DE CANDOLLE

PRODROMUS

SYSTEMATIS UNIVERSALIS

REGNI VEGETABILIS

PARS XVI

SECTIO POSTERIOR — FASC. II

PARISIIS. — E TYPIS C. LAHURE
Via dicta de Fleurus, 9

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DE CANDOLLE

PRODROMUS
SYSTEMATIS NATURALIS
REGNI VEGETABILIS

SIVE

ENUMERATIO CONTRACTA

ORDINUM, GENERUM, SPECIERUMQUE PLANTARUM

HUC USQUE COGNITARUM, JUXTA METHODI NATURALIS NORMAS DIGESTA

EDITORE ET PRO PARTE

AUCTORE

ALPHONSO DE CANDOLLE

PARS DECIMA SEXTA

SECTIO POSTERIOR

Fasc. I.

Sistens Cupuliferas, etc.

6. 6. 6 It
LIBRARY
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PARISIIS

SUMPTIBUS VICTORIS MASSON ET FILII

FORO DICTO DE L'COLE-DE-MEDICINE

VENITQUE APUD EOSDEM LIPSIÆ, PROCURANTE F. WAGNER

NOV. M DCCC IXIV

SIGNORUM PRODROMI EXPLICATIO.

Q Planta monocarpica duratione ignotâ.
(J) Planta monocarpica annua.
(2) Planta monocarpica bienm's.
***If* Planta rhizocarpica, seu perennis herbacea.**
***i)* Planta lignosa, cujus magnitudo est ignota.**
5 Suffrutex, nempe planta lignosa cujus altiludo ad summum bipedalis.
3 Frutex, nempe planta lignosa, a basi ramosa, plus quam bipedalis.
***5* Arbuscula, nempe planta lignosa, trunco donata et infra 25 ped. altitudinis.**
^ Arbor, nempe planta lignosa, trunco donata et 25 ped. superans.
***(J* Scandens.**
***tf* Planta seu flos masculus.**
9 Planta seu flos femineus.
^ Planta seu flos hermaphroditus.
oo Numerus indefmitus, sic ovula oo, id est plurima non numero definito.
? Signum dubitationis.
! In synonymiâ aut loco natali indicat specimen ab auctore ipso aut viatore inscriptum.
v. s. c. Visa sicca culta.
v. s. sp. aut v. s. Visa sicca spontanea.
v. v. sp. aut v. v. Visa viva spontanea.
v. v. c. Visa viva culta.
v. in h. Visa in herbario.

DE CANDOLLE

PRODROMUS
SYSTEMATIS NATURALIS
REGNI VEGETABILIS

SIVE

ENUMERATIO CONTRACTA

ORDINUM, GENERUM, SPECIERUMQUE PLANTARUM

HUC USQUE COGNITARUM, JUX1A METHODI NATURALIS NORMAS DIGESTA

EDITORE ET PRO PARTE

AUCTORE

ALPHONSO DE CANDOLLE

PARS DECIMA SEXTA

SECTIO POSTERIOR

Fasc. II.

Sistens Salicineas, Gymnospermas, etc.

PARISIIS

SUMPTIBUS **VICTORIS MASSON ET FILII**

FORO DICTO DE L'ECOLE DE MEDECINE, N° 17

VENITQUE APUD EOSDEM LIPSIÆ, PROCURANTE F. WAGNER

JUNIO M DCCC LXVIII

PRODROMUS

SYSTEMATIS UNIVERSALIS

REGNI VEGETABILIS.

Ordo GXC. CUPULIFERiE (1). — Amentacearum genera *Linn. phil. p.* 28. — Uastaneae, sect, i, *Adam. fam.* 2 , *p.* 366 *(exclusis gen.)* — Amentaceae, sect, m, *Juss. gen. p.* 409 *(exclusis gen.)* — Cupulifera *Rich. anal. fr. p.* 33,92 *(excl. gen.)* — Corylaceae, sect, i, *Mirb. elem. phys.* 2 *p.* 906 *(non sect,* n, *ubi Corylus).* — Amentacearum Cupuliferae (pars) *Ag. class, p.* 9. —Quercinap Ji/ss. *dict.sc. nat. 2%suppl. p. \%(ubi nomen solum).* — Quercincftct Fagineae *Dumort. anal. p.* 12. — Cupuliforarum pars *Lindl. intr. p.* 97. — Amentaceae Fagineae *Reichb. consp. p. $2 (excl. gen.).*—Cupuliferarumtrib. Quercineaeet Fagineae *Meissn+gcn. p.* 345 *el* 257. — Faffineae *Döll in Flora* 1842, *p.* 725. — Cupuliferarum pars *Endl. gen. p.* 274, *suppl.* 4, *part.* 2, *p.* 22. — Corylacearum pars *Lindl. Veg. Kingd. p.* 290. — Xylophyta, Fagiiieae *Döll z. Erkh Laubkn. Amenl.* (1848) *p.* 22. — Cupuliferas verae *Schacht Beitr.* (1854) *p.* 53. — Fagineae *Döll FL Bad.* 2, *p.* 540.

Flores monoid, spicati, spicis plerumque unisexualibus, nunc basi feinineis, supra masculis. Flores MASC. in amento solitarii aut ^lomerati, bracteati vel ebracteati. Perigonium lobis saepe •naequalibus. Stamina e fundo perigonii 5-20, libera, filamentis ^racilibus, antheris bilocularibus. Rudimentum ovarii liberi Praesensaut nullum. Pollen (immersum) globosum, lasve, 3-porosum. FL. FEM. singuli vel pauci in cuptild (ramus abbreviatus) ^^nmersi, cupuli basi bracteati, squamis et praeterea inter-^uin aculeis vel laciniis tarde crescentibus ornatd. Perigonium regulare, sacpius 6-lobum. Ovarium inferum, 1- et placentis promiuenlibus plus minus 3-rarius 4-7- loculare. Ovula in singulo loculo gemina, e basi erecta vel ex apice pendentia, anatropa, integumento duplici donata. Styli lot quot loculi, us superpositi, indivisi, sursum stigmatosi. Fructus ex involu-

(1) AuctoreAlph *i'-*

'cro scu- (u pul accrettl et nuculis (nuces, glandes dictis) con-'strfnl, cupuld interdum fissl Semen plerumque in singuld nuce vel glande abortu unicum, ovulis aborlivis situ pristino adstantibus. Albumen nullum. Embryo radiculA parv£ superd, cotyledonibus plerumque carnosis, facie nunc sinuate vel plicate adpressis el interdum subconnatis, dorso convexis, nunc sinuosis, radicul&longioribus.—Arbores, rarius frutices, ubique terrarum except^ Afiicc£ tropicali et australi indigeni, foliis alternis, penninerviis,stipulaceis; spicis masculis (amentis) et partemascuia androgynum caducis; cotyledonibus farinosis nunc edulibus.

Devernatione confer pnesertim ad Döll, zurErklär. d. Laubkn. Ament. br. 8°, 1848; devera, cupulae nature et distinctione ab affinibus Corylaceis, ad ejusdem Flor. Bad. y. 2; tandem de tota organogenesi videSchacht Lehrb. 2, t. 8, sive der Baum, **t.** 3.

I. QUERCUS ***Linn. gen. ed.*** **1, p. 726;** ***Gaertn. fruet.*** **1,** ***t.*** **37;** ***Secondat, Mtm. sur Vhist. nat. du chine, in-fol*** **1783;** ***Schk. Handb. t.*** **301, a, 6;** ***Michi. hist. nat. Chen, d'Artier, in-fol.*** **1801;** ***A. Michr. arb. Amer.*** **1811 t>. 2;** ***Blume ft. Jav. fasc.*** **13, 14, ef** ***Mus. Lugd. bat. v.*** **1;** ***Nees gen. fl. germ. fasc.*** **1;** ***Endl gen. n.*** **1845,** ***suppl.*** **4,** ***part.*** **2,** ***p.*** **24;** ***Spach hist. veg. phan.*** **11, p. 145;** ***Webb it. hisp. p.*** **10; Gay in** ***Ann. sc. nat. ser.*** **4,** ***v.*** **6, p. 222$_1$** ***Bull, soc. bot. Fr.*** **1857, p. 4'»5, 301:** ***Schacht Beitr.*** **1, p. 36,** ***t.*** **3,** ***id. der Baum, t.*** **3-** ***Kotschy Eichen Europ. und Orient, in fol. Wicn,*** **1858-1862,** ***et eisicc. div\ (quorum una series rerisio dicta); Brendel the trees of Win.*** **p. 20-47;** ***Alph. DC. in Seem, journ. of bot. jun.*** **1863, p. 182;** ***Mia. Ann. Mus. Lugd. bat.*** **l! (1865),** ***p.*** **108 (*pro parte*). — Quercus, Robur, Suber et Ilex (partim)** ***C. Bauh. pin. p.*** **420, 424. — Quercus, Ilex et Suber** ***Tourn. inst. p.*** **583. — Synædrys** ***Lindl. nat. syst. ed.*** **2, p. 441. — Lithocarpus** ***Blume Bijdr. p.*** **526.**

Flores masculi inamento solitarii, rarius ternati, plerumque bracteâ caducâ in plerisque stipulis orbatâ stipati. Perigonium regulariter aut irregulariter^-7 (saepius5-6)-lobatum. Stamina numero variabili, loborum perigonii plerumque superiore vel duplici; fiiamenta gracilia, exserta* antherae biloculares, filamento multo breviores, saepius muticas, plerumque glabrae. Pistilli rudimentum saepius nullum, nuncglobosum,liberurn, hirsutum. Flores feminei plerumque in cupulâ (invol.) singulàsolitarii, nunc cupulis connexis approximati. Perigonium apice 3-8 saepius 6-lobum, nunc obsolete denticulatum. Ovarium inferum, superne uniloculare, inferne placentis in centro vix coalitis, 3-loculare, loculis biovulatis. Ovula angulis interioribus loculorum nunc basi, nunc supra basin, saepius prope apicem inserta, in omnibus sursum hemianatropa. Styli (saepe stigmata in descr. auctorum) 3, raro 3-i, loculis superpositi, uno bracteara spectante, saepius ligulati crassi patentes, nunc lineares erecti. Fructus e cupulâ mulatâ, squamosâ vel zonatâ, nunquam aculeis onustii, et glande plus minus liberâ, exbertâ vel inclusâ constans. Semea abortu unicum. Ovula abortiva nunc circa inferiorem nunc circa superiorem partem seminis cum vestigiis parietum persistentia. Testi membranacoa. Cotyledones crassae, saspius piano-couvexae et inteprae, dorso frequenter undulatae, rarius sinuato-lobatae. Hadicula supera, intra basin cotyledonum inclusa. — Arbores in hemisphaerio boreali et inter tropicos crebcentes sempervirentes aut pro tempore aphyllae, stipulis fugacibus- foliis in vernatione Iongitudinaliter plicatis; gemmis stipulaceis, squamosis (con .

Dölll.c.fig.23,HenryKnospenbild.inNov.act.nat.cur.22,parsl ,p.337f t 22,etMohlmorph.Unters. ab.Eiche,in-d^0 Gassel 1862);pili$_s$novelloruni

stellatis sive fasciculatis, adjunctis interdum aliquot solitariis, plerumque serius retractis aut caducis; amentis pendulis aut erectis, saepius masculis, raro androgynis(fl. femineis infeme sitis), ex axillis inferioribus vel saepius e gemmis lateralibus pauperioribus aphyllis vel paucifoliatis nascentibus ; pedunculis femineis ex axillis sequentibus aut e gemmis terminalibus, paucifloris, nunc minimis. flore terminals (Gay 1. c.) alii*-que fl. plerumque abortientilms, paucis maturescenlibus, singulo flore cupula involucrato; fructus maturatrone annua aut bienni. Glans junior pubescens, matura plus minus glabrata.— Flores femineos subbermaplirotiitos vidi in Q. Robore, ubi stamina solitaria passim inter denies perigonii interjecta. — Charade res admodum in eadem specie, etiam in eadcm arbore variabiles sunt: longitudo petioli, forma generalis, lobi et dentes foliorum, forma bractearum in amento, numerus loborum perigonii et staminum, mucro brevis vel brevissimus antherarum,longttudo pedunculoruui iVuctiferum, numerus fructuum, convexitas dorsalis squamarum cupul«, magnitudo glandis erga cupulam (Alph. DC. *ttude* sur l'espece, in Bibl. univ. nov. 1862, iter. in Ann. sc. nat. ser. 4 v. vol. 18) (1). Squaraaa cupulares post Qorem generatae, consistentia, formd, pube frequenter squamis (stipularibus) gemmarum in singula specie suLsimilibus ut observavit cl. Gay 1. c. — Situs ovulorum abortientium erga semen (Alph. DC. Note sur un nouv. caract. in Bib), univ., oct. 1882, et Ann. sc. nat., s6r. *k* v. 18.) abinseriione ovulorumpendere videtur, sed evolutionem ovarii in perpaucis «peciebus observare mihi contigit. In Quercu Robore, ubi ovula *infera,* id est sub semine maturo in inferiori parte glandis remanent, omnia ovula juniora in inferiori parte loculorum adscendentia vidi, septis tone superne initio discretis. In Q. Subere, ubi ovula abortiva infera vel (rarius?) secus latera seminis inter basin et mediam partem altitudine diversA adsunt, ovula omnia juniora paulo altius qiKrai in Q, Robore insident, parietibu« similiter superne discretis. In g 2 et 3 sectionis primaa et in aliis sectionibus ubi ovula abortiva *supera,* id est semini superposita, ovula juniora omnia supra mediam Vel in superiori parte, septis ibi perfeclis, infra saepius? discretis (Q. acutifolia) adsunt, ex div. sp. a me observatw #et ex labulis eel. Blume. Situs ovulorum constans; tamen ex adspectu fructus non dijudieandus.

Sectio i. LEPIDOBALANCS *Endh gen. suppl. i part.* 2 p. 24, *Alph. DC.U.cc. Miq.Ann. Mus. Lugd-bat. \ p.* 108. —G^n. Quercus, *Ilex* et Suber *Tourn. inst.* p. 582 — i. Quereos *Linn. ed.* 1 n. 726.— Sect. Robur, Cerr.jides, Eryilirobal;mns. linlliiVra, Suitor, CoecHera *Spach hist. Teg. phan,v.* 11 p. 1 r3 *et seq.* — yuercus divis. Escutus et Ilex Gay tit jinn. *sc. nat. ser.* 4 ft, C. **~jL* /

l'uh s«[uamis imbricatis tocta, ore aperta. Floret masc. in fundo pilosi apsque i-udimento manifesto pistilli. — ^Vmenia gracilia. hnarfon^ja Wm/-t.» P sub -nlo tloremti i;usciculo flormn unic«Tnud^ fnitUBf fltBUB. PengoinTmrmasc. ^ajp irragulanter divisum. Stanii3ri>lerum(iu labos pc. *non* masymmetrica.

IV ^^lionibm spocierum caute in prcsimi online cbscrvatis (Aiph. *BC.* I. univ. Arch. sc. 1862, siM n. Ann. sc. nat. W- sensum definitum verbo *vel* in j'iirasi cujusve specie) tribiu, ticmj" uonis [em |pma JiveMe in (j. rtwribus etiam in iliv. raruis i herbario servatis, verba *nunc, aut* adhibui Escmpl. lia : fo! basce varia: .cutis aut olttu

§ 1. *Ovula abortiva infera, id est sub glande videnda* (1). *Maturatio fructus annua, sive fructus matwiligno anni inserti* (2).

*** Species folns pro tempore orbatae (3).**

A *Gerontogex*

"*I* **0 ROBUR (Linn sp p 1414), folns obovatis vel ranus oblongis elhpticisve** basi cordatis vel ranus obtusis vel acutis \anelobatis vel ranus sinuato-lobatis lobis muticis plerumque obtusis, jumoribus subtus saepius pilis stellatis et partim simplicibus pubescentibus raro glabns adultis sdepe glabratis, bracteis fl masc hneaubus, pengonu lacinns 6 7 basi inaequaliter connatis pilosis, cupulai hemisphaencae squamis adpiessis extus cinereo pubescentibus inferioiibus o\itis medns et supremis ovatis vel e basi ovat& dorso convexâ mucronato lanceolatis obtusmsculis, glande ovoideo ellipsoideâ vane exsertâ ^ ranus 5 vel 5 In Europâ et AsiA occid temperatâ sUvas vastissimas pleiumque formans — Desi cat h pai ed 1, St Moulin diss in Gomra bot Lugd bat 4° 1841 p 6, Webb it bisp p 10, Benth hand bnt fl p 473 Divdlenda in mnumeias species male defimtas aut piaeeunte ill Linne, unica species pohmoipha Tiansitub inter subspecies I et II nunc in diversis arbonbus nunc ineddem obsenaverunt Leman et lurpin e\ fhaum Pi med 2 p 222, Zucc in Morâ 1831 p 161, Gay in Bull Soc bot 1 c et piaeseilim Giev in lrans Edmb bot soc Ip 651 4,5, et Kling^raff in Bot Zeit 16o2p 172, confer piaeterea ad vai *Armemacam* et *petiolarem* quoad longitudinem petiolorum, *fcu>tigmlam, ambiguam, Tenorei, Buhseanam* quod ad pedunculos, et diss meara a Etude sui Tespece » in Bibl univ (Archiv sc) nov 1862 sive in Ann sc nat v 18(4) Folia autumno exsiccata plus minus **perstant pro anno et aihore**

Subspecies I, **Peilunculata** , petiohs plus minus abbieviatis, peduncuhs fiuctifeus plerumque elongatis petiolo nempe longionbus

a, *vulqans.* ,rdmis folnsque jumoribus subtus parce pilosis nunc glabns, adultis glabns *$* In Luropi, a Siena Cmtra Lusitamae (Welw [f] mh Webb), Sardiniâ centnli (Moris fl Sard 3p 514), regno neapolitano (Ten '), Peloponeso (E\ped Mor p 273), Cons antinopoh <h Webb') forsanque a provincns tianscaucasicis (e\ auct sed specimen fructif certum non \idi), usque ad lat >8°in Scotiâ (Wats Cyb p 275), 61°-62° m ^OIwegld (Hartm Skand fl p 201) et Sueciâ ^Fnes fl Geval p 31), 60° \ersus Pttropolim (Ledeb fl loss), 58° ad Widtkd(G A Mey fl , in Rupr Beitr p 30) et cncitei 56° in Uial mend (lrautv ectest Kiew, in mappâ) Hemens Dal hist 1 p 4c IC opt Quercus cum longo pediculo

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(1) Ovula abortiva observau in sp n 1, 4, 13, 19, 21, 22, 23, 24, 2[r]>, 26, 32, 34 38, 39, 44 49, 54, 57, 58, 61, 63, 68 70 73, 75, 76

(2) Duratio fiuctus m eadem specie admodum constans, sed in speciebus caeterum simillimis differt

(3) Chdiacter propter defectum ahoium hie adhibitus, et enim 1° vanat in quibusdam speciebus (0 humihs, Q Iusitinica, conf Webb it Hisp p 13), 2° transitioncs maebtt (folia plus minus ante frondescentiam novam cadunt, arborem per plures menses aut aliquot dies aphyllam linquentia, nunc, in Q Robore, Q alba, Q unbricaiiA ex Brendel 1 c exsiccata dm peistant),]° ex speciminibus herbai lorum raro perspicitur, prdesertim in spec ubi \etusta folia cito post frondescentiam cadunt lnde plunmae species § 1, vagae inter sempervirentes et non sempervnentes

(4) De hisce non curaverunt auctores qui dneisitates gemmarum et foborum, *pedunculate* et *semliflorr* in unica piovincia Germarnae aut Galhae attente obseivarunt, innumeiis all is vanetatibus et subvanetdtibus europaiis vel asiaticis omissis

C Bauh pm p 420 (ex DC qui plant herb Bauh vidit) Q Robur p Linn 1 c 0 racemosa Lam diet 1 p 715 (exel \ar), DC fl fr 3 p 309, Duham arb ed nouv v 7 t 7 Q Robur pedunculata Martyn fl mst t 10 (fide Sm) Q pedunculata Ehr ' arb , Hull bnt fl p 212, Willd sp 4 p 450, Woodw med bot t 126, Sm Tngl bot 1342, Nouv Duham t 54, Loudon arboi t 69 v 3p 17311.1567, 1568, enc>cl trees p 849 c IC , He^ne Arzn gew 6 t 36, Reichb ic t 648, Hartig Foist t 12, Nees pi off c ic , Kotscdrv Tichen t *11* Q hybnda Bechstem in S\l\an(ex Irm bot Zeit 1847 p 580 0 pedunculata velmehus brevipetiolata Doll lhein Fl 275 0 fi uctipendula Schrank 0 malacophylla Schui (Lsti bot Zeit I860 (fide Iseilr Nachtr Malj p 77) Q pendulina Kit ? (ex TSeih ib) Q pedunculata glabra Godr fl Lorr 2 p 285 Q Biutia Ten » il nap) p 2591 197 (pedunculis in icone 3 4 lin lon^is, ex descr sesquipollic) Q paleacea Desv journ 3 p 48[if] (e\ patna, nam desenptio feie nulla) Q germanica Lasch in Bot Zeit 1857 p 413 Q longipes (e prov transcaucasicis) Stev Verz. taur Halbins p 306[9]Q eiucacfolia ejusd ib * Petioli in eodem ramo feie nulh A el 1 3 lm "vel 3 Im longi, nunc (in proximo ramo, aut in aliS. arbore?) etiam 7 lin Limbi 2 5 poll longi, saepius semipinnatifidi, pilis rans plensque simplicibus, demum letractiu nee caducis Pedunculi 1 3 pollic , nunc bre\iores; imo (ex Doll 1 c) interdum nulh, et tune meigit in subsp II, nee nisi longitudme petioli (charactere Aanabih) distincta Cupula 4 5 lin longa, 6-7 lm lata Glaus 9 15 lin longa (v v et s)

p, *Thomasn,* ramis iolnsque junionbus subtus pilosulis, adultis glabns fiuctu majore *$* In Calabnâ (Ten '), prope Ncapohm ad Astione (Heldrl), urci Bosphorum (Webb' in h Hoi), ad Konstantinowska (Bess ') et in launâ (Stev ') 0 pedunculata macrocarpa Bess ' in h DC Q Ihomasn len ' fl nap 5p 2o9 t 198 Ex speciminibus Tenoiei squamae gemmarum pilosulae, petioli 3 5 lin longi, limbi jun ad nenos passim pilosi, lobi hinc inde dentati (ut in \ar vulgan), sinus obtusi, pedunculi 5-1 o lm longi, cupula 6 8 lin lonca, 9-12 lin lata, glande 9 18 lm longâ apecimina adsunt in h Webbii Q Brutia a cl 'lenore vocata mtei praescrfltem et vulgaiem magnitudine fiuctus media (v s)

Y, *Haas* ramis sulnelutinis autglabns, foliis grosse et obtuse lobatis subtus etiam adultis pilis slellatis brevissimis undique pubescentibus, cupulâ pleiumque magnfl. ^ Fiequens in montibus a Bulgar Dagh (Rotsch\ ' it Cilic 374), ad lacum Van Kurdistaniae (Kotschy' it 1859 n 407, 408, 423, 4M, 43i; *36, 437, 438, 551, 55o), ad portas filicicas (Ba lansa[1] 638 in h Boiss et Caesaream id ' b36), m Asia minon loc non design (Tclnhdtch ' 1858), prope Trapezum (Bourgeau' 1862 n 644, 646, 648), circi Belgrad prope Byzantium (h Webb[1]), ad fl Melas prope Le\adia (h Boiss ' et Webb') Q'Haas Kotschy Eich t 2 Petioli 2 6 lin longi Accedit stepe ad var Thomasii magnit fructus, ex gr in specimi-nibus Balansaei Media cjeterum intei >ar \ulgarem et apenninam Diffeit a pi IOI i pubescentia fol subtus non evanescente, a posteriori statuiâ majore, puhtscentil lohorum minus copiosâ Van it ramis glabiis \el brevitei velutinis Pedunculi saepius monocaipi (\ s)

8, *Armeniaca,* folns longe petiolatis, junionbus , adultis feie glabratis, sinubus non profundis —In Armeniâ et Ponto (Kotschj ' Bourgeau' 1862 n 642) *Q* AimLiuica Kotschj EJCII t 25. *Q* Lasibtan KolhChy' revis 46 m h Boiss Ramuh purpuiescentes, glabn Petioli 6 9 lin longi, limbi *A-,~)* poll longi, basi obtusi \el corditi, adulti subtus ad nei\os passim pilis simplicibus donati caeterum pilis retractis glabrati, lobis F*irum productis n regulaBl)us obtusis vel subicutis Hoies masc ignoti Pedunculi fiuctif et fruCffle omnmo Q Robons peduntulatae \ulgans, ubi folld Emilia liUerdum adsunt Vn a ^ulga^l distinguenda (v s)

e *pMiolaru, tolns* longe petiolatis, junionbus , adultis glabiatis, sifubus prolundis, lobis oblongis — In hasalticis Nimrod Dagh ad lacum Van alt 6000 p (Kotschj ' it 1859 n'Sbo) Petioli in eod lamo 4 9lm , nunc 6-Ulin longi, hmb"i pinnatifidi, lobis utnnque^o 7 apice callows Pedun

cuh ft-18 1m longi Squamae cupulae longiuscul-e Rami ct gemma: glabri liansitus vcnsimilitei adsunt quoad lobos foliorum intei praisentera et prasoedcntem, ut in var ^ulgari, sed in herbdiio desunt (v s)

i;, *microcarpa,* glande minore — In sylvis Sjrmu 0 pedunculata microbalanos HcufTcli in h DC Jolid parum lobdta, pallida, glabrdta, ut in plunbus formae vulga^is Petioh 2 lin , pcduncuh \\ poll longi Glans 8 JO lm longa, 4 lin lata, cupuld 3°-J° longior. lorma depauperata, forsan non constans? (v. s)

*j, *fastigiata* (Lam diet 1, p 725), cymâ ex lamis erectis pyramidali In bylvis C llabna. (Ten), in GalliA austro occidentah, sed lbi prope domos, et passim in Gallicia (Colm et Bout examen enemas, p 15) Q fastigiata DC 1 fl fr suppl p 351, Lois in nouv Duham 7 p 178, t 55, Ten fl Napol 5 p 258, Loud arbor 3, p 1731, t 282, enc f 1543 Q pyramidalis hort , Bosc mem p 17 Folia brevipetiolata, parce pilosa, raro sessilia, c ito cadentia Glandes 9-15 lin lon g æ Form o a nn semper haereditana (ex Alman du bon Jaid), e 30 satis, 12 foimam fastigidtam pidebueiunt (Ma. thicu, fl foicst ed 2, p 237) Specimen pedunculo abbreuato subnullo inter *sessiltfloras* collocavit patei in herb nostro (v s)

0, *purpurascem* (DC fl fr suppl p 351), novellis purpureis, folns pur puicscuitibus —In syUa Maule piope Le Mans (DC heib ') et in hoitis 0 purpurtd Lodd cat Q pcdunoulata puipuru Loud, arb 3, p 1735 (v s)

t, *Hodqinsn* (Loud I c), folns multo minonbus — In hortis> angl Q Hod^insn Lodd cat 1836 Cyraa subfastigiatd

x, *pendula* (Loud arbor ! p 1732), 1 imis pendontibus — In horlis angh cis luimi srpius haeinlitana (loud I 1) Q peudul 1 Lodd cat 1836 Di\eibep vanclitcs \onsira in hoitis lamos pendentes summit Speumina vidi in h Webb (sino fl et fr) ubi folia subtus tomentosa (v. s)

X| *lactmata,* folns elongatis suluntcgns Ael irregulantcr hcnnato lobatis lobis acuminatis aculis ob1usis\e In Angl 1 A, passim (Loud) ct in hortis anglicis Q j|Liniiti Lodd cat 0 iilicifolia hoit Q Penrussi hort Q pedunculita neteiopliylU loud aib 3, p 1732, f. 1569, 1570, 1571, encycl of ticcs, p 8iO, 1 1)44 0 pedunculata? uliufolia Lam ill hoit 1854, c ic Iiuctus ignotus (v »)

ji, 1 *anegala* (1 ndl gen suppl 4, p 24), folns ex albo et purpureo \anegatis — In bortis Q vanc$_o$ata lodd cat (v s)

v, *Apcnmna,* minor, novellis incano tomentosis, folns subtus Ltiam idul-Us pillide tomentosis supia glabnusuilis demum gUbris____In siccis Ancnninoium (Lara len syll p 470), Siciliae (Guss syn), Galliae mend aa Pic de Saint Loup (Godi fl fi 3, p 117), oiicntahs (Nestler' in h DC , Godi fl Lou Knschl fl Als 2, p 80), et circa Pansios (rauche 111 h Boiss • Loistl) Q Aj)ennma L*im diet 1, p 725 DC 1 fl fi (,, p. 352 Loiscl in nouv Duham 7 p 177, t 53 0 tomentosa Lhib ' 148 (spccim sine fi nib DC) 0 pulunculati \ar Apennina Godi fl Loir 2, p 285 0 pubescens Lodd cal (non Willd) Q pcdunoulata pubescens Loud arb 3, p 17 *U Q* amplifolia Guss syn fl sic cd 2, v 2, p 607? 0 Toza Gnseb spicil Hum 2, p 317 a lozadiv hie forsan refeienda[9] Q vimmalis Bosc' in h Webb (non m h DC et in mem p 12) Ranor videtur quam paialleia A inetas Rol>orls sessiliflorae lanugmosa dicta, a quâ longitudine pedunculoium solum dnersa Petioli 2-6 lin longi Pedunculi 3-12 lin longi, non crassi (\,l) ^

Subspecies II, ^cs»IHIIopa, pcliohs plus minus elongatis, pedunenhs fructifeiispleiumque ibn\iitis (pttiolo nempe vulgo hrcviorinus) ant nullis, 111 IUS rjhioluni aquantibus. —Non nimus^aiidt quam subspecies I Peduneuli btrpius crassiorcs toima a, p, transiIus dd. pitcccdenles quoad pedunculos praebent, ut var. Y» 3, s, pnons, quoad longftudinem petiolorum

a, *ambtgua,* ldmalis velutinis, folns supra passim t>tellato-pilosis subtus

tomentosis ppdunculis petiolum aequantibus cnssis \elutinis — In Calabria (Ihomasi in h DC), Gillift piope Lugdunum (Q Apennina Auniei' in h DC) Phagus Dal hist p 5? Ut vanetas Tenorei media quod ad petidum et pedunuilum inter *pcdunculata** et *scbi>riif}orai>*¡ imo pubes-
centiA. foliorum intel *pedunculatas apenninas* et *sessihfloras lanugmosas*
Forma foliorum, longitudo petioh et'pedunculi omnino ut in "sai Tenorei, lobi tamen folioium saepius ad foimam acute dentatam iconiim Dalechimpn accedentes Folia adulta desenpsi, subtus \alde tomentosa, junioia \ensim utnnque pubescentia Squamae cupulT inferiores o\itae, sup lanceolatae subacutae, dorso ux mil ate, sed in hisce char \anant omnes feie \anctales In specimine Ihomisn petioli G lm lon^i, pedun cull 2 lin vcl (in codem ramo) 7 lin , ideo petiolo nunc sublongiores In omnibus pedunculi crassiores quam in *pedunculatis* (\ s)

Pi *lenorcij* lamulis velutinis, foLns supia glabus subtus pilosiuscuh&, pedunculis ciassis velutims petiolum aequantilms — In regno neapolitano (len ') et Syimio Scl ivomas Heuffel[1]) 0 Dalechampn Ten ind sem hoit neap 18)0 s}U p 4G9 (excl vai C), fl nap >, p 260 Pha,?us Dal lust p 5'Q Budaiani Habeil fide HeufT ' in h DC (media inter \ar praesentem etlanuginosam) Q Lsculus Gnscb spic Rum 2, p 3S6 (non L) Lx specimine a el lenorc conim rami fuho velutini pube bie vissima, folia ubo\ata, lrregulantei pinnatifido sinu ita, lobis oblusis pas sim dentatis, ddulta supra glabemma, subtus ad nenos passim pilosa, in paienchyraate pilis bievissimis saepe stellate ad lentem conspersa, pctioli 1G lin longi, glibnusculi pedunculi 3 6 lin longi fiuctifen crassi, pube ramoium \clutim, f^lindts mediocies cupuli cinereo pubes cente tiguicE Ddlccliampn diffemnt foliorum loins acute dentatis an errone pictons? foi&m var ambiffus potius tnbuendae Proximi var [1] mu(/iiios<D, ubi nitejdiim pedunculi breves ddbunt in ipso lamo ubi glandea pleiaquc scssiles (v s)

Y, *lirgiliana* (len s^ 11 p 469), ramuhs ^elutinis, folns saepius amplis nee piofundc lobatis supia glabns sul)tus pubeiuhs demum f,UbM!.? pedunculis fiuctifens nullis aut l)ie\ibus, glandc oduli ^ CncaNeipolim (Ten), in ins Isclna (Guss i) et in Sicilia (Guss) 0 Robin Virgilnni Ten syll Q Vn_hihana len 11 nap 5, p 262 Guss ' en plant Inanm p 307 Q Cupaniana Guss syn fl sic 2, p 60b, en plant Inanm p 308 Q pcdunculata lulcis Loud *m* aib 3, p 1735 Cl Gussone, anno 18o7 speeimina commumcavit ex ins Isclua, sub nominibus cit , qua. mihi simillima udentm Foima folioium in Robore scssilifloid frequens impla, obo\ata, basi)btusa, lobis non ma,ru>> in cqualibus obtusis Petioh 4 6 lin longi, gUbiiiiisculi Pill sub limbo ad nenos lnngiusculi demum evancsccntes, in parench^mtfe breMssimi sajpius stell iti id lentem \i dendi Pedunculi in tubus specim nulli ex fen inteidum breves, ex Guss inteidum 1 veil \ poll lon^i UIl(le^a^ tiansit ad ^ar *amhiguam* et *Tcnoiei* Squamae mediae ct sup lanceolatae Glans mijuscula, ex len edulis Suto nietas (lieend*est Quercus e nemoiibus Lucanne, a cl Gaspaiinn sub n 12, cum cl Gay comm et ib eo mccum dnisi ubi petioh 8 12 lm longi fiuctus subsessiles, glans pcllicem longa, nulc ad Aai peduneulat* Ihomasii et Haas aceedens (v. s)

[8], *Buhseana,* lamuhs glabns, folns longe petiohf fs\i) isi saspius cuneatis supra glabi is subtus ad nervos solum pilis longi^ soli tarns lins mstruc tis, pedunculis petiolo bre\lonlius pubeiuhs non ciassis ^ In Persift ad Achewlar (Buhse' in h Boiss) Ramuh petioh et nervi subtus puipuras centes Petioh 5 9 1m longi glibn, limbi 3 poll longi, 1 ^ poll hti, ol3o\ati obtuse loliati JkLsi ST pins icuti nunc subconhti Pedunculi J (> [01]" [loi]»g», non ciassi^iuctu sjqius unico Cupula ^ult,a^[1S]» squ urns [01]tuse lanceolatisutsa-pe in eon^uiuni Ghns seniipollieans cupuld ideo parum longioi, subpubeseens Una ex liniumeiis nitei 0 pcduncuUtam et sessilifl$_{01dm}$ auctomm (\ s *ft*

£, *mcspilifolia* (wallr ' sehed cnt p 494), glabra, folns obovato oblongis basi in petiolum cuneatis \el longe angustatis apice obtusis vel subacuus

maigme integris passim iindulatis fructu In Thunngit Rarni junio-res, gemmde et petioli glabu atque rubtseentcs Folia 2-6 poll, longa, 6 20 liu lata Moiesetfi jgnoti (v i> comm a cl auct)

?, *commums,* iamulis glabus A el glabnusculis, foliis saspius amplis nee profunde lobatis parce pubesdentibus ^ In Puropa et Asia occid nempe ab HispaniA centrali (Colm apunt Cast p 1J4), SardmiA (Moris el p 2, p 9), regno Ntapolitino (Ten fl Nap 5, p 2b2), Gracia Kotschyl revis 71), GiliciA (Kotsehy' 37r>), piov Musch (Kotschy' anno 18J% n 556, 562, 567), laeum Van (id • 550), Karduchnra id ' i64), in monte Biragoel (id ' 425), Ghilan (Aucher r 5333 m h Boiss et Webb), Anatolia sept (Kotschy' 385, b , reus 37) et TaunA (Ste\ 'inh DC) usque ad Sei gievsk piope ->4° lat. versus Lial mend (Claus in Rupr Beiti 8, p 147), Pcnsam (Ledeb fl), Mosquam (Fl Mart fl), Lithuannm (Luhw Icdeb), ct 59° Utit in ScandinaviA (Wahl, Hartm fl) et ScotiA (Wats f yb 2, p 376) Oueicus htifolia mas quap brevi pediculo est (Bauh pin p 418 (ex DC qui specimen auth vidit). 0 Hobui p Lmn fl suec ed 2, p 340 Chrene male Secondat hist nat Chen t 4 Chuie Rome a laige feuillelam diet 1, p 717 0 Robui var sessilis Martjn fl msf t 11 0 sessilis Lhr ' arb Q se&sihflora Sal prodr p 392, Sra Ingl hot t 1845, Loudon ubor t 69, v 3, P 173o, f 1572 0 Robin Willd sp 4, p 450, Hnlig foist t 11, Schkuhr Handb t 301, b, Duham tub nouv ed 7 1 7, Nees pi off c IC H(ync Ai/gew 6 t 35, Reichb ic t 644 0 congloraerata Pers syn 2, p ")70? Rcichb'ic t 645 (var lamigmosae forsan propior?) 0 mteimedia D Dun, Bab man ed 2, p 301 0 ibencaBieb fl Cauc p J913 (putim?) Q Robiir Ibenca Ledeb fl ross 3, p 590 paitim 0- conacea et 0 dujpicns Bechstem m Sjhan Jahib 1814 ct 1816 (e\ limiscli hot 7eit 1847, p 5S1) 0 viminabs Bosc' mem p 12 et in h DC (non m h Webb) 0 miciotarpa Ja Peji hist Pyi p "J82 (fide Clos re\ h La^Pevi p 178) 0 abietum Kotschy' pi Cihc 375 in h Boiss 0 condensaia Schui (Fstr bot 18i7 (fide Neilr Nachtr Maly, p 77) 0 sublobdta Kit m bchult O,str. 1 619 (tide Neilr ib) 0 pallid i Heuffel' in h DC 0 miea Kotschy' Iich t 4 Q manmleii Kotschy[1] re\is n 36 m h Boiss Q mtei media Kotschy'rev n H 41 0 lampiophyllos C Koch niLiim 22, p 327 Pili folioium iaii, simplices vel stcllati, demum distintts adpiessi nee ev«inescentes (limiscli). Vanat ut \ar vulgaus subspec I ma^nitu dine foliorum et petioli (saepius semipoll m n o64 Kotschj 2-6 lin in eod iamo), smubus \ane profundis (s«epius non profundis), basi cordatd vel obtusA vel raims cuneaU, pilis plus minus rails, nervis nunc fla\(s centibus, folus siccis nunc peistanlibus, pcdunculis (m eod iamo) pe tiolo bre\ionbus velapqualibus, vel sublongioiibus (V)6 Kotschj '), stBpius brevionbus, magnit glandis Inde speciminasaepeadsequentes\a'r trans eunt (v v et s)

yj, *bullata,* ramis junionlms folusque glacis, folus saepius amplis nee pio-funde lobitis, f>quamisinfeiioiibus etcffiliis cupulae dorsovaldc comexis *5* In AsiA mmoie prope liape/um 0 mannifei i \ai Kotschj ' ie\is n 36 (m h Boiss) 0 pseudotschanikensis Kotschy» ib n 38 An O mannifeid Lmdl in bot rcg 1840 anp n 72, cujus floies et fr ignou et ubi folia """Su'btus puljtsccnti i » * In praesenti folia evoluta ampla omnino Robons sessihfloiae communis, ad nenum subtus lnteiduzn ie-mote pilosula, saepius undique glabemma Squamae maps doiso mflatae quam in plensque, sed in hoc chaiactere variant specimina omnium fere ^anetatum Robons In alteio sj)ecimine sub n 36 ad communem ielato folia glabia et squamae subconvexae (v. s)

0, *Ccdrorum,* iamulis velutinis ranus glabnosculis, folns non amplis saepius dpicc anguslatis supia sparsim subtus ciebic stellato pilosis pinnati-fidis aut laiius subpinnatifidis Iajauro Ciliciae (Kotschy' 377) U\ Kai-ducln.1 (Kotschy, it 18o9 n 548,^oO), pio\ Musch (id • 560)'et pi one Irapezum (Bouigeau[1] 1862, rF *b'-tb) Q* Cedrorum Kotschy' num eit Q bessilifloia Kotschj Lioh t 32 (loco nal sptcimims fi^ non dicto)

Q Ihicis Kotsrl^r' }76 in b Boiss 0 subalpina Kotschy» pi Cilic 335 (sine fi) Q pinnatiloba C Koch in Linn 22,%> 326[9] Kotschy it 1859, n 554 (ubi lobi fol 1-2 lobdti AOI integri) 0 ftannifera Kotschy' 18o9, n 550, 560 (confei ad vu piaeced) Folia pallida, in eod ramo o\ata A el elliptica ^el obo\ata, petiolo 3) lin loneo Fructus sessiles Glans saepius 7 lin longa Folia nunquam e\pansa*ut in vai communi solitum, tamen fi quibusdam specim andticis \ai communis aegre difleil Accedit ad Q Lusitdnicdin sed sinus fol piofundioies (v s)

i, *Dshorochensiti* lamulis iolnsque adultis gldheaimis, folus oblongis pan is — In Asia minoie prope Tiape/um Q Dshoiochensis C Koch in I inn *U,* p 328, Kofschy Lich t 39 0 longilbha C Koch ib p 327* (dffinis udetui, et equidem Q Robons \anetas) Q Dshoiochensis \ai nnuo plnlla Kotschj ' ieMs n 40 m li Boi^s Petioli 3 6 lin longi, limbi 1-2 poll longi, 6 12 lin ldti, subtus (in sicco) fl^escentts, semmmnatifidi \el pinndtifidi, lobis obtusis Peduntuh (quando adsunt) petiojy suhbievioies, *MX* pubescentes Fructus in snecimme raatun sed WpeifcjLti Cupiila 5 6 lin Idta, squamis pubescenUbus, mcdns et inf dorso conveixis ut sdepe in specie acciuit Gldns cupuUm #qudns, impeifecta (v s)

x, *Szoutziij* rdmulis gldbus, folns longe petioldtis supra* petioloque gla bnustulis subtus paice pubescentibus, lobis o\dlis muticis nunc ciebns et longionbus, flor mdsc ign , fiuctibus brevitei pedunculdtis, glande pubesccnte cupulA M\ duplo longioic — In s^lvis montium pio\ Kdidbagh oiicntdhs Q Kobur S/OMIZ ' d cl Fisch et Mey comm tidiisitum prcebct inter Roborem sessdifloiam et Q micidiitheiam, unde haecce lungendd forsdn cum \di mnumeiis 0 Robons Peliolijo uno idino 3 6 lin longi, in allero 4-12 lin , basi non cidssioies Limbr2 4 poll longi, l-}-3 poll ldti basi obtusi, lobis utioque latere in uno i,imo 3 6 non profundis, m dlteio 5 8 longionbus et tune foimá Q nidcidntherae Pill subtus ad ner\os ScEpius simplices, alibi stelhti bioMorcs Gemmap OVHdeae, subdeutas, pilosulas Stipulae cito cadentes Pedunculi 3 4 lin longi Tiuctus 1-2 Gupula squamis ddpressis ut in Robote Gldns Q mdcidiitheise (v s)

>, *aurca,* lamis glabns vel subpubescentibus, folns oblongis piofundc pmndtifidis \el pinnatifidis vel ldiius undulato lobatis lobis obtiisis s$_t$epius integiis supra glabns subtus pubescenUbus demum gldbiesctntibus — In liandtu (Wierb ') et Pedemontio (ColUi) Q auied Wiu/bicki' e\s n 1514 in h Wthb (non Kotschy) Q Pedemontana Colla lierb Pedem 5$_T$ P 185, t ()1 0 Esculus Linn sp p 1414 (non mant necGiiseb), SOL hoi tic Loud (fide heib Webb') 0 Stieimn Heuffel' in h DC (lamis pubesc ad \ai lanuginosam accedit) In specimine "Wieil) petioli 6 7 lin longi, limbi *I* \ 3 ½ poll longi in eodem ramo saepius pmnatifidi, lobis utiinque 5 7, ianus undulato sub'obati, fiuctus sessdes In icone cl Colla folia omnia profundf pinnatifida, pedunculus fiuttifei 71m longus (in descupt fiuctus sessilis dicitui) Q Lsculus L sp certe 0 Robons sessilifloiae ex desci in Rees Cycl etLoud aib 3, p 1845 videtur, sed plunbus foisan \anetatibus lespondet, Q Ksculus mantissse est Q Gems (\ s)

I*, *pinnatifida,* aibuscula \el fiutex, no\ellis incano-toinentosis, folns pan is pinnatifidis supia demum glabns subtus pallide tomentosis lobi^ sublobatis — In ditione Badensi (GIMI Spenn Biaun), Galli«\ centrali (Boi) y pinnatihda Gmcl fl b i d ^ , « 673 0 aspeia Bosc» mem. S 24 Q aspeiataPeis s^n p 571 Q pubescens \ai pmn itifiUi Spenn Fl,, tub Doll ihun pi p i76 Q sessihfloia lacmiosa Boi fl ceiiti ed 2 p 568 Chene non in mo\ Queicj DC ' heib JE|dia in ead ar bore lobdtd vel pmnata (Ioucf f 1701) Lobi reguIaieSfsublineares (ex Gmel), in nostns mcgulairs, o\ati, inicidum acati ^(ncllI mbn Glandospanae, sessiles li msU id ^al hnuginosam sinubus folioiiimni eodem i$_{amo\ saC}$p$_{e\ minus}$ profundis, pube copiojjjpdi stellati pngmi supenous adspectum supeificiei aspeiae praeben^^|de nomen Boscn (v s)

v, *leptobalanos,* fohjs supi i glabns subtus cmereo-pubescenti-villosis, glandibus cjhndiaceis dngustis cupul\ conic\ 4°-")° longiouhus — In nemonbus sicuhs mont Madome et in (alabnà ad Aspromonte ubi *Quercia domila* \ocatur 0 lcptobalana Guss syfi fl sic ed 2, v 2 n 608 Folia obovato obloi^ji, basi subcordata, sinuato lobata, lobis 'bicubus obtusis mtegi is. Fiuctus sessiles, sohtain glomeratique Habitus fohoi um omnino *Q.* pubescentis (id est var lanuginos<c nob) a quA differt singulan for mà glandium, istdj cnim 7-12 lin longae, diametro ad summum 3 hn , cyhnducae v^ ahquando non niluL cuivataj ac connformes____Lx bpccim a lodaio nuncupato, in h Webb, uihil a var lanugino&A differt nisi fiuctus minores Gupula babi subconica (v s)

?, *mtcrobalanos* (Bor fl centi Fi ed 3, p r)88), arbuscula \el fiutex folns jumonbus subtus tomentosis, glandibus minimis — in siccis Galhse *omtr* (Bor) et Lin LucaniA propc Gastegiande (Gaspar ' m 114 a cl comm) Paiallcla inter sessihfloias vinetati £, in pedunculatis Gasis m specim Gaspair 6-7 lin longa, nunc minor ex schedula (\ s)

o, *polycarpa,* folns supia glabns subtus canescentibus, fructibus numerosis deiibissimo aggi Gratis — In castanctis prope Heimannstadt imp austr 0 polycaq>a Schui Vcrlundl 1851, p 174, Andiae in Bot Zeit 1856, p 49 0 dMllms bcbui (Psti bot 18>7 (fide ISeilr Nachtr Mdly p 77) Pctioli \\ longitudinis folu, pdosuli Limbi ohovati, sinuato-lobdti, subtus tciiuiter stelldto pubesctnles, lobis brcvibus rotundatis inteT gns vel subemdiguidtis Fructus sesbikb An found constdns? An soLum var lanuginosd?

7T, *parmfoUa,* minoi, glabnusculd, foliisminonbuspinn.itifidis lobis o\atis passim sinudto-dentdtis submucionatis — In siccis ct montosis Gdlhae (Lam h DC), Loiey et Duiey fl C6tcd'Oi2, p 822) et Anglia3 (Biee in Loud) 0 pldtyphyllos fcmina Dal hist p 2, c ic C. Bauh pin p. 419 0 Robur ldciniata Lam diet 1, p 717, DC Ml fif 3, p 310. Q sessilifloia vdi Loud «ub f H77 Q scssiliflora lacmiosa Bor fl. centr ed 2, p r>88 NOVLIU iubn Pctioh 2 4 lin longi Limbi utnnquo 7-8 loin y 1 \-*i* poll h>ngi, 61 > hn liti, subtus id ncnos pilosuli, lobis subroguKiitus, minimc lacinuitis (unde nomen mutandum), sinubus pleiuiiKiue obtusis Glandcs parvae, raio solitanae, sacpius 3-4-glomerat L c (^ t>)

p, *lanuginosa,* minus elata, ramis incano-tomentosis, folns saepius pinnatifidis supia spaisim pilosis demum glibns subtus palhde tomentosis *5 \i\ j,* mine (ex Willd) ^ In Tuiopl praeseitim .uistiah ct AsiA occid y nempc ah HispaiuA centi (Golm apunt Castil p 1)i)f Saidimà (Q sessihllora Mons in h DG '), SiciliA (Guss syn 'lodaio[1] in h Webb), Peloponeso (L\ped M01) et Pamasso (Heldr • 27, 61, Oiphan ' 413), GretA(Rouhn 738 m h BoJ|s '), AnitohA sept (Heldr ' 2>29, C Koch in Linn 16, p 1>), foisan a prov lianscaucdsius (ex duct sed specimina non vidi), usquo ad Galhara sept (Gra\es cat Oise, p 121), ma^n duo Badensem (Koch syn ed 2, v 2, p 737), Bohemiam (id) et l>odoham (L(d fl loss 3, p 7W) 0 Robui Maitvn fl iust t 12 (fide duct) Q lloluii lanivnnosi 1 im dirt 1, p 717, Kochcl Banat, i) 78, t]8, f 79 Q pubescens Willd sn 4, p 4r)0 (exel syn Secondat), Abbild t 141 (fide auct), Koch sjn ed 2, p 737, Haitig forst t 13 (raediocr), Reichb cent A 647, Kotschy rich t 34 Q lanuginosa Ihuil fl Pai p 502 Q lâginca Rohr et May fl Main p 210 (fide Koch) 0 scssilifloia pubescens Loud arb j, p 1736, f lr)73 Q cnspata Stev. Vei/ laur p 305*0 Au/in Bosc mem p 16? Q (erris Pall fl iosrt&f P 44 (non alior) Q collina Sclileich » 97 111 h DG Q Ulrica Stcv^in Lichw pi nov Casp Cauc p et t J8[9](fiuctu caiens) *Q* congesta Piesl del Piag p *SI,* Guss. syn 2, p 607 (saltern <\ar a et p) Q undulata Kit in Kami/ iel Kiti p 110 (non alien) Frequentioi m stenlibus etAopibus Pubcs stellata in no\elhs, petiohs et pagina inf loin copiosáyin folio adulto plus minus imminuta Folia non ampla nunc bub&inuatd, nunc pinnata, lobib bdepe undulato-lobatis, interaum

(piaeseitim in fol jun) subacutis Petioli in eod lamo 2"), 3-7 lin longi Bracteae fl masc nunc hneaies, mine obovato oblongae Pedunculi nulh \el breves Fructus non magni Tamen in specimm neapohtanis, sub num 29 a Gaspan cum ol Gay comm , in ejus et in meo herb wdendis, glans quam in vai Virgilianâ non minor (v s)

Oj brachyphylla, ramuhs pulverulento \elutinis, folns obtuso paucilobis utnnque palhdc et crebrc stellato pilosis, — Prope Smyrnum ad Coidiho (Balansa'), in CreU (Rauhn[f] 737, Kotschy) et EuboeA (id), in Graeciâ (h Boiss), Q pubescens Balansa' pi or ami 1854, n 284 Q-biach}pbylla Kotschy Lich t. 9 Q brevifoha Kolschy ohm in c\s Syi 109, a, et re\is 40, 50, 51, 60 Kami junioies, petioli et hmbi sul)-tus pube fla\escente brevi tecti. Petioli 3-8 hn. longi Iimbi obo\ati, 15-20 hn longi, 6-18 hn lati, sinuato fissi, lobis utiinque 3-8 obtusis passim sinuato dentatis, sinnbus obtusis Biacteae obovato lineares, doiso et piaeseitim margmo seiiLCdc H masc lacnnis b, basi bieutei connatis, pilosis Stamina subexseita Fi uctus sdepius solitarn, sessiles Cunula 5 6 hn longd lataque, squamis arete adpressis dorso inflatis et pubescentibus Glans 15 hn longa, 7 hn lata Specimina vidi in h Webb e Monspelio et Hetrunâ qua[1] folns similhma, sed fruttu minoie (v. s)

T, *cuneata* (Ten fl nap 5, p 250), ramulis \elutinis, folns in petiolum longum basi angustdtis jumoiibus utiinque pubescentibus demum glabratis — In Calabriâ ulteiion ad Spadala (Queicus sp nov Thomas irl h DC ') et in Banatu (Q aurea cunufbha Wierb ! id h Boiss) 0 Dalechampu vai (Ten sjll p 469 Q Appennina \ar cuneata len fl. 1 c Ex spcciminibus Uiomasu lami juniores, petioli et cupulcC fulvo-pubescentes, petioli 8 0 l*n longi, hmbi basi acuti vcl longius an^ustift, form.1 caeterum Mil^an, pilis bic\ibus plensque stellatis, fi uctus SLSSI-les vel brevissimc pedunculati, soli lam, gemuu tcinive, 8 9 lin longi, squamis <n itis et Imcculitis minus qu lm is ilus vai adpicssis tuncn mllexis (haiactei bisis fohoium \iuibihs in spccim 2)28 Heldrtich in h Webb ad \ar linugmosim iclato, folia cjusdun rami longc basi attenuata vcl obtusa et imo coidata (v s)

2 Q FARNLTTO (Ten cat h nap 1819, p 65, ubi err tjp Frainetto), lamis junionbus mibescentibus, fohis obovatis subsessihbus basi contotis crebie pm-natifidis IODIS obtusis muticis saepius smuato-lobatis supra glabratis suntus spaisim stellato-pilosis petiolo basi incrassato, stipuhs hneaiibus e\tus pilosis tarde cadentibus, flonbus masc , fructilms 2 4 ipicc rimuh sessihbus, cupuldp hemisphaBi icfe squamis adpressis extus pubescentiJ)us infer ovatis sup ldnceoldtis ol)tusis, glande uipuU 2°-i° longioic elhpsoidcA taide glabrescente 5 In Cal.ibnâ (Ihomas, Ten) ct Grdecul occid (Kotschy' re\ 62 et 63 in h Boiss) — Ten syll p 470 (e\cl p), fl nap 5, p 260* Kami recti, secundo anno glabn Folia 3 4 poll longa, *2S* poll lata, supia demum glabia nitida, pilis subtus ad neivos simphcibus, alibi stell.itis. lobis utroque latere 7-9, plus minus a medio hmhi distantibus, sinubus obtusis Stipuldp 5-6 hn longae, per maturation em li uctus adhuc videndae, petiolo jnplo longioics Gemmae ovoidc.e, sencedG Petioli 0-5 lin longi, sxpiusO-l hn Hore&masc ign Fiuctus ag^regati, stipuhs \etustis plus minus cincti, a iructu Q Robons\ulgans nondi\eisi Cl Gay ad Q Roboiem letuht (Ann sc nat ser 4, \ 0, p 239) Habitus tamen imeisus, lobi fol numeiosiores, ^"Pul32 mums caducos, squamcBHSublongioies, nlanioies, matupjj laxiores ;) T0/ae propior, prtttsertim ex fructu, sed folia bie\ius petiolata, subtus »on a ense tomentosa, lobis paucionbus (v s)

P) con^erea, lobis fohoium muticis \cl sappius breviter mucronulatis. sti-P«hs angubtc obovato oblongis — In Banatu Q conferta Kit (med), weichb ic fl germ 12, *LfM* Wior/ ' exs n 1640, Kolschy Licli [1] I* O Esculus Heuffel' in hi*meo Lx icoiie floies masc us 0 Robons similes videntur, glandes impula tnplo majorei,, elhpsoideae Ex specim **Heuffch fl masc mdjoreaflfv s)**

3 Q VULCANICi (Boiss etHeldr ' herb , Kotsthy Eich t 18), ramis juniorlbus

cilo glabiatis, folns oknatis oblongse pinnatifidis lobatis\e lobis ohtusis muticis supia glabus aut spaise stellato pilosis subtus pilis sparsis saepius stellatis pubescentibus, fl masc secus lachim aparsis, pengonio piofunde 6 fido, lacinns extus pilosis acummatis, fl fcm apice lamo urn congestis sessihbus, squamis cupulse junioiis laxe adpiessis externe pubescentibus infenonbus o\ato acutis medns et supr lanctolatis, fructu maturo J l[R] I^caonidc monte Karadagh alt 4000 p (Heidi •) Rami validi, junioies et petioli rubesccntes, pilis stellulatis aut distinctis bie\ibus cito e>anescentibus holu 3 6 poll longa, 1,13 poll hta, corncta, petiolo 2 8 lin longo, limbo basi obtuso vel cuntito, lobis utioque lateie 4 6, m eadem aiboie et eodem folio vmantibus, mine pioiundis mine feie nulhs Stipulap circa floras fem adhuc adstantes, hneaies, 4 6 lin longae, subulatae, pubescentes Flores masc ex IC Kotschyi descnpli Antlierae glabrae (v s)

0 TOZA. (Bosc in Journ hist nat 2, p 155, t 32, f 3), radicibus stoloniferis, folns obo^atis oblongis\e vane pinnatifidis supra stellato pilosis subtus densjssime pjlis sfellatis lufo-tomentosis, lohis o^atls oblongisve obtusis muticis, stipubs uncmbus pilosis, rachi fl masc biacteisque lineanbus pilosis, puigonn lacinns 6 7])ilosis bisi lriogulaiiter connatis, fiuctibus sessihbus aut bieutei pedunculalis, cupula[1] lumisuhcCiicaj squamis laxe adpiessis evtus pubescentibus infenonbus owilis, meâns lanceolatis obtusis, supenoiibus angustionbus arutiusculis, glande cupulA M\ aut 2° 4° longioie ovato ellipsoideA cito glabiescente ^ \el sa3pius 5 In LuiopA, austro occidentali, nempp m GalhA a divis dicU Sarthc ad Pyienaeos, in montosis Hispᵻinise bor (du Ricu[1] *2M),* Siaua de Yeste (Boiug • 81b), rued Matntum (h Webb'), in Cjiiadan,im.i (Boiss [f]), Siena Ne^ada (Boiss » Willk ' Webbi), l^usitaniae mont (h Webb[1]), forsan in Libano (e\ J30 Kotscby pi Syr. [r]anni 1855, in herb Boi&s. specimen fr nintis junionbus) Q cnnita \ai E, Lam diet 1, p 718 0 Cems DC fl fr 3, p 311 0 loza Hose mem p i7, DC lapp \oy 1, fWw, fl fi 6, p J52 rh^ne^non Secondat Chen, t 5 Q nigia ihore cbl land p 181 (non L) Q p^renaica Willd sp 4, p 4")1, Lam ill t 779, Loisel in nou\ Dnham 7, p 178, t 56 Q Tauzin PPIS encb 2, p 571 0 stolonifera I ipe>i abi 582 Q pubescens Biot Kamub pubescentes, demum glabiati Folia 2 4 poll longa, 6 20 lin liu, j)ctiolo 2-6 lin longo pubescente, limbo sjppius basi obtuso \el subcoidato nunc cuncato lobis utrinquo 4 7 saepe oppositis o\atis \el o\ato oblongis p.issim siniidto dcnt.itis ACI inte[o]nis, pagina sup foln ciebie stellato pilosd, adultA atio Mitnte aspeiati glabiescente, infeiioic dcnsissime tt conslanter iulvo pilosA Vanant loin lobis plus minus piofundis et segiegatis, sojp[lus] piimatifida, nunc semipinn itifida vel subpinnatisecla, tidnsitioiubus adeo iiequentibus ut validates dilficile distinguenda Pcduncuh in eodem rarao sx'pe \anantes, sTpius) 0 lin longi, nunc nulli aut 1 2 poll longi, unde unitds 0 Robons fumatui \ntheiae glabias Tiuctusl 4 in pedunculo Cupula 4 6 lin longa, 5 7 lin lata, nunc oie subclausi, squamis medus apice tiuncato obtusis Differt a Q Robons \ar pubesceniibus lddice stolomfeiA, foho magis elongato, supra asperato, mtensius coloiato, lobis magis distinctis pube subtus magis peistante densiore, squamis cupulde longionbus, minus adpicssis, medus obtusionbus (\ s)

p, *humihs,* s[t]cp;us 1 3 pedabs ^ "\el *5* In plamtiebus Galliae austro-occidentalis 0 humilis DC ' fl fr 3, p 312 (non Lam) Q foza var ejusd 5, p 352 0 Brossa Bosc, p 15 Cauhs nunc altior ad ^ulg**arem** transit Pedunculi simihter vanant nftnc bie\es, nunc nulli (\ s)

; Q SYSPIRI-NSIS (C Koch in Linn 22, p 328), lamis junionbus pihs bre\ibus retiorsis fuho lomentosis, folns elliplicis obo\atis>e lobato cienatis lobis niuticis obtusis supia glabns sublus fuho tomentosis, stipulis cuca gemmas hneanbus pilosis petiolo sublongionbus, fl misc , fructibus sohtanis pauusve aggreg.itis sessilibus, cupula; Insi obtuscC squnmis pubescentibus laxe adpressis planiusculis mfeiloubns mednsque o\ lto lanceoktis obtusis su penonbus lanceolatis acutiusculis -} \eijj Jn \siâ minon sept ad Gaue Sber (C Koch), niope Tianezum (KotschyM*e\ n 44, in h Boiss) Descnpsi specimen sub dicto nomine Kochn a cl Kotschy comm Rami vetustioies

Mabn Foha fiima 2 3 poll longa, 12 poll lata, paiiolo 3 6 lin longo demum glalnato, Iobis utroque latere saepius 6, non profundis, ad crenas extiemitate transeuntibus, pube sublus sparsa stellulati, pihs sohtarns in nei\o centrah Stipulx fugaces, circa gemmas o\oideas solum obsenatae tructus in specim iraperfetti, glande intra cupulam 4 5 lin latam ore coji- stnctam, in peifectis forsan exserta. Squamae subaequales, hneam longae, margine praesertim pubescentes An a seq diveisa? (v s)

6 0 MVCRANTHERA (Fisch ' et Mey ex Hohen en Talysch p 29), rafflib junionbus petiohs fohisque subtus fuho tomentosis loins obovatis petiolatis crebre cienato pinnatifklis Iobis obtusis mwticis pihs plensque stellatis supra, rans, stipulis lineinbus \el oblongo obo^atis evtus pilosis tarde caden tibus, amentis densiflons, pengonn fl masc lacmiis (> 7 lanceolatis extus pilosis basi lriegulmtei connatis, anthcns acutiuscuhs filamento longionbus non exseitis, fructihus 2 4 apice ramulorum congestis sessilibus aut subsessi hbus, cupulae lblncviato hemisph'ciic'c squamis hxe gapiessis extus pubes centibus lnfenoubus O\itib mtdus ct sup lancpolatis qjbtusiusculis glande cupulHudl lo loii$_{G}$ioic $ In s\lvis Ge$_{g}$igix caucasicr ((Cnseb) ") Lenkoian et Talysch (Hohen), Kanln^li |Kisch ') et Nilsiiboliiwin (Szovits! in h DC et 547 in h Boiss , Ledel) fl ross), p V)l). t) j)ubescens S/OMts» in h meo, Iedeb 1 c (pntiiu)]>)91 Pih rdnimum jmentcs, densi A Q Fainttto difTeit solum inlheris luplo fcio l^i'ftoiil us (lmeim longis), Iobis lol pleiumque minus pufuiuhs, pttioldtis squimis cupul e minus adpressis Petioli fin eod iamo) 2 ⁵> lm IUIILE. basi paulo incrissati lol)i utioque latere 7 9, sipius o\ati integii, nunc ut in }* irnetto ovato-oblongi passim lobdto sumiti, I iro submucionati Stipulac 4 6 Iin longae, per nvituiationem fiuctus idlmc videndde, cnca gemmas terminales numerosce Cupula 6 9 lin ldU, 4 6 lm longa Glans 8 9 lin longi clhpsoidea, pihs adpressis longis rans, dtmum glabia Confer ad \ar Szovitsii Q Robons sessihfloraj (v s)

0 DENTATA (Thunb fl jap p 177), ramis junionbi\s dense fulvo tomentosis, folns subsessihbus obo\atis vel Obo\dto oblongis fllnnque obtusis sinuatis lobatisve Iobis obtusis biovissime mucronatis, junioiibus utunque stellatopilosis adultis supia glabntis, stipulis elongitis e basi anguste linean ol)longis dorso senceis, fl misc secus lachim sparsis -\el condensatis, bracteis nulhs aut ovatis mmimis extus pilosis, perigoino piofimde 6 lido evtus piloso laciniis angustis, antheus pilosis pedunculis bre\issimis pauciflons, fructibus , 5 In laponA (Ihunb , heri) Lu^d bat ') — Blume \Ius lugd l>at 1, p 297 Foha 3 10 poll lon$_{p}$'a, ÏL 0 poll lata petiolo 2 3 lm longo, lol)is crenis\e magnit Miiantibus folium tamen lobatum nee pinnatifidum, tomento fuho Stipule 7 9 lin longcfi, infeiioies rami latioies, obh ngoohovatde, ceter* anguste lind&es, apice subdilatatae Amentd 1-j poll s<c^ plus longa, densiflora, Bcactece in fl lnfenoubus deficientes, in sup squiniiformes, dorso pilosae / intus glabrae, flore multo breviores Peria|nium lacinns inaequalibus hneanbus Stamina 8 9, filam breussimis, smthens oblongis muticis, 2 mtenonbus saepe stenhbus (v s)

P, *Wnghtii,* Iobis foliorum \ix mucionulatis, amentis basi laxiflons, brie tcis lon^e et anguste hneanbus floie longionbus, anthens mmoiibus S In Japoiul (\\ nght 1 t\ped amer sub nom 0 dentatae comm) Tx fohis tt stipulis tukm Mdetur species, in hisce clur \alde affims Q maciantheiiE Hoies masc adeo differunt ut diveisas species certe dixenm nisi quod flores *peciminis supia descupti heib Lugd bat monstiosi suit in plunbus An status piaisentis normalis? An duae species? Fiuctus ignoti (v s)

8 ^1 n°t$^{B\circ}$VATA (^{Blm}Re en pi Chin p 02), folns obovatis subsessihbus grosse sinuatis, loins lotundatis mttgernmis supra punctato scabiiuscuhs subtus ramiMnie j n n l $_{g}$fb p p hb hbus ramiMnie junionlms tomentosis, fructibus termmanbus aggiegatis sessihbus, cupuiae squamis externis ovato-obloitftis obtusis senceis mternib elongatis linearibus acutis leflexis glandem subglobosam superantibus *S* In montosi* C limap boi prope Pekmum tt prope Tahewhan Manchounae mend (Carrutheis in Jomn Linn soc G, p 32, sine discr) Hanc similem 0 dentatJJ

lliunb aitcl MuLAnn Mus Lugd bat 1 f]> 10), fide speciminis authentici, num fructuS arabarum habuit nescio

Q MAC CORMICKII (Carruthers m Journ Linn soc 6, p 32), folns brevitei petiohtis obovitij^ bisi lolnti, a medio id Msm cuneato attenuate sinuato) bitis lobis sursum\ersis rotundato obtusis muticis a mcdio utnnque decies centibus, smubus acutioilbus subtus phucis, glabus vel rauus sulitus id venas pibs i ins obsitis, cupulae squamis externis tn ingulatis senceis intei nis mcmbiamceis lincan lmceolatis mirgineet apice cili^tis cupulam valde exccdentibus, nuce lotundata cupulae squamas vix excedente styli basi apicu latt —In sinu Taliewhm MaccbouricE austr (Darnell) DiversiMs fohorum a Q Mongolici adeo tais ut soliim c\ fiuctu divcisa speqes Loco squamarum dense lmbncatanira (compact scilcs) 0 Mongolica, cupul i notius Q olwata., squamis timen densius imbiicatis (moie compact) brevioubus magis erectis — Hdec omnia cl auctons

10 Q MONGOLICA (FUch ' m Turcz pi Biik n 1066), ramis glabris, folns brc\itcr pctiohtii. obovatis amcdio veisus basin subcuneatim angustatis ips\ bisi coidatis subsinu ito lobatis Jobta obtusis muticis pilis ad nervos subtus lon n nsiiiis stipubs e bas^ovaU inguslt liuciubus pilosis fl masc secus racbim icmotc pilosajn sp^sis, pui n mo 6] utito lobis lmcanbus acutis pilosis, irucLibus ipW idini SUL§CSSI1I1JUS solitajjis piucisvc cupule late nemisphdLiica squaniiis imbiicitfs^ulprtssis doiso senceis mfcrionhus ovatis, supuionbuaov ito lmceolatis apice tiuncitis glande cupulY 2° 1° ma|oie ^ In Dibuiii id fl Aigun et Amur (auct, ell) et in sinu Manchounai Taliewban (Canutbers in Jouiii Linn soc 0, p 3$, sinedtscr) — Lcdeb fl ross i, p 589 lure/ in Bull Mosc 1854 v p 409 Q Robui Pill fl ross *2* p 3 (quo id stnp (hbui) Pclioli 1 4 lin lon^i, ut ncivi subtus pibs rans id-sptrsi vel K^bn, lirabi 4 6 poll longi, superne 2) poll hti, idulti extra nervos subtus glabn, supi i glabernmi, bbis utroque latere 7 9 ad crcnas apice ti ms(untibus Stipulae 1 7 lin *lou^se*, caduca? "Gemme ovoidt*, squanus mirgine solum sulpubtscentibus Amcnli masc gpiciba, pnmo ad-spectu glabi 1 pibs mis IOJIRIS BnctrtE inguste lint ires, pilosae Liciniap ptngomi lniea bieviorts Stamina 7 8, exseita, mtberis Klabns Pedunculi nulli aut pttiolo brcviores CuniiU4 1in lon^'i, 6 lin lati yjuamis inf Lt medus dorso convcxis Olans glabimscula, ellipsoidea (v s)

11 Q GniFHTim (Hoofc f et Thorns f ined), nmis junionbus petiohsque glabnusculis, loins obovatis vel obovato oblongis brevissimt petiolatis basi ol)tusis A el acutis apice acutis dentfto seiratis dcntibus oblusiuscuhs muticis junionbus , adultis bGpra glibnuscuhs subtus tomento minuto stellatia pubescentibus, stipuhs lincuibus extus pilosis fl ma«,c , fiuctibus apice nmi 2 *I* subscssilibus, cupula hcmisphderic 1 sjuinus \aldt id])ressis sub SLiiccis infciioiibus ontis obtusis supcuonl us UnccohUs obtusis aut supre mis acutis, Llandc cupull duplo longioic glibicsdente *5* In India- boi pi 0 A KhdSa, alt 5 6000 p Rami \ctustiores toiulosi Rami aonui in sppcimme abbrevuti, autumno fere glabn Gemmae tune o\oidcae, obtusae, squamis o\i tis senceis stipulx circi gemmis pairc-E, \ttustae *I* 3 lin long-e Jolia 3 6 poll longa, 1 J poll lata, pctiol > *1* J lin longo cbartacea, basi (in codem lamo) cflidata, obtusa A el acuta, dcntibus ad ij)icem veisis sed contundatis c crcms Ton mignis sui^cntibus tupuh 7 liu litae, 4 5lm Ionga3, squamis convexil non mflati^ lmis lincam, medus 1 i lin , suprcmis lineam longis (v s in h Boiss)

42 0 ALILNA (Blume Mus Lugd bat 1, P 298), nmuhs ghbns, folns obo-vatis vel obovito oblonps icutis vel obtusis casi pluumque ingustitis missime obtusis giossc sinu ito dent itis (dcntibus inapqualibus obtusis \el lotundatis 111 issimc acutis cum mucionulo) chutaccis supra gl ibi is subtus 111-dumento cancscentc obtcctis amentis axilluibus l)ievilms spicito pauciflons — In Japonil tt Ghin\ (Stiunton ' ex folns) ^ald dicta (cum aliis div sp) m herb Lugd bit Q Nira h Lugd bat 1 0 birsutula Blumc Mus. Lugd bat p 298 0 holosencea ot Q Jiumosa ejusd 1b (vensimiliter folia umus aibons in cadem charta heib Lugd bat seivata, et pra-scntis &p foim<fi, cv Miq Aim Mus I B 1, p 104) Join (L\ Blumc) JS poll longi, 1 } 4 poll

tata, peiiolo *',i-]Q* tin. Iongo, tiervis lateralibus utrinqun 9-13 crassis patt;n-tibus. Aitnl «1G fl. fem. aut fructu. Specimen meum oplime cum phrasi ill. auctoris quadrat. I'ube^ffiptfbrum oculu nudo non visibilis, suti lente minima slellata pall i da, pills alimfbt solitaries Ion ^i or i bus in nor vis, Flores fera. sen-ates ailt pedunculo petiolo breviure insidenies, solitarii vel pauci, pedunculo pubcrulo, squamis j.n. lncaais. Affinis ex folio Q. Griffithii. (v. s. co-nun, a Mus. L. b.)

P, *pellucida* (Blunie *f"\.* c), foliis adullis utrinque glahris venis extremis raagis pellucidis. — In Japonia. (v. folium a Mi; s. L. b. comm.)

13. ? p. SEMECAKPIFOMA (Sm. in Rees *mcl* •>!), n. 29), Mmis jifnibribus sparsim stellato-pubcscentibus, foliis ellipticis oblongisve cord.itis obtusis undutatis integns vel spinoso-dentatis coriaceis, junioribiis stellato-bubescentibus, adul-tis supra jprffisertlm glabratis. amentis laxifloris, rachi pubescente, brae teis ovato-acutia flore duplo brevioribus, pbrigonio brevher 5-6-loIw subrtil so, antneris glabris muaronulatis, iVurtilms ajiice peduncull brevissimi sttlitariis fiemmis ttrnisve, cirfiula tiennsplia'rica, squanris lanceolatis subsequaiibus pubescentibus adprcs sis den mm sttbdiviergoutilHis, glajide cupulam dimi^no saperanle. ,> In Nepalia (Ham. Wall.l) et K»iaoii (Wall. -2771;. a). — Wall.! j?.7.nt- rai- : •»(>, t. 174, list n. 217(! • non Hook. f. et Th.)• °- obtusi-folia Don prodr. II. Nup. p. 5(i? <)• Cassura Unn ib, ? (e* Honk. f. in lilt.). An sempervircjns V Riimi yetotiores torluusi, rufoisi. Folia s;«pius ;i poll. lo nga, l.'j is l,u. lata, potii-1 ;iy^nieni<; subiius ttiniiM'u-iillijnis rcticulati.s, in nrln-iv jnn. ,•• plus uW spi integra vel (pipos-dulaia (lenth. in llu.). stipul;c olilii^ii1., :S JJin. longai, extus pul erufae. Amniln folin breviorS, gorilnJ paucis distautilms. Braoteae d*B.t;i:, utrinqne ptlosuhe. ['origoOHini masc. I ;- [in. longnra, lain inlimdilnilirormti, uuinquc j|parsini uiftsum. SlaftJua !)-10. AnthSfe liaeam fere butta- ilaii -.,n-s. I'cdunculi IVnet. U3 lin. longi. Matu aanua. Cupula *6* Jin. Ian, ^Bam ;. (v. s.)

P, *Hookeriana,* folifs Glli]>ti3»*vfil obovato-eil amentis densities, iiiis ovatia vel obofktis'ftoro subbrevioribus, squamis cupulie inlerio-'•'"" super, qjblongis ncllucidis. — In Himalaya *bm* alt.. 8-10 000 p. (Hook. r. et Tli..). Pili fol. jnn. quaiu in ac'luii^i- iinrii vel stellati. Parsinterna ctipulae magis sm-ii: cm ilistinfl&m prirao. extstimavi, sod ol. Bentham (ex litt.) pluribv exemplaribua h. *vagi* oftsemtis unicam affiray.1 in toto Emodo CrequentemiB(v. s.)

H. Q. CANESCENS (Blumel Mus. J,ngd. bat. Up. ^06), ram is j uniori 1ms adpresse wricuo-puliescentiliiis, fofcs subsessilibua e basi saepius obtusfl oblongis vel ooovato-oblongis ovali^sye aculis vel nbtusiusculis ^lamln sparsim sulitus civliro pijis lonps udpressis prthescentibus, fl. masc..., IVucti-uua axillaribus suliiariis vel ^'liiamis elongatis ilui ibus, cupula ovoideo-glob ^^liiamis elongatis ilui ; piUentfbus vel adpressis. ,) In Japo-nia. H;imi jnniores lenaesfffflfiiiiff'foliosi, sue undo "anno j;iahr;tli el apbylli uemmae ovStdeo-oblqn^m, o] gflabriuscute. Folia !)-'>(i lin. longa, 4-12 *an.* lafe, petiolo fere nTlllo, an maximum linonm Iongo, dentibus e basi lata weviter mucronatis, mucrane ipsn olitusiuscnlo, *nervia* lateraiibus utrinqiM 8, P*8jn« inferioi-e sericea pilia omnibus ¥ soiila d croln-is. o«>vato-obloDgffi, piibaruhe, 2 lin. inmaa angustiores. (v. s. sine fl. vel IV. ., Mus. L. *b.* comm.)

". * 0. CRISPULA (Blume ! Mus. Liijid. Inf. **I,** p. *2$$),* ramulis Remmisque gla-is suljsessilibuie basi ubtusi vel subcordata elliptieo-vel ohovato-acutis grosso el ina^iualitor scrrat%lobatis lobis ovato-acutis su!>-jmiiuribus utrinque pilosiusculis, aaultis supra in nervfi central! ninnnr »^tus swms tl<il,V()S remote pilogia, Q. el fr....'j In Japoni;r insula liiic-i in 2„T JloU- lon(?at <J lin, usque ad 3^ poll. subnullu aut (in sie'e i ^" ir.tiiacea, latemlibus utrinque 9-1% margine liiilx'niiu Cr,s1i;ilul„ ii,imis obtusis, margine sub-in ,v!.7i„V Cnnt)rilin glaberrimis. Kami s,. itofoliati. I'ili nervorum iMnina sup, |n]i| |1ruVL>s steuuiat] 'rftWgi solitarii ran. Confer ud \v- s. a atus. L. bat, conam.)

16. 0- GROSSBSBHUXA (glume Mils. Lugd. bat. 1, p. 30G), rlnis mn bns, folus subsessilibus e basi o.lusA olwvato tlbWis acuminati ceis in nervo roolio el neis latdrih us utri Japoniâ, ubi Midsu nara vocatur. Q. crispula β p. 104 (synonmon fructibus ignotis non certu 2-2 ¾ poll. lata, 6-12 lin. longa, serraturis leviter incurvis acutis apice sphace- latis infimis parvis obtusis, nervis lateralibus utrinque 11-17. Spec hoc nomine accepi a Wrightio (exped. amer.) in Japoniâ lecta, u folia cum descript. congruunt. Rami 2i anni aphyll ipso mutici contundati; majores in medio folii hinc minores integri, omnes versus extremitatem folii paulo versi. Pili solitarii, longiusculi, secus nervos et passim extra nervos in paginâ inferiore, rariores et breviores in superiore. Stipulæ oblongæ, basi angustiores, extus pilosæ. Flores ign. Cupula subvelutina, squamis subadpressis, infer. ovatis, super. lanceolatis. Glans ign. (v. s. spec. imperf.)

17. Q. URTICÆFOLIA (Blume ! Mus. Lugd. bat. 1, p. 296), ramis junioribus ad- presse sericeo-puberulis, foliis e basi acutâ obovatis vel obovato-oblongis acutis vel breviter sis subtus pressis simplicibus et stellatis endulis laxis, spicis femi floris, fruct ensis lineari- canescens

simplicibus extra nervos ra- quibusdam simplicibus elongatis alibi stellatis brevioribus cum Bractea fl. fem. ovato-lanceolata, pubescens, flore brevior (v. s. fem. jun. comm. a Mus. L. B.)

18. 0- nuitiu.s (Lam. diet. enc. 1, p. 710), frutax vel Jnffrnti.* , i

. obovatisve ftregulariter acute vel obtuse denta tig subtus incanis, perigonii niasc. extns pilosi lanceolatis anlheris exsertis, rniclilms sessilibas ant cllpulft abbrevlata late cyatliilbrmr,»jiiamia a.jpressis luHKiludine siite^ualibHs-iniV,.. *ovum* cupulam pins minus supcuuo. fl vel 5 n, Lusitani it. lisp. p. I , WuLw! || ct (Boiss etReut ! Webb - Bourgeau ! 2032) ef circa f S e m (WebM fr et Reut n. Robur V. Clus Hisp. p. -24, c. ic. Robu^VIL S *hit*V **c*Ac*. 0. fraUcosa Brot** l.nsit. 2, p. 31. Gatlos globo^as intmhm **rilibus** Mii mt,x **pedalis, a b rmtex 3-^2-ped.** folia siibi« longa, (»-lWin. lata, petmluJ -2 lin. IOHRO, supra n.tida eto, remote et breyisshne puWnila, subtus crebra et braviu veluiSi , ? S Stipule fugacesijineari obovatæ. -erigonium minimum. A niffSifiSS; duplo brevMires. Pedunculi wepius 2-4 lin. lon-i in num. sn^m; • Webbi.i a cl. Giy ,:,,in m 3-12 lin. lon,i, (!,! Sia I ™S £. " ' ^ Hn hta°

amam, glabrescenf, .,-6 lin. l a. A 0. Lusitanica differt solum SuH S-

nore, foliis (v. .s.) SffipiUS Persisle"t'»us, cupula breviore, squamis mums a<lpre%is.

{i, *prasina*, giabrius^la, petiolis sublongwribus. Q. prasina Bos^mem. fcrisimn^r*/ 01,11TM- *' 44- o" ^lauca Rosc! Cu!t* »lim in h. pafeet wiS 1 i .• X speciTM; meoet aliis herb. Webb) ad nraes&tem siflfcc- «pecies sub eo.iem nomine coluntiir, ex. op. 0. prasina P- 397. Petioli 2-4 lui. longi. Fruutus i-uotus. (v. s.) i

19. Q. LUSITANICA sistentibus ovatis sæpius acutis var tifidis, lobis perigonio aut brevit elongato- simis im supremis mare Med Præeunte cl. Webb, plures formas pr sed (e rales i n K adsunt wif V i nervu ris, sed squamis magis nus hemisphærica.

(Welib ! it*Hisp. p. H), ptfrellis velutinis, foliis mine per- oplongis oljovatisve^basi obtusis vel rarius adfctis apice ie denlaiis vel sublobatis vel ratius integris nunquam pinfla- (Jenubusva obitisis vel acutis mnbeis vel mucrooatis, fl. masc. OMIIS piioso 4-7-fldo, lobiar obtusis vel acutis, frfflfibus seasilibus t-r peduneulatis soiitariis paucisve, cupula hemisiihaenca vet sa*piits iwjmisphaenca'>ore subconstrictA ciuereu-velntina squ;iruis adpressis- is ovatis mediis ovato-ianceolatis dorso convexis vel subconvexis if"TM ohai^mmimiS glande 2-4 cupulam superanie. -Species jjiplymorjilia. minus tamen quam *Q.* 'Rulmi-. ninibui div. Inc. obSeryati, transiius inter vere ante emissa descentiam novam cadunt, n«in. GaUs ramis teA stipitatas steps Pe^^niibiw ut» Q. Robnre. Cupula fere 0- Robo-

SSSiieSSf foiiS1m!?J Vel arhor, hUl Iirevi stellata in ramulis « CV rE • Webb 1. c. Racbis n. rnasc. piiosa. Bractea? anguslu Iiiireares, perigonio longiores.

«, r/wsu", Ibliis regulai-iter crenato-serratis vel rarius integris, deatibus iw!!/ til'»s. *5* Crescit 1°, in montosis i>eninsulx Hft watuif* J- in Pamphylia (Heidi! in h. DC.) et Isau-

Lusitan V A P- **W-fc^ffinea** Urn. **M, p. 725. 0- australia /I -. (ex** cod. 14 spe- Si 11 ^n.duct. aflrmal Canaim). 0- Turner Willd. 975? dic met at ciijiis viui. al, ill. Hrauii cum bl. Gay comm., ubi ptli nunc terp nmn- fl?^'TM r vidit et i **rts Willd^en.** 075 ^n.s junioris arl-oris e Tibet orvis Rdsmil, pareiichymate adultu in vulgari. Affbor in horto bfer.-iondura vulgar! Tiropiora sunt). 0. ai-vlopifolia sa-pms jmlU- lineai-i-swliulattB, pitiolo *h* re- v.ures. ledunculi O^lui. longi. GlauseUipsoidea, nuncacutiuscula. (v. *!) a b^Sf^- V petius milliuiis I'l I- long's, glandje inolusa (an «rtu ?). circa Tanger (Saizm. ! in h. DC.). Limb^-2 poll, longi. (v. s.)

niSSS f ! ? i5 P»lariter acme **deiftatis vel^gflus** integris. - **In** UOG> *c.*i v i iiiiisul:u ilierica[1] (Welvv.! Doiss.! Willlt."! Bianco! voy.'lmt *I* - 2 p. 25 t. p>i. Q. aipcsiris Boiss.l Hunch. 178, t. 17 ful i Willk Ilot Tfn[2] V- hybrid;) Brut. il. lus '2. n. 31 :'Welw.! JJJ *h.* Boiss. poll lonci adraodum variibiles, 1-2 poll., nunc 2-3 Sueciraina remotis vet millis, basi acutis vel obtusis. 2-H-lin. I./nJJi Y ambijrua iidsiinL Fedunculi vocatur). 0. Lusitanica <tica Petioli i i*i-

5 *brtgtcupulata,* folns obtuse vel subacute crenatis subtus pihs minimis inrams (u] nil abbieviatâ bisi obtusissim^ *5* In horto pans loco pro pi 1 One (111 11 sul) now Q Iurnen nefcirboi loco veteris scholae sub ' I nouiiiK tic qua confei ad Q pseudosubflpm Pi<esens ab accuiat I Giy obsci\ata liuctibus mnuis ab iltul dīēit Folia ut frequenter in 0 Lusitanicâ, tamen subtus densius tomentosa, pube brevissima peisistcnte Cupulae sessiles vel subsessiles, 4 i lin longae 5 0 Un latae, oie subconstnetae, sqâamis inns et mediib doiso subinflriLis (v s comm a cl Gay)

Subspecies IF Orieotalls, frtitfex vel rarms arboi, pube in ramuhs et paginâ inicnoii folioium vanante ftic nulllvel pilis stellatis minimis demum retractis vix sul) luite pcispicuis vel longioribus stellatis caducis prope ncrvum in flocculos aceivatis pilisque in nei\o passim sobtams. .peisistentibus___In Onente Folfrnon mijoiatiuam in subsp I, plciumque rc^ulantci senata \d crcnito sei 1 Ua, nunc piolundjus dentato lob it 1 (spccim Heidi e Bv/antio J282 in ty Boisa , 218 J, 2184, 2185 c Smynio aliaquc) tt tune a (MRoboris sessilifloraf vai Unuginosl dilficile distincta Dcntes tamtn acutioi^ cupula bdsi minus obtusa tolia. juiuora nunr gUl)iiuscula, nuuo passim utrinque pilis» stellatis vel sohUius vcstita, quae m subsp I subtus semper incanotomenlosa Gallas in commoicio ^sitaUs prsbet VaneUtes seq potius subvarietatcs dixenm nisi ox symmctnâ in dispos typo^raplncâ

a, *mfectona,* petiolis l^lfcf lonais pube foliorum raio iloccosi, racbi fl masc pflpsl, pedunculis fmcflfciis petioh bfevionhus aut nulhs In Thucid (Gnseb '), Anitol^fttotl (Auchci ' 2808 in h Boiss et "Webb, Heidi ' supr cit Kotsch^» J02 JOJ, iOb, 370 it Syr rjU, levisio 57* 86, 87, Bihnsa' 290, 037 (quo nbor), C Koch ' in h Boiss), ins Cjpn (Kotschyl 371), Synl (Libill ' Blmcbe' 87G) Musch ot Karduchia (Kotschyl 18 /), 4J3, rj >7 503, JGO, 667* %9) Q mfectona Oh\ ' voy 1 p 2r>2, t l'^i") NOUN Dublin 7t 49,f *1M*\iseb spicil p 3 35,Hayne A/inf?(w 12, t *f\"t Q* I usitanic 1 V'ebb' it*p 12, ot Boiss » 1 c quoad **>1 LiltLS oncrit O nfeili C Koch[1] in h U)iss » cl 111. Linn 1[C]) |) lr» (11011 Willd) U unduUli 11 I lb** ***(nou 1 m* me Uug)TL^CiiirUan i id !** ibid 0 polye upo-» Kotschy ' n J70 Q inciaii» ftbie!nl?'tx Kotschyl ILVIS o7, 8(J 111 h I3oiss (etiam id vu S\nicim iclei), it lS'iin 126 piopiiU I'ultes sub folio floccosj vel puliiu fl >ccosi adet»t in sp(cim Auclici *2I[r]>8, Coqueb 1 >>1, ct Labill liciJjun Webb 876 Blanche in h Boisb r>3 3 Kotfcby ib , 569 Kotscliy 111 b DC , 302 id ib etc tolia mine integia (v s)

^, *Bousieri,* petiolis 3-6«kp lon^jll piiVe foliorum mo floccosl, lachi fl masc , peduncubs f^^tftris plcrumciua pa^olo loDgionbus In Synae monte Cassio (Boiss '), 1m Libano oecuf (KotechyJ jfl syi 185r) n 126, pulim) supia B< yiout fltotschy ' IOVJS ri'i) inDfir Musch et Kaiduchid, (K)tbcliy' 18VJ, n)(>i ?68) id mon^ Bin^oeTfid ' 424) *Q* Boissien Keut in Boiss diign hyr 1, lasc 12,|> jft (UIJI folu euore K[lab] einma dieuntur) Vix ic ne vix a var a distincti Peduncuh 3 12 lm longi, imo interdura (in *WLG* ct 56'^Kotschy) poiiolo brevioies et feie nulli, in cod iamo n r>68 lm *k* 8 longi Folia oblonga raro Integra, saipius regu- I inter et grosso eiemto senata, lobis obtusistSiel subacutis (v s)

y, *leptocatpa,* novelhs cito ghbi itis petiolis 2 6 lin longis, fiuctibuq subscssilihus glaopt angusU cvlmdi it\ ^ In pla.nitie Lihcic^ ad (1 lJyi 1-mum (Kotsoliyl il Cil JJ2 in h D(ct Buiss) 0 biachycdijji Kotscby' exb 1 c FoliftiiicMtci cienato dentata Glans (ex unico excmplo) 10 lm longa, 3 lin lata An loima constans? An non^Mius transitona, pio loco et anno ' (\ s)

o, *Irachycarpa* vai;etUi a similiH glande solum cupulun vix supeiantc aut nun supu ifte. — Piope I3\ymtium fAuehei I 2884 in h Webb et Boiss), 111 monte dyrnpo (Loqucbci 11 *m)i* Webb) et urisim in Syriâ (fabill I in hvWebb) Mia ut in a vanant Puljes m ult bpeciminu edduxa, floeeosa *boimi* vix munoiaiida, in plensque speciebus cisu atcidens *(\ h)**

-1 *peliolam,* petiohs 4 12 lm longis, limbib pleiumqut pauci dental is \el integi^, lacln II mase pilosuld (nuiic glabra?) In Cjpio (Kotschj ' in h Bo.ss), Gaud (Pinaid ' li Boiss), id poitds (llicias ct in tyuio CihcidP (Kotschy » 373, it 18)9, n 2'2, Balansi' 1150 tt 037 in h Foiss 11% in h DC , 634 ib), inMalle Cydm (Kotschy ' it Cilic 1853, n U>J 366, 367, 368, 569), in piov Sclmwan (Kotschy' 1859, n 570), in Kai duchwl (id i 18)9, n. 556, 5)8 ib>) 0 petiolu is Boiss diagn sei 2, n 12, p 120 (non Benth) Q PfcLtfingen Kotschj ' Eich t 23 0 tauncoli Kotschy ' ib t 10 0 Cjpn Kotschy' in h Boiss. Folia sdepuis pube biew e\anescente, lanus longioic floccosa (ex gr in ,564, 558, Kotschy) Rachis m specim Pjnaid pilosa, in ahis non videnda, ex Kotschy Lich t 10 gldbid, sed MX credo (v s)

%jl «t

?, *Synaca,* petiohs 4 9 hn longis, glande maxim\ In Tauro (Kotschy I 862 in h Boiss , Balarm' 635 ib), in Syna (Kotschy' it Syi 126, b, et 364 in h Boiss) Vanationes pubescentiae ut in 6 Glans 15 18 lin longa, intra cupulam 6 8 lin longam Arboi vix a praeced vai distinjuenda (v s)

Subspecies III, **Bwtlca,** arbor, pube ramorum et pagirffe inferiors fohoium stellata caduci floccosi pihsque in nervopissim solitinis persistentibus, foli^ pleiumquc imphonbus obtuse vel suhacute crenatg-serratis vel dentdtis * in Hispdiiil mend et oi£ ^ept Ajucse

a, *Mirbeckn,* pedunculis fructifens petiolo brevionbfc, aut fore nullis — Prope Algeciras (Boi&s '), San Roaue (h Webb ^h Boiss '), 1 anger (Slizm •) ct in Algenal frequens piaPsertim versus onentem 0 Lusitanica BT tied et Sal/manniana Webb i it Hisp p 12 Q Mubeckn Du Rieu ' in Puch Rev bot 2, p 42b Vulgo di LUIS */en* Rimi cito gld.br iti *ho\u* raro bdSJ dcuta, saspiub obovata. vol elliptic i obuibx vol ocula, sa^pe *A* poll longa. ul J \-*l* poll Utd, Unien in eo<i iamo 1]-J poll longa et ') 24 lin liti, pcliolo 2 8 lin longo *citnis* sjcpms re^ulinbu^ ublus^s, mine (in eod idmo) in denies breves dcutos muUtis membidiiacea vcl coridcea, mterdum veio nonduui deUpsd[1], floccis pilorum uL in pluubus alii's vdi supid cit sod copiosis PengQiuuin cxtus idim^iiLosain, iibbum potiusquim pdititum, sed m hisce vdiidul lloies pnoium Fruotus non diflci ml Spcciminaqiiduddui, hispimcdh Webb et mei nilei pr<esunlem et subspecies II difhcile cullocautur (v s)

P, *pedunculala,* peduncuhs fructif potiolo duplo tnplo\e longionbus • Specimen urncum, sine loco natill,in h Boiss vidi Petioli 6 12 iin longi Limbi J poll Jpngi$_{T}$<l \ 2 p)ll ldti, pube caduca Pedunculi 1) pollicares An form a consfms? (v s)

^B *Species Amencanx*

1° Extra-tropieales (fbbis pLorumque grosse et lnasqualttei lubaii<»)

20 Q LYBATA. <Wdlt fl Gaiol p 23 >),iamis , folns biovitei JJctioldtis"e bas f un(dta *val* obtuwusculd oblongii \el oblonyu-obo\ *Ma* uie^ulintei lobatis IHniLUihdo I^iali^ lobib oblusi-, vel •iul)acutis, junionbus ,, adultis glabus "eivo bubtu<s passim pikso, imtnti', , fiuctious in |)p lunculo abbieviato P^ucis solit inisve, oupula depiesso globosa t(nui Lei velutin \ s [uamis i mbi lcatis o\ ito ki^ouldtis medus Undem doiso \dldo mfldlis galeilonnJMls, ^rluide jnclusl $_{xo}$i subindusa \ In Caiohnl, Georgia (Michx, Lll'f yiund\ oi Mich v) a LomsMii.1 ((oopei,m Smiths lep I8)8,p 2>>(Hutni hlh Webb'), JotiiiiiiiijaiUu-, — Michx aib 2, t >, Chui t 4 tolu J O poll loiMdJ,^ poll ldti, petiuhs 2 > lin longis, lobis iiilcrno remotis ddniodum vanis, si IHIIJUS excisis \el litissimis ot ueivo centiali parallelis, pilis \\\ nei\o nlpiessis luuus jmiionbusvensim pubescontibus (,upuh 9-14 Jin laid, 7 U {>" afll» IJJM plainu^culi, squamis mils obtu«9, dlnv dtutiuscubs, muchis dm dorso in [11] ' ' «"in (umitis (v s)

21 Q MACROCARPV (Michx Chen t 2 et 3), ramis junionbus pilosis, folns e basi cuneatâ vel ranus obtusà oblongis vel Obovato oblongis obtusis vel acutis grifsse et irregiilariter lobato-pinnatifidis mine lyratis lobis obtusis junionbus utnnque adultis subtus stellato pilosis, amentis pilosis, biacteis fugacibus* perigonn lacinns lineanbus extus pilosis, authens vi\ exseitis, fructibus apice pedunculorum paucis vel solitarus maximis, cupulâ hemisphaenco globosâ velutinâ squamis infer et medns adpressis ovato acutis supremis plerumque in lacinias lineares diffusas elongatis nunc muticis, glande late elhpsoideA obtusà cupulam paulo superante 5 I*[1] Amend sept a Virginià et Texas (Cooper m Smiths iep 18)8, p 25o), ad Vermont (Oakes in Lmeison), Ohio (h Boiss i) et Missouri (Lngelm ') — Michx arb Am t 3, Emerson rep trees Mass p U2, t 2 *oha£ 15 poll longa, 2 4 poll lata, petiolo (in eod ramo) 4 12 lin longo, nunc15 lm l«n#o, saepius basi acuta, in eod lamo)i Webb acuta \el rotundata, subtus (junioia praesertim) incana Stipulae Jmeares, 4 lin longae, sencede Amenta sparsiflora \el flonbus apice condensatis Biactea? nullce (delapsde[9] m specim) Pengonium saepius 5 partitum Pedunculi iructifen m di\ speciminibus vanantes, 3 12 lin longi Cupula cinerea, 15 18 lin longa, 16201m lata, squamis junior et lmis matuns dorso planis, mediK* matuns doiso convexis nunc cannatis, supiemis in lacinias 4-b lin longis extensis, nunc (in sylvis densionbus vel aestate fugidiore ex Michx) muticis (v s)

p, *abbreviata,* cupula breviore (pollicem longa, 16 lin latft), squamis supenbus muticis — Prope Saint-Louis (Engelm ') An foima constans in eadem arboie *1* (v s)

Y, *minor,* fructu minoie (cupuld*9-lO longâ, 10-12 lin latâ) — Circa Saint-Louis (Engelm ') An constans in eadem arbore ? (v s)

22 0 oiiViEi-ORMis (Michx f arb Am 2, t 2), ramis adultis glabris, folns e basi attenuate! oblongis pinnatisectis lobis irregularibus o\atis oblongisve integris vel dentato-lobatis subtus stellato tomentosis, amentis , fiuctibus sohtaius pedunculo abl)ieviato insertis, cupulA elongato obovoideâ basi angustatd cineieo-\elutin€\squam,is infer et medns adpressis ovato-acutis supremis in lacunas hliloimes erectas desmentibus, glande ellipsoideo-elongatA cupulam vix supeiante $ Piope fl Hudson, enca Albany (Michx f), et in Pennsylvani«\ et Virginiâ ^Puish fl 2, p 632, an eadem sp[9]) Q macrocarpa var ohvaeformis A Giay man bot ed 2, p 404 Folia \idi in h Webb (a Desf cum specimme Michx compai) quae folns Q macrocarpae simiha, sinubus solum piofundionbus Cupula (ex IC) pollicem longa, 7 lin lata Eamdem ait cl A Giay quam Q maciocarpa fiuctu lmmatuio vel lmperfecto, firnutque*raiita& in herbarns, sed forma^cupulaium adeo diveisas in alns speciebus non \itli An status macrocarpae ef^raesentis in eadem arbore adsunt ? (v s)

23 Q BICOLOR (Willd nov act berol 3, p 396, sp 4, p 440), iamis junion- Q*s cito glabratis, folns e basi acutà vel obtusà ooovatis vel oblongo-obovat s acutis \el obtusis giosse crenato lobatis supia cito glabiatis subtus stellato pilpsis plus minus incanis, amentis pilosis, bracteis nullis? pedunculis fiuctiferfs petiolo multo longionbus 1-2-caipis, cupulA hemisphaenca squamis senceis aut velutinis infer o\atis medns ovato-lanceolatis super lanceolatis nunc apice elongatis, glande elhpsoideà cupulam duplo superante $ j$_n$ Amencà sept a CaiohnA mend (h Engelm'), imo Flondà oi (Nutt), ad Maine (rmeison iep), Wisconsin (id) et Missoun (Engelm ') — Emeison rep tiees Mass p 135, t 4 Q Punus tomentosa Michx Chen t 9, f 2 (ubi iol solum) 0 Punus discoloi Michx f aib Am 2, t 6 Biendel oaks Him. t 33 0 Michauxn Nutt gen am 2, p 215 Omnia Q Prim var a, sed ioha subtus incana et pracseitim pedunculi 1-3-pollicares, petiolo majoies et saepe tuplo quadiuplove majoies Diffeit ideo a Q Pnno solum ut \anetates 0 Robons pedunculatap ab alus, sed transitiones desunt aut nondum obsenatae fuerunt et ideo distmctam sp seivare debui Unicum specimen, in herb Webb, tiansitum forsan praebet, quum pedunculus petiolo non 'longioi et squamae cupulae passim apice elongatae et dorso mnatae Q bicolons potius udeantui sed tiansitus in eadem nboie non certus Squamae m pidesenti

\anant (in ead cupulA)* saepius dorso planas, mine con\exae medns et supremis mteiduni apice lineartfms, sed saepius cupula omnino Q Prim, a Folia junioia subtus semper incana, senus incana vel subconcolora, et inde transit ad \ar seq (\ s)

P, *platanoides,* folns subtus tenuiter pubescentibus non incanis Culta Pansns ex AmencA sept Q Prmus platanoide-> Lam diet 1, p 720 Q \elutina h Lher ' Q pannosa Bosc in h DC Q mollis flju.tt gen 2, p 215 et ideo Q .fihformis Muhlenb^cat in Nutt cit ?

24 Q PRINUS (Linn sp p 1413), ramis junionbus cito glabiatis, folns eJaasi acutâ \el obtusâ obovatis \el oblongo - obov atis acutis ^pl obtusis grosse ciendto-lobatis vel undulato-creiiatir» supia cito glabrat^ subtus stellato-pilosis, amentis pilosis, biacteis nulhs (fugacibus), perigonio saepius 5-fido, peduncuhs fructifeiis petiolo non longionbus 1-2-caipis, cupulA hemisiñaencA, squamis senceis aut \elutinis infer ovatis medns o\ato lanceolatis super lanceolatis, glande ellipsoideâ cupulam duplo saepius supeiante $ I^n Americâ sept a Floridâ (Michx f), Carolinâ (id , Rugel' A Gray') et Louisiana (Cooper in Smiths lep 1858, p 2^), ad Ohio {h Webb') et Missouri (Coop 1 c), in paludosis Pt inundatis — Willd sp 4^p 439 Q Prinus palustns, Michx Chen t 6, Michx f arb Amei 2, t 7 (optima) Q montane Emerson rep, trees Mass t 6 (non textus) Folia 3-8 poll longa, 1-4 poll* lata, petiolo 3-12 lin longo, membranacea, lobis crenisve submucionatis vel potius callosis, sul)tus pallidis Cupulae 6-12 lin latae, 5-6 lin longae, squamis dorso plainusculis infer et medns obtusis Specimina fiuctilms minonbus ad var seq tianseunt Folns Q Lusitanicae ^ ai Baeticae simillima (v s)

P, *acummala,* folns longe pptiolatis plerumquc acuminttis raro acutis, lobis pleiunique subacutis cienis\esubmucronitis cupul i mmore saepius basi rotundatd mine subacutâ ,5 In mont Allp^hinies (Michx), nee non planitiebus a Maine (Emeis) et West Chester (Dail fl) ad Missouri (Engclm ' Gejei') et Aikansas (h Lngelm ' 1179) Q Castanea Muhl in nov act beiol Willd sp 4 p 441, Emeison lep trees Mass 137, t 5 0 Pnmis acuminata Mjch\ Chen t 8, Michx f arb Am 2, t 9 0 mon tana Emeison, ibid p 1)8 (non icon), Biendel oaks Him t ^5 Folia saepe subtus pallidioia quam in a Petioh (in eod specimme) 3-12 lin longi, saspius 9 12 lin. Lobi in eod specimine vanantes, saepius grossi, nunc cienae potius ^ocan(ll, mucione euguo magis ({iiam in a constante Cupula 3-4 lm longa, 5-7 lin lata, plerumque basi obtusa, in specimine h Webb (folns acute lobatis) basi acutiuscula (v s)

Y, *monticola* (Michx Chen t 7, aib Am 2 t 8), cupulâ minoie subtmbinatd basi nempe acutiusculA n«c lotundatd ,5 I^n siccis ct rupestiibus a Caiolinâ ad Veimont et New Hampshne (Mich\) 0 Pnnus folns obovatis etc Wangenh p 15, t 8 Q montana Willd sp 4, p 440, Dail fl Cesti ed 3, p 266 Ex iconibus et desci nullo modo folns, flonbus aut peduncuhs i Q Pnno vulgan differt Petioh in Mich Chen t 5 bre\es, 3-4 lm longi, m IC Aib Am longioies, 6-8 lin , m sperim h Webb. 12-15 lin longi Foima cupulae chaiactei siis constans in genere, ergo foisan species dicenda Unicum specimen (e Maiyland, in h Webb) vere cum ic convenientem lepern Ex lllo cupulas geminas, 5 lin longae, 6 lin latae, basi subacutae, glandes imperfectae non exsertae, quae in *c valde exsertae* (v s)

8> *Chincapm* (Michx f arb 2, t 10), nana, folns minonbus, fructibus crebris sessilibus, cupuld bdsi obtusA J In stenhbus, pdssim, a montibus Gaiohnae ad Rhode Island et Albany (Michx), in Missouri dltioie (Nicollet 144 in h Lnffelm ') et Kansas (Fendl ' 127 ibid) Q. pnnoides *WiM* \n nov act beiol 3, p 397 Q Pnnus pumila Miclix fl bor ^ 2 P 196 (non Q pumila Michx f) Q Pnnus pumila Michx men t 9, f i (Sine fr)y fl boi am 0 p 196 0 Pnnus Chmcapin Michx f aib Am 2 t 10 (ubi fiuctus) 0 Chinquapin Pursh fl jy P 634 Vix J-pedalis' saepius *I** -2 pedes alta, an piopter stpniitatem locorum? toba nunc acute, nunc obtuse (t 10 Michx aib),

lobato-crenata, petiolo mediocn Ex folns etfiuctu a P Pnno fiuctibus pan is non differt Cupula 4 hn longa, 5-6 lin lata (v s a cl Gray comm)

25 0 STELLATA (Wangenh Amèr p 78, t 6, f 15), lamis folnsque junionbus pilis stellatis flaws pubescentibus, folus e basi acutâ vel obtusâ oblongis obovatisve "sane et niogulaiiter paucilobatis nunc lyiat s, lobis obtusis muticis ovatis vel •bo^ atis, adultis supra^glabratis subtus stellato-puberulis, amentis rachi pubescente, bracteis omongis minimis iugacil>us pen^omo pUpo uregulanter 5-6-fido, antliens pubescentibus, fiuctibus stssihbus vel BHvitei pedunculatis, cupulà hemisphaencà cinereo-pubescente squamis *id*-pressis ovato-lanceomis mfei obtusis, glande ovoideA cupulam dimidio supeiante J JnHmencà sept, a Floridà (Michx, Cooper in Smiths rep 1858) efc-Texis (Lmdh • in h Engclm Berland ' 2498 ibid et 1696 in h Boiss ' Matthes' 188 m h Boiss), ad Rhode Island (Coop 1 c) et Saskatchavan (id), fiequens in Missouri (Hiehl, 305) —Lmeis rep Mass p 133, t 3 Q obtusiloba Michx Chen t],arbi Am 2 p 36 Biendel oiks Ilhn t 31 Q villosa Walt Car* p 235* (ex Ell sk G et C) Aiboi minus elata quam 0 alba Folia 4-6 jrfbll longa 1 J-4 poll lata, petiolo 3-9 lin longo, in eod ramo lon^c ctineata vel obtusissinia, lobis utiinque 1-3 nunc smuatis T)btusissiiais, adulta saepius lubescentia Stipulae linearcs, 3 4 lm longc, j^losulae Amenta 14-3 poll longa Fiuctus saepe gemini, pedunculo nullo vel 3-4 lin longo Cupula 5-7 lm lata, 5 lin alta (v s)

p, *Horulana,* petiohs longionbus — In Floridà Q Flondana Shuttlew in plant exs Rngel Petioli 6-12 lm longi Limbi basi longe cuneati vel obtusiusculi Fiuctus ign (v s in h DC et Boiss)

y, *depressa* (Nutt gen 2, p 215), nana, 1 3-pedalis —In Missoun collibus prope fl Pldtte

8, *itahensiSy* frutex \cl iibuscuh, squamis cupulsp liifenonbus ct raedns doiso com exib plus minus infhtis — Inter bait lake et Sieni Nevada, Ubi unica Queicus (h Fngelm ') Folia et antherae pubesc^itia omnino Q stellatae Squamae jim in fiuctibus \ulgans st(llata3 lntcidum sub-convexae, et m nosti«\ Q Robore ^allant similiter (v s)

26 0 ALBA (Linn sp p 1414), lamis cito glabratis, folns e basi cuneaU oblongis vel obovatis vane lobatis seepius pmnatifidis lobis muticis obtusis, junionbus utimque uicano-tomentosis, adultis glabiatis sublus palhdis, amentis giacilibus lachi felabiescente, bracteis minimis fugacibus, pengonio piloso nicgulantei 4-6-fido anthens glabnusculis iiuctibus apice peduncuh petiolo brevions aut longions, cupulA late hemisphapii^ cmoieo-piil»eiul\ squamis o\ato-acutis linbncitis denofcm con\exis, ghndyellipsouleA cupulà duplo tnplove longioie *$* In Ameiicà sept a Flondà *lh* Boiss ') et Texas (Lindh.il m h. Engelm) ad Maine sub lat 46, 20' (Michx) et hcum Winnipeg (Hook B boi am) —Michx aib Am 2 p 13, t 1 (sqmmis cupulae male fig), id Chen t 5 (opt), I meis rep trees Mass p 127 t l, Biendel oaks Him t 29 O alba vugmiina Cat Cai 1, p 21, t 21 (nil nisi folium) *olia idultT J-6 poll longa 1-3 poll ldta, petiolo 2-0 hn longo, lobis piucis sTpius oppositis Stipulae 4 lin longse, lineaies, Visi mgusfitcP, pilosulae Vinenta 1-3 poll longa Peduncuh fiuctil (ex specimme 340 Riehl h Boiss) 6 10 lin longi m eod lanio, nunc 3 1 lm aut feie inilli I-iuctiis) l? Cupula 6-10 lin lata, 4 lin alta, matura sqmmis dorso inflatis duns aspeiata Glandes 9-15 lm longae Uti Q Robui Mint longit petioloium et pedunculorum, folnsque plus minus lobatis sed vimtioncs minus extienide ct saepius jn eadem aibore adstantes, unde vanetates firmae vix constituent® nisi forsan seiquentes (\ s)

p, *repanda* (Mich\ Chen t 5, f 2), folns ineguluitei smuatis aut sinuato-lobatis —In Vngmiafcliisquo locis Amencde boi —Loud aiboi *v* 803, i 1569 et 1)70 Q alha Guimp etHa^n Hoi/ t 130 (\ s)

y, *microcarpa,* Iiuctibus minimis — Prope Saint-Louis, in stenlibus (Engclm ') (upula 3-6 lm lata, 3-4 hn alta Glans 6-9 hn longa An loima constans ' (v s)

27 0 UNDLLATA (Toney account pi Rocky Mount m Ann of Lye 1827, P 248, t 4), fiuticosa, lamosissima, ramis mcano-pubescentibus, folns e basi acutd vel obtusâ oblongis sinuato-lobatis vel pinnatifidis lobis ovatis obtusis vel acutis supra stellato-pubescentibus demum glabratis; subtus pihs stellatis persistentibus mcano-flavidis, amentorum lachi pilosâ, bracteis anguste lmean-* bus floiesublongioiibus, peiigonn lobis 5 acutis extus pilosis, antheiis ghbns muticis, fiuctibus solitams vel geminis pe.£unculo petiolo breuore msertis, cupulâ hemisphaeiici squamis ovato-acutis glande ovoidoo-oblongâ cupulam plus quam dimidio superante ^ In Amenca sept ad Rocky Mountains ct iontos nvi Canadian (loney) ot.mNovo Mexico ad Santa Fe (Fendl ' 805fet 806 HI h I ngelra) Q Icndlen Liebm lgersl p 12 Lx scheduU in, herb Cngelm n 805 et 807 Fendl =Q undulata Torr *fide Torrey* Pctioh 2-3 lm longi, limbi 1 J-2 poll longi, 6-12 lm lati Stipulse anguste lineaies, petiolo aequiles, fugaces Amenta in specim *abbie\iata Pedunculi fl fem nulh *el 1-2 hn longi Stigmata obtusissima Cupula (rx ic) 4-5 lm longa, 7 lin lata, squamis hasi latis apice acutis (unde a Q Douglasu et plonsque \dr 0 Robons diflerre videtur) dorso MX comexis Glans ultra cupulam 7-8 lin longa Num 806 ex Licbm est 809 et 810 similis, sed in h Engelm 805 similior Pedunculi similitei dbbieviati; petioli sublongiores (*y* s)

P, *obtusifolia,* folns obtusionbus ellipticis ohovatis\c undulato-lobaus ^ In no\o Mexico (Fendl ' 807 m h Tngf lm) Hunc numerum \idit cl Licbm in h Hook et ad prsesentem speciem^ (Q *endlen Liebm) refeit An ioima ielioium in specimine I ngelm mera vanatio, ut m plunbus speciebus ? Fendler 807 et 805 similes, dicit m dghedulâ (v s sin fi)

Y, *pedunculata,* lobis fohorum acutis saepe mitfcronatis, pedunculis fl fem petiolo longionlms ^ In montibus Nou Mexici piop|Santa-Fe (Fendl ' 808 m h Tngelm) Similem suo num 805 ait cl Fendl in schedulâ Petioh, tomentum, foima folioium, fl masculi^equidem simiha, se*d pedunculi fem petiolo duplo Uiplove longiorcs, 9-12 lin longi An charactei vanabilis ut in Q Douglasu B alnsque? Ramum mnciiin vidi Fructus ignotus Valde affinis Q Robon var Apeiminse (v s)

28 Q DOUGLASII (Hook et Am bot Beech \oy p 394), ramis fulvo-tomontosis, lolus e l>asi acuta A el obtusA oblongo-o\airbus \el oblongo-obovatis sinuito-pinnatifidis lol is obtusiusculis muticis supra sparsim stell ito-pilosis glabrescentibus subtus stellato-tomentosis fulvescentibus, amentis giacilibus, bracteis , pengonii 5 fidi lobis ovato acutis ciliatis, anthens 5-6 glabns muticis, fiuctibus sessilibus solitanis binisve, cupulâ hemisphaencâ, squamis adpressis cineieo-\elutinis e basi o\atâ convexft lanceolatis mfenonbus obtusis sup acutis, glande o^ideâ cupulim tnplo superante 5 ^n Californiâ (Douglas' I ay et Collie — Hook ic t 382 et 383 Folia 2-4 poll longa, 1-2 poll lata, petiolo 4-6 lin chartacea, lobis obtusis denticulo minimo tamen acutiusculis, pilis persistentibus Ramus flonfer in ic 382 depictus non certe ad sp peitinct ejus amenta 10-12 lin longa, pengomum patens, e\ ic legulaie, g h b m , intheidL non (xscitie sunt Cupula 5-6 lm longa, 7 0lm lita cum glande \ ui(titibus *lanugmosi, ambiquv* et piacseitim *machyphyllr* O Rojoad m o d u m similis S [iiamaj m^dire ut in var brachyph^lU e basi ovatl doiso plus minus convex \ abi upte angustata et elongatâ, extremitate obtusâ In cadem cupull aut in cupu^s ejusdem lami pars externa squamarum aut subconvexa aut valde mflataJ ut in 0 Roboie alnsque accidit An Q Douglasu, cum omnibus suis vaneTatibus, Q lobata, Q Ganyana, imo Q undulata formae tantum Amencanae Q Robons? Ix defectu speciminum in heibarns cnaidcteies et transitiones mihi non satis co$_B$^{p}niti scd chai diffeientiales \eie specihci me fugiunt Flores masc 0 Douglasii hie e\ ic desenbuntur, sea ex var p? y^ e^ m Q undulata et Garryana diversitatem frustra quaesivi a Robore (v s)

β ? *Gambelii,* petiolis paulo brevionbus' lobis obtusis mine acutis squamis c*H$*u.æ A ^Pius doiso inflatis Secus Rio vel Norte (Gamb), secus fl Luni (Woodch i fl rou j et m monte san-tiancisci (id) Q Gambeln Nutt pi Gamb niJourn acad SL Philad n sei \ 1, p 179 Ton in Rep exped Seatgrea\es, p 172, t 18 Hoies masc Jgnoti, et ideo forsan

species nee \anetas Nuttall fiuctus sessilps ait; Toney pedunculo vix lineam longo figuiaut Petioh m IC 2-4 lin longi Squamae lbi doiso inflatae ut interdum ma (v J»)

Y, *Novomexicana,* frutex, folns oblongis piofunde pinnatifidis lobis saepe 1-2-dentatis obtusis vel acutis, peduncuhs femineis subnulbs vel petiolo brevioribus vel longionbus, cupulde squamis defrso inflatis 3 In No\o Mexico ad Santa-Fe (Fendk • 809, 810 et 810, b, in h Engelm et Boiss) Q Gambelln Liebm Egersl p 11 Peduncuh fem in eisdem lamis 0-2 lin , 2-6 lin , 1-9 lm \anantes Petioli 3-8 lm longi, saepius 4-> lm Cupulae in specimine stenles, squamis valde basi con\exis, aliae immaturae Amenta filifoimia, 1-3 poll longa, pilosula, flonbus plei unique sparsis Braeteae filiformes, floie sD?pius longioies, fugaces Pengonium patens, 5-paititum vel 5-fidum, extus pilosum, lobis acutis, latit ina> quahbus, nunc bilobis Antherae 8-11, glabiae, muticae (v s)

ô, ? *Next,* cupulA \alde abbreviatA, glande cupulam quadruplo qumtuplo\e supeiante In CalifoiniA (Liebm Hartw ' l%o) Q Neaei Liebm Lgesl p 15 0 Douglasu Benth pi Haitw p 337 Transitiones forsan vidit cl Bentham, sed in specim Hartw in h meo et Boiss (ut ex Liebm) cupula 3 lin «Bolum alta, 7-9 lm* lata, glans 12-14 lin longa, 9-11 lata, et inde potius species distincta videtur Flores masc adhuc ignoti (v s)

29 Q LOBATA (Nee ' in AnaJ cienc et in Keen et Sims Ann of bot 2, p 111), ramis junionbus fuho-tomentosis, folns c basi acuta vel obtusA oblongis ellipticis vel obo\atotfDblongis inaequahter* \ane pinnatifidis lobis undulatis obtusis muticis vel passim calloso mucionulatis supid sparsim stellato-pilosis subtus pilis peisistentibus stellato-tomentosis pallidis, amentis , fiuctibus sessilibus aut suBsessilibus sohtains paucis, cupulA hemisphaenc 1 crassa. squamis adpressis cinereo-\elutinis infeiiorlbus et medns e basi ovdtA valde come\a in mucionem o\atum obtusum brevem dcsiiientibus supierais ovato-lanceolatis acutiusculis \ix basi inflatis, glande oblongl angustA cupulam 3°-4° superiante J In California (Haitw ' 1964, "Wisliz » in h Engelm etc) — Liebm Igosl p 14 0 Hindsn Benth bot Sulf p 55 (ex ipso Benth pi Haitw p^337) Folia 3-4 poll longa, 1-^-2 poll lata, pttiolo *-6 hn , m eodem ramo plus minus piofunde lobata Cupula 8 lin longa, totidem lata, basi et niedio ex squamis con\e\is giosse tubeiculata, orem \ersus paulo angustioi et vix tubeiculata Glans ex Liebm polhcans, ex specim Hartw et Wisliz 1 i-2-polhc , ex Liebm 1-poll , ex nostus IS 16 lm longa, 5-6 lm solum lata Folia equidem pluuum var Q Robons, quoad formam, sed pube subtus bievissimA et peisistente, cupula ore subconstneta, squamis medns ct infenoribus magis inflatis quam in ullA var Q Robons, et glande angustiore, unde nunc ab una nunc ab alteiA \ai Robons differt Specimen Neaei in h Mdtnt flonbus et fiuct caiet Folia pubescentia (nee ghnbra ut dixit Nee) subtus vix palhdiora, unde ab omnibus hie descnptis diveisa, sed eadem species tamen udetur (\ s)

30 Q G\RRYANA (Hook ' fl boi amer 2, p 159), ramis junionbus fuho-tomentosis, folns e basi saepius obtusA^obovatis obtusis sinudto-pinndtifidis lobis maequalibiis intogiis lobatisve obtusis vel bievissime mucronuldtis supra spaisim subtus dense stellato-pubescentilms, amentis gracibbus rachi subpubescente, biacteis , pengonn 5 7 paititi lotas maequahbus dorso pilosis acutis \el acuminatis, anthens glabns, fiuctibus s%6silibus, cupulA perbrevi-hemisphaencl scjiumis densis o\ato-icuminatis pubescentibus, gldnde ovoideA ^ In Oiegon,, Foit Vancomei, Puget Sound (Menzies, Douglas, in h Hook) et in California (bot Beechoy, vo\ p 391) Ex specimine Hooken m h Webb folia 2 poll longa, pollicem lata, petiolo 3-6 lin longo, supra (in sicco) nipicantia, subtus fuho-tomontosa, lobis ovatis, contundatis, saepc denticulo minimo submucionatis Stipulae 4-J lm longap, oblongae, basi angustatae, acutde, ut squamae obtusissinitB gemmaium dorso senceae Amenta conferta, diffusa, 1-1 7 poll longa Biacteae nullae ^el delapsae ? Stamina 6-8, exserta Fructuse\ Hooken descuptione (v s)

M 0 DRLMMONDII (Liebm tgcsl p 12), folns confeitis c basi late cuneatA

latissirae olxrwitis obtusis mcmbianaceis undulatis piofunde sinuato-pinnatifidis lobis ldtis oblongis obtusissimis \el obo\atis plus minus sinuato-incisis maigme caitilagineo iecm\o supia glabns subtus dense olivaceo-tomentosis in \etustionbus glabrescentibus iuscis, petiolis mo\ glabrescentibus, fiuctibus sessilibus geminis vel sohUrns, cupulâ htmisphaencâ, glande oblongo- ovpideâ In Texas ad San-Felipe (Diumm 342 et 561 in h Hook) Folia 3-4 poll longa, 2-3 poll lata, petiolo 2-6 lin longo Cupula 6 lin alta, 7 lata Glans 10-11 lin altd, 5 lin lata —Vensimiliter una e pisecedentibus.

2* Species Mexicanae et Centro-amencanae (folns \aiie dentatis, nmic mtegus, nunquam lobatis, duratione fiuctus non satis cogmtâ in plunbusji

32 Q CORRLGATA (Hook ic t 403), lamis glabns, lamulis gemmisque pilosis, folns petiolatis e basi acutfl lancculatis acuminatis seiiato-dentahs dentibus obtusiusculis \el callo breu subacutis utiiii({ue glabns, amontis lolm multo brevionbus spaisiflons, floubus , cupulâ sohtanâ subsessih ma^ii U mi sphaeiico-tuibinatâ squamis adpressis \elutims infenonbus o\atis ruedus ovato-acutis dorso inflatis vel obtuse cnstatis apice inflexis supicmis o\ato-lanceolatis, glande semisexseitâ late ellipsoideâ circa* apicem subdepiessâ 5 In montibus Guatimalffi (Skinnci in Hook , "Wars/ ' n 11 et 38 in h Boiss) Ramuh P\ ic etexspeciminibussimill "Wars/ewic/n glabn,gemmissolumpubescentibus Folia (ex specim Waisz) forsan subpeiennia Petioli in ic 4-9, in plantâ Warsz 7-15 lin longi, limbi 3-6 poll longi, 1-1 -J poll lati, sijbmembianacei, nervis laterahbus utnnque cucitei 14, tertiams tiansveisis Floies masc ex ic tantum noti Fniclus (e\ specim Waisc) in axillis foliorum anni, pcdunculo 2-^ lin longo, ut lamus line anni ciasso insidentes Cupula 0-10 lin longa, 14-1 > lin lata, subcmeiea, duia, squamis inf et modus inaequalitei doiso \aide inflatis cannatis Cotjledones ut dixit Bentb lnajquales, doisd' subsinuatce non mm mate Pumo adspectu valde, Q Skinnen afnnis, sed matuiatio et semen dneisa (v s)

33 Q INSIGNIS (Maitens et Gal in Bull Brux 10, n 3, sp 25), lamulis petiolisque dense fuho-hirsutis pilis leflexis, folns bicvipetiolatis obo\ato-lanceolatis ficutis dentibus callosis sinuoso-dentatis utnnque pilosiusculis, nenis tians\eisahbus appioximatis fuho-pilosis demum supia glabiatis, lructibus subsessilibus solitams magnis, cupuU hemisphasiicd mtei squamas dense fulvo-lanatA, squamis hue squanoso-imbncatis patulis o\ato-lanceolatis MIlosis, glande e\oideâ -f exseita ^ *n Mexici montc On/aba alt 7-9500 ped et ad Pelado de San Andies piov Oa\aca (Gal 123,124,125) Deest in h Maitens Affinis e\ auct Q coirugatae, et ex Liebm foisan eadem (juam sua Q oocaipa (Q Waiscewiczn), sod dnersissima squamis la\is patulis Specimina floubus ct fiuctu carentia, e S Baitolome et Matlaluca, cl Liebm in h Copenh Q insignem \oca\it et mecum comm, qua3 lamis et folns aQ Waiszewiczn, non diffeiunt, fiuctus ^elo seorsim senati ad Q stiombocarpam magis quam conugatam accedunt Cupulas foimâ \auant, duae depiessas, subpatenfoimes, 9-10 lin longoe, 18-20 lin latae, Ld!si abrupte angustata3, tertia hemisphaenco tuibinata, 14 lin longa, 25 lin lata Omnes fuho tomcntosaa])ra3seitim intpi squamas, squamis inf et modus o\ iti-> lii\e imbiicatis 2 lin longis, 1J-2 lm latis apice inflexis, supiemis lanceolatis longionbus **erectis crebns Glans \ix exserta, acuta ^el obtusa, dm velutina (v s *jjt***

3^ 0 STROMBOCARPA (Liebm ' Egesl p 18), lamis junionbus petiolisque brevibus iuho-tomentosis, folns e basio btusâ\olsubcord€itaobo'\ato-oblongis\el obovato-elhpticis breMter acutis ^el obtusiusuilis a medio undulato-dontatis veJ cienato-dentatis dentibus obtuse callosis, supra in neno tcniulpr\olutinis> SU tuiS In ner^i"5 piaesertim stcllato-pilosis junioiibus fuh is deindc gldbrescemiijus, flonbus , fiuctibus solitams subsossilibus \cl brevissimo pedunculatis, cupnlâ Ute tuibinaU velfttniA scjiumis laxo imbiicatis obtusiusculis !?1S Hale °^ito-lauc(olatis caucus tancoolatis medns dcmum patontibus, gianae semiexseitâ ex umbone ma\imo con\e\o o\oideo acutâ nitidA 5 In Mexico mtei Jalapa et Huatusco, alt 4500 p Rami fructifen bie\es, apse lulvo-velutini, crassi Petioli 3-7 lin longi Limbi 3-6 poll longi, 1 VW°» lati, non coiidcei, sed ngidi modo Castanese vulgans, neivis lateialibus utiin-

(Mic 1ri-l9 Mibtus pmiQPntibus, tprtiarns transvprsis distinctis, |tinioritnis subtus Finn druse sed*inanifestp stpllato pilosis idiiltis in nrnis dm pilosis Pcdunruli PX axillˆa Coin, 0-2 Im longi (upula 9-15 Im longa, r>-18 Im laU, gnu mm me clus 3 Im longis, Mipipmis linoanlms et bneam lutis, omnibus Ikiipmitatp mflpxˆa potms (|iiarn lellexA Cotylotlonea dorso convex*, non ruraimataj (v s in h (openh)

35 * 0 GALEpini (Martens' in Bull Bruf 10, n 3, sp n 26), nmulis gnmmisqiin tfhmmiscnlis, Coins brr\iprtiohtis c bisi acut\ obovato oblongis acutis voljciimiiiiiitis spnatodPiiUtis duililniH jiiirviH ublusniscubs apicp callow siini.i%lidis gliln itis siibtus cito glabntis, liuctibus subspssibbus solitauis, ujpuH 1KHIIS\)IIIMIC\ nfclbwi tomontosa squamu lancool.iiis luc lmbucatis, gland* nvato-mfiindˆdta nbCisit somiexsrrtA In Sylvis Moxici prnpp Sanlng(«do Huatusco, ill 2Ss)-xiK) ped (Oil ' \1h) «t« i>inua S.m Baitolomp (Iifbm 'inn fopcnli) Ex sprdminp 11 pt li drstitntfo in b Maitcns loin I^^IIISL poliolo s.rjmis birMOio a Q corniRati dimmnt I'otiob 2-4 lin Longum i8rvo4Jrntˆili siipia tomntrr strll«LtA\elutiiiillimln 11 i()ng, 11-2 Im liili, cbaijatPi, jiimorrs subtus stollato-pilosi, idulti ad norvuni pilos simpliceb pawm cum alns stcllati* iaiis in])arpncbymatc subtus praebrnlps, quod in o (oniigatA dim dwtibiis callosis "virnilp Fructus a cl auct d(S(tipti iTiueitio ot id'o din itio IKIIOICL[1], cupula diamrtio Mibsrstjuipollican, glans dlnnielio pdlliLan Alflnim dicit 0 msigni — SycLimuid Liebm qua* Colin cum MaiUnsn cnn\r iiiiint, nionso ipbiuino lo< la folia poisiqtpntia j)rdeljent, basi acuta \cl obtusa, stipuhc caduca[1], anguste linoares, oxtus pubpscontcs, 4 Im IOIIKJP, Cructus (soorsim sopie^atij 0 Warscrwjczn subsimilrs, cupuIA hpmisplifPriLO-turbinatfl, |)pdunculo 1-5 lin longo non crasso uispitii, 8*) Im longA, 12-T) Im lit/1, intii s<|uanias pia'sprtim luho tomenlosA, sf|iiinns laxmsnilp imbiiotis, imis o\itis obllisis doibo inflatis, giadatnn lancpolitis mgustionbus, simnniiH acutiusuihs, maximis in rapdio 2 lin longis, glandc 12 1 "i lin long,!, 9-12 hn latft, urabone subconvexo (v s)

36 L CIRCINATA (NeeI in Anal cicne nat 3 p 272 et in <hnn et Komn Ann. oC bot 2p 10(),cxcl vfu), ramis pptiolisqiic fpiiugniGis nulvonilcnto-velutiins, Coins bicvipctiolatis olm\ itis VPI i uius o>alibus bisi ingust'iti obtusis VPI Hubacutis apicp anguslatisoliliwis \P1 (ontunditis oblusionbus undulitociPiiatis ciPiiis mpdio tallosis, sujua glabi itis npi\o puhpiulcnto \olutino, subtus iptinihlis CIPIJIP ct IJIPMSSIIUP stollito-voliitims, flonbus , Cmctibus 1HP\ ssmip pcdumiilitis, cupula (lmpeiCcf tt) subgloliosA, squimis Culvo \elutmis adpipssis niCpiioribus I IIP o\atis PPIPMS nngis ac inagis laucpoldtis, glando subpxsprtl 7 In MPXILO intPi Tixhla et Onlpancm^o, npnii fiuctus gpipns l'lagmpiiliim attuht I'uon (h Boiss) cum *Q* obtusiiA nuxtum Ex sppcimirip uithcntuo uiiipo hPib Matnt pubps nmi petiolomni ct nervorum |iiaccipuonim lla\ i, tpnuissima (undo a 0 obtiwatA et mjpsertim Q tompntosi CILIIP distiiuta), pplioli 2-3 lin longijimbi r> poll longi, 2 J poll la.li, coIIICPI, idulti sublus Jiisccsppntrs calbs nbtusis, ppdiuiLuli minimi, 1-2 fiuctus unppilcctos gnQUtei, cupuli m«ijoi 4 Im lati, subchusi, squimis nuno doiso Lonvcxijj, t'kuKUfcpcrCccta. Yai a Neo memorak est Q tomontosa. (v. 4)

37 QtotfAfNoiM-FOiiA (NPP! in Anil cicne nat. 3 n 2()8, Pt Sims Pt Kan AunjWf boI 2 p 101), lamis glibialis, loins J>ie\ itn ct uasse pptiolatis obo\ito oblongis basi angustatˆa mavjiialitPi obtusis subcordatisvp aj)icp attpnuatd cililusiusculis subcoilaccis subinlcgns pvtipmitatc npivoium subcdllosis et subpin.nginalis su])inieivo pulverulpnto splutinis (.ctciuni glalnatis subtus cifbiP Ktidilalis tonuilPi stelhto vplutmis, llonbus , pedunculis fiuctifens pctiolo longionbiis folio multo biPMOiibus, nipulA (|unioic) subglobosA \eliitinA squiuus adnipssis o\atis ct sujremis o\ato lanceolatis obtusis 5 In MPMCO intci (fnlpincingo et Tixtala, ncc non prope fl A/ul, apnli fiuttus |im gprpns PX axilbs Col supennium Hamus ultimus (m hcib untciis) jam «l»l)iatus PPIIOII 3 4 bn longi, 1{ Im basi ci issi, id osi crassioies niUUri HI ilfinibiis, idbiii pissim sl(llilo julosub I inibi r> 6 poll Inngi, 2 2^ poll- Id-ti, supu nitidi, pilis tamen miiiimis prope ncrvum adhiu punpruli*s rete subtus pallido, pilis brevissimis in nerviset extia sitib Pedunculus

1} poll longus, puberulus Fructus junior 4 lin latus, ghndo submclusa (v s a Mus Matr comm)

p, *lutea,* folus elliptico oblongis Cum a crcscit 0 lutoa forsan var mi gnojinefohas Nee' 1 c Q fkva Nee,*ex Spicng syst Jp 8o7 1 oil i 6 7 poll longi, 2 2J poll liti, ex descuptione sumus ochncei, sod in nerbuio toloie m nervis pilhdo intra nonos fusccsrente omnino 0 mi-gnoli rfoliae, nee non pube, consistcntiA cillis minimis in siiiubiis ipico noMoium secus maiginem limbi simillima Fructus unus perfectioi cu-pul\ 4 lm Htâ, hcmispliamcl Nomcn 0 fl iv i Nee dcest in Ncc Andl cionc ct in b Matr (v s comm a Mus Matnt)

y? *macrophylla,* folns ampbs obovatis oflWsissimis In Mexico propo lix tala ot in montc Omiapa (N(o'), in Sicn i Mdcko Mexici ocora (Seem ' herb n 1972, bint (1 net fi) Q maciopbylla Pscc[1] in AiidL cicne nil Jp 438, ct in Ann ol bot 1 c Willd si) 4p 4.18 Q lesfhosi iicbni ox Seem ' in Bonpl \ p 39, in bot Heiam p 33J Iiobm in 1 gesl p 24. *oba cuneato obovati, basin coidatam veisus lugustiti, podalia (ex Not), 8 poll longd, *i* 6 poli ldta (je\ sptcimino mthc nt sine fl ot fi in b matiit) Pitioli in (od(m pinpics 3 hn longi cum lamo glibrescenlos NCIM nubes, cdlld niciigims subintogia omnino pucsentis spcciei, undo vai bolum videtui Fioies et fructus ign (v s)

38 Q OBTUSATA (Humb ct Donnl ' pi pf[uin *1* p 2G t 7f>), iirais juiuoi iluis bievitcr stellito pilosiscito glinidtis, folus o bisiobtus\ sj?pc mtquili oblon-gis vel obovato oblongis obtusis mupinc undulatis ct cxticnntiU ncnoium callosis supid ^kbratis dd ncivum contidlcm Unmtei \ebitinis, sultus ciobic leticuhtis pibs stellatis bicvibus pubciubs, rdcln fl mdsc pdssim pilos\, ilonbus spusis pougonio pdtcnto (xlus piloso , pedunculis fructifpns folio bievionbus potiolo longioiilms, cupuU vclutini, snuunis ddpicssis ovitis \ol ovilo hncpolitis obtusis doiso sul)convoxis vcl infldtis, gluide mclusi (im perfect^ 55 I[n] S>>MeHVIc \ici propc \no ((H ct D)) Mindoi (Iicbm ' in b Coppnb ot DC) — Kutitli in HH et B nov gen 2 p 14 Q iffiiiis Mutcns el Gdl bull Biux 10 n 3, Gai herb n 90 in h Deloss ' Litbm ' m h Co-ponh Ix spocimine unico duthentico Mus par petioli 3-6 lin longi, limbi 4 6 poll longi o 20 lin lati, minus quim in 0 tomontos\ conicei, pibscjflo brcvioubus cillis ni iniigme I ins MX poispicuis pigm\ super idultLad nei vum tcnuitc i slelhto velulml amonta gricilia, vix \ ollicom longi jam u-tusta inthoi is paucis ghluis pc dunculus 20 lin longus, cupula mi|oi dim lati (nboitions vel nondum malm i) subekusa Mjuamis in I 11A alnsque mi mme letioisis (imito cl auct), sed nt in affinibus eiectis adpiessis Glans abortions, m spccimme inclusa (v s)

p, *pandurata,* pctiobs longionbus, lunbis oljovato-ablongis — Eodem loco — Q panduuli Humb et Bonpl ' 1 c p 28 t 77 Kunthl c p 1) H spccimmibus duolms luthcntlcis Mus pai folft lougitudinr, consistent^, iKivatuiK ct pul)esc(iiliâ Q obtusitdi, 1J2 poll ldU, obtusi \cl subi cuti, calhs paulo magis d stinctis, petiolum ^elslls i^jpeidum lbiuplo in gustata (ncc von pjndui Lti), pctiobs in ood I imo ^9 bn *l()ii[n]ui pc duncuh sch]iiipollio , cupuU (pufocti) hemispliiciica, oic constiiLtd. 4 lin longa, 7 lata, squamib ut in a glande exseita (v s)

Y, *Hartwegi,* folus e basi cordata vel ;anus acutt obovatis vel obovato oblongis ininifeste undulalo dentatis vel cienatis cicnis nunc cdllosc niucionulat s, squamib ctipuldc doiso vit convexis vel inflatis >ft^MBxico occid veisus Anginguio (Hditw • 43> in h Boiss ct Well), in Mexico (I[J]i\oni ilnd Bciland 2131 sine fl noc fi), in montc Gucbihque1[Bei land i 1147 in h D(ct Webb), ad (eno del Pin il (Socm ' J4V7) *Q* ambigua Humb et Bonpl » *])l* equin 2 p il t 9J (non Midi), fi I smcimiiHs mtbent unici pcssimi sMo n ncc *h* in h Mus pn 0 BUJI pldiidi m i Swoc t (x Steud nom Q H u twogi Benin 'pi Hutw^p-fiO 0 iiudinoivisLiebm in Seem • bot Hciald p 33i ct in Lgcsl p 24 {c spccimme b Seem sine fl nee fi scd loins snudl) IVtioli 3 [r]i bn lonffi Limbi li-5 poll longi, 1 3 poll lati, cienis magis qudm in a distinctis,

sed calla, letitulatio, pubps simillima Cupula nunc imppif dppresso-globosa, glandc in tenpus; nunc ppi fptta 4 (> lm louga, 6-0 I lata, squamis mfpnonbus ONato-tnangulaiibusobtusis, alns gradatim magis lanccolatiset atutis ore subconstntta, glande obovoidpA \P1 subglobosa, semiexserti VPI broMore IncupulisaboiUemibus squamae sanpius dorso in tafjerculum aucts Forma vulgatior ^idetur quam aet p, saltern ex hei barns mehus cognita. (v s)

JO 0 POLYMonpiiA (fham.et Scbl in I inn 1830 p 78), ramis foliisque junio nbus utimqm touiPiito flotcoso stellato fuho taduto ^pstltls, folns longius Lille pptiolatis P basi subtoidatA \P1 obtusA \P1 indjquabtpr subatutA elbptitis vel ovato- \P1 obo\ato-plbpliLj^ obtusis mtegns \el ramis a medio undulato dpntatis adultis supia glabns subtus crebre reticulatis tarde glabratis, amentis tomentdHis ebrattpatis* pengonio 5-fido extus piloso, anthcns mutitis, ppdun cubs pptiolo multo brpvioribus \el subccqualibus nunc sublongionbus 1 2 carpis, cupulA be misphaentA tiiiPico-vplutinA squamis adprpssis infer mednsque o\atis oblusis (I CM so tonvpxis supiemis lanceolatis minonbus tipbus, glandp plus minus exscrtA obtusA *Jj* In Moxico (Pav ' h Boiss), in piov Oaxaca ct ad Mnador (Liobni ' b (oppiih), ad H.itiPiid.l dp li Laguna (Scbipde Pt Dpppp), propp /utuasan et Miradoi (dal » 92), Bolanos (Haitw ' 420 in h Boiss Pt Wpbb), in Sifna Madip Me AIM ottid (Seem ' 1970) — Plantb bolt l)i n.it {) 40 O pptiolnis Hrnth pi Haitw p Vi fquani SPIIUS p)4g ad polyinorpb.ini iclcin 0 \anans Mai tens' Pt G il in Bull Biux 10 n] 0 tulKTtul.it i I lehm in Seem • I>ot Her p 3.J2 et in hgesl p 2,1 Dcscnpsi spccimma h (oppnb us Haitw simillima scd perloctiora pt cum descnptionc in 1111117A tontoidantia Petioli in pod ramo 3 0, 6-10, 7 12 lm longi giatiles Iimbi 2 r> poll longi, 1) poll lati, nprvis quatemams subtus distmttis, marguip tartilagmeo, dcntibus ubi idsunt ol)tusis latis npia callosis, subtus ptiam tomonto dclapso \Pstipii pubis sub lpnte minima' pianbpntps Niiilum spptimpn (ptifim ruaitio HOIPIIS) folium pprsistpns ostcndit StmiildP •uigustp bncaips, fugacps, i-4 lm longae Anionta bi^)Uicana, graciba, hracIPIS lorsan dplapsis? I obi peiiKonii ovato-acuti f $amina pauca, parum pxsprta PpduiKiili fiuctifeii in P(»d ramo l-(» lm longi, in duobus ramis simul IPLIIS h ropcnh (i pro\ Oax ita) H-12 lm longi Cupula't-d lm longa, ^ 7 lm hta, squamis nipdiisdoiso plus minus mflatis Glans nunc vixpxspita, nunc dimidio, nunc ultia Confer ad 0 germanam in sp(dub (v s)

40 0 OMISSA, lamis junionbus \e1utmis , folns obo\atis obtusis basi subtordatis tonaceis a mpdio ciuitpr undulato-(rpnatis p(pxtiemitatp nervoium miiLionatis,]tjnioiihus , adultis supra glabns subtus |»ilis bicvissimis stellatis densis intano tomentosis nervis prajtipuis glabiatis, flonbus , ppduntulis fiuttiffns pptiolo sublongionlnis, cumilA hpmispb.pncA \cl tuibmatA pallide \c liitmA s |ii unis ad|»fpssis o\atis dbitusis maigiiK attpnuatis, glaudp suhf \wit1 In MPVICI SIPII i Madrp (Seem » n J9(J9 in b suo sine mini m b (o|)cnh abb Hool^) Kami vetustioresglabrati, in sppcimmibus.iphylli spd longp post frondpscpntiam Iptti Folia in lamis anni apj)roMmata, *>nl) nn turationp fiuttus wwatpa, pptiolo 2 H lin longo, vclutmo, limbo 1J-2} poll longo, \i)*16* \\n% Wto, margmP ip\oluto, npr\is latprabbus utnnque 0 7, tprtiains sulvTus tompnto j>pisistpntp tpctis, mucronibus \ 7 lm longis Ptdun- jCUL \ ri lm longi, dicarpi (anspmpei') Cupula *A* 4 lm longa, 4-6 bn lata, TWnJinus margme glabratis Omissa m Botany of Heiald pt a Liebm (v s)

'il V 0 IAXA (I icbm 1 in Bonpl 3 p 38, et in spem bot Her p 333, Egesl p 2 0,'ftimulis tomento na\psceuté dense \estitis, folns obo\atis apite rotundatis nAM attpnuatis plus minus coidatis repandis nenis sdipp tallo brevi ternnnHtis supra stellato pilosis sublus iptitulatis Pt dpnsius fl.uo tomentoiis, itpngonio mast piloso, antbpns apicp pilosis, ppduntuhs fiiictifpns folio brevionbus, tupulA (yatbifornu squ.imis imbiiLatis o\atis pt $l_d t_0$ lanceohtis oblusis adprpssp pubpstpntibiis, gl mdp semiexseitA — In MPMCI Sierra Madip [illegible] ', 1967 in h Hook et inde in h (openh ') Q callosa Martens! herb (non Benth) Folia 3 4 poll longa, 1 ½-2 poll. lata, petiolo 3 5 lin longo, subcoriacea Stipula lineares, extus adpresse pilosæ Amenta pollicaria Pedunculi fructiferi 1 J-J poll longi, dense cano-flavescenti-tomentosi Cupula 3 lin

alta, 6 hn. lata Glans 5-6 lin longa Flores masc eraescnptione cit Liebnidiini Specimen 1067 herb Seem pedunudos annuos, 1-2 poll longos jujebet, fructum unum peifectum ahosque imperfectos gerentes (upu|«i ib»i hcmisphc£iicd,4 lm longa, :> lin lata, &quamis mf o\atis (v s)

42 Q iifTA (Liebm ' Egcsl p. 21), ramis junionljus fulvo \elutmis, folns e basi cordatA oblongis dcutis\e obtusis conaceis grosse iincjul ito ciendtis crenis mod 10 callosis, supra sparsnn et bre\itei imtio stelUto puberulis dem gldbris, suhtus pilis stellatis tomentosis, flonbus , pcdunculis (olio diruidio hievionbus fructuspducosgeientibus, cupulA hemisphicrico patellifonni squ.mus •idpiessis ovatis obtusis subcon\c\is cineiCb \elutim^ basin glandis o\oidcd*; aniplectente ,5 In Mexico bor occid <id UttCiando (Hartw ' 410) et Sieira Madre (Seem I) — Seem in Bonpl 3p J8, el in bot Heiald p *'Ml* Q obtu sata \«u Benth |)1 Hanw smo desu (non Humb et Bonpl) 0 k»Ha e\ Month 1 c p J48 Kami citoglabiati, \alidi Folia J poll lon^.i poll l.ita, petmlo I *l*\ lin longo, ncrvis sulttus < ii.im toitiinis cminc utibus leticul.itis, l'ulun cull pubesuntos, apicc \el medio fmctileii (upul^ 2 lm longa, (> lin latj dl.iris r> lm long.i, obtus^um mucione cunuuunf Descnpsi specimen optiniuni Hartw in h Boiss bjx'cimen n 1971, lolia inteRra vel])auLitrenata Pi f hot, demum subtusj^l.ilnescentia, sed ceite ejusd speciei, flonbus finetu que caiet (v s)

4J 0 BENTHAMI, ram IS tomento fla\o pubWcntibus, folus longmscule petio Utis e b.isi .icntA \el subauilA ovato \el obo\ato \el sulihinceoldto-oblungis acute acuminatis intcgiis undul,itis[v] (m SICLO) membraiuteis, junionbus floecoso tomentosis, .idultis SHJHA ^labiatis subtus tid neivum centi.dem et in axillis iiprxoiuin tomento li.no stell.ito dm Mibescentfl Ms, flonbus , fructibus sessibbus«\cl J^CMUI poduncul itis cupulA hpimsijhd i icA Iiilvu tomentos.1 S(ju.unis inns o\atis .iliis o\<tto lrincrol.itis adpiessis ontusis ^l.uide dppressoglobosiV vix exseilà Lomentosa ^ In Mexico pi ope S.mU Mam (Hutw 1 P>(>< in h Boiss) Q unduULa Uenth pi Haitw i> HI (non Ton) Kami leitioanno solum glabidti V'olidJfpoll long.i, pollicrm laU,fetiolo /»-0 lin longo tomen toso, neiMs sccunddras sijbtus eminentibus teiturns minimis, paiencliymate non pelliiLido nee conaceo Fiuttus mint |»odunculo I lm longo msciti (upula 6-7 lm longa, 9 10 lin l£tat viuimis inn^iuc membianateis Valdr affinisQ llapuxabuensi sedfiuUus diiplom.ijoi,gl«inssubglobovLnee o\oidc.i folia ncrvis sccunddrns magis prommentibus (v s)

44 Q TLAPI XAHUENSIS, ram is cito glabiatis, fob is- longmscule petiolatis e basi obtusà \cl ran us subimfa ovato-vll oblongo lanceolatis acuminatis mtegiis mcmbranaceis adultis supia glabris subtus gl.ibiosLCntibus fascicubs pilonim in axilhs nervorum dm acenatis, flonbus , pedumulis potiolo Lie\ionbus \el subnullis s<epius monocaipis, cupwlA hemisplu'i it A oic T?iiff onsti u H , s(]iiamis ovatis obtusis adpiessis doiso senceis iuargme membianaceis, glande semiexsertA %5 I" Mexico prope llapuxabua*Hdit\s ' 430) Q salicifoha Benth pi Hartw p ðó, non Nee Rami \alidi Petioli 0 7 An longi, glabiah Folia 3-4 poll longa, 10-1 r> lin lata, supia nitidn nems teitiaius subtus te nuitpi in ncco rctu ulata acumme s(enius n< utissmio fa4faculis piloium secns 'H'tviim centralem in axilhs dm sulttufl \idendis I'edumuli axilfates, 1-4 lm longi (upula 4 lm longa, r> lin l.iti, sqinmis ut m ifdn^ margine fuh is gl i bnusculis O\ula dborti\a (ex umca glande obs) sub medio, ncc \\ vm.mis (v s in h Boiss et Floient)

4). 0 f^RTESii (Liebm I Fgesl p 17), ra^Jfcito glabiatis, folus bieupetiolatis anguste lanceolatis utnnque acuminatis biisi exceptA iemottf*setaceo dentatis membranaceis supra glauns subtus in axilhs neryoium dm stellato-tomcntosis, flonbus , iructibus junionbus dxillanbus subsessilibus sohtani^ mine geniinis ellipsoideis, s(iuamis adpressis pubcscentibus ovatis obtusis margine glabrato lenuioiibus, glande *S* In Mexici piov Veia (ru/ et Puebla Kami secundo anno aphylli Folia 4 6 poll longa, 9 l> lm lata, anstito acummata, in petiolum 2 4 1m longum sensim basi angustata, j>u |(HIMIIIIIII \el ultra usque ad apuom nregulantei setaceo-dentata, setis *l* \ I n I ' ls \eisiis apicem lunbi p^ulo flexis IIPIMH latei utrmqui 14-H» suliiu* pn»ini

nontibus, teiliaius^eUcuUiis mininns tiuaus* junioies in spcciminc :j lin Ion pi, intei foli.LappioximaUi.Linu Utenles, veri&iiniliter annui? (v s in li Conenh)

4fi 0 SARTonn (Liclmi I I # si p 10), rarais junionbiis ci#> plibratis, folus longe nctiolitip e lusi dcut\ \cl obtusa biC|u insequih oblongo vcl ianu* ovato-lanccolatii. acumindtis rmmbriiii£Ci* b ISJ excoptd Iemote ct rcgulanter an st'ito (l(i)Utib supi i glabns subius gldbn scentibub tomento stellan in axillis nuvoium did jieinstento, flonbus , pcdunculis fiuctiluis potiolo lneuonbus vcl nullis 1 2-carpis, cupuld hcmispbajiico-UiibmUa S<IUUIIIS> ditto adpiossis ful\o pulxseentibus »\aiis obtusis gldiidc OVOHIPO globusa semi fxsula 5 I'[1] M< \ici pun *V$ia.* (in/, piopc Totulld ot Alpatlahua (alt 4 7000 p) Hum oiniiLs in spocimimbus stoundo anno folus orbati, Iructibus tune in uillis folionini inin, sod foisdn loin junioi d etvetustd siniul pro ternpore ad sun t Pctioli 0 I Klin lonfli, junioies pubescentcs Limbi 3"> poll IOIIKI, 12 20 JIN KILJ , mstis \ersus lpioum /lovis (pciiphcna subintegr^ \o\ unduhlocmnl.i cjUnmiUte neivoium exeuntibus 1-2 lui longis l[J]tduncub (IK 1 1 I IOIIKI FmoLus pdi^^(npuld 3 4 lui lon^a^ 5 lni lita, sinnmis nui guir dttcnuatis *mloi* ills Uuis in cod iduio pliffroinus exsoiu An var den tiUO Tldpuxibuciibis, ut ulsunL in Q aculifoba (bimillinu species, fructu bicnni'), ii msiLus sivo inixtuid folioruin integioiuni el noji intesrorum nondiun cogruli (\ 7 special Q Sarto/u ot uaico U riapuxabueusis (v s comm db h reg Copenh)

47 0 bAMcitoiiA *(boo* in* Anal cionc nat 3 p 26J sive in Koen et Sims Ann ofbot *X* p 101, non lienth), i din is junionbus Migitis tenuitei vclulwus cito [illegible] loins bK'viSiiinc petiolitis o bisi obtiibd \el suba^uU oblongo Unceolali> fieuli^siiiKi d(umnidLis intogt jnmis nKmbianiccis sppurgladbialis sublus Vills stellatis cito edducis m axillis nei\oiutu dm acci^atis tomcnto^is, 11 on Kus , Inictibus sjjpe gomiiiib subsessibbut>7 tupuM bcmisplidiucA uneieopubesconU, squ mi s idpiossis o\dtis obtusis, gldiide sub^lobosl semi oxseitA *6* Jn Mexico occid]])iope^pjpulLu tollx((e\ spodfmiup Noaei in b Matut) [illegible] 1 2 lln lohgo,l 4 *i*^ 4pol ll lloiipp3, 9 11 lm lati, nervis l(ilii!iis in sicco sijju i reticulilis stibLus MX peispicuis, to men to in IX 111 is i)or\oium sccu«> ncivujn cpuliahm subtu^copioso dole iso, fisciculis in puencbynnte tune rans mini in is i[J]cdiinculus fiuUiiei *i* lm longus, ex axilla foln in runo oxiiomo Inn (u circus L\ ligin 1 alunus spcciminis Nedei in 1) Cdv .) cl Lingo (li 1 (I *nu* < tun hum in e commun cupula 4 lm lon^a, r> lm 1 ita Folia ibi gldbutd Diffcrt a Q acutifoliae var. intetrnloliâ Iructu annuo. (v s)

48 0 ShEUAMfi (Liebm ! in Scorn Bonpl 3 p 52, *hot* Herald p 251 ot in hgesl]r")0), lamis line mm glibralis, folus brevipctiolatis c bdsi obtusa vcl dcut\ ovito vcl ubloiiKO-lanccoldlis dculissime acuminatib ^cl ranus oblusis inlegenimis niemln macei^suprj glabrdtis Mibtus \>ili» strllatis caducis ju\la neiviim centid)4in dm acervatis. tomentosib, ilonbus , podunculis fiuctifens •ixillinbus pdinlo longionbus 2 J-carpis cupul\ hemispbajnca cmereo pubescenU sjui.iiii^ ddprcssis ovitis obtusis, gldiidc siiltglobosA vix exsortd *i)* In ArndicA media, id monlcm (Jiniqui, VejdKuit* (seem ' 1228) Pib limoium st(lldti, caduci PoUoli 1 \ ihn longi Limb) 2 j-4 poll longi, 9-18 lui lali, iQaigiiK cdilihgnlco, nei\is extremis reticulitis in sicco ulniuiuo peispicuis, fjfccuulis piloiiiii)sum L in lolio idulto iaid, bul)tus in dxilbs *mi*voiumcopiosis Inlvis Wiltinuili '\ 1 > Iiii I(wgi\glabif stpntos, oieo^i, ngidi, nunc ulLia fiULius inXpnoios elon^Ui lonuteBp Cupul 1*1* 4 lm loiif?a,v[r]» lm latt,squdinis mdigineTfldbidlis tPiiuionbus Glans impeifecU videtur Differt a *Q* sabcioliA longiiudnu' pqdunculoi urn An van etas? scd ti an sit us non vidi (v s cjrnm a cl Seem)'

49 0 (/HiisBiiiGiii (Mdrtuis! ct (.dl in Hull Brux 10, n 3, «p n. 10), ramis jiijjjoubiis pi LioliMjnc tomento UOOCOIIO caduco iuho vestitis, folus petiolitis (hdsi obtusl \i 1 i mub subdeutaovato hinceoldtis dtulc vel acutissimedcunn [illegible] lucinbidiidcus IIIUKHS supi i f?ldbrdtis ad coslun dm velutinis subtus [illegible] fdis iic IMIIU cc>nli ilrm pdis bi(\jbns slf Ilitis dm velutinis, ilo-

11 bus , pedunculis fiuttileiis petiolo subaequSRbus, cupula c basi acutiusculâ late cjdtliilorrai squamis dupressis o\atisobWsis cmerco-pubesccMitibub, glandc exsertâ j In Mexico set-us mont< m On/ibae alt 7-8000 p (b M.ntens' n 128), ot pi ope lotutld (Licbm *itmi* b Coponh) Pctiuh 3-4 lin longi Liuibi 3-3 poll longi, 9-11 lin lali, nenib twtianib supid in sioco reticulatib subtus m perspicuis Pili ner\o contrdb subtus in folio adiilto perbistentes, undcdiffat d Q sabcifohA Podunwilus unub adebt tomentosus, 6 lin longus, fiuctum guens, dlteium cniitUns JK dice Hum giacilem glibnus-Lulnm 8 lin longum apice liuctum uiiiini pcifectiim ct umini aboitivum \)*TJih(* ns (upuli J lin longa, 5*lyi ldti Glaus dcest Hrc c speumme uujco li Martens, sed tiid optima smiillmii in fi Copcnb M<1I unde lolia anmia, pctioli 3-6 lin longi, limbi 2-4 pull loiuAJj-18 lm lati, podunculi .{-5 bn loogi 1-2-caipi, siiiipliccs vol ad)unot(j MJ0D11O giacili glibiiiisculo I-J lin. longo elongLti, cii|)uli 3P^n lun^i, rj-(j-fi11 IJLLL, pateu^>sinii IKC bisi rotundati (quod ib alhml^> divciiuni), (?Uus olli|)soi(feaj Naldc exserta, G lm longa Diffmf •* *Q* saliuloha longiludniti petioli tt pcdunculi, lunnA cupuldJ (v. s>.)

50 Q HARBINERVIS (Doiitk'pl Hutw p 5G), ramis jltnioiibus stollato-pubpsccntibus dense foliosib,Wns bic\ipetiohtis o basi cuneatA *P*\ obtus^ O!H>\ Ito-obloji^is oblthigisvc dcutis pdssnn a Jdfedio spinoso-dontali^ vel subintrgn^ rigubs, jimionlms , adullis supi *i* glabns subtus glabiatis in angulis nmnruin plus minus tomeniosis, flonbus , fiuctibub subscssililms solit.i;Ms i^1-minisvc, < uj)ula bunisplidincl suljscucca sjuamis adpicsMb liiltj^jbus o\atis alus o\ lto-lantoohtis ol^usis, gl mde OM>id(M)-acuU scmfl^il^ *5* In Mexico ad Keil del Monte (Hattw ' 427. Kami lusoji, socundo. anno glabu el apby^ Pelioli 1-3 lin lougi, pubescent* b Limbi H-3f poll, longi, 7-13 lin^lati, cliaiticei, dentibus ulunque 0-3 o lobo ovato vul P maigino undulatâ inucionilounibuij' Pe^uncub in layiulis mm , pntifllo biovionbus vcl leie nulb Cupula 3-4 lm longi et liti, squinns \alde adpiesbis U Benthdin (il) p 348) 0 launnnu es^e t>uspioalui, sed ex special, dutbeuticis cerje diCfeil. (s. s. in U. bo|M|}

51 0 GLAUCOIDLS (Marions et (J il in Bull Hiuv 10 n 3 s». 2), runulis angulatis ulo glibialis, lulus brM^nic peliolatib e basi coifotâ olhplicis (»litusis mcinbi Liiaceis inlcgiib, juTIAfl)us jnlis btellatfc bupra i ins subtus dcyisis flotcosis tomcntobis, adultis doinum glabpiiimns, amenlib bioMlms 'pilosis,]>eduntulib Join Jolio brcvioribus, cupulis ()umoi) globosib pai\is Joiin^inco-toiuontosib s([uaims admessis ovalis obtusis *j* lu Mcxiu mont. Misteti AltietSieni dOivacL, all 7-9000 pel (dU 103K .ad Coiios S Felipe (Liebin ') Q elbptioa Liebm in b li Copcnli lol. nJ3-10G Kami sccundo anno teieteb, non vilidi^Poha in launs annf^^-^ ppll loi£9, 9-12 lm lata, potiolo limam long^uienvbymite pelluciolL noivis tMpius et eti mi quateiniuis sul)tus diilmolis, Ujto^nto subtuf rulo c id6co. Pt dimciiiL^jn in axilhs lolioium anui, 0-12jbn flhgi. DebcriR^)Lumen M*l< nsii,Tfcbmaniiiidni simlluui loliib 1-3 poll^Rngib, 11. iqjjfdekpbis. JboJid ibi nitoi— dum undAdtd (v s).

Sempervu[illegible]es.

A *Amencanx* (uler«equo intertiop[illegible]les)

52 P HjMBMJDTn (Bonpl 'in H ct B pl^equm 2 i*#55 t 130), ramib jumopbus R5memo floccoso cubsime oibatm^fobis pphoUtis dbbmgo \ed *ohov,iU)*~ wnu oUtteblsijunbionbluslon*ge*dn^ustdtisddeindc bubtdrutis aul obtusis apn dcuuuiiaiu, ve| ,,1JJlls acutib nittgils bipi i (dtiamjuniombus))«kjbn ^lubtus luiiionhub floLcoso-toniontosis dbdt^» nei\o piicsuitim m dxillis ncnoium lalejaliumm «iu tomcntoMs, amentis Kiiioi|Ri<> spaisifloub nilosis, brAlois nullis poiigoniu sesbili campmulaU) obiuse 4-0-lobo ningim ml us piloso, antheiiso-7 muticis, cupulA subscssifi laic hcmispbancâ pili\adpiessis iul*»-sencca, squamis idpipssis obtusis ON ills tt sup o\ ito-1 mccolatis, gl mill semiexsortA ovoidcA /> In ditione Bogolensi intei vicum Ascuibiottis K li Vega de S Loren/o (\\ m I« . ,v .» (\\ i« j *w*\ m h limss Tnnnd'), ^ m u

branatae (Goudot!) Antioquia (Tnana[1]). ftovella to men to floccoso stellatofuKo undique vestiti in pagfni sup foln pnmo deterso demde m nmis Foln perennn, petiolo [r])-7 lm longo, demum gldbri limbo juniore basi longt diigustalo apitt subulato, sfeundfrfenno bisi subituto 5-G poll longo, 1-J poll lato subcbartaceo neivis hkidlibus utnnqiie 14-1 >, tertiains panis retitulatis Stipuljj hneares cdduro., 4 lm longL, doiso senceaL Amenta (xlii-mllaiid, sobtmi 2 poll longi f upula 6 lm longi, 10-12 In liti, sijiiiiiiis mugme felibiiustulih atttmatis (v s m h Mus pai , D C , lm nd, Uoiss)

"≥3 0 CITRIFOLIA (I lebm ' Igesl p"20) iamis iwellis et loins junionbus utim que spusim fistitulito lulosj^CU" glibntis folns pttiolatis oblongis vil clbptitis juniiiiibis bisi iCutfflBce BubiildliSj^ddullis basij obtusis \tl subi cutis ipjcc lomimitis aciitfs SCMObtusis mlt(;r^j|dmLi]tis (junionbus)donsi-flonbus i ich^Bttlhto pilosl, bracttis jiullis THrigonio sessili cimpanuhto, PYtns glibio oie [r])-lobo barbito, mthons puicis muticis liuctu ^ In (osli-Ki(j monle igm\onio li LSII, alt 9000 p ((1 isUd^i i) AnaQ Hum boldtn 4I\CISL; Pluia^n ddaltus ignoi uitm Pulies in folns novcllis piapsentis i nioi non floccosi sod sp-usi in (olns idullis ptaimiqiH nullL (IKKI nisi in loins 2-J(X plunbiis in ixiJlis ndvoniin subtus Mito d ypbm)Pctioli] 4 lm lon^i Linilii 2 4 pull lon^i 9 18lm 1 iti se(undo anno ngidi sum i in Mdi IHMIS Icitiuiis vix distinttis Stipulai lirunes, caductt 4 lm longi , doij§ j)ilosul *i* Amenta junior i 7 8 lm longa I lores misc ^ lm Jon^i Ldw)ciigonii bic\cs, ovati, obtusi (v s tornm a cl (Pist)

54 P^COSTARICBNSIS (Iitliin Igtsl p ?6), nmis VLIHIIS cito glabntis folns biL^tci jxtioKiis c bisi cordite obtusi \el obtusiusgull o^>\ His (Ilij>iicis\e obtusis COIILUIS mtttfiis, julis suj I i mis cl tilo nclipsW, sublus titbits stcllatis (uKis (lotto&is rulutis flonbus fruttibus solitirns \tl gemmis scssiiubus MI] < ilmitulo loliobitMOK nibidt nlibus tuj>ul\litniispb i *nc*\ squa mis idpitssis uumbi uidu ispuln stentibiis d< mum gl ibi ids tl mtidis infeno-nbusoN ids obtusis sup 1 mfleul ids olitusmsuilis ^lui lto\<i le\ \(lsul)Klobos\ (limidio VQLJitd. (xsciti [r]) In Cost u it i ^t (tumh.f IJK ntibus (Wais/ ' «H) n i d i t o H H ilt 8 10000 (> (r[siedi[U ini dpicc Imttilui toln2-J poll J(iigi M j poll I ill, pdiolo 1 *i* imjOfc" idmodum tointoi maigmt sulrtdnva, passim undulua^, supi i nituli IKIMS tciliuns subtus lnium dislinctis, tomento stcundo mno inn nisi JIIOJ i ntivum (entiakm vidcndo AmL/iti 1 \ poll longi i ltbi | issirn jiilosl brdcleis m ito lmunhtis flore jquilibus cxtus pilosis pr n^onio 5 ndo milieus ghbris mulir is Peduntuli in rod J imo 1 12 lm *\m\ii* (upuh)-7 lm longi 6 9 lm (inio 12 lin ex Liebm) htn (lins 7 *\l* lm longa, umbonc pino fotvkdf nes (in s ceo) ru-gosae OMifaab itivi *(LX* unica feldnde d W irsi.^ coll) sub mcdio nee ipsi lidsi scnimi^ /\ j>.)

55*mT* LiNDFitr iimis |imiQubiis prte pJBpscentibus folns scssilibus vtlbrevis-simt j)Ptiolitis dlijtiti^m siiblincpoiwa basi obtusis \el subcordatis apite itutis vtl itutissimis integns tornteis supi i uto gldbrdtis ^ubtft secus ner \urn tt in* LXIIIIS iiri\oium diusl^lhio tomontosis imenlis folio Lie\ioiibiis pilosis, ilonbusscssilibus fhicWlcssih solitino cupull licinus| bojico tuibinitl cineno tominiosa sffl»mis idpitssis oviiis ot SIIIC nonbiis nil lduc(olatis obtusis, KI LIKIL ^ ^ S O \ T (iiinadipproyincia lun]i (linden'1W? n *\u[t* m h Webb el BOJM»S) Hint tl Kotfcby 0 llimiboldtn \ocnit in h Boiss , std loliL sessm d]iiibe(ciipulr mmuiadpitssi Petiokk nullus vel raio lineun longus I imbus *7*i*]>oll longus 0 1G lm latus Stinuli? linei^s, doiso idpiesse sencej [r]j 6 lm longi 1 loies in lamuloNptcimmis fruMcu li Webb (mint Hoitnt)stitu muliotn observandi in ruin grdcili sp nsun pilosl insciti M ssilcsjjel subssssilts peiigoniocimpiiiiilitosieniisD [r]) lobo, cxtus piloso, mtheiiHiPvitPi exseilis, glibns submutionatis \el rautitis I IUCUIS glmd(mchis^ mipeifpcl& Ix iiiseilionc matuutio annui (upulaG lm longi, 8 liti (\ s)

56 0 fouMRNgis (Humb et Bonpl » pi eqmn 2p *lit* t 129), iamis jumo-nlius glamis loins bitupeliolatis dliptitis bisi m^ustioie obtusis apice

acutis integris supra junionbus iemote stellato-pikus cito glabiatis subtus tarde seeds neiwinarcentialcra pi«ebeitiin in axilhfllthoruni Literal urn diu flocLOso-tompiiiosis. cimcntis clongatis ^u^libus spai^flons, iachi sparsim pilosa bracteis nuljs, flonbus pediicllo^HLih glabro sustensis, peii^mio campanuhto obtuse ot inogul.iiiter 4 "S-IODO intus piloso, anthens muticis, fructu r) In Novae GianaUr piov Pamplom, alt 0000 p (Funck et Schhml n UJo, li DC)), et vensimilitoi prop? Guidas (Goudot' h Boiss.) el Salto (id h Webb") et monte Qmiidu (Humb (t t Bonpl). Specimen Bonpl in h Mils pai flonbuPot fiuctu caiet, e\ specunine Funck et Schlim bio dcscupto, novella non floccosa Stipulre lmeans, CKIUUP G lin longaj, evtus adpicssc scnce<p Pelioh 2- Mm longi lunbi 4- > poll longi 18-20 ha lati, consistenlia, tbmento, neivis ommua Q Uumboldtn Ainenti bipollicana Pedicelh J-l lin lon^i Folia i^necimiiiibus non Hoi if supia utatis smullima, acummata (v s)

57 Q TOMENTOSA (Willd sj) 4 p 4tt), nniis junionbus flavo-tomentosis, folns brevissime])ctiolalis ^)isi obtusA vel SUJDLOHIitl*4)lon^o clbplicis ^ubacutib crcnato-dentatis cienis nun#dhUos(niiicronul itiSJfcnau is supia glabi ilis, subtus dense fulvo-lanuginosis loliiuldlis, peduiiLiibs fniLtifens lolio bic\io-iilms fiuttibus pauLis, tupulii bemispbdiiiLfl fulvo-tomcntosA s<juanus> ad-pussis ml ovatis obtusis sup lanccolatre^ ohliisuisculis — A Mexico ad Acapulco (Nee; Q puluncularis Nee in Anal cienc nat 3 |) 270 Q pedunculati Neel in b 'Unbaud, mine Jf((non I uiopa or). Q c illosa Benth pi Hiirtw p 61b p 01 (fide Liebm ibid p V>\) Lmi lamoiuiajDX N(e nibi-cumIt, in boib fenuginc Ain paginA mf folioiumtTuKa vej ^^ncana. I olia e\ Nee "> poll longa, vi\ ^poll laUi, ex speuim llut> et h* Wmr\l 3-4 poll IUIIKI, 1-1-^ polLldU petiolo 1-2 1m , pilis sulitus stcllatis longis puenchy-m.iU IDUM pilos^laLio pilhdo punctulito l^diujculi 1-4 poll longi Cupula in spPLim a Net coiloUis h iiiatui im])eil(cta, gl indent (aboitivani») continens e\ nostio specimine \ea-i 4»lm lata, scjn LIIIIS cMus non tonvexib Nomen pnstmum pijBter \uiabiles pcduuculo* ^iterdum feie falsum (v s)

a, *communis,* aiboVfolns plcmmque obovatis et obtusis J I" Mexico boi occid])iopo GonKin (Haitw ' %4 in h Boiss "Webb), prope Mnadoi et (onsoquitla (Liebm ' orb Coijenii), m Guatimala (Waiscew 17, 18, in b Boiss !) 0 lomentosa BenflP m pi Haitwfca. %4 Folia 3- > poll long t, 1-2 j poll laid, petiolo \-\ lin longo, la nil subtus minutA parenchymile glauco, e\ specimTnibus b Boiss et Mus pai peiennia, bed fiequentei in hoihmis folia anm solum adsuut Lupula 4 lm^ longa, 6 8 lin lata Glaus cllipsoidca, cupula duplo longioi ut in seq var. (v s)

p *bullata,* iirboi, s(juainiscupulde extus basi convex is plus minus mflatis ^ In Guatiinila (Waizs ' l> in h Boibs), m Mexico or ad Mnadoits (LIIKILD ' i0 ibid ^ olia Sd3piuaMbovata obtuse, ut in priced var (v s)

Y, *diversifoha,* fruiR 10-14 ped altus, fohis oblongis vel ellipticis 5 In Mexico nitei pagos Chilma et banta Rosa 0 diveisiloha Nee' m Anal cienc nat 3 p 270 et m Kan et Sims arm oT bot 2 p 10") Ex specimine Neaei folia 1-3 poll • longa, b-12 lm "laffk petiolo 2 lm longo, in eodem ramo cieimto-dentata \el subintc gia Prftlmculus bipolhc Fiuctus imperfectus vel junioi 4 lin^ solum latus Vix vanetas (v s a Mus MatrTt comm)

δ, ***abbrctiata,*** **drb<jr, pedunculis fiuctiferis ibbieviatis petiolo puumlongionbus $ In Guatimala \el Costafica (Waizs f 43 in h Boiss) Folia obo\dto-oblonga Peduncuh 5-6 lm longi, petiolo 2 lm longo duplo lon-Rioics Cupula valde pubescens, cinerea potius quain fulva, ut mterdum (aetate?) in alns var (v s)**

58 0 RPTIGULATA (Humb et Bonpl t pi sequin" 2 p 40 t 86),, iamis jumonbus lUNo-iomentosis, folus bievipetiolatis vejteubscsbilibus basi subcordatft vej cordan obovatis anice rotundatk dcmuin coSaceis ambitu mucionatis vel uenato-denticulatis vel subiiito^i if5upi i tfl ibiescentibus subtus fidyo-toinentosis reticulatis, flonbus , pedunculis fiuclilcns folio bievionbu»el ae<iuahbus mine etiam lungionbus, cupula hemisphaenc.1 pubescente, sqiRiniis aictc

ri dcmum laxiuscubj^limrssis uvalis vul nvaiu-lanccolatis oblusts vel auutis, glande u'\. *4}Uti* Motiei U:ni| Gratis (Pavmi! *W* Boiss.}, id Gerru de las Nabu IJJIS (H. et B. l), inter tiujipftuatn ul Santa Kysa tid.I), ad TUpuxahua (Jjfcirtw.! 429), Yavesia (I.mDiiJM^ Cnjicnli. nl Ii. lK.pbt imtnt. onzaba (Q. spTC.'ia Liebm.l h. OIWHII.), m Cucsla do S. Juan del Estado (id.t n. herb. 153). 6. spicata Hurab. ul Bonpl.! pi. sequin, 2 p. 46 l. til), Berith. Sl. II.nLw. n. 429 (nun Smith). Q. decipiens Martens el Gall, in Bull. Snn . ID, n. :i, 'ial. in b. Delesa.! *n.* 131. Bami cito glabrati: Folia ex Id-s | u |.^ 5 f S n iiua vdeniur. Bed ax n. 108 01V21XJ b. Co|penh, mense sept. lectis, certe persistentia, *I'll* poll. longa, 1J-3 poll lata, petioJo 1-4 lin. longo, mncrurnltus alinijift n poriphaeriJ surgentilftis semili rieam longis vel (in eud. i.iiii'ij i! ittmjeeiejriiaiaWia^ undulato-dentati, flfeciculis taducis pilorriim subtus minus <{<iiitu Tii#b-' **tomentjM^approximate**, pareoclijrfflate inter eos visiliiLi nee obiecto m i" ii'm-rii'isafffciluiictili varie elongatt, |«u-bescentes, di-l>"lyi:;ui. Ctipnla 2-4 iin. long", 4-7 lin. lata. *Q.* reticiiiata *tb-<<>{.* in ii. Mew.]«ar. scil *"\ LCOM* eadeni \nlctur. *Jin* mixta in herb, cum 0, Bpicati? I-inaMArim.'irns riistinpiifii^lffi^ uni^eiicTilata) fuliis subcordatis, peduMiilis folio irm limffioi-ibns, *[tla»is rnaturis *ra.ro* taxis; altera (spicai) fulft cordatis-,, jiedmnicuis sa I rilms Gt nime: frui• rimos 10-1H, i"rfectos vel imijarfr" «qiiamjs maturitate Inxis; sed torMsa media froqaenter fflsiini in herbai iis, præsertim n Ii. Copenh. (V. s.)

p, *Gngrfii.* roliia integris vel unlco mucrorie praeter terminalem subintegris tstil mlu annn) fcrrugineo-toBentosis. J In Mexico p'ropc Sail illo (Greggl 38• in ii]:• • :• m"iedmine persistentia, elliptica, 1-2 I poll. lonigri, mense angusto ?.' anin supraglabrescentia, subtua tomenmsa. (v. 9.) *j* *

69. U. PDLcnitT.A (Humb. et Bonpi. I pL o<juin. 2 p. 44 t. 88), ramts junforibus tenuiter i'elutinis,foliisoblo!tffi9 vr! oimvato-ol)longisia.si cordatis v<;l oblusis ;i incifTu el :i|iii uis sii]>r;i *v'*-uAubtus.minute incano-luiiiMiiiinis, Ibiribus.... [ii'dtinciilii Inir- :>"lirtjrbrcviunl)iin snlunequaliliu-i, fruijlibii s cnpnla (Hlamlg itnjxjff.?) fflobijso-ldi-binata, squamis adpres• -is uvalilni , -ilii nsis nauwiifc scRri'tsis etturt suhpulinsiKMililHi^, glande ovoideà vix exsertà. /, (ri MmRit inmr Gunnajuato el SanM Rosa. — Up'[1]'> in II. "i H ii'JV. (Jen."a |'. II. I I.'IS. Folia 1 ^-2-poIlicaria, ?,-9 lin. lata, petiolo 4-6 Jin. i b;Lsi undtilata, a me11 in ijgnlala, denlibiise lobo Lrevi ovatu vel en ip^.1 margine surgentibus acuminatis lineam lun^is. I'edimciiH Lennesj :i *i*\ lin. Iftngi, fraciua 1-2 gerentes. riijuilh junictr? vui abortions? 3-4 lm. longa Eataguq. yaldsp affifiis Q. Sideroxylri, sed petiuti longiores, folia margin? nun revoluta, demibua ilebilnn ilius, <•! inatiiralin certe aiiiiua^fv. .s. Jtih. Mus. |>ar.)

Go. 0. GLABHI 1 Q ith.l pi. Hartw. p. 5fi el :\'*x.* •xcl. syn. Neæi. nun Seem.), i.inns lulnsqiie snbliis jimiorib^s pilis stellatis sparsis longliisculis i-'aduc us (leuiiiiin iflabris, Foliis ,I ire v 1 n p t t olAflk e basi otitusa vel rsrius siili:irni.i oblongis vcllSifvaiu-DbJfiiigis saepius o ifti–i • revoht U el ni'iitin i;rcnaloWi*iilati*! vi-1 rarius undnlatu-g|hdMfci • iTms nl)-uisis ajiicf! caiiimiH nMvis tertiaiih sutchis relicuiaTis eFmPfTMbii)^, pachi ma.se, pilrjsa, nerigdhio cam|i;ninlaio OI*[1] lubatu exlus |iil t pancis inntii-j-., Ihictib lilbus vel suHessiJibu s uunc U=diniL:nlriiis s<i)jr;u-iis pfm iij lin hmi adpressis c nVatfl v;l i.liln se lanceolatis, glande ovo tleil SfMino.vsertti. _, In .Mi'\iri Mnnic Drizaba, alt. 8-flOfif) ped., CIiinanlla, CuesUi do Lacln»[ia et Cerra• Leon (Liehm.! in h. Copenh. Pol. *l^Q-jGh*), pi .i Jej. . . . nte (HartW. t 4'iS, sino II. nee IV. in h. liniss.). 0- spleild ens Nee, quacu,u junxit cl. Benth., dilTerl petiolo, it,ifin:l fthbis, tomento (ftiisq ramnrirm, etc, Species *n IUWTW.* in h. Hnisjjfccciincnil cum iis.Linluuarmi, SP<I Lifibmanniaiw per:-I-I:I fl c....jilfl;i (l^sc^Fsi. |.i in liRno lecun'di .inni tfeficiciitin; lam n c\ snecimino 428 h. Beifs. persistentiaI Petioli in *eod,* ranm '2-5 l i s p p i u s 3 lin. longi, Limbi 1^-3 poll. Iongi, ft-ifi |$_n$. i;,ti, mprji nervo iHlato-piloso glam-escente, pilis suhtua lonRidribus in jun. sparsis

caducisAgccus neivum dm \idpndis Stipulae angiiste fmeares, acuminata[1], pxtus pliosit[1], 3 -J lin longa[1], caducae Amentum \etustuni mouse iio\niib loins mullo biPMu^. Fiuctus in ramis amu .Lutumno matuiescenlcs i'eduntiili *-4 1 • n longi (m speuiniue minus certo Haitw in h Boiss 5 1m longi) (iipula J lm longa, 0 hn laid, iuarginc teimis Olans> 3-7 lin. longa (\ * in li Copcnb ct ab eo coinm)

p, *inteqrifolia* (Liebm ! h Copenh fol 165-167), foliis integiis \el pioi»p apicem undulato-dcntatis, cupulâ glabnusculâ In Monte Oiizaba, alt 8-10000 p (v b.)

01 0 GRISEA (Liebm LgesI p 13), lamis fulvo-tomontosis, folns ellipticis basi Stepius coidatis vel iaiius obtusis apico obtusis intogns A el spaisini mucronito-dentatis supia spareim subtus uebue stpllato-jniboscpiitibiw, flonbus „, ppdunculisfiuctifens petiolo longioiilmsrf-^-carpis, cnpulft hemisphtp iicf'cinerpo-tomcntosd, squamis adpicssis c nasi ovat.) subcomoxlf \tl con\e\A obtusp cuspidalis supipmis angustionhus liucoolalis, glandp pllipsmdeâ cnpuldin dimidio supeiantc *()* In No\o Mexico (Wnghtl 06'> in li DC ct Boiss , n 1866 coll 1851 -*M* m h Bois&) Rami spcundo anno pt spnus tomontosi Folia 15-18 lm l(JBgaJ*7-10 lm lata, pietiolo 1 J-3 lin longo, in sicco pallida, fnhoscentia, apice calloso-submucioinilata, nonis spcnndains iiliiiiqup 8-0,tciti.uns irticulatis, pubp])crBistontP Poduiuuli fiuctil s,ppms 3 lm longi, sod admodum vaiunites, in specimine lHOOWngbt m h Boiss mine nulli, nunc pollicaies' CupulaJ in spccim h. Boiss peifccUP 4-[r]> lm long.u, 8 lin Litas, in specim meo mullo nnnoref, seda lanio spgipgaldc Pt IIHJP jiaulo dubicC Glaus laJMs, glabiata DifliMl a Q oblongifobA TON pubc mamfpsiâ, liuclu •cvliinciilalo, a Q lopiiichfohis lationbus coidatis, tomonto juillulioic minus âflhso, LUJ>U1A majoie basi obtusioro. FiuctUb in apice lami, ideo <innuus, fine soptpmb maturus. Folia in ram is anni, foisau \cio subperennia? Aflinis Q Ilici (v. s)

G2 0 RFPANDA (Hutob et Bonpl 1 plant equin. 2 p 'Jl t 70, non Bpnth), i am is jiimonbus flavo-tomonto^is, folns biovipctiolatis obo\atis vel obiongis basi obtusis vel iaiius acutiflPapicP rnlundalis \ol subicutis calloso-muciomi latisvel muticis coilaceis maigmc revolulo undulalis vel lepnndo siiburnalis supia junionbus spaisini slpllnto-pulipscpntibiis pilis P\,UIPS((Millbus subtus douse stf Ualo-tompntosis fuhib, pengoiuo misc piloso latticamjjanul.ito 0-7-lobo, fiuctibus „ A **In editionibus Mexici inUi Rp«il dpi)W(Tnp pi Mm an Folia** per floiationcm sotnndo anno peisisUuiii «dcindp tiio (ulrnn.i I'diob 1-2 lin longi, tomentosi Limbi 9-24 liiipoiigi, [p]i-rj lm litji^ COIIMSLPIIIHI pmKiiiorGquain in Q lincropbjllâ et pide^cica su])i i glahuscftilia niUda, nenis inagis distinctis, mucioiic minoip vclimllo,* maigiup s«ppe lppandp dentato. Floiosmasc ebiacteati? AntliPitC 7-12, gldJ^iai, miiLiLdu. FHILIIN ut \UIPLIII vcie jam deest (v s in li Mus pai)

63 Q MICROPHYIIA (NeeL in Anil cienc nat. 3 p 264, SI\P in K(rn.«»ims Ann. of bowj p-JOO), Trutex vel fruticulus, lamis jumonbiis cmeieo^minon tosis, lolns^mivispl)i(\ipotiolahs obloiiiKis lilnnque soipius obtusis apicc birvissimo muuoiiatis mtpgiisinaiKUK[1] ipvolutocudukâi<?coiiac(is supo spaisini SIPILLU) pilosis pilis ppis^lcnlilnis subtus dpnsp slpllato-toniPiilosisWlvo-tinp '^[(IS Konil, HonlAp ^ iiiKtibus s(ssihbus vel pcdunculo bievi inscitis solitanis\pl s,cil ful^LPiuisphaiicili)ubpsiPiito squamis adpipssiso\atis et supunm M[Vato idM((1 «la!is obtusis, glanip ovoidea semiexsorta J \el J I» editiombus Jjpxici (pIN f in }l]i()|SS *H* Floreilt)? |,10]M) GuAaxualo **(Nee!), Real del** ^fllt w ! 42')). Cosiqumadn (Wisli/ £234 Tn h Boiss) 0 iPP.md.i nprnn pi Haitw ! 42'>, non Bonpl *Kx* spedPhmp Ne.ci in b Mill Join m lamuiis umfciu, b-12 lm longa, 3-5 lm l-»^, petiolo 1 1 J lin longn ulim qup oiniisa ^(»l r,110 sll])ALUtaj iuiutus lbi millus, e\ delin cl ^Lango altbIUIS sppenn Noep, m,m iprQQti .Llu^speciiuiuibus citatis similis Spe< imina Himum smnllinU, f(,i,,s intoidumlfcinque acutnisciili*?, semppi nnuioiiula is in speuiu Hutw pptioli 2 *W* longi, linihiJ(M5 lm longi, 4-(> lm lali, sea pul>es, consistcntia, fructus similia L[TM]dv *speciminiljus Inb.i m in ligno secundi aiini Mon vidi, sed forsan \oic cadunt f'upula \- in [1nM]ga

J-G lata, podunculo 1-3 lin longa insert* —Specimen adest in h* Mus par ,i Bonpland uiui Moran loctum, sine nomine scivatum quod ad pidisenteni lefeundum \ulotur, foil is omnibus jumoribus cum floiilms cditis, doientis folio biovioiibus donsifloiis, racln pilosa, bracteis oblongis vel obovdtis cxtus pilosis, pengonio late campanulato extus piloso obtuso breviter 5-b-lobo, •mthoiis ciicitoi 6 a niedio \eisus apicem muticum passim pilosis Ignoto fructu, et fioiibuhin alns spccimimbus non cognitis, identitas specici non tei ta (v s)

y3, *cnspala,* ramis mcanis folns cnspatis iitnnque incano tomentosis apice muuonuhtis vel muticis 5 Loco l)Id3ln Huena vista (Giegg' 296 m h B)ls\liuticulus dopdupeidtus, folns 4 9 lm longis, pallidc fulvis (v s)

G4 0 OBLONGIFOIIA (Ton inJ?itgieaves cxped Zuni p 173, t 10), i.imi^h-bns(cx IC), folns oblongoVJllipticis utiinquo obtusis mutius integon lifts glabns, fiuctibus apiLP 1.1111011101 solitanis sessihbus, cupulA heniisphaciitd tin hinalA si]uunis adpiessis o\dtis LOIINPXIS, glandc o\oideA tu])ulain tnplo supcrante 5 In novo Mexico. Folid foic Q k'liscr, sed ex ic ct doscr ghbia, apico nimiino callosa, ex,none 12 H1m longa, > *b* lm l.u.i, pctiolo 1 \' *I* 1in longo, ppicniiLDlu e\ clcscuptioiiP, sc«l in icoiie lamis anni inseili Liipuld (ex ic) J \ lm longa, 4 0 lin Uia, basi obtusa ^

(?'> 0 PUNOENS (Liobm r.gosl p li), ramis junionbiN tenuitPi stplUto volutinis, folns plbpticis \clotlongis basisubcoid ills VPI obtusis vel sub.K utis apito obtuso subcallosis maigine undiilato-dpiilatis |(1 J 110r 1 hjjs utniiqiie piibciulis adultis sii])id glabiis subtus adpiesse minutissime slcllalo-tomcnlosis, arnonlis pilosuli^, bractPis liiiomhuh ppiigomo subloflgionbus, pciigonio sa'puis v 0 paitito lacmiis linenihus, anlliPiis 0 7 glabnis, fiiutibus solitanis gcniinisve spssilibiis \cl])pdunculo bte\i inspitis, uipulA liprnispba^iica, s(]iianiis ovato lancoolalis adpiossis doiso convexis ol CIIIPIOO-MMUIUIIS ipicp obtuso KlihiiusLiilis, gl.uwle ovoidoA cuiuil mi diftiidio supciautc — In No\o Mexico (WnglH[1] b()'i) et(ililoniiA(l)ougl ' Lobbtv I.iebm*) Fiutex diit aibus cula? Toll 1 siilippipnnid, 9-18 lin longa,4-11 li[| 1 LU, ppliolo 1-2 lin longo, coHan 1, 111 LIginc c ulildKiiHo spLisim calloso-dont it i\pl potius angulata,]>ubp sij|)tus]» illid-V, oculo aiuiito dillicilp in idultis \ideudA sed ppisistPiilP FIOM s masL ((siHciin Dougl) in aiiipntis 0 12 lin longis minuti, passim pilosi Pcdunuili fmctif ()-() lm longi (upula.Uin longa, (> lm lati UlandesOlin longa (< \ I lelnn), in spOLini BICIS aboili\di (v s)

0G QI*i'H<biiiM)ifcOLU (Iiobin i:gesl^ll4), lamis junionbus fulvo \elutinis loins ellipticis Tusi obtusis \el suljiuidatis apicp maigineque caitilagmu. m\n 1 on ilo dpniiculatis, junioiibus uliiinpiPstpllato pubpscpulibus, .idultis su-])i 1 glibi ilisMibtus minute pubescenhbus, ilonbus , fiuctilnis sessilibus \el apic(|ipdiuicUli bir\is solituiis gpminis\(, cupula? depiesso liemispbaMica sqiiamis adpipssis ovatis cniPieo tomontosis, glandc In GahfomiA et Rocky Mountains (lipbm *ex (*oultpr et]<iemont in b*'Hook), 111 Novo Mexico (Wright* 1H>1-P>2, 11 1868 111 h Uoiss et ex itin 2° Ffcmont 11 4^8 m h Hoiss 'j liutex? Tolia tx Iiebm 11-14 lin longa, FlO lin lata, petioli ^l \ lin , ex specim h Boiss sul)pirennia, 4 7 lm longa, 3-3 lin lata, potioli lm longi, ex Licbm subtus])ruinoso-glaucjscentia, ex h Boiss luKo-piibpsKiiiia r iipula (p\ I u bin) 1 lm dlijL TQin lata; in specim h Boiss immitur 1, s([uamis obtusissimis Folns IBedit ad Q pungentem et agnfoliam,%ne(l Mm imis cupulde ab ultima differt (v s)

G7 0 IIASTAIA (Licbm Kgesl\n 13), lamulis incano lomentosis, folns e basi bubcoidatA lmceoldtis acuti«flFnaigmc unduldtit \el passim bie\itei (lent«itis conacPis junioiibus iiliinquG stellato velutinis adultis glabiatis, amentis fnictibus Solituiis gpininisve spssilibiis vel bievi podunculo mspitis, cupulai lienusphdiici[1] s(|iiiiiiiis «idj)iessis ovatis obtusis doiso pubescentibus', glande ovoideA ,) In Novo Mexico (Wiigbt'|jlbl-52, n 18G*>) Descnjjsi plantam in h Boiss cum phidsi mcompletA LieTJm satis* convenieris, sed petiolo fol ddultorum mcano vclutmTi nee (ut dicitui) gldbro C\ auctor num GOO 'Wnghtu, mihi lgnotum, citat Specimen Boiss folia in lamis anni ins>ertd

15-20 lin longa, 4-6 lm lata, ptfliolo 1-2 lin longo pi\pbet;*Vlcnticulis rans \aiip sitis modo mutionis acutis ngidis (upukc intoiduni pedunculo 2 lin longo inshiUp,33lin longae, 4 lm latd?, glande (> lin longa, *o*\oideo-acuQ, mine aboiticute feie mclusa (\ s)

68 0 AGRIFOIIA (Nee! in Anal cicnc nat 3 p 271, tiansl m Knen et Sims Ann of bot 2 p 10(>), i.imis jiinioiibus pubescentihus, folnslatecnatis \clo\ahbus basi subcoidatis cbutaceis lpmotc dcntato s])inosis aduHis glahiatis, fasci-, culis piloium in axillis nenomm subtus dm atcnatis, imenlis loho longio-nbus llonbusfHO nidus, fiuctibus sessilibus solitams premmis\e, cupul.T turbinaUr squamiwdpipssis o\atis obtusis mombi aiwu eis extus glalniustulis iiiugme plus iriHs cihatis, glande o\oidco oblongA PXseitA atuta ⋎ In AmontA hoi oitm tuta Nootka (NPC[1]), in^alilounA (NPC 1 t, Doughs[1] Haitw ' 1%3, Ion) eUin l^exito, loco non ditto (Pa\ ' in h Uoiss) Ik>x foilis Agnfohi Ampntana Pluk ph\t t 1% (sine fl nee fi) 0 agnfolia Hook it t 377, Month in pi Haitw p H7, Nutt in Jouiu hoi tit sot I ond (> p 1 >7 t it oj)t Q o\}.idenia Ton icp oxp /uin p 17J, t 17 (squamis nimis acutis in ńg, ex desti obtusis) Aiboi (ox Nutt) Folia 1 J 2 poll longa, 7-18 lm lata, peli^olo 3-4 lm longo, neivis lateiahbus utriiKjue 3-4, tertiarns vix distmctis, tonlento caduco in axilhs subtus topioso longius-tulo Floics ex Nutt desti Cupula 4 lin longa, (> lin lata, squamis in spe-timine Neaei valde cihatis Glans 8-15 lin longa (v s)

60 0 CHRYSOIEPI* (Liebm. Tgesl p 1">), lamnlis tenuitoi luiluiacpo-tomcn-tellis, folns o\atis \el plliptitis mucionulatis basi *obtusis mtegiis (m lamis stonlibus <Icntitumtis) con iteis juninnhiis supia IMCMSSIIIU stcllato-pubpiulis cito glabiatissubtus tcnuissimp lepi«lcitc»-\c*]iitiiiisp.illidis, ampntis , huctibus snlilmis gemmisve stssililms \ol hipussimc pcduntulatis, ciijiulft late honn sphcPiicft flaMdo tointntos.l Miuaims ad])ipssis ovatis obtuse cuspidatis, glande oblongA cupulam dimidio \cl ultia supeiante /) In California, piopp Mon leioy (Haitw ' 1902), NoU^Tdlilomia (soc Oiog Ednili ') — Benth ' f)l Haitw p Mfi 0 agnfolia*\ai soc Oieg e\s ' Aibor scmpciMiens, 30-40 nod J olia 9 24 lm longa, 4 10 lin (in eod l.imo) Lit i, potiolo 1-5 lm longo, maiginc icvoluta, pleiunKpie in lamis fiuttif intcgia, iiunc (m muto folio sppcinunis soc Oieg) 1 dontata, pfiienthjmate subtus lopidoto, squamulis mmimis mitio mngmc pilosis feiP ut mO urentc Podunculi fiuttif 0 j lm longi (upula 4 lin ^longd, 7 lm[4] lata, squamis non inflatis, aitte adpressis (v s)

70 0 VIRENS (Ait h Kcw cd. 1, y 3, p 3[r])6), ramis junionbus brefl|simc stellato \elutmis incnnis, folnsbrevitei potiol.itis oblongis vel obovato oblongis hasi atutis \cl ol)tusis apito obtusis DHIK mutionulatis coiiateis suppmc gla-hititis subtus tpnmssimp lppidolo \plutmis pillidis intp4b \d (iMiscitim in Miiculis jun) meguLiritci lob*ilo-d(ntatis, anicntis]>ilo4ws, bi(ut(is oblongis ppiigonio hicwoHhus, ppngonio [r]> G fido c imp mul,ilo, lobis hncrolatis s.i pc ovato-hntpolatis obtus s tinthens [r]) (> pubestentibusmucionulatis, pPduni ulis folio bicMonbuhfiuctus 1-3 gerentibus, cupuiA tuibmatA mine h.pniisph,Tu< o tuibmatA, <wuamis adprpssis subvelutims infei p basi o\ ii*i 1 n (I ills si pe ovato laiHpolatis obtusis sup hntpolilis iculiuscubs, glandp < 1 i^A < upul un <liniiiln» \el ultra suppiantp, tolj]pdonibus m mas^nm nnitani i Jihtis' ,> In aust) ilionfeus Am(nc«c sppt a lSonibik Vnginiae (Mithx f), pci lexas (Lindh ' M i»2 Uc iland i 208b, 1917 et'ine fi v n 2 100-2414, 1400, 208(> 1 J00, ^27, 1020, 192J, 2417, 247 J, 2470, Matthes' 104)Jit 1 londam (Rugcll), ad M<\iti j)lm ypiatiu/ (LindPii' 10 ot 2'4 in h BJSS? Pt Wpbb, mini Floi), tu-t i Jdhpd ot Mnadoi J|k2 >00 4000 ped (GaL.^94, Liobm ') in Guatimala vci CosUnta (WaistewflP*)2 in h Hoiss), osUnta alt 7000 p tttist ») et tuca Haxanam (R dt la Sagia' 418 in h J)f Pt Wpbb ; — Mithx (lien t 10 oi n, Mithx f aib Ampr 2,11 (squamis cup nimis oblusis) V s^nlf0I\II(ns y loins oblongis, etc , Cat (ar 1 , t A7 (li ppssimp dp^) l«?si" Llnn SP P 1412 0 Virginiana Mill *d\a* n 10 o spmpPi-vnens wall far n 2J/, *Q* oleoidps f ham ot Schle< ht in Jinn 18iO. p 79, Mart u C^al Rul1 Brux 10» n J, sp n 1 0 rtftusrt Licbm ! Egorsl p 29 (hde h (hrs>t ubi sp tondita) Toha leie Q Ilicis, 1-^poll longa, 6-1[r]j lm

I. .I.I, peliolu f-:i Jin., mine per pin res ;nmos persistentia. ptJis minimis Intis supra fan's nifrnciliu;) siiblns ,.-rsistiMitilujs iui-vissirnis I*OIML culli fructif. 3-18 fin. lonPi. rmuila n-R lin. 'longa, 6-8 lin. lalaVciaerea fcvito plur. aact maturatio annua, Id eat fructus maturi in ulliniis rams insidenms. Absque (tor. vel fruct. a Q. cinereâ in herb irii$_a$ non dUltit si

milfM.*PubattoUowm* e stellis planis aTbis rnin.nii., q$_{Uara\ tn}$ Q. n$_{irt}$, .(,»,, **mlnoribus. DiverStas ipeeffica constaiu non alia. Adde insinqr brute?* «** masc. in pr.Tscnli.fiaephisanguslio res, perig muni initis I,,,,) minus hisim cupula pierumque turbinata (in Q. Ilicc sa-'iiius li c...^ squamae i pice obtusiore magis adpressæ.

71. 0. LBTBSCENS (Martens! ot%al. in Bull. Brux. 10, n :) sn ^/.) ranii stelk.lo.vrluii.u.s ilavis, fulii s brevissime petiolatis , l M i \ u W u-l'n. nbtusn oboyaiis nl,iuR$_{ls}$ $_{re}$mdie undulato-clfniatis dontilnia callogia supra cito plahrescentilnM subcoriaceis subtufl pili« irtpllaiii; nuLJorilnm ot intercom mino- •.....? RulKMoentihiw lutescontibtis, Boribiw. t.....IIIrlljls rructiferis petiol," lonkioribiii to io mi ill brevic iribuo ol gocarp uniorilws) obovoide is iomiKiiieo-veliitiiiis, stpjarfii s adpressis infer. hvaUs sim. laiicenlalis i vH . 5 in Mralco cii«i Mirador H ZaiMia|i;iii •(,.!.! *Ul, l.nuUu.* n. *n* fide MaVlens nti.«io).Kn|a 1 • ;»'. poll, longa, 9-J5 lin. lata, jlctiolo 1-1] li,,. Ion*) dcn- llllM^ !•' iantibns (in co.!. ramo rero nnliis, mucronirnrmifnis vnl ova k c) l:rh;,,1 longw), pilis sul.in s præcipuis cen Lrq (lavis, maioribua quam 0 vi' rcnlis, filiis minunl . blppidotis FeUUhcuJiis in specimine caris, icntiis. pubescens. Ciipula junior; ex cl. auct. nai«i, ovoidca L'fXie **irisa fscrlvnns. imperf.). Folia certe ppraiinia; rmctificatio ith lusa (awlveris: imperf.): Folia certe ppronnia; rraciiiiwitinatt in specinuflc ajinua. (y. s. comm. a cl. Martens).**

U. *Gcr<ntogeæ.*

72. Q. **BALOOJ (GrifBthJ in h. Hois..),** ramulis stellato-velutinis, f^iis ovalibus basi obtusi \v\ subcordatis ;\\>*kv* ol.his i n breviter acutis inte,crjs coniiccis supra junftirilius stcfltilttn [iflosis .Icin Rlabraiis sti] Inf. wluhi,ts,,]|>i.lis, JJ. masc. luacteis oblongis obtu sis perig mi,, siih'lirn- viunlnisimbi rulis, perigor ,ii cxins pilosi l.ibiso fjobtusis, anUierTssiiDcino mini fruciihu-....•> In ATMniiistaii (Grin*. I j. i folia semp, mmnlia T, ailin" :.. K-J2 l,.i. lata, ^ifnff, $_2$ || Im. I,*,., „t tb 0- ll.ci. — Kinds' n j, friicliM igBti, fit pubetHinnlia n.iif,,; „ ,|. ..rs;tt el (•tlilll s t o i $_B$S S'

β. ? *glabra*, foliis aculeato-dentatis vel berrimis. — Cum typo lecta. (Griff. Diversitas foliorum e congeneribus ignoti, unde specimen valde dubium. (v. **8.)**

_ I-MI-IIIS Tiitofrriit, aflultis „ i B|$_{tt}$. •!^:il> li Kew sub n. 4448 loiniii.) 11(111 "linuiiJa, ne| tl-.... t.| rructus

73. **0-JuMLiim. sj,. p. 1413), ramulis foliisqiio sulitus stoTlftttfeluthm in.**

tini grfifli lobis oh.usis. anthoa;.faJtti$_a$ Mil ' , *fihZ* f ' S ' mucroniilatis frnrtibtij^itarii; „, ucisve ,,.....,,,!„ msJGTa

Uj superionbiJa rndKus, $_K$tande ,-, ,, V

aon HII I. Sue....., 1863, p. 191). Juiltf in dej.. &irilto h in' , [„.' (!<'•<! yp.l),Coino (Comoli ,.....l . ,], ,,„„.;, lilrinn, (}| ,,,,; ' "f

Hfspama (H..UI H :;•,... :;,•-. I. ,'!,W.lik. {ni .'.i ,'/ fKotschy! 20 Uinl 7.15 in h. Boiss. Hddri i , ii,- s

7| mli. Boiss.)—Wats. iJoinJi-. t. !)0. Rcichh. ic.fl.germ. 12 t. fi42. (mucmnibus anther. acutiori bus quam in plerisque), Loudan arbor. I. 69, li. i., erfc. trees, p. H80, r. IG07-I611) Nouv. Duham. 7, t. 43 (ubi pedimculi longiores quani vulgo) et l. 44, f. 2, Kutscby Eicli. I. 38 (in texlu errore fructus biennes *H*\-cuiiili^L Suiter aiijjjustifuliiim non serratum Duham. arb. '2, p, 291, I. 2. Q. caffBin.'i Poir. diet, nippl. 2, p. 217. 0. expansa id. ib. Hex n. l-:» Du-Imn. 1, p. 314, t.] et 3. Q. Alzina Lapoyr. abr. Pyr. n. 584. 0- Hex Vis. 11. Dalm. 1?D.2O8. 0. Gramuntia Linn. sp. p. 1413> London one. p. 882, *t.* 1614-HIKi (^pocirftojfflur. vitlio luco Graimml, <jutf c^rK.! llicis). *(j.* gmcilis LiingiM in li. Swiss. (flMa utrinijue angustata suliintegra). 0- Suber Tommas. eis.I 1G3JI, Biturfjuati! plant, hisp. 18M. Arburcs jiifin ores folii valde denbita plc-nimiiue prsebeut, tjuai serins ii(>nt;it;L vel Integra, nt in lliui A(|iiifollo. Pelioli :M2 lin. longi; lioilti saepius M-'2 poll. Innpi. Sijtiomse cupularnm sacpius erectæ, i;i]-j apice subpateifcs, prsesci-tim in var. fi. Iiuninieras varietates JisLinxm-uni quidam auclores (Ten. S; 11. g. 572, Ihihani. 1, c. i tc.), sed -\ waractcribuM foitocum in ctidcii] ram(j aut Rad. arbore Variantfbus. Polia "linn iVuma el (Nujul'iis fulmndum variant, basi el apico vol acuta vei nbuisa. l;i;icic.-f fl. IU;!SG. semper latiores quam in Q. Subere, in div. arboribaa (nrc in oaifom) variaro vjdentur, ut ct iniilutfaj mucrornilaUe vol (rarius) tmiticx. Peduoculi rein, in ead. arbore difTerunt, raro tamnu longitudine 2-jioll. nt vidi hi sprxiin. lunii Tnatioji, in aUoro Galloprovipelse h.]lniss. et In (c. Nouv. Duham. Glandea in ead. arbore aui atfrbae aui dulcea [La Peyr. t. c. DC. il. fr. f». |i. 365), tbagnitudiae ut in adinibtis variantns. Scrjui entes fo una; ex cbaracteiibus forsun validiorLbus variet^tesi d i dæ.

Pa *agrifolia,* Coins spinosis obscure rircntibuj iitrijn[UB glabrosccnlibus. Circa Monpelium (Ma iKnnl),in Sicilia (Guss.<To(laro!),Dalmatia (Vis. 1. c.). Atticfl lll.-l.ir. ! 2560 in li.Boiss.). (v. s.) *

Y, *Ballota,* r<*lii^ basi sæpius rotundatis dentatis vel integr^ subtu s va\-lo in ca ia ibem scmpeftjnulieis i ibcnpnhn sa-liin s dorso '-HivaX.r., (i I , i LDosf.l), His|i;ii)i;\ iiiiiiiil. (!)oiss..' Willk.!<'¡|n, 411, Bourge HI! 872, 875, 1487 in h. Boiss.) <>t in sylvis ro^iis prope Matr iuim ih. Boiss.! Webb.). Ilr\ in ajor Clus; Hisp. ic. p. 32. 0- rotun-difolia Lam. diet. p. 723 (excl. syn. *Q.* Gramuntia), Bo?cl mem. p. 30. Chfine castiUan Bosc mem: p. 24t Q. fJastollana Poir. diet, suppl. 2. j>. 2M? 0. Hallola llrsf. in Art. Acad. pafit T730 c. ic. Fl. All. 2. I'.:;.50, Web •!>! it. Hisp.. p. 14,Boiss.l voy. *E$.* 2, p. ft78. Lbudoh enc. tre a, p. *XH2.* f. J612, 1(113. Vulgo Ballota vel Belloia flfepanis. Mihi vix varii tas Q. Micis; et '-111111 folijs mLIJIMI*- a]>lunlms spm-im. llicis dilTorl; ;niilifi;r su)j>itH glabr« mine pilu- lib' ni iii Wee, iitu 1 i';r- quod ihterdum in Ilicc; [,'l;ins dub:is n....i saipfi in !lice; character ik'uique si|n;ini:uuiii \;ni.ii 111 IJ^O ranio Bailotse ut vidi it| In rb. Boiss. (v. s.)

ncarnnilb iTHBB l v H .

74• 0. PHYt.nm oiDES (A. Gray ! liui. mem, p, /iOiJ), ranii^junioribus jjlis s(el-latis lirfivibu s r•fesc ntil>us, foliis cllipUol s vel ob va lo-oblongi? basi nbliisis •M[1m11] acutiusculi s integris vel ap• cem vorsu : serratis coriaceis petiolo nervo-que cent•1I1 utrinquc nilvo-velminis j-;i r<-nr-h\mate cito glabra tin pilis aliquot simplicibus passi MI (in iiciTn priftSMiini) liiti ,persisten tibu^Lil. masr. linn ieis oblo•i^is puiKtnilis p»-[i:_ itiii(i snba.'qnalil us, perigonii utri iti<i^J" pil<»snli lobis •' "I'tusis, antlieris glands nmUcis vel rarii; submucro ipilalis, pt'ilnnculis JI'"[1i1] 1i -.iilp;f(jit;iltlnis pau cifloris , cu ipnlil crniorifonui albidii-. . . glandn niiiHn broviVire smiamis brevts$imis arete ^1 ressis. 1 I[11] Japoni^ |'IM|J(! simocJA. Raiui scenndo IIIIIHJ ni^ricatiUs, adliiic velutini, ju-. [ni.nn]s anguosi. roiia peren ,,[;.. ift-|6 lin. limga, 5-7 tin. lata, raro obi usa, pierumqnfi apicg ovato-icuta, dcniit-ulis ubi IIIIMIIII ,paucis brevibus, margine •[vfl] uMI, iifrvfs liiWcalibus vix distinctis, (OTtiariin n'lti pa-

i-iiu tns K Gray descriptus. AH var. 0- Hicis? Ffores mas. et teo. simillimi, .»-d loliaglabrau, pijis partini siniplicibns. (\. s. I or. .)

75 Q SUDER (Iinn sp *id I* p 1413), loitup suheroso ramuhs folns que snbtus stpllato whitmis im mis folns ovitis o\ ihbus oblontfis\p acute aeniatis VPI laims lntogns supj i glabiatis lloi nnsc biactpis hiipiu lm ceolitis VPI hneaiI obovatis cxtus pilosis peiigonmm apqmntihus pengonii rxtus praesdtim Inspidi 6 fidi lobis obtusis anthpris pilosis frucUbus saepius sohtims ppdunculo inseitis nit spssihbus cupull ohovato-flMhisj hae ncâ bisi obconica VPI nnus ol tusa squamis \pluluns e basi ovata adpiessâ subpatPiitibus ^d Prpctis infpi *o*\ lto lancpolatis sup hnean l&nceolatis longionlus, glaudc cupulim dimidio stpius supoi mtp WrffGallia lustio oripntih (day') Hispun L (Boiss I Webb!) Algnid piacsWlim versus Phi hppcvillc (Ii DC) Saidmia (MOMS') f oisica (Thomas'), Sicihl (lodaio' h Wpbb) Itihàminrmia (Ucitol 11 Webb! IK ib) (t Istna (lomnns ']hJ[c]) in h Boiss) — iNouv Diilum 7 t A[f]»(mila) V(s plant off suppl (i^ irula) II IJIIO Ai/n Gcw 12 t 4^(pcssinu) Reichb ic 12 t 7 t 641, Wats duidi t 80 (nnla) Suhei hisnimuim iLtifolium f his Hisp p 27 (J£ opt 0 IIPX \ u suhios.1 Vis fl Dijm 1 p 208^0 I1P\ lionfRpiu' fl (anff 0Kb in h Webb (onfor ad 0 occidpntalcm Gi} (n 81) qincum dm confusi Do modo tiactmdi ad subcicm (omniprcn obiiiKiidum ((nfc i ad laubeit dp Passa in Mpm soc ignc S(mo inn 18<T <t\Villk in J ilnh lhirand, v n DP fomnlM iiPdiidionucl sul nis conf ad (is *b(* in Mpm soc phys gpnpv v 1) lolia sapius 1 2 poll longa, 6-1) hn lata, pctiolo 2 6 lm longo, caHeruni ut in affin miro modo foima et dentibus \anabihi Duiatio ultn initium sfcundi nun demdr \inins Stij)ula Higicps linem obovatae, extus pilosi Bnctpr fl/#'infsc s i |»ms august r ipicp i)lpinm|ue' icutap PeiiKonuini mtiis p losirp \d (l>ISI exeppti) ^libium Anlhtrai mutica), undo a (J Jhce ut et coitice subpioso differt Hoipsfcm SPSSIIPS tut saepius^eciis nedunciilum 1 12 hn longnm disp siti bi ictea cii|usve o\ato LOiO (iipula b) lm IOIIK i it supc me lit P bisi plpiumqup comcae mine o)jtusd, ^(Miimis (juoad 1(iigitudmem vnuntibus, pidPtPici plus minus erec fte, mtpidum (midiis Pt sup prTSPitim) subpiteniibus, pxtiPinitate tamen inacxA nee IPIIPX^ •jlandfs unii i ((his) si j)uis dulus (B(fl fr 6 p 3-J5), gustu mediocn (Lolm y Bout c\ im Pncm is p 8) inpidrm aihoic ter ab autumno id jiiiuiiiiini in r^ispanH matin antes (folm Pt Bout ib) a^ecimen possidio AlgPiunsf ul i uipuh in pod i imo basi nbroniLi \(1 ioiiIinla tae — OMIII aboitiv i sipms in spnim uh mcdui sominis disposili mine omnn piopp lusini \ IULHIUKS folu prdmu iilomni Pt s<[uinuiiim fiequpn tei tidiis(nut, imo in fTdtni uboit IHL HIPO \ iru titps^fiimas distinguend<e mihi vidpnUu 0 subpi Kotschy est Q Occident ihs (v \ et s)

76 0 ALNII-OIIA (Popch pnum pi fypn, p 12), frutPT irborpscpns, ramis folusqiiP siiblus pu^p stoll it\ bi(\i ful\o-\(lutinis loins o\alibus mt subiotundis bisi intigns i mpdio inevitPi drntitis siippinc ^hlnatis scibuusculis impntis mis icngonio in is< j-fido utninjup i)il(s< uithpris pilosis fructi' bus solitams I imsv(spssilibus aut JIM\itoi j pdunculdtis cupul«r IK nuspha> IICT squiuus \(lutmis mfpnonbus o\atis id|ussis, nipdus lanccolitis Pt siipciionbus line mbiis uiiciii lto TPCIIIVIS ghndf oln\oid(o-oblong\ cujulim bn-qintPi suppranK ^ In niontosis (jpn (Porch Kotsdiv' 400, coll |8(>2 n 7)0 Audi ' 2881, iomid ylandp sub iborln 1) —Kotschy I ich t (, Q fypiii Iiub ptSi» ' ill pi oi 1, t ,() (foima pi uuU stmi iboitu \) non Kotscby coll T862 I olia ultra 2[n] innum ppicimintii (PX Kotsdn) potius tirdc s((imdo uino ndpntii? (p\ sppciminibus obs) Fiuclus iniiú,' ex cl f'i> J)iPnnrs(\ Kotsdi\ j limbus obspi\ ltis mnuos (xistinio laide cul<mt(s Pt ideo Iiteie idim j mi \ptuli msoiti /ffuiilis ex loins cum 0 llicc 1 oha 1 1; poll tongg, flrl2 hn IUL, pptiolo kAontoso 2] lm, lontfo, coiiacci^j)iucm(Mi i supid TiitidL pilis i ms sero \ix pcispicins ; snbtus jjntio OTfva d(mum iusco-toppntosa, dentibus minimis mutioniloimilms HoiPS misc (\ Kotschyio doscnpti, inthr us subhasi itis, bi u u is squamifoi mibus (upulT4-5 lm long-e, 6-7 hn litne, squimis cnssnisdilis, mediis loiiffionhus J hn longis Ghns (m pad aibore) 6-15 hn longi, l&vis, in BpeciB Auch in Jaub figuratis abortiefltes rfB|tunc ut vulgo squamae longiores (v s)

77 0 GLANDULIFERV (Blume' Mus Lugd bit l,j> 295), ramis junionbus

adpiesse pilosis, fohis e l»asi obtusA ranus acutA ollipticis vel obovatis \el ldiicoolatis acutis xel auimmdtis lanus obtusis gldnduloso-spnatis junioiibus ddpiosse senceis adultis supia glabns, amontit fililoimibus laxis pendulis bracteis , ppngonio , spicis fcm potiolo longionbus \el broMonbus pauciflor^pubcscentibus, cupulâ bcmisphaencA, squaiuis adpipssis pubonilis obtusHancpolatis, glandc o\oidcA \P1 ollipsoidcâ cupulam duplo tuplo\e supciantp ₜ5 In laponiA (Blunio, "WiiglH' (xppd ampi) holii j)Pisist(ntia 2-5 poll longd, J-2 poll l,it,i, bdsi in podpm nmo Pt pianscrtim in dnersis \aridntia (m&A cl 1)1 xanptates le\ps distmxit), sajpius obtusd, mine inaequilatua, anHr plei unique acuta* yptiolo in podem i<uno 1-3 v(1 J 6 lin longo, dpntiuiis non cipbns b.isi foln idiis obtusis Slipulsc ob]<ftigd>, 2 lin lougtL, lugdtps FIOIPS ipm incmn-pubescPiilPs, lud-Lldt o\i»to-lanceoldtA pubescontp ᴸ lin longA stipdti Stjh J, pdtpntes, obtusi, plain Fructus solit.ini \cl pdiici in ppduiiLiilo gldbidto, pnmo anno mdtun? Cupulae 5-8 lin Idtce Affiinlas potius 0 LusitaintcP, sed sempenirpus (\ s)

* Y «

ᵏ78 0 niLATATA(Iindl inWall ' hstn 278')),rdmisjiinionbiisglabriuscuUs, folns oblongis dut pllipticis l>asi sjppms obtusis dpice acutissimis API iaiiv^ atutis •mt obtusi* intpgns \el rpniote sninoso-spnatis juiuoiihii* glabriusiulis adultis glabiis, amontis ^r.icilibus, biactcis (1 m.ist o\<ito dtiitis, pmgoMio a])itp sublobato passim piloso, anthPiis glabus vix mutionulatis, p(duntulis liuctifpiis 1 2-caipis jutiolo sublongionnus, (ilipuji[1] bPinispbfTiic.T pnseo-))iibcsccntis vjiiamis <idpipssis lanuolatis, glaii()|«o\()id(A cupulam dimidio sunpiantp ^ In HimalajA otcid adSnmui (Walt lisl n 278ʳ>) Pt Kamaon (id • n 277 J, Hook f ' (t Th) — Ro^h ill Himal p {M>, |IUP <1PSU t 84 (ubi PIIOIP Q dcalbatd scTi])ta) 0 llonlninda Iindl mWJ^listn 277J (1 Hook f in litt lfiontit itpm ambarum aiboium HIP moirim Ex speuminibus floufpns Wall 277 J Pt Hook 1 pt Ih i uni imuoics sapius ^Idbn vetustioips lpnticpllis lotundis pmiiipntilms III^OM, loli.i CPIU])(rriinii, 1-3 poll longi, r> 20 1m laid, pptiolo 13 lin longo, junioia tonuia,])ilis minimis sobtanuMpaisim punctata, adult i ch.utacea glabpuima, \PIUS (\tremis Mtiuihti, irWodrm lamo mtpgia\(l *>pinc^cX, saepius aruminr icutissimo tPirmnati stijuilae 1 muolata[1], pxtemo])ilosulftᵗ, 2-Mm loiifn , .impnta dillusd, simplicia, \1 V\ \\\\ lon^a, potius laxifloi i, biactPiC $ lm longa[1], ulial P, floip duplo IMPMOKS, ppupoiimm extus IHSI pilosum, caet(nimjulis lans donatum, stamina 7-8, fil.muntis biPMssimis antlipns apic^n^tseitis K\ figurA aibons liuctilprfr in Rojlc 1 c folia foimft ct tluitibus similia spd diu.itioMP i^notA, fiuctus supia dpscnpti pnmo anno matini, <upula > lin lonpa, 7-8 lin lata, ghndp 9 10 lin longA l'luasis mpa P specimiinbus flonf quoad iolii, e hguia fructifpium quoad liuttus (v s ilonl)

S 2. *Ovula abortiva m[cia(\). Mnturatio /ructus biennis(sivc fructus matui i lujno anni prior^s inscrli.)*

* Spccips foil is DTO tempoie orbata ?2) — Gprontogea

79 0 f'FRRis (Linn sp p \kVi), ramis]iimonbus pubpscpntibus, iolus ol>longis olunatisvo vanp smunto-dpntatis \P1 saepius pinmtifldis lobis obtusis vel duitis sa»))ius mucionuliitis j)ilis utimqup nrp\issimis stelhlis supia nnotibus, stijmlis angustp linoai thus pilosis, arm ntis pubcscpntibus, ppiigomn 11 masc tampanulato 2 4-fido lobis obtusis antlipns pilosis, fiuctibus solitauis K'nuinsNp bievitpi pajiuncuhtis aut spssilibus, cupul* hpmispluriicaf pchilipd , S(I Uamis PlongjHs gsubescentibus, infenonbu^ hncpolatis pitpntibus, -pu"5 lanceolato-lmearfBus patenti-ieflexis, sup lincanbus angustis diu

(1) Vidi in spec[o]m^] 7Q, 80 > 81, 84, 85 » 8^ K, 94, 101, 104, 105, 106, 108, 109 — A Ovul ! "Hpidum sub medio seminis, iutPi basim et medium, altitudine d.vprsa, SPCUS spililI11 l(lsnnt

(1) uuiatio lolioium m pluiibus sp non satis constans et m h# ib nbscuid, ut supid (hxi (in notA, v 4)

prpctis domiini p.itontil)iis \ol IPUVYIS, glniilp cnpuiam dimidio snporantc ^1 lhif seen to /> 111 OMPIIIP (t pissun in I uio|»ft dusti di, locis lbi disjunclis, iipmpe I in Lihuiu (Kotscliy ' 328 in h Boiss), monto Cassio Syiiaj (h Iloiss 1), l.uiro Giliiisc (Kotschy 1 385, 386, 388, ot ox stheduIA, 384), Cm A (I'maiiP), Iniolo ocuu. (Halansa'), Phrygia (W(1)1)' hoili ») , HMpphyliA (Heidi ' 108J, <)75, 1220), piopo larsoun (Bihinsii 1152 in h fliss), in MacodomA, Soibià, AlbaniA(Giisol) >pic Hum p .134), Hosnià (Scndl '209), Ilanatu (HeuffeP), JIun^inA propc Kysonstidt' (t Iludp (Domci !) AustuA infer (Npdr fl p 241) a Mor.uiA propo loninit/ Ptjttschau (Noili N.Lcditr M.ilys, p 78), 2[c] in Siulià (TodMO in h WcbK^uss syn. sul) di\ nom*), Cil.iiiiiA. (h. DC ') ot ppr Apcnnmos Podomontmm usque (All n. 108fa, Coll.i hPib pod 5, p 18.J), m]>ro\ Vicetmft (Poll fl Veron 3, p J27), Istnà (Floisclipi ' m li 1>G) et Dalmitia(Vis fl], p 208), 3'ultia AJpcs ot Jurassiiin pmpp Hisoiitium , m sylva Villus Snnt(,pOrgp (Gion ' fl lr eL p\s. *i*\ G.ill 727), 4° in <^ illiA occid CMCI flumon Ligpus (ex omnili met) ct usque ad Vmlies (GIPII ' m li. DG), b.iitnf (DG '), »° in sylvisvilhp ie^ia[1] Pdido propc Mantum (WPII1)»)UIM idis.m non mdigpiu ex Rent. Tin h Webb) — W.its. Duidr 2, t 92, lois in Nouv. Duhata 7, p 182, t f)7, H.nt rorst p 142, 578, t 14, Hayne Ar/n Gew 12, t 48, London .irb 3, p 184(> lftbt), c div fig, one oftices, p 3f>4, c div flp Heicbb. ic fl &erm 12, t% 650 0 ausiruca Wdld sp 4, p 454, KotsLhy Eich t 20, Guss syn (L.sic 2, p 60[r]) 0 cnniU Lara diet 1, p 718, Oliv voy I 12 Q ^^iloj)S-[a]8obp dm 2, p 241, Uon Nann 102 (non L). Q. h ilinliloos f mi]loso nu m (lien. Q loumcfoitii Wdld sp 4, p 454 0 liondosi Mill dicL od T> (tide Loiul) Q. cuu ct Q IUgn.il Load cat olim () !>>culus I inn mant fnoii sp pi) PUIKS biovissinu, in noxcllis plus minus cinnf i Foli i in rodein lamo svpc \ m i (oonl loud one. f 156(>) adco utvanotdtes consUntes fiustia inquuendae Stipule? 3 G Im longac, tarde Cddentes, angnste linenies Potioli 3-9 lin longi Limbi basi coidati \el (m cod rimo) acuti, lobis iingiilaiibus, nunc dootati, ,s<rpius pinnatifldi, nunc [illegible] piini ililidi, IIPI \is (t DPI\ullis subblus s(mppr c^ienidibus stPllatim pilosis SLi|)iil<p cuca tfommqui pu\.im ciebi.e AniPnla 133 poll longa, medium usque lmfloia UncU r hncaits .mgustas, poi ig icqiiantps I'ei igunium 1-2 3 4 fissiim, saepms bifirlimi lobis 4 AntliPi.c *j* lin IOIIRCC, filiniento snb-<cqu LIPS ^pres fommpi se(us pr diinculmn bievem 2 5, biactcis cxtenonbus 2-J lirieiijTOsciiicli, squirms usqiif .irl initium spcundi mini ovato-lanceolatis oblongisve inllcxis .idpiossis oblusis, junto \< 1 julio secundi anni sul)ito elongatis et divpigentibus (h Webb[1] ic cit Roichb) Gupuli pollicem soipius Lu, lacmiiM fiuclu mituio 2-5 lin longis, iiileuonbus bievionbus Glans Tjbndracp.i,[c]) I[r]) Un longa Vanetatcs nortenscs msigniores, raro hcreditaria[1], hunt ^pientcs

p, *lacmiata* (loud one tioes, p. 856, 1 1M8), folns subpinnatise<#s anpnstis, loins .ituminitis — In hoitis but Founo) bpontane.u anffustifoliai ad pidBsentem s«rpp .Kffpdiint 0 asplpniifolia horti Noisette 1818, ct Q hptprophylld hoit PiimentiPi, in hPib mpo, luc rcfeicnda vidpntui, pioptpi folia oloiifjLtL pinnitifida. pt sccta, genius angustis acuminatis PIIIK S M. luscc decst, yi bdipe m loimis raonbtr. cultis (v s)

yfvarU(jata (Lodd cat 1836, Loudon 1 c), folus vancgatis — In hortis but (v. s irfh Webb)

o, *pcndula,* Neil in I mdci Gilpin l, p 7i, Loud enc trees, p 856 f 15V7, arb .J, p 18'i7, 1 1707), lainis longc pendpntibus vel piostiatib' loins mgustis |)iofuffdc lobitis, lobib obtUMiicWubacutis — l[u] hoitis but belgic etc

c, *suhpeicnnis,* loins veic solum cadentdms —Aibores in hoitis but a centum %(annis oi namenti umsA inseitionepiopAgatj}, *Q* ps(udosuben nimisalfiiHs, bjdnd.c intenJum existimatcp intci *{)* OminptQ Suberem et sub div nommiluis ^io ougme et hak.tu divulgata} : Q Fulhamensis hoit (0 Coins FulhainoiiMs Loud arlf* 3, f 1710, 1711, e»c trees, 1 1561, Q dcnUU Wats dendi t 93, ex Loud), Q. Jufcumbcana Lucumbc in Phil *tfins* 1772 (0 Ceim Lucumbeana Lou* arb 3,

p 18[r]>l,t 1712 1713. one ti i n62, 0 Txonionsis Iodd cit cd 1836) Van it coitico m igis subpi oso folns \ in ilnliltus mine mcisis, mine tuspis de quibus pgipgie scnpsit London 11 cc froha sub tcmppiitâ hyomc Anghae vnidid pcistint Lt vcrc solum cidunt Squ un c cupulae luttidum oNdtoj laxc ncctd) (Q Corns Lutuml (mi, in loud cue f Hbi), hybnditatcm firmmtes (v s ex hoi to Mill in h Webb)

** Sempervirontes

A *Gerontogece* (1)

HO ,n PSFUDOSUBHI (banti viag Tosc 1 p 156 t \), cortico suberoso, nnns suhf istigutis pube iiniulorum ct folioium brpvissima stdldU, 1 »lus (bisi obtusl \cl icutJ o\ itis oblonpisu dcntibus cicnis\ç mucron itis supid spusim subius urine ct libido pubcsLcntibus pcngonio misc campinulito G (ido (\lus piloso lobis ov itis, inthuis pilosis nune (idnus) gldbiis, fiuchbus bicvitei pcduueul itis \cl subbcssilibus cupulâ nunc hunisplumel nune obo\oidoo tui bin lU, sqmuus CUIPIPO pubpsccntibus, inf o\ ilo-lancool itis dtmum pdlcntibus modus line in 1 mceolatis df mum icfloxis, supicmis uitfusto line iiibusdiuci(Ltisd(inumpatontibus\olioflo\is f,[p]lmd(cupiilUluplo sxpius 1 Mrfinic > In syhis MyciiT oiicnlilis (fosson' mill cit), in Sic ill \ (Guss ' inli i tit) (ilibnA (Ion 11 ni])) p 2)7) CMLI Rom un in syl\ \ Maixln i <h Mitt(i(b W(bbi 18)2) inHdiuinP syh \Aicidosso(Sinti,W(1 b') ciniVdO-nim(Hrilol 11 it 10p 210), in Jstnl (unicl uboio co^n Kotsthy I icb t }>), piopc S u/ in mi (id) ct i lrissim i propo Gi isso m Gilloprovincia (DuviU t Oiy m Bull soc bot *li* 18 >Q, p /*4 i ft /|47) Ct * i cjus (h D(loss ') — (uit spmiiK uiliquit bot t 1 (Sinti^niutiiiti) N m\ Duhiin 7, p 174 t 48 1 2 Noes pi olfic suppl ic SHIP mini kitschy[1] hich t Ji Q liiiiun hoit] u ' a|lioi \(tci isscholdJ (\tiil cum piop QiKiuium, iuc altpi i dp i[u\ u IIIPI id Q Lusitinicam var bKMcnpulutim, monpntpcl Giy) 0 cipintdlim diet 1 p 724[9] (omnino duhi i) 0 Iontimsn Guss ' in h DC (PX sppcinuno lruclu iinp(ii(cto [n]l)boso, ut in fi^ d(\ti i iconis Kotschyi), ind spm horti Bocc *2Hl*>* s^n jl sic p ()0J Q c istuu clolu Cosson[1] P\S Giy' in Bull soc bit li 8p 422 (s(d in lit 18(>2 scnUntiun ipso coinxit) Subci imdincio noii utdc toll i nost liondpscmtiim no\ un cidi\ i (an scmpii?), 2 7 \ poll longd, 1-J poll ldta, pctiolo 2-6 lin lon^o, subtus incani mucionibus dpn-tiuin 1 uc (uficicnlibus Stipulae uigustp IIIIPUPS, i)ubpsccntps pptiolo brp-viorcs Amenta, masu nuiri(rosd? 2 poll longi Pongonium line im Ionium, lobis obtusiusculis \ntliPi p pxsertff[1], in sppcnn Sinti mtpidum glibiae Bi itt(d> line UPS ui^'ihlL, pcii^onio siibl HI^K K S HOIPS 1(minoi suns pp-dunoulinn I 0 lin Ionium spnsi ipiu ippioxim iti Bi icU c cuiquo flon tits, bnciri-ldiicpoldta), pxtus pubtsunUs, extenoie mijoip floiom supennto Sli[n][p]niati J j, luicuii, leflcxa (nictus piuci Cupula 0-12 lin longa, 7 12 bn 1 ltd, squimis mfpr 1 2 lin nipdns pt supcr^-4 lin longis angustis O\ul 1 iboitivi nilcrd, uno (in spmppi[9]) \cisus mflum i)irtem scminis ti inslito (ex piucis fi obs) In spccinnnibus h Wpbf ((X pidpm sjhl ubi S111l1 dp-Uxit) cupuli]> illicc in long 1, lpicp lip(jupntpr lissi, ghnddii ultn nudiurn tpgens, s pi imis dissitis (nidf<is qmm in ic Sintn pt ibis sj)pcim obs) sii-pi'niis (uclis imdns ieflcxis b([uinnL diu ovito lmccolatde, tudp sccundo J-'Hio plongitc ut in Q Lcrn, uipustioics qinm in Q cistancifolil (qm-[L]"i» uboi ilgpiipnsis nuppi conhisa) ^{jio flonbus misc ot Iniclu 1 () (°MI distiiigiutiii SPII loll l non pinfmiflc lolnti subius incina squim«c [MS] [muui] bnvioies, liuctus milun migis lPgulintu lcflpxi, dm itio fo-noium longiop (N s e R[on]ia flonl , ox HetrunA huctif)

*y fiusvonet, loins obtuse lobitis, lobis MX mucron itis fiuctu mijoic > In ^ICIIIP nciiioiibus dcmissis Q hahphlcos duss I sjn H sic *od 2 ir 2*

(1) Fob 1111 pnonhus numpiosioiibus verr post fiondcscpnti im cidivi, in ultimis iridgi^ ppisistcnln s MM I n il. I ,, 1 ilMii?itP f t p itpntcs VP! rpflcxse

p. tio:> (non Lam). Ex specimme fructif. Gussonci in h. Webb Q. pseudosuhor \idetur, sod floros masc. desidcrantur. Lobi fohorum vel crenae intprdum fere muticae adsunt in var a (v. s)

y, *glabriuscula*, foliis parco stoJlato-pilosis subtus non incanis. In horto Kow. anno 18:>3, legit cl. Webb. Fiuctus ut in ic. Santi, sed minor, (v. s. in h. Flor.)

8, *rgylopifolia*, cupulA abbrovialA. *5* In horto Trianon olim ct nunc, arbor unica (Lam. day!). Q. hispanica xar. rcgylopilolia Lain, diet. 1 p. 723, Gay' 1. c. L. aegylopilolia ii$_{Prs.}$ $_{s}$yn 2 p :>70. In Hispftkià non cogmta. Forma forsan iniporlocta, ciijus tamon glandps matins Cupula 4-5 1m. loiiKi, 7 lin Liu, loinisphaenca, sijuamis diiibisis p\ spocmiino a cl. Gay comm., paulo major et squamis rctionVxis in altero specunine ohm a patre sonato, sine loco rial., lorsan ex horto quodam pansiensi (v. s.).

e, *Gtbraltarica*, cupulA abbrcuatA squamis crcbris adpressis supprionhus domiim laxis precio-duorgcntibus. *5* In horto Trianon, altora arbor, olim et mine prapsens (Lber.! in h. DC, Webb' Gay') Q. Hispanica var Giliraltanpa Lam I.e. Gay' 1. c In Hispaniâ nondum cogmta, idoo nomen lorsan iniilandiiin Cii]iula 3-4 lin long.i, .VG lin. laU, hoiiusphienca, glandc paulo OXMMIA, vijiiainis ut in pnino anno Q. pseudosubens, an deipctu uihons cultj)? (v. s.)

I, *Tlemsenensis*, dontibus fohorum \IY mucronatm, anthem s?rpp glabns, fructu.... />. In Algeria, prope Tlcmsen. Q. psoudosiibor Dosl.' fl. Atl! 2 p. 348. CujHila PY cl. uucloro squamis apice laxiusculis pchinata, sed Iructus non atlulit, saltoni in *herb*, pans., noc in IIIPO, nee apud Webb oiant, undo dutmim. Kx spocinnno meo authentico anlliorae glabrae vel ranssimc pauupilosae, quod vix in alns DesL Folia ex cl. auctorc proi'undc smuata et serrata in jun. arbore (v. s. flor.)

81. 0- occiDENTALTs(G,iy' in Bull. soc. bot. Fr. mai 18">7 et in Ann. sc. nat. ser. 4 v. 6. p. 243), corlico SUIMMOSO, ranns folusqup subtus stellato-velutmis mcanis, folns ovatis ovalibus oblongisvp acuto dontatis intpgns\p supra glabratis, bractois fl. masc. an^usto liiioanbus linoari-lancoolatis \el obovatis lmoiiribus pxtus pilnsis pcngonio brPMonbus, pongoiui pxtus nnrsprtim bispidi (j-fidi lobis obtusis, antlioris pilosis, Jructibus sobtanis gpminisve pp. duiK ulo inspiiis aut sessilibus, cnpulA nunc obconicA mine homispha?ricâ, squamis wliitmis mfor. ovatis adpiossis cuspido IUPVI patontp, siiponoribiis ovatis VPI lmoarihiis obtiisiusculis prectis, glandn cupulam dimidio sa^{j}pius supprantc. *j* In GalliA. austro-occidentah ((>lus DC Gay') Pt Lusitaniâ — (Welw.' (Hi in h. Webb); cultii in h. Trianon' alnsque. Suber aquitanicum *CAus.* Hisp. p 27. SuborDuham. arbr 2 p. 2U4 c. ic O-Suber Kotschy Kich. t. 33. Anlo el d;iy cum Q. Subeio conlusa. Diffprt folns ullia annum vix ppisUmtibiis Pt niatmatinno *bxenni;* char.ictpribus bractparum fl masc. ct t-upulaj minus pprspicms Pt paulo vanantibus Cupulae (PX sppciminibus a cl. (iay comm. in h mco pt ttoi<gfc basi mine lolunuat.T, nunc attpnunt.p Folia ploiaqnp VPFP cadunt, pauciPsubpprsistPritibiis anlo maturationoin Iructus dolapsis fd.iy I. c); sppcies KIPO phjsiolngica pntmsquam morphnlogica, le\ititPin (liaiactpriini ad soctionos adhibit «i phinbiis inonstrans Anthorjc uiucmnulatip (an sonipor^{1}'); in Sulipro niulica^{1}. Squama) IMPVIOIPS (juam in plensqup Q. Subcris, 1-2 lin. longae. (hula aborlixa oinnia mfpia \o\ im$_{0}$ „„_ terduni bioviter stipitito UPC liitpr ml. ot inodiam parlpm ut frequenter in Q. Subere SPCUS spiram pnnecta Cl. Gay 1. c. et in h. DC. formas glande minorc et plus minus serotmas observavit. (v. s.)

82. 0 ITHABURFNSIS (Docsne in Ann. sc. nat. ser. 2 v. 4 p. 348), ramis petiolisque tomonto brevissimo j)ubpscpntibus, folns ellipticis ovatisve s;ppms cordatis acute dontatis nenis latorahbus paucis suj)Prnc glabratis nitidis subtus stellato-piibpscpnlibiis, pori^omo nuisc. prolundc 0-fido ciliato, anthons pilosis, fructibus solitarns sessilibus, cupula? turbmaU^{1} squamis piibescpntihus laxis inlenoribiis ovatis modus ot sup. gradatim longionbus magis ac magis recurvatis, glande oblongâ cupulam ter superante glabrattl. /> In montelthaburum, vulgoThabor, Palaestinaj (Bov6! 493, inDecsne errore 495, Boiss.'i in Tha-

bor et Carmel (Kotschy' 316, *i)* — Kotschy1*Eich t 12 Folia \cie decidua, conacea, 2 4 poll longd, bullata, marginc sajpe recuivd, petiolo \ 9 Im longo, bisi coidata, obtusivel mius diigustdtd, apicp Stepius obtusi, dentibus lnegulantei sitis acutis, pihs stellatis supra cito p\dnescentibus, subtus crebns Cupulds abortivaf collegit Bo\c', <* speura Kotschy I maturae fertiles 1 J- poll latdi, squamis super \dldc re\olutis, 5-7 lin longis, J lin lati*>, nei\o central! supra plus minus distincto Glaus amaia, 22 J poll, longa (v s) (1)

83 0 PYIUMI (KoRchy' Eithen t 3), ramis petiohsque cinereo-velutinis, folus tdidc cidenlibus o\ lhlms \el matis \ol oblongis \aiie»(in eodein i imo) sinuatis dentitis lobdtis\e dciihbus mucionulatis, supid spaisirn subtus cicbio pilis bievissimis stellatis pubpsccfltibus, fl masc pengonio b-fido ciliato, anlhcris pilosis, iructibus sessilibus sohtdins gemunsve, ^"puldi cyathifoinus squainis pubescPiitibus, urns o\atis Ldpiessis, modus owito lanceolitis crassis ipice pdtuiti rccunis, supiemi-i line inlius Ioiitfionbus lecuivis, ghnde ellipsoideA cupullbistei lungioro *y* In plinitic Ciliuci piope Addiu, secus fl Pyiamum (Kotschy'it filic Wjinh Boiss), dd ostidPyiami (Kotschy ' it 18)9, n 20) Q liypoleiiLti Kotschy' it 18>> n 99, in h Boiss , sine fi noc fl ideo dubia (nonQ hypoleuca Mu{) Folia imtio\ens2 LIIII cadentia ev Kotschy, nuncsenuspx specim Kotschyi in h Boiss), 1}-J poll lonpa, 1-2 poll lata, potiolo 2 4 lui lontfo, basi cord ill, obtusi VPI acuti, sublus CIIHICO toiiiditosa, in oodcin i imo adniodum \diidnlii, sinuati, vcl dentald, ^el lyr.ili, \cl sinubus pducis pinnitifidd lobis tune dentitis *Y*lores nidsc e Kotschy desci (upuldJ squamis imis (t inedns 2-J lin lon^is subicutis suoieinis J 4 lin lonpis Olandesedules, 18 lin longdj, intia cupulun 7 9 lin Tongdin, 12 lin latam (v. s)

84 0 MACROLFPIS (Kotschy' FICIIPII t 1(>), pilis stplhtis brevissnnis pallide pubescens, loins ovitis o\ ilmus ol)Iongis\p l>asi obtusis vel coidatis giosse et maequihtpi dentato scuatis dpntibus mucion itis \el icummatis fl misc pengonio pxlus piloso obtusp lobrh) lain cimpanulato, aniliens pilosis, fiuctibus solitdins [icmiiiis tcims\(subscssihbus cupuldi hpniisphd,iicd3 squamis hgulatis laxp su {KM posit is nuiK (aide patcntibus mlci lonbus ldte ovatis, medus oblongis pipctis \P1 subpitcntibus lon$_n^r$ioiil^s apicp (\CUIMS, supenoiibus lnipirioblongis eiectisapicp subincurvis, glimlp inclusA \el cupulun paulosupeiante apice deprpssA etpilosul«\ ,5 In Attica (Duiv ' Oiplnn ' (\s {01 in h Boiss), (reta (Kotschy' e\s 18>> n J09 i in h Boiss Sipb ' SHIP nuin), foisail in AsiAminoip (tx ic lchilut)[9] 0 /LKIIOJJS I sp p 1414[?] (pio pirtp, cxd syn et pali iA), Mill Diet t 21 J (ic mcdioci liuctu nondum matuio?), Kotschy' ie\is 6") in h Boiss , Ohv \oy t 13 (in Nouv Duliam 7 t >l et m Hayne Ar7ii Gew t 47 ltprata), Iou(i aiboi t 09 (err typ 49) et e|usd enc tiees p 861 f lob") (mpdiocr) Q latilohd imgno liuctu cdliu tubpiculis obsito Tourn ' in h luss sine loc nit Q iLgilops I inn Lmi Ichihit As mm t 41 0 Oiaeca Kotscliy I ich t \{) (noriqusd rpvts in h Boiss) Ramuli et loha subtus pubp iniiuit) pillidc lul\a Folia 2-3 poll lon^a p< tiolo 3 8 lin longo, basi sdepius coi^atd <\< ntibus lobis\p plus minus distinctisacutis VPI acunamatis Cupulae maturae (2° anno), 1^-2 poll latde, sencede, squamis 1 lussimis, iniis2 3 1m longis, mpdns et sup 7-9 lin ldngis medns Mm SUMPI 1-2 lin latis, omnibus non ciassisunde species d vulgan dsidtica sequcnte aifleit (v s)

8> 0 VALIONFA (Kotschy[1] Lichen, t 7), pilis stellatis brpvissimis pallide pubescens, folus basi obtusis vel cordatis ovdtis ovahbus oblongis\p giossc e' m^qudlitei dentato-senatis dentibus acunundtis mucionatis\p, fl masc ^chi husuta ppiigonio e\tus piloso obtuse lobato lite campanulato, diithens pilosis, fiuctibus solitdrus sessilibus, cupuld3 subglobosae squduus ciassius- ^u »s in coipus cidssum imft bdsi connatis, infeiionbus late o\dtis extus saepe pidnis, nipcius sii])loiipuiibus ovoideo oblingis patentissimis recuivis, supeiiqiimis lmedii oblongis plus minus ufllndtis, ghnde cupiildm aequante

l fl P< iVi[0] su Peiante apice dppiessA et pilosula ^ In Tauio (KotschyUp LIiiC 390» 387, 391, 394, Balansa! 832 et 1153) ' Fiuctus sub nom V^ny

0) cl ^ook f in Trans Linn soc 23 p 384 t 38, species hie sub num 82, 83, 84, 8), 87, 88, 89 (iiumerdtas uiidiu et edindem dixit

aut Vallonea commeicio (ut^t Q mauolopis) traduntui y JKgilops I inn sj» p 1414 (pio pailo et excl pitnA), non Oliv HOC Giisoh *Q* Afeilups oli\(Mi<ina ltlnlul As mil) 2 p 470, t 42 (icon dubia, iiuclu nondum initiuo? <x paln\ hie potius lelati) 0 Uncoil K<jts»liy' Eich t U (qu«r olim 0 Iiojdii.L o|usd <vs .{90, non W<bb) Ruiuli a folia omnmo Q macrolenidis, cupula CMSSIOI , magis clausa, squamis nou ligulatis (inns soluin plmiusculis) sod pinguinus mcdiis et sup plus minus cxluno HCUI-VIS Pun His 12 |r) lin htus SqimuitO ml 2 lm longer,okusdi, mine mucio-mildlJ*, modiir 3-r> lm lon^c, 3-1 1m k«ita», sup 4G lm Ionga3, 21 lm latjr; media? rt sup tn divoisis spoum plus minus locurvx glande nunc exsortft, scd chiiaLtoios spocincos div liuslia qua'sivi Cupula[1] commoicn inteidum (ox coll me,! caipologiU) 1 } poll Taiae, ti«ississini«T, squimis n-cidis soLtionc tihingulaii, modus divoigentibus lnctiono tiuncUis, pnnio adsppctu a cupnlis Koischyi dneisissimis, sod foisan omnino matuiae, aut vaiiotis fjuiPdmi' (iipnla[1] crtnum \iianl in di\ specimmihus hcibino mm, nempp 1 *U u* CIHISP (t squimis .lngustioiihus, qumdo glmdos .iboi-tiunt (Kotsdiy! .W4 in li Boiss , *V)*\ in h *DC),* 2 nnnoits it squ.imis \i\ pmguibus pleiisque PIPLIIS qumdo unppif(cta[i] \ol nondum nutiiiae (H<ldi ' <)7'J, pditim, in h. Boiss); i CI.UISJI Pt sqiumis bio\ionlnis, medns mtei so dissitis iefloxis (Kotscbyl 100 in h Boiss non in h DC) (v s)

*[i*t *Gtrdelii,* sijuaiiiib non Lidssis, mcdiis lineanbus elongalis reflex is \o\ «I|)KO UIIC nuitis siipciiuiibus ut m a — In Tauio CJIICIO Q. Goedeln Kolstby'J87 in li *Ity* (sod specimen in b Boiss vai a simile) Fiuclus matuius, forsan lmpeifettusj ut *sdi\)C* m omnibus spec (v s)

y, *brericrenata,* foliis ipico sfppius obtusis iogulantei et bic\ius creiidtis, CKIIIS uL m a nine ion ilis, s(|iiamis cupiiliP ciassis bicMuuluis Ad poiUs (jlicias (Dal«msi» 8.T2), m PalaislinA id Na/uetb (Gullaidotl '2240 in h Boiss , 2241 ibid id vn (3 accodons longituihnp squamuuni), in piov Hisjn Kuducbid (Kotscby' it 18">0,n rwJ in b *DC* , nbi i imus bic iofe-iciitlus, ilt(I sqiumis modusadpicssispluusad Q BunLn potiuspeitinot) 0 Gadolii Balansa' 11"> i in h^oiss Foil i plciumque tlliutica, 2-J poll longa, 1-1 ijpoll ldta, pctiolo ^5 lm ilongo, bemper coiUata (v- s)

80 0 BnANiu (Lmdl bot teg 1840, append 74'Kolschy'it 18rj9, n 500, 561, *h\th* t 3l),piln stollatis biovisbimis palliih pubesuns, loins o bisi sa»-pius LOKILU ov«itis oblongis\c uenis mucionitis vcl dcntibus acuniuulis plus munisxc cionito-dontatis, flonbus m.isc peditellatis, bi ILIOIS , po/i-gonio 4-bdo lobis ov iLis inugmi pilosis, mtbeiis paucis pilosis, iiuclibus solitains scssilibus, cupulA lumispbdJiiU squamis mloi ovato acutis ad-piessis, modus ovato-1 mcoolatis laxc adpnssis txtiomitito subinflcxft, su-premis linoanbus loftKionlius eicctis vel uncmato ir iloxis, glando cupulam piulo superanto .ipico dcpiessA puboiul.1 *J)* In Kmdislin (lmdl sod t\ spc-c iiiiiiiK sine lmctu, md(dubio), in piov Schnwaii (Kolschy' r)')2, "J(JO ct 5()l) IMioli 4 7 lin longi Limbi J-4 poll longi, lf*-2 poll lati, .icuti, sub-tus magis pubescontes quam in alfimbus *(0* I[1]} mm i xcoptA), junioit s don-tdfosoiMti,, WIHIS denlati vol cicnati, apii ulo vtl niuciom lined bicvion (iipiiU CHICKo-xcliituid,J'J'') lm l longad squoernolata, squimis inns U mo fhis 1 J-2J lm longis, in oadom cupula aupnssis VPI piulo IIIVPI^Cnlil nubus , iiipn mis loriglonbus Descupsi spOMmmt n *W)* lh moi ct b Boiss , <[uilius-nini iMipula[1] sogipgit,e mmoios idsunt, ubi squimau mcdwe nunc pjtentos rioiosmasc ex icone solnm mihi cogmti In specim 501 lolia similu liuctus m ituius squamis mno modo ad Q oophoiam accedit (v s)

«7 0 iTiRrNDrROii (Kotschy! pk exs Cilic 393), pilis stollatis bievissimis .illiHlopnbrsLPiis, loins ovalibns oblongis\o dentato-lobatis lobis cicnisvo injilinlibiis mucioiwtis, stipulis angiisk line ai ilius, pongonio niisc iiuctu JJTltnio scssili, cupulaj subglobosa[1] squimis laxis cioctis doiso planis ai)ic(submcuiMs mloiioiibus ovatis mucionatis, irudns longionbus oblongis niu-(ion ills oMusisw , siipi MOIIIJHS hucfolatis longionbus K utmsculis LLIIKIC (iijuil mi)>iulo supeiauto {,hbi(scenic *fj* In III mo (Ibi(nb), in l.uni Bul-rn Ua^h (Kotschy 1) lUmiUloln y *A* gilf)]>is loli i smuliui mine subm-

togra et dentata, nunc pinnatifida. Fiuctus 15 lin latus, loimft spliaeiae supernc tnincdtd ,squam* 11011 patentee, potitis mflexae, lax* tamen, inlcuoies 3 li» long*; l2 Wit Iat<i3, utmedwe ma|uics iriflfonit£,niuuon6 submflovo; supei IOLCI ,') o 1111 longdC, umius nl in Q -/Egilopc cineieo-puftcscentes, intus inflat.fi (v s)

88 0 TROJVNV (Wol)l)! in Luudon gaul mag ex Jaub et Sp ill. pi. or. 1, t r>7), idinulis glabimsculis folns obloiiK[ls] v°1 ovato oblongis acuto dontalo-scii.itis supia .mlidis cito gl ibiatis subtus tcmiissime stellato-pilosulis, fl misc , fiuctibus sohtauis sfssilibus aut pedunculo bievi lignoso lnscitis, cupulae obo\«ito (unpanulatap sqininis tonuitei \olutiius crassiusculis, inns ovatis cuspide libeia uncinatl, medns e basi ovati ndpiessa lanceolatis et ununatis, supipmis lirau bApolatis picctis vel subiccums, glande cupulam dimidio sui)Piantp apVCo subdepiossa pilosulA *5* In Phijgui mend ot Mjsia lanuscula (W(l)b'lioib) Aiboi Ptaibuscnla An MI iotas Q Vallono.ii (c\ bchcd WC1J1>) Kami 2[1] anni aphjlh, tinoioi, glibn, jimioics tonuissime puboscentts Folia 1]-2} poll, longa, <M2 lm. lata, basi sacpius coidata, apicc .icutiuscifla, potiolo 1 ,\ lm longo, sunra, nitida et in jun. MX sub lonto passim pilosula, subtus pumo adspoctu glab'ia, tanipn stelllatim pilosula, pdis noi\i conti dis non stollatis IIPC adeo minutis, maigme nunc < nspitc) undidato, dontibus lopjuliiibiis jnucionatis StipuUr fugaces Fiuctus socus lignum 2[1] anni, SPSSIIPS vol pcdunculo 2 lm longo 3 lm lato^psciti. Cupnla pollupm longa, 0-10 lin lata, squimis inf 2 lin supci •A i m longis Color loliomm ol cupulauim ut in Q Look, in sicco non pallidus, et inde ab afhinbus diffciunt. (v s.)

89 Q J^OK (Kotscby' Eichpn, t 21), iamulu pptiolisqup pubc mmutissima vclutmis, folns oblongis aut oval11)us gio«?se cipnatis dentalisvo cionis mucionihs supia gl tinpsifntibus subtus ciobre stollato-pdosis, fl masc pcngomo Vfido j»uborulo iwigineot intus]>asi longo piloso lobis ovatis, antliPiis pilosis, LiipuliC sqihimis iusco-tomontosis, imis o\atis subadpiossis, modus e basi adpiossA o\atA o\ito Iniicooldlis subadpiossis apice \oio mflcxo, suminis longionbus hnoaul^us damiim uncmatowloxis, ghndo sa^pms abbioviatA obluMssunft ^ vel t5 In Autilibano ct mont Hun m, Synsc (Kotsrby' IPVIS 53 in b Doiss., PXS o)lm 172) Folia s^kuis 2 poll longa, 10 12 lin. lata, us 0 Valloneae sul)sinnlia, timen non pallidi, cipnis VPI soiiatuns in oodom ramo diveisis Floios o\ Kotschy doscnpti Fnictus SCSSIIPS aut subsossilos, sanpe in s])ocim stculos, cupul«\ tune dansA, 0 lm hi ft, 10-11 lin longa Squamae inf 1-2 lin longer, modiac 2 lm , sup dissimilos "1 lm longfp, angustjj, initio inflpxae, demum icfloxse Glaus ex IC cupulam vix supcians, an sempei[9] An satis a Q TrojanA diffeit? (\. s)

90. Q OOPHORA (Kotschy' Eich t. 26), pilis stolhtis bievissimis pallulc pubescens, lojiis ovatis ovalIbus oblongls^p f>asi ol)tm>is ipgulantci cienato-sorratis CIPIIIS aculoito setaceisjfl masc pongonio oxtus piloso lobis acutiusculis Utp campumhto antljp nilosis, fiuctibus solituns sossdibus, cupulA obovbidoa mt ollipsoidoft glandem feie totam tenente palhdp volutmft, s({unmi4 infer o\,ito-aculis adpiossis, modus o\«ito lincpolilis oioctis \v\ subpatontibus oxtipmiiato mflcxa , supuniis lmcaiibus oioctis VPI s,p|)ius Ioflcxis $ In Kaiducliia(KotsibJf it lSV),n. V>0 P(tioli 5-G lin longi I imbi 2 J r> poll [.°»gi, lj-2[1] j)oll lati,acuti, basi subcoidati, norvis latcialibus utunquo J-U, crenis non piolundis, mucrone 1-1} ^[in] longo teimmatis Amonta (ox AOtschy) li'2poll longa Pongonium pioiundo Vfidum (upul.i T> 17 lm [oll]K-i, 15-16 lm pi ope apeituiam lata, basi subangustat i, squamis mf et m!? %F[I]P(11s 3 3^ lin longis Glans ellipsoidea, subvelutina E\ Libam, ox fructu ad Q. Look (v. s.)

91 PFRSICV (Jaub. et Spicb ill pi or 1, t. 5"i), ramulis pptiolisqm mmiiK \eiutnns, loins ovalis \el oblongis vel ovalb-Lincoolatis basi obtusis giossp v(Ji..rp])iii(j(» cicnato soiratis doutibus muCionitTs supia spaibim subtus uobio stciiato-pilosis, stipuhs lineinbus extoino pilosis, fl masc pengonio extiis piloso pateuro,mi 5-7-loho, antbons passim pilosis, li^ptibu^ solitams subscssilibus, cupuld^ inluiidibuliloimis cniPioo-\elutmr M|iiamis IIIIOIIOMIHI[1\]

adnatis nvdtib, medns ot super ovato lancpolatis apice recuivo liboris irlaiidp cupulani dimidio supprante tflabiiuscula ^ ID Hersiae mend monte l'iie/Piid (Audi I u: o.Wl), lntoi AWslm ot Schira/ (kotschy! pi por**MiiUi MM in Kiiichstaflid (Kotscliy pi Alep Kurd J%) Pubes umorum unionim prLioli pt foln subtus J» ill.de luK.1 Pol.a 2 4 poll. IO.ILM jo -ljj,> £V pptiolo 4 G lin IOHKO stipule lugicos, 1 lin long* I'm'gomum 1 nu*' 2-21 lin ldtum, lueutoi lobatum Anthouc :,-7, fildmpiitis b, ,oros nills Lipv.liusiwucib. Cupula8-12 l.n longa, oro 8-0 1m In,, s.juamis biev Is infeiioiihiis 2, siippnoubus3-4 lin longib <*lan> «j 20 lin lontra hlnrZ UUIIL subacuta (\ *>) B> uuioiigd,

p, 7Jc/aH0m, squamissupenoribuscunulaHongioiibus — InPoisi.1 (Bolan« ! n (>1), in h Fluipnl) Folia simiHiuia*S(juamaj super 4-o'lin lontw; loiiKP liiicpohitaj, apice vane llcxai Glairs o\1no-acuta cumin l.mv.nr aut diDiidio longior. (v. s.) reuor

92 0 VESGA (Kotschy Jt 1850, n :>i5, Lichen, t 3jG), lamuhs poUolivme miniitp ost pillidp VPEDIHUS, loins ol)lon^i«, \el o\alo \cl obovato oblonlris at utis bisi (ordatis vol laio oblusis acutis\c cionato dpnlUis dputibus dcu-mmalis pubp imnutA supia vix pcispicuA sulitus LO|)IOSA pallida, floribus fructibus solilains spssilibtis aut subscssdibus, cupulA IK inispbdPiici \plutiuA unej^, s<juamis ad|»iossis IIIIPI Vt modus ovato-lauceolatis obtus Ubculis su|>mhisjUfiPaii-lanc(olat s pmlo lon^ioiibus nectis \e\ \aiic ilcxis, *tiUmli** pllipsoidflPhpicc dopMssA *KUUK*scnito (upulA dirnidio fc IO suppiant* { Tn pro\ sdniwui alt 'itoop 1'Ptiob 4 K (in pod jamo) lin lon^j I imbii'/poll IOII^I , 0 18 lin 1-LII , ii(I\IS l.itcialibiis utiiiKjiie O-1J| nnigkiiiljiis dGiiiium *I* lin lon^is Lupula basi olitiibissima, 8 10 nn longa,Tl 12 lin lata squamis ml ct modus non ciebus, supicinis 2 1m lon^is Clans 10-12 lin' longa, ex nomme veris dulcis (v s)

0J 0 TcHlIIArCHFFFIl (Kotschy» in h Tchihat), i inns jiinioiiliiis poliulisquo tpiiiiitpr ct pillidp \elutinis, loins lanccolatis aculis basi obtusis crebn ct Kinsse ciPiidto-doiiLatis dpuliliu^apicp (alloso acutis supia spaisim subtus CM l)i(> pihs mminiis HtolldtiH pubpscpiitibus, flonbus , liuctibus IJIOMSSIIHC])(diinculatis solittii us ffpmnusvp, ouj)ulA lipmibpluPiicA oic j)atento CHIGIPO volutinft, sijuamis mloi it rnodii«radmossis late ofAto-quarfiaiiRulis, supo-nonbiis o\ito-(ibloii^is olilusis patpiilibiis, supn nns p\tus ipcuixatis ^laudp ollipsoidcA (iipuliiii dimidio suppiantc glalnatA JInljdldtiA Q rchiliaichpwi Kotsdiy in Tcbiliat As ram 2 p 4(>8 (sine desci) t 40, f 1 (liuctu jumoip loins minis subulato-dcntatis) I'otioli 2-» lin longi Limbi 1 -1 \ poll lonm' 4-8 Im Iati, dontibus uiim(|up 10-13, piofundioiibus quam in icune et obtiisiiisculo IK(siilmlito rnucioMitis Fiiiclus in spoennmo dr lapsi, *vx* 'flo-nbus |im . et K-onpbipiiiKs (upula matuia 7-0 lin longa, pollicem lata, squa-mis omnibus 1 \-*x* *w* longis, pi ope \eiticem magis ac magis pateutibus, su-inemis lollexis paulo bievionbus (v s)

<)*k Q* REOIA (Lindl bot reg append, n 73? folnHantum cognitis, Kotscfy' Lull t 11), ramis junionbus puberulis \e\ glalius loins o\ato-aLutis vol o\ato lancoolatis vol dblongrj-aciilis biisi coiddtis vel obtusis vol aculis KIOSSP inciso-dontalis dontibus subulatis, juiiionbus supn pilm soliUmis subtus in IIPIVO pilis soliLiins alibi slollatis bievionbus nubescontibus, ulullis LM,ibMtis loins i imomm su iilium snnilibus vol piofimdo Pt iiipgulantpi lobatis Ivia tis\o, llonbus , liuctibus sobUins gpimmsvp subspssilibus vol bio\itpi no" duiuulitis, cupulA subglobosA gnsoo sulnolutin.l, sqiinms adiuessis crebrL, inlpiioiibus ovatis, m(<lns ovato lancoolatis, supionns subspssiJibus mporibus in!l<\is gland* mclusA aut vix oxsortA pubeiulA In Kunhsti n Brant), piopo Muscli (Kotscbyt it 18',0, n 412), in montp Kaia Kuidistan n Kotschy It 1841, n .140,111 1. Boiss am.oscTtim in h Flo.Piit), in Tarnu (K ,1 (JIK n 181, mil ll«*i*0, in Vnt.tamo (id ' 18,1, n :,04 ? ! S bnccimuid SHIP lr XPI Inlin pimutis degio .i 0 I ibini d.fTo.iuit vtuJ V(, J,n long. Lmiln .1 8 poll long,, i 4 poll lati, intonsp vn.dos, mo ni b a aco nunc in cod ia.no sl.angulat. , p.nnati, lohis tune acuin.natis et inlcnluni ateiahtci dentatis Cu|>ula> pedunculo 0-7 lin longo inseit«r, oie constnetde,

glande imperfect à subclausæ. 4-7 liu. loiuye, 7-12 tin. laUe. DifFerl à U- Libani præs"Mini i'nlijs iii;rj(.rrlnis. si>p<> pmfftnniufl dfililalis, mine pinnatis, frnclu tinnum globe so, squamis b H'vjoribus viv ijMii<lr:iti|~rMlis. si*ii ^jui isdam sppnniiinbu s mediis varietas n• iiimiiqirnii videtur. SpecimeWWost in ti. Tchiliatcli. n. (i(ii. n Libani ;i il. Kntschy vocaium, foliis Vfra; p. LibanjL, Bed floriferunj et anLhcrtt %laL ris, dum i in 0- Libnui antherx pilose sm ex Kotschy. An Q^eMkli'ibuinhiin, ubi anilujrae sic diversx esseut? sed Inicuis ignoius. (v. s.)

95. Q. LIBANI (Oliv. voy. t. 32), ramulis petiolisque glabriusculis, foliis ovato-lanceolatis acutis basi obtusis vel acutis grosse crenato-serratis dentibus acuminatis supra glabris subtus junioribus minutissime stellato-puberis glabra- Us et ad nervos e t^^^^ axillis pilus jSj !K inasc. perigonio .Viiilo *vxlus* pilosu, apthcris pilos sj|MhiMbus suiitamis sums-ssim»its. aipnia ffiLuipanujiiu, s<|uaniis ftdpn creli'i • iv-i-vclutiiiis. ini'eiwibus ci muilits ovatu '» an^'iilis. Mi|n-<'iinscrci-tis liueari-lan- nbtusis s;cpius rainoi'ibus, glande late i'lli[VMiii|e;'i jr[;|j. . . .„•u];i npicfi depressa cupulaffi paulo vel duplo supe- '"itite. ', hi multibus Syria* (uliv.LLabill.! in h. Webb, mine Flop.), i» Tauru (Kotscfiy! pi. cxs. i:di.'. :isn ::sl. \m, :i84, 389, Balansal *K.\A.* fl46), Phrygia cjj'onio mend. (Tchihatch. As. min. 2, p. 470), Karducliia (Kotschy! it. 18W, n. 559, 562). — Kouv. Duham. 7, p. 167, t. 49. f. 1. Q. Libani var. callii:ar[>i>s Kuischy ! Eich. '• *h. Q.* Cardticliorum Kolschy I It 18.'t9, n. 562, Tc hi batch. As. min. partAbot. 2, |». 47 8, i. 40, f. 2. Pill rari^ simplices in Muuilis et petioli*. mine nulli. Folia li-3 |»>U. longa, 8-1o lin. lata, petiolo :l "*t* lin. irjnK'jjjytida. pilis subtus sub i'ntc yidoiulis^ in parenchymate n- nimis atellaii!^^n.axiilis Rt ad IHTVUS loiiKiusculis" stiliurits vel steUatis, dentibus e basi offlffl abrujite acuminaiis. Flon's masc. ex ic. Kotschy descripti. Cupnla; i>-]-j lin. Ion gæ, 12- if, [in. lata;, ore mine Constricto, sqUamis (in ead. arbore) fibiusissmn> \>-*l nyicn* sibrupte anguslatia oliUisiusculis, supn mis 1 ^-2^ lin. longi • squamæ infer, et mediae sa>pius Jorao planeB, interdum (n. ,)lj2 par urn in h. DC.) c rasfforea et lorulosie. (v. s.)

96. U. I'ONTICA ((.;. Koch in Linn. 22, [i- :tl9), ramulis glaborrimls. foliis ellifeticis grosse serra.tis Sirbtus gjaucesceolilms, sii|iulis filiformibus ciliatis petiolo duplo tri]i)n longioribus, fl. masc..., cupulie squamis Lriangu]aribus aut <-, ato-lanceolatis. > In niNiiiiliiis I'miti. Si'ciiiiui-; Cerria Spach^ei cl. auctore. Folia :i-n [Hll. ltjnijj:i, *'i* \:\ pol l. lata, sorrulaia, sprris irtaiigulari-ilalnceata^s^^ ttin. longrs. tiervis ucunuariis KilK emineutibus, petiolo ;t-'i lin. longd. GRE mæ rotumiala;, Al'finis t>.\ auctore 0. PersiCBBj ubi laBtten rami])ilosi 61 Julia bi cordata.

97. 0. CASTAKE^EFOLIA (C. A. •'••• -. Verz. pi. Cauc. p. 44, nun Cosson, tftino 1861), racnulis petiol^sque minute velutinis, foliis ublonftis vel oblongo-lanceolatia baai acuus vel obiusis Kmssr* vel sinuato-dotiUtis dentibus miicronatis supra sparaim subtua ubiquo^stellalo-pilosig, stipulis Imparibus pilosis, floi ibus mas••. perigouio pubesefnte, anthcris pilosis, l'ructibus sotiLariis vel y min is sessilibus aut pedutnculo brevi crasso iuscrtis, cupulae hemisphaerica squamid seri i-Qts inferioribus oyalo-cuspidatia mediis e1 sup, gradatim-iongioribua efl anguatioribus mediisprimu dei . . . tmibus in Iruclu p^rfecto mlroflexis, glande cupuluin bis-(]ii;Uf?r supeiantr'. } In sylvis niunnuin (i. . . .'gise CaucasicaB (Hohen.lJjalysch.fC A. \;ey.!), i hilan (*Aitsch* ':,;ci:;), Persia bur. (Bui se! m h. Boiss.), nee lamen China-, nam s [jeefmiua de quib. Gay in Bull. soc. iwt. *H*, p. V2i, l<Minus eat, diversae sp. videnturj ei ramis sine 1r. et fl. (a cl. •'iy comm.Tnon diiudicanda. — Eichw. pi. Casp. p. I , Jaub. et sp. ill. pi. OP. l, i ;^ (9«*amjs junior.? male fig.), l.cdfb. tl. roas. :i, p. 591, Kotscbj hicn. l. 40. Q. cStannsefolia li. hal. (Schlecht. bot. Zeit. L857, p. 890) differ* *av* ltl,,,,, se(i milii ignota sp. FoliaH-6 poll, longa, (.K2't Jin. lata. petiolo 2-9 Hn• tango, rigida, tarde decidua, nrrvis subtui? ('niiiiiPiitibns, pilis utrinque breviasimis, supra raris, il'-nulm- i>l"nimiiu'- ICKUIUI ibus acutissimis iniuc siilJiiullis, Floresmasc. nonsatis COKHIII; <\ spi ecim certiori bus anlhcris pilosts. Cupiil;i> sa'pissinif sleriles aut glaiidc suniiaburtiv;1, Him: (,'lobi ierliles (ut m ic. Eichw.) 9 lin. latae, plande Ifi Im. longa, glabrescente.

Squamæ tarde reflexæ, super. 3-4 lin. longæ. De aliiure afticanft Cass«jnis, confer ad Q. pseudosuberem. (v. s.)

β, *glabriuscula*, foliis utrin•iu.• pan e pilosis — In monte Talysch .i n! ftburs (Jtuhsn! in li. |5uts> j, (,). c;istan(ynriplia l'u;i ; <uli v; gl..),,r !];,,i,,s. ! \n[/. pi. Bit I is p. *W)*. Pili sub li nte apparent. (v. s.)

98. Q. MACEDONICA, rarutilis, potiolis<[uG vix pilosulis, foliis ublungis vel ovato-oblon^is utrimpie ;i cutis vel o .usis sii; ^"WB^Hiibus lubisve mn-cro**nali.4 uii'inijifo ... anthi Iruciilm tlifiiculo Li-vissi mo rivissn pulwHCPntc insci • . '. • tflifrriaribus late ovatjs adjiressis, inodiis lancRrtl Ifitis infteiis, gland" in--ln-,.i au ,» In sylvis Mai (Orisil*. !) et Albaniæ (id.) sparsim. Q. Ægilops Griseb.! spicK. fl, i<um. I-. 333, Btct. syn, (non i.iiiii.) - idi in h* llitiss. a ol. i.risel). cnmni. nude si. . . . Inhio sp. divpfca Vrtlliinca, It.iini n piini'i anrm (sn!) I' tiltULUqffitti • ! , longn •! 12 lin. laU, pntiulii 1 'J Im. Iu• isp<Tlu (ilabt-ji' \IMU mirnitiK3irnifl snbtus [iraiscrHrii nimis et wdttarits inaii}-IUSJ margin^ undulatfHd^nUiiis Vfl urenSR r;uin unicrmK tiniila: minx *»voidf[1]>, obtnsa:, jtiiljrruko. |Tni<:iiis (miiffl sfcundi aiiin iiMinlnm maturi) \ :> lin. Imi gloliusi •. sebi^-12 lin. ptuinis** majovibas (mediis) 1^ **lin. longis,** (v. s.)

99. 0. CBINBHSIS (Bn i. |il. Chin. p. 61), wmulisjWjrifi, foliis ovaio-obloDgia acuiis yei'fif-dratniitiH hasi ultiusis inarHine summ'ttilaiis et remote Q ucroiiatis supra Kl^bris sub *i* mi . . . • (teJIatJB incane-scentibus, li. masc.j fciu MI!IS'S,INIIIH solitarijs ^eminfeve, smiamis cupulse cinereo-vfilutinis hmceulatis m • mdc siili^h.ims.i cupuliun dupprante. ,J In mimiosis Cliiji.r scpl p Pa li ;ulu|ii ^l« lin. luugi, Imsi cnmiusculi. Linln aduli) f6-6 pl ll. \ *onw, 2-%s* [mil I ulrinque 16 Ifi' httidcm mncronibiis ncroniiiis acmis I | * Ui^ lun^ix jM poHpbcriA t(;r-min;ttis, niodo foiii Ciistaiicrc. Stipula! dH;i'w:n. Ciipnlae iniiio nncitiui anni iiiiii:iiiiii snhttlohriiti, **:i Im.** Inti, --•|uanifs **uti ribus lime iullrvis, jncdiis ven is. Glaiis a HimyJ diisci[1].**

I O (T . Q • . i • • • i : '.... .!. .'. !• I **inulis junWribilS pa-nun nWlliilo iMiiii-nLnsis, foliis)i iibcdrdatA I'liii.nvis vfil supertiB passim I ibpanduraDlormih • , v(-| obtusi i i-uiii nil i vo\ rcjiantl" < u sl(|h— in- uuneScwjii l<tinentnsis, floribus..., froctibils substilitanis uiiuM ln-niispi , sijiiamis lungis XJM. tflandi.[1] snb| !'ini'-iinn — hi Japonic. Folia ^ulin peliolo :t 'i lin. Imifjro, rippvi: I;i.I(;nilibus blriiiijn]a.!is, .sii'pr ulitusis L-t su . Q. Cliiii-jiisi]',ui vald^ all liifiert.**

101. 0- SEHRAfx (Thunb. 11.]<ip. p. 1*6), ran[is j . . ribus. . . sericeo-pubs I(,n— lilms, l'n!iis e ha--1 obtusfl vel rarius tctltA obiod) n'rtii-tiatis vl raiin-. ratis d*»i • supi-'i .y n - . ! r v > s I - I • w f j sericeis, ailnln-; .'abratis, amcntis I,: ictris lute ovati extus puberulis, peri pouio /|-!n!ni i'\in> pulierulo, anlheris globosis jlal)i is, ii,,, fem in ai ill is solitariis v^l npnl;! hpnrisDhwri Hfjiiaini- i Itiitlnis in r| fiirtribiw Ian -I omnibus i r>nunn v;m. >, In Japmiin fTliunb. **Wright! h. Lilgd. bat.!) 61 Manch** -id ad 'i1 newnan (Q. serrata Carruthers in Journ. Linn. soc. 6, p. 32, sine descr.). Q. acutissima Carruthers l. c. p. 33 ? (ubi descriptio a sp. japonica non differt.). Folia fere Q. Libani, 2-8 poll. longa, 7-26 lin. lata; petiolo 4-12 lin. longo, juniore tomentoso, demum glabrato; nervis lateralibus 9-20, sc i;t 1-2 [IB. ifingft, ex ◁ nte prev i tPrmintitis; pills sericeia *fuirm* sis inter nervns folii junioris brevibug, in *w* npioribus. Axiliee foiii maiuri

sæpe pilosæ. Stipulæ 4 lin. longæ, anguste lineares, nunc apice latiores, extus sericeæ. Amenta pendula, 1-2 poll. longa. Lobi perigonii obtusi, plus minus basi distincti. Pedunculi fem. ½-1½ lin. longi. Cupula 7-12 lin. lata, s a basi ad apicem sæpe maj u-ibus, variantibuSjSupren is 2-7 lin. longis, tarde |>!us mi lifts patentibua, nuncjfc eticT cupula ftaitirnvix rcctf dft ntfbus itao patcni(fccurvis. Glaus oUin vix superans. Varietates ex foliis angus (LoribuSj s;r[iius nhujsis. mil minn-

fil'u d. Illume iuttlus. L. n. 1,1' 297, quas e\ SPC [minibus merandas existi

uilir'iii. vix ciin mo. Petioli interdtatni *2-;t I'm, Itmgi , limbi If^poll. (v. |j

fS, *itiuhurnhii.* .mipniis Ijrtioribiri, floriims nmi;. majorib n Siflci (Hn\h,).'Kii;isi;na Sikkun (Hoot iepalia (Wall.! 2771). Q. serrata Kujtb. II. iini. f[1] • p. 641, Honk. f. H Til • bui'ghii End] ! polyanilia TJndl. in WB lisi u. -277] 1'idia aiiDua videnlur, il miplcni). J'M1:I I2., t.isi m adulia Bbnino lir ir. Slipulx[1] (ex Hl eiim gomnias angiistiores, i . . . issitilte ul in a. Floras T] lin. effear lati, *LVU* nt in a linetfm, niulwns paulu majoribus. FIOVM lem. sinjiles. Cii|uiki: i- Japoii iribiia similes, squamis imis oval el sti|j. i-}-:j i liRis, ubl brigis, dblusis vel aiis, vanu diverg«ntibiH aui ra cad. **cupula racurvatis. (v. s.)**

102. Q. LANUGINOSA (Wall. Cat. n. 2771), ibiiis vel pbtu uvali-iii nfflft dentato-sen lis ulnimtiff [1] laimsis sii|ir;t licni nudis, Irn ctibus axillaribus sessilibus, cupulæ squam *HA* imbri rl d p . . . . ibonata. $ In Nejulii (H;I.III. W.-tll.). Q. II.IUM HUM m ii(?a vel Banja nomen vulgare pl.inum sp, at'iiniuni videldt). \>l prosscnteiiQ iribuonda vcrisiin. spncimiiia W.iiliilni nnun 1KJ(.sim* iioiniin[1] Cumift. uln runn jun. il'-riM[1] flavo-loini ilia dliplica, ol)louga vel mala, utriiHiuc olnnsa *vi*\\ acuta, ioriacea, ti i ila, 1 -. -\ poll, longa. fi in lin. I a la, p'Pliolo ;Mi lin. •-•", jimi<ir^Bm! -u-toiaen •, s'-mi* ^'i[1], suhlns .i lomeiitusa, imtib M ciindj uau lutaij dii Itrai (lore sin fl;* iiiiium iiiasi . fi-fidi if, iiitn- :illji>-laui sulmiucromtiai vel obtusæ. (v. s.)

•"*lO:i. p. INCANA (Roxh. Imri. B liJo-veiminis, ibtusis ipra initio strllalo-punrTtilis • nblus '"lii'-nin miiuiii. Willis, **amenlis gracilibuBl h liracreia ill** atis ilnicin ,Tt[iiaiilibii **o, antharis** muurunu mculis I. I | ln^viori|us, rructilnis solitariis geminis ternisve, cu ipulas (juhiori,sj sijnamis nyai us. > In Kamaon (Roxb. Hook. f. e: ffioffls.I) Pi Nfipa-lia ? 0. Innala Sm.). — il""I« [1] (*Ul]*" R"*[b]-)j [1] ftd. I8S2, v. :i ii r,'i a Wall, fisl lid« H >nk. I i lanala Sin. in Rees rycl. -. i. n yul^. Banja e laniiginnsa *Dun*, sed in hacce Lomcifluio jumua i allMii.ii, PI specim. 2-11 [mil. inii-.i 15-3 a-0 HI. iniigft, 1-2 p«U. char, variant <•<«• ineari-lan i AnK'iiia dimiiliq Jco-oblonga. An cum i>ra[1]ced. jung<[v]ilda? (\ cmnni. a

p, ^'7"""•'^^•<^•,^[1],liis nbovatis elliptic! :\t> »Htusis vel acutis non acumina .) !: NupaliA introd. in hort. an[1. d i n h. p paris. (h. W U. N«»pi h". par- wl. IK'i[1]*. P *14-

Loud.enc. trees p. 8ft8, f. 1I;:I;J, i;ay' nut. N#v. Chen, p 24 Folia

4. 0. COCCIFERA (Linn. sp. p. 14131 ramulis stellakupubescentibus feliis eflipticis ve oblongis basi corclatidfel ohtusis vel rariJTacS in Si sn-

passim ste lato-pllosis adult* cito t f l a b r a f c coriaceis,fl J S I K ceoUis vel oblong vel olwvatis extus pulueni ... ,;, ', £ fc"" s p loso tobis bhtusis, an Iberia mucronulatis *veltar\nfmntS* • iff, « cuJo brevi c r m inscrtis mine sub*™l,l»us ,„,„„s ',.! " ^; " "'s

- I - .1- rHdaLiio ;.,^is,rnln,s, imis «| sum.olijj fi.^n u quo

et pseyducoccifen, WVIJ, it. his,., p. I., P< im. |OI1)-i Sj , ? " piua 10-12 liiuloiw, pilw raris bn'vissimis,iRuJcis Min lon^i<i ei li.K'iuu l.m^is, [iHoribHs iciniiurilm [tl (U-xii 'Sis

Uolosiibbrav ore*, gillie rmim-iitw.-rulirae, f o r m e s (GaFid. hist 2,1 .v V,) Kermes pr;i:t)cnt. Amenta i)-18 lill. lonifJl. Flu res m«sr nnn satisTin ,'ti. *

ft brovipros, cras.s. . . . n,rvis, et am-alione aa de&tu iurvationsi dum m eoilem ramo DOC nun 1 ipuia variantes. Ubi i uiima . i n PaUint ea « lrclHil ""sum Paulo inllfxa jl'm-i s r „ uen, e- imperfect!, squami^ I. . . !„ ar.no ut in priore » f f i gjSe brt viore. iransuns i.uer vai I bine ad specfes s e c;.^ S S n E i s " • irigqno-laiftaolaiis aciuis, m.-diis riKide patentibus nunc rccurvati*, aliis ,n,.|,s aut tardo ^patentibya vH pat,, li u

! Bourgnau ! etc.), Gallia austro-mi<>n ,„„, \i lina ceria in \wvh. mm vidi), I);ihn;iti;VfPeW' in ti' it, i ho (Marmot I I 92), Gra•„;, (Kotsuhy ! revis. 48 *W'lti* i n I, „„•

\rz"- '"•«•• 12, I M (omisgis aliis ial,. ubi Fruclus ilrsutii au mores auI male lig.). Cossoq! in UouiK.pl. hisp. 1853 n 2O'M •! Vtty. Esp. p. r>7H,t.r^{fl.masc.raalRfii) revis. n TO in b. Boiss. Jaiain I 1. c. (non De.sr) 0 *GrS^i'* is. G9 in ii. Boiss. (non e j W Eicben) n. SibtbV.mi'i vi ,,; i r. Ki.Ucbyrevis. n. 4H in h. *H,L.* [ubi squin* f upulæ nunc ^ J ad yar. inibricatnin acccduiil). Frul.\ raro itrli m-uh v i las, obtu«, S,MMUS spino^a, nunc .uu,',-, i us a "cem v , ^ ^V'. 1 i.ni l"|l1"- serrato-spinosa. Cupula f-G Lin. „.<, j „, Vita, ore nun " , I,! '"

enerviis. GllnsperWap-lSlin. longa, sed sæpe bevS! (V sj 8 V<

cmml* w* «, ffla i,dc abbmviatA. . In ti. . . . ,us l|, S S« SS (ll.ni^-l-r. Cltsmi-riUj, ltour^>au! !)| m h I',,,) ,, , ... lltfi mentl. fWeiw-,! »' '>• » »»iss.i v,,v.i,,;;. ; ; n < ; '-L^'i"";;:'. Lx apecimiiK! vuiusto UVhv. in Boiss. RfiWto, folia intVrdu'm, /3'l" iCfc ratao) basi obtusa, Ad rrequentins in specim [)o,i, ... (l11 p„(kl» non siipprat sed manes specfs fructus fmTperfectos abbrr'-vi prebeni. Scjuamic ta«,t,a»aMteiltes vel ncnrro, alia erPct I ,„ in Sjuaraa.. duw. n, • *m ve\ \n* eadera cupulfi e n e n S / Medfa hanc et a. sunl spedmina Welw. 27 in b. Webb. suSrnom A

setiundo anno valde revBlutis. (v. s.) • -"wrtivi, squamia

Y) *pseudococcifera,* cupulaa s-^amis abbreviatis planiuacolU, ri%iorib^

ovdtis ulpressis, medns watn-lamrnlilis utitis rlomuni plus minus pi-
tentibus niiiiquipi ldlpxis, supiemisl LIUcolitis itutis nedHs ^ ant 5 In
AlgcuY (Dcsl i in h DC), piopc Phihppoville (nupu accepi), Saidinia
(Moris[1]) et S\uA (\uchpi ' 288J in h Boiss) 0 psoudococcifera Desf
fl All 2, p 3'W, Moris' 11 Sud 3, p 517, L.ibill ic dec 5, t 6, f 2,
e sppcimine Desi (non aliorum) Folia tai a squame modiae MX linea
longiorps, e basi adpipssl m euspidem pnulo divcrgontom abpuntes
Cupula tot i mi$_n^r$is quim in a cmeteo-velutini Mans peifecta, 0-18 lin
longi, snpp brcvioi Lnus p 2 lamis h. Wpbb.rjnfloipscpntnm fpm ano-
malam pidelxt. ppdimculis 12-r> lin longis, fiuctus J altcrnns gpipnti-
JJTis (v s in n meo ct Webb)

8, 7*mbneata,* squamis cupulae imbiicitis usque ad matin ltatem neifectam
adpiessis doiso con\p\iusuilis ab inns giadalim mapis ac magis lanceo-
ldlis — In BaelicA (Webb' Bourgpnu' anno 18)3), Lusitinia versus
(mtid (Wpbbtann h Flor rt D( ) et loism ad letu.ui (Webb' lb sed
s>peum lnippi^ Q pspiidococtilen Webb' putim, (osson in Bour-
gcau, quoium pus ad U tallipnnos biath>bal mos loisin peilmet —
lolia ^al a (upul i ore tonsillctij, glandp m sppciminibus ibbreMat^
imppif(Uc\) SquuiiiB finpin usque supeipositae, sublongiores media*
H-H ijP longae,<llorso enenia, tandem h\e imbntatJ[1] IIPC patentes
Numerus Bourgeau 878, anno lR'SO medius est intci praesentem et
\ai a, squimis in eod i«imo ant m div s|)Ptim erectis \e\ patenti-
ieflp\is fiuctus sub n 447 (t 448, e lauro, communiciMt Kotschy
ubi in pad aiboip ut vuhtm squama[1] mine erectae, mine racdiau piten-
tps, mine media[1] lpflcxan, quoium pais ad 0 tallipimos biachybalanos
loisan peitinct Confer etiam ad vai a, obs den 48 Kotsehyi (v s)

e, *Auzandn,* fiuctu mmore, cupuldc squamis crebie imbricatis lmis ovato-
laneeolatis, lhis laneqjlatis, omnibus adpiessis dorso subconvexis matu-
nslaxuiseule supeipolitis mininip patcntibus $ Cuca relonem (Gren et
Godr , Blaise in h Boiss ') et Massiliam (Blaise et Roiix in h Boiss ')
0 Au/indii Gien et Ciodi fl fi J, p 110 I olid non glabn. spd modo
afflniuni passim initio stpllato-pilosi Cupula 4-r> lin longa, "S-b lin
lata Squam *i* mediae vix lnu \ longiores, magis quam in ilns cinereo-
velutiihe, pilis bievissimis plensque retiorsis An foinn imppifpcta, glans
cnim meliisi aut solum ')-(> lin longa in specimmibus h Boiss Ex spe-
eimimims sub vai *teia, \mhncata* et *Ciliticd,* squ.imae in eodem lamo
lnteidum variant, non leflexae, quando fruetus imperfeeti vel lmmatuu
(v s)

(, *Cilinca* (Kotschy' m b Boiss), cupulap squ.imis crebre imbiicatis. imis
ovatis obtuse nuieinn it is adpressis medns gradatim magis hn(politis et
ticutis matin is lixis\el PXLUIVIIIS mtus eomexis extus nlanis, supre-
mis bitvionbus linean lanceolatis picctis, glande cupula sumongiore *j* L
Tauro (Balansa' sine num in h Boiss et sub n 1148 in h DC)
Antherae mucionataj Squamae mediae 1 J lin longae, frequenter in eodem
lamo et fiuctibus ppiteetis eicctae laxiusculde \el semirecurvatne, id est
fT. medio pxcuivatae, eUremitate ipsft tamen ut in alus])leiumque mflexiV
Fructus secundo anno imperleeti squamas eieetas servant Alfinis *Q*
y ralliprmos vahdae (\ s)

o * *tomentosa* nmulis et folus adultis supra spusun subtus ciebie pilis
s^lhtis Inmbus pubfsceiitibiis, Hoi et ii In monie DPI si p|Dpe Te-
tuin(W<bbi) U Cillipnnos (special lou dicti) Webb' it Hisp p l^r>
Aasunt sppcimma \V(bbn in h floiPiitino, sod cum alus glabnusculis
vulgaiis eoccilpnp sinulibus et absque (lonbus \el fiuctu etiam uinioie
^x p-itria xanetas piarscntis \idptui An Q Auchein hie jun jed * ?
(\ s)

0, das *vantha,* pengomo fl masruli MIIOSO 2">-rido, mine 2-paitilo lobis
2 3 lulls 5 9 j$_n$ syh$_d$ticis SLOglietti Sitiliae 0 pseudocoeuleia Huet
pi sie n 180 Rami \identurarbusculae vel fiutitis elati Folia Q cocci
Jerae vulgans, 6-9 lin saepius longa, basi in cod ramo obtusa vel coi-

data, Integra v«] gpinosa, Perigonium masc. villis longis albis mar^ino [ifvitsri-liBi {lonaiuni, quo ad divisi<....s rarians ut sa?pe in ali ebua obs, Aniheni! saepius muUo^e, Fru#us i^rn. (v. s.)

in;., 0- CAiiUraiNos (Wobbl it. Hisp. *a,*]•'.), ramulia^tellaio-pujbescentfbus fbliti oblpngw vH eUlpticis vel obovatis bnsi cordati cronaio-spn-atis vel rarius spim mi stellato-pilosis adultta cito glabrati cxhi '-ntiluis, pei [»lus minus piloso lobis obti] IIIMI s i.iuiiris vc! nnirrnniilaiis, Irutlibiis ^nlunculo bre\ i inscrtis nunc subsessilibus soIiLariis vd ^mmis, ciipula liemispharidl sin; Idngjoribus adprossis v< atentibtu vel patentibus\d reflexis suprcmislineaji-iaiiceolatis'ereptis vel patentibua vel larde reflcxis olande inclusa aut aubexsertA. Riterduin ., (Hook.! t. aii), sjcp^,rariiwVln oriental! «-! A«- mans Mediterranei. Q. p»ud Ii.wk.lf in Trans. Linn. p 381, t. 36 el 37(exei tyn.0. Aucheri el Fenzliij ,flonDe»f Peiiolil-ilin longl. Bractea? ut *in Q.* cocciferft? sedflorea masculi nondum satis coniiLi Kxtmmitates Bquemnnmi patPiitiuu |il«rumqufl hiflex», ut in it cocciferft' utalis basi iiiiiiiiiain am nthnis minus Scronaristeumiiiba majore, squamis sspius !onKii>iib6« im-iliis nempf! plcnunqn«-J lin denLibus, squamarum piiis i nitulis, glaude vulgoobtu Dunijiii jupiila multoties longiore, sed variajiones {in eodem ramo) aubsimiles et transitiones variofatum cateDam fere continuana inter hasce species Equidera non pisi in herhariis pauperibus vel botanicis uui regionem iimcaiu pera^-ant formal varietatum rlfstiucLai apparent el iluae Species oullo character omnilms variolalibii pauperibus patentibus

Differre videtur ab eft statuiA |gum **basi** **mni** **ak U f c l**

morals n.

a, *pungent* (Kotschy! it. Ciljc. 'TIO el BO, 10. feliis spinoso-(iciu*ttf parvis Jructit pan'o (impeiiccto), wiuamia act4ninaM| Habitus nl folia tirnmno *Q.* co n »iccis observatae. Foli;i 6 IS lin. longa, denlibus \-*l* lin. longia.obliquis vel perptMirJicuhuibus rifiidis. (ii;iiis aborlien!) upulam cdiinatam " lin, DifTfrl •{ *Q.* ruucifi'n'i sr{uamJs mediitt 2|-3 lin. loiigis, supremis kintrioribus. (v. s;)

β, *parvifolia*, foliis 4-8 lin. longis spinoso-dentatis, fructu parvo, glande inclusâ, squamis dense imbricatis mediis lanceolatis laxe adpressis, supremis erectis. 5 Circa Byzantium (Noé! 233 in h. Boiss.). Fructus in specimine unicus, sessilis. Cupula 5 lin. lon

ali„ lo„«h sericeis. Vix variet». nam l&iaj./'iV^a™" mediis

oatali sterib inierdWJB minora ct jqnamas vensiinilii, i erectæ vel paiontM

[II i|I\. CII|UIIIS, (V. S.)

y,vwp.i, Cruet!] pa epe imperfecto, riande abortiente vel mniilm, vix Buperante. sfluamis abbreviatis latiotihua aapo obiusia n, omnibus adpressis Buprema inflexis. *r*-; In LiVano (Kotsrfiv!) Utakieh pBoiss. !), in CreW (Raulinl in li. Boiss[1].) et Zacintho ffi \v i 0. inops Kotschy! it. 1853 el revis. n. 83 in b. ll,,iss. p. braciivhSi^ id. *'W.* a, ibid. (». pseudoeo I Kolscby! it. Cilic n *>i - i V *11* " <>. Cretica Kauliul 732 !. c. Fulia dentibus obliquis ut Boiss 5-7 lin. latae. Squamae m<-[;r | [-2 lin. ' longæ, sæpius obtusæ, nunc in numpris Kotachy lohgioros. (v.

g p y g (

Muobrtna, squfcnis abltn emipatentilms, sunremi, im rlbua eroctto vel recun i i,, Libano prnnc Beirout n .S< *I* •

H [lfl. |0WP^ ac,,,;;;

(/,(i/. fructu uiajore.s.m.-.inis Im-viiisuulis vali.lis, innsovalis a-iiin-

medus **inferioribus patemlBus** su is aliis semipmemibus, **aupremis**

diu erectis demum sæpe uncinato-recurvis, glande crassâ obtusâ longitudine cupulæ vel dimidio fere longiore. δ In Tauro Ciliciæ (Balansa! 1149, 1154) et Libano (Kotschy! 55, Gaillardot! 2462). Q. valida Kotschy! revis. in h. Boiss. Q. echinata Kotschy! ib. n. 55. Hanc pluries a Q. coccifera ail caiiipnnos transiuli. Folia to specunipa GaiUanioi late ovalia 8 l.'i lin. lniiga, 9)2 lin. lata, apinoso-dentata yel rariusserralo-mucroit;ii,i in puigo in caiiipriae. Alia specimina foliis in eaUiprioo vulgatiortbus sjmilia. BHorea oiiisc., (ex specitu. Balans.) bracteis late ovate-acutis vel lanceolatis in PeOd. amento, perifcoi [ualitei urlobo, pilis intus basi longiSj antheris manifesto muaronatis. Cupula 0-12 lin. longa et];L(;I. Sijnanuft nifflfc in loime, Bupromae lincares angusiiore9. plunder njilura oa^gis tiuaiii • (v. s.)

ζ, *brtukybalanot,* fructu parvo eaene impprfecto, giandn aljorUcnte vel cupulaoj vix superanli[1], «juamis anbrcvialis latio'ribus, mediistnaturitate late ailpi'ftssis VPI scmipaiontibus raro subuncinatis. Buprcmia erectis. :> 11 line 3' [IM] Syrifl versus Boy rout (Kotsoliy! 441, ft, b, t_j 4.) in mont. Syria «! Palfertinsa (HimM 492), in monte Garmei (Gaillaifdot! 2239 iii L BoiM.), pt poop* Byzantium^ffioiss.! speoim. Bqtianiis aediis vix div••I LvniiliHri sell liicv iMi-iiius tnjlfijpvar. euca]H]iri»oa). Q. brachybaliuios KrfUK-liyf it. OTic. n. 441, oJHCImmfilt'jiis id. 441, »• <'l 'I- Folia ut in plerisqoc varietali bus d. in JHBbus O, coccffera serrato-spinosa, til eat mucronibus versus apicem Imiln obliqiiis j-ij lin. lun^is. Cupula 6-7 lin. lougaet lata, Squamse media; 2-24 1'"- longae,acuuj: vel obiu *hxv* ;idpressa yel patentee, supremjp '2 lin. longae, glanije subrxsi "hins;*i. (v. s.^

η, ***leptolepis,*** **friiciii medincri,** squamis mo*iiis **anguste lanceola^s** supreniisqiie lineari-Innceolalis maUiritate omnibus patentibufi ujptatis, glande cupulain |paulo stperanLe, — In railroad Bulgar Dagh(Kdtsahyl)et CrelA(id. n.200. a). Q. dailiprinos microphyllu KoWchy! it Oilio, n. :i99 in h. Boiss. (sedtepecrraen in h. DC. ei squVfeifl omnibussrectis ad var. priced. |tutius pertinet). U. dipsacifta Kotscbyl I85S, n. 200, a- Folia prioris • | eucauiprinos, non minora quam in plerisquf\ nudo nnmfn varietatis *Q.* calliprinos tniorophylla Koischy in Bdheaulis nnn Bervan(lum. Cupula 8 lin. late. Bquamae mediae et «upj emæ 2½-I lin. lougae, graciliores (muni in aliis, unde nomen. Specimen 'ioi), a, dilVcrl squamis brev/iorihus, supreiui s erectis, sed curv Filio in specie variabilis. (v. >.)

'". ••*ucalliprinos,* squamis dense imbricatis, modiis longe lanceolatis supreraisque lineari-Lanceolatis preclis ycl iaift adpressis *v%* patentibas vol N'flexts', glande crassA iinins;\ vel subftxeerA. *6* In LiBaaq (Labill.! Blanche! B-ft, (J79 in h. Boiss, 39 in h. DG. Gaillardotl 2244, R Ũ h) ! ft- Cilio. 442„ ft, 442, li) el Tauro (Balansa! 1147, Ketechy! 391. 401). Q. paeudococcifera Labill. in dec. ij p. 9, t. 6, f. I (nun Derf.). o. Hprinos Webbi I. c. (XI. specim. Zacinthi yar. inops ot Tefuan dubio.) — Ja'Mi et sp. ill. pi. or, 1, t. 57, B (excl. iisd. speciminibus), Blanche 1 exs., Koischy! exs. 0- diapar totaehf! 1855, n. 442, a. 0- echinata id. &. 442, li. in li. Boiss. (noji 155). Inter M. Labill. et Jamb. (e specimina auwont. l.;il.ill. niinr (n h-flor^ntino) occuratfe , nisi quod squamse nimis \acut£e, Btaturnnon frequcnteaj osienduut ubi squainaa OEuaes erects. Spe'iiinnn plura li. Boiss. transitus prasbeni a squarais erectis ari rrcim^atas, ntdligo frequenter in fructibus pjusdem rami anni. Hocurvatio^ quiM,j|'!! i squamis supremis, in aliis a mediis incipit.aquaiBi *toe-*U:<'l) B lm:longaj. (v. ».)

ι, *pdchyhnlanos,* squamia mediis ovato-lanceolatis adpre*is aui idns minus patentibus, supremfe linfiari-4aapeolatis tarde apice excurvaus, plande issimfi. cupulam_paulo Mpcrante — In nnnit Carmel et Thabor (Gaillardot! •>•>';;. 32/15 in n. Boiss.), Cupula 8-9 lin. longa, 10-11 £"• i.ua, squamis *ww* simillimis in div. raauB sub eodem iniiiinn ctunmuTucalss, vix 2 Hn. longioribus, basi latioribus <|U:OJI in aliis rils mine crassis ut j$_D$ Q. coccitcra Bspe aocidit (v. s.)

rtqida, foliis subtus glauus \c\ sub^laucis 5 In lauro (Kotschy' it Cilic 4Oi,4O4) 0 ngidaWiIld sp 4p '*04 (fide Kotschy), Kntschy I ichen, t 8, non C Koch Folia ommno aliamni, et \aiiantu ui ID 0 cocufpiA Pt Q callipunos nompc liasi obtusa \P1 coidata, drniihus puppndiculanbus\pl obliquis Specimen mpum sub 403 folia minus quam 404 glauca praehPl Pilh stellati in Joins jun non dpsunt Fiuctus omnino 0 callipunos pucallinunos, pt in sppcimme sine numno glande anortiva vanetatis biachyoalanos Squamie mpdiffi ipflpxae ll-21in longae, supremae erectae vel mflexae i'olia interdtini glauca in afnni Q coccifprA (v s)

X, *arcuata,* squamis imis piucfc ovatis obtusis,<BPdns angustp lanceolatis omnibus uncin ito K fiVvis supif mis linpanbiis PIPCIIS VPI uncinato patpntibus ') In PalisLma (Boiss ' Kotschy' it 18')') n 442, flonf ot indc dub), montp lhaboi (Gaillaidot[1] 2242 in li Uoiss), Tamo(Bal.msa'sine num etilM in h Boiss), Ciotft (Heidi \ in h D(pt ibiJ in h Boiss), et cuca Constantinopohm (B(aupr6) 0 callipunos Hcldr ol Bal.insa in schrdulis Q JMlcLstin.1 Kotscby[1] Lich t 10 0 aicuata Kotschy' in h Boiss 0 iPtunans id ibid (f \c\ sppcim .ulfonifpi im ppitin)(I Kotscby fiuctus annuos dicit, snl (\ uus KOIIP Pt sppLiminibusiu *h* reuoptBoiss cprtp biPiniPs sunt Cupul i 7-9 lm 1»IIK '» H 0 lni lata, glande* .ftoiuente .LUL biibpxspttj Squ.inicT U^MB unun.ila pt rptioiScP ij^is pi supipmis soluru (\cpptis, l-|-2 lm WKf .Lcut.i , (xlirnutalo ipsi non lnflpxJ M[illegible] masc Scppius 4-lobi, anthoiis muticis vel inucionulatis (v s)

106. 0 FENZIII (Kotschy I Eich t 24), lamulis stellatojubpsftentibus, folns ellipticis oblon^is\p sparsmi arulrito drntatis vel janujr mtp|rris]unuuibus reniotp strllato pilosis (Icmuin ^labiatis conadpisqup, (1 masc biaclPis , pent?onio 4 ndopnbpiulo lobis ohinsis, anllipiis glabns mncronahs, fiuclibus solfwns R[PnilIllsV(1] sessilibus aut ppdunculo bip\i inspitis, cupuld? pubpscentis basi ol)tusa3 squamis crebns imis o\atis, mpdns MX longionbus o\ato-acutis et ovato-lancpohlis, supiomis bip\ionbus luif .minis, omnibus pipctis adpiessis doiso subconvpxis, glande cupulam paulo suppiantp <$ vel 5 In lauro ciliuio fioqiiuis (Kotscby (\s 18)3, n i97' J98' Balansa' 185b, SHIP num) Habitus, folu ommno 0 coccifeiae HOIPS masc nnhi fprp ignoti, PX Kot«by pmulobi (ut in \ai dasyantha coccikra?), PXIUS IMSI, mai^inp pt intus pifosi, inlhms valdo mucionatis Fnutus ^hndp mine < upiilam duplo suppi mip, SIBTMU^ ibbioMat\, squamis tnbns, urns pt modus 1 -1 J lm longis, linani l.atis, fmnii usque adpipssis, supiomis vciticillatis bie\ionbus angustiountis sat discHpantibus (v s)

107 0 AncHiRii (Jaub ct Sp»' ill pi or 1 p 113 t r>8),ramisjunioribus fulvo-\elutiins, loins ellipticis VPI ovatis basi subcordatis \el obtusis spmoso-dentatis VPI intpgns n^idis supi i trniiilci stollato puhrsLdilibus Rl ibiPscnilibus subtus pilis slHldtis adpipssis pnsistc ntilms c morpo-pubpscpntibus, fl masc , liuctibus scssilibus s()lituns, cupiiLc LiiibiniUe CIIIPICO APlutina[1] squamis imbucatis inlei 101 thus ovatis obtusis supenonbus Kiadatim auguslioiibus pt minus oblusis nifpiioiibus mpdiisqup pxtipmitatp PXCUIVIS subpatpntibus, glando \ix PXSPIIA *j* In insul.l (oi (Auch n 1879 ex h in us pu) niope j)y/iulitirn(Auch ' iH79 in h Wpbb, mine Floiont erroip \rns nunipu ct loci nat spd sjecimpn icom simill 5 Sinffuli lann lolia inlpnoia intpgia supenora dpntata modo 0 coccilpiai, pptiolo \-\ lm longo, 4 8 lm lato,' utellis piloium sublus mullijulosis in vptustionhus squimulis subsimilibus Fiuctus ligno anni puons insidenles, nunc (in spec W(bb) lamulis anni puons non acWtis *adhuz* loliilens Cupula 8-9 lm longa, J)-IO lm Uta, s<mamis 1 j-2 lin longis, inlcnonbus pxtus plains, caetens subconvexis Glaus ellipsoidea. (v s)

B *Americans*

108 0 C»I\SSIN)IM *(Uumh* pt Bonpl » pi equm 2 p 40 I 91, non Benth), ramis junionbus dpnsp lulvo-lompnlosis, folns brp\iter pptiolatis obovatis basi cordatis apice seepius obtusis conacpis undulato-dpnlatis dpntibus linparibus mucronifoimibus supia glabratis subtus dense fuho-lanugmosis, flonbus ,

ppdunculis Iructilei is petiolo bie\ionbus\cla»qualibus, cupulA homisph;eiico-luibinalA tdiiclom glabiatA squ.imis adpiossis o\atis oltusis gl indo o\nideA suboxseita /> In Mexico juxta (hilpanungo f H et B), nionto On/ahiU (Gal. 114 in h Maitons'), ot in Guatunala ot Costanca (Wdist ' 41, 42, in h Boiss) 0 nigosa Nee in Ann tient nat Up 27ft* *(ex* specim unico Neaei in hoib mus Matnt sine fl ot ubi Neo gemmas pio fructus sumpsit) 0 spinulosa Maitons'et Gal. in Bull Bjx \ 10 n *I* sp n 73 Folia subpoisisten tia, .J-ftpoll longd, l-.Jpoll lata, pexjfllOj 4 (> lin longo basin, voisus angustata et lbi laio donlata, dontibus o pc iipjMit \el o\ angulis suigontibus mucroni-loimibus loctis 1101 1 ngulis 1-1J 1111 longis Peduncuh maiiin e ligno anni inions 1-3 lin long^ liuitus pantos gr lentes (upula \ r> lin longa, ri '> lin lata Glaus pana Alfinis 0 stipulan et (loins) Q lotitulatao, sod tomento (lensioie, mucionibus longionbus, loins subpoisisLontibus spot 1 men dubium \O«LM lolia peisistonliti puobot undr <i 0 leliculala (Illicit, sod pubcscentia •sub lolio non \dldo toniosA buicpiinu) adspoctu piopior vidctui K\ defec tu floi. etli aeteino oblivio tradendum wdetui (\ s)

109 0 spirNWNS (\>o' m Anal cionc nat 3 i) 275 ot in Ann ol bot. 2]) 109), lanns junionbus fuho tomoutosis, loins moupotiolatis o basi obtus«\\el couUU obovatis \ol oblougis vAidiius o\atis s,rpius acutiscoiiaccis remoto amedio sonatis dentibus sa pnmsubulatis domum \el jinwdfc"ibus contundatis supia]unioubus tomonto fpmiginco stollato ovanescfflto vestitis subtus otiam adultis dense luho lonuntosis, stipulis lmean-acuminatis doiso pilosis taido tadivis, llonbus liULtibus axillaiibus solitaius gemmisve scs-silihus \el subscssilijnis cupmm fflmioioj* globosA s([iiamis adpiossis ovatis It muter])uboscentibu8 nidigme atWnu itis j In "Mexico pi ope 1 ixlnhi (Nee ') et losOrganos do Attop.m (H ot Bonpl ' nl c iiiuii 2 p 47 t 90) Aibuscula (ex Noo), «ubor r)() pe(^(ox Bonpl) Phiasi* ot doscnptio o specuninibus magis complelis Bonpl in b Mus pai., sod specimen (smo fl. not liuttu) NOJPI in b Mus "Mdlnt simillimiim Hann \abdi F^ia poisistcntia, pinno anno sub sessilia \el])otiolo 1-2 lm longo uhinque lertugineii, socundo anno conacea ot supra nitida, petiolo tune .} > lm longo, limbo 1 1 J poll longo,*Q* 18 lm lato, tomonto subtuftleie lanuginoso tabacino, supia bie\ioie tdduco; Uentcs fol in eod lamoe^Jad aetate \anantes, m spetiminc No.ei subuKili \ol ob-.tusi, majoios o\ati 3 lm lonpi \ol multo minoies, m spetim Bonpl fiequentius subulati, mucione otiam lmoani longo, nunc (ontund.iti ol loio nulli Stipuld* J lin , in spocimine ^e^^l 4 lin longv Pediintuli J-.) lin longi, setundo anno ciassi^Fiuctus m Uurus doost l)ifToit a 0 ciassiloliA loins dm— tius persistentibus[9] limbo basi nitegro, dontibus ad extiemitatem floxis not poipendiculanbus, mucionibus dentes sen lobulos tciminantibus net e pcnphonA abrupto suigontibus, tomonto Join jun. bieviore (v s)

p, *palhdior,* fol11s niajonbus grosso donUtis, tomon^oramoiuni ot folionim pallidioie *f)* In Mexico ciua Heal del Monte (Haitw ' 424, 42(>) U tias-silolia Be nth pi Ilailw (smo dost i), non Hunil) ot^onpl Ev num 42(> lolid coito m lennid, jiotiolo 3 0 lin longo, limbo 2 r> poll longo, 1-2-j-poll lilo, basi excoptA giosse dontato-seirata, d(ntibus o basi tnan-Rulan ovatA acuminatis. siipuldP 3-4 bn longa[1], primo anno poisistentos , Fiuctus secundo anno matuii, pedunculo axillan 3-ri lin. longo mseiti, gomini Urnative LupiilahemisphaMHd J lin longa, 4-b lin lata, squamis adpiossis ovatis maigine lonui glabnoiibus Glaus ovouloa, ^emioxsorU Billeit.i 0 ciassiloli.^ dontibus obliquis majonbus diveisis a setifaabiupte e pciiphaenA surgontibus (v s in h Boiss)

110? \p S SJYTOPIIYLLA (Liebm ' Fgosl p 22), ramis potiobsquc junionbus pul-oll M lulims Clto glAl"titis, Joins ebasi sdepo nurqiiali o^atd \ol cuneatfi. fiiipucis vol obovatis ^pl lanns o\atis acuminatis vol acutis conaceis integiis -bioMtoi ,u uminato dont uis supra glabiatis subtus dense ainido-iomontosis, amonlis gidtilil)H» ebi.itle.ilis? *u* ngonio«c.mipaniilato exius puosulo obtuse lobdto, antbons apice sulx allosis, hue tibus sessiiibiis vM nrevissimo pod$_{nm}$ ulatis solitariis *P*\ gomirus, tupuW abbieviato bomisph«« - nca tenuiter puhesconto squamis adpiessis ovdtis obtusis, glande semiexsoit i ovoideo-acutA tj i$_{n\ Mcxic,\ mon}$t,bus centi Oaxacams, alt 6 8000 p. ad San

Pedro *tin* Nolan esana, Cuesta de Loebopa. Sjwcimina plurimi mense jiuiin legil el. Ljebm, unde frondescenti* tingularu apparel, <|ii;e forean in ;Lliis spec. ,M'"\;<:iins siuuij modo progreditur. Ramiu sub n. 146 lulia \r-tuurta et simul fqjia nascentia pi a-Let; fruotiwqui annul vidgDtur ubi Mia juaiora desunt fn. 144,145), obfenap fructibua junioribiw n. 1'iii initio uiidi iiiiiu iiiiihiH'v LUII. Species 0- caJfjphylltt et Q. sideroxylsa affinis (v. I.)

A

111. ? Q. SIDEROXYLA (Humb. et Bonpl. ! pl. æq. p. 39, t. 85), ramis juinorilius tenuiter velutinis, foliis breviter petiolatis subcune a t o t l i l b l i obtusis a medio dentato-spinosis supra glabrescentibus subtus pube minutâ incanis, floribus..., pedunculis petiolo æqualibus vel brevioribus 1-2-carpis, cupulâ globoso-cyathiformi, squamis adpressis ovatis obtusis externe pulverutento-pybesccntibus margice scaiiosis, glande ovoidca seniirx j In **Mejici temperatis aridia prope Villatnando ft Sauta *l*^>^ — Kuniii in \\/< in.',, pen. 2 p. 11. Arbor vatdc exedfca. Folia 18-24 lin. longa, 7-10 lin. [ata, petiolo *i-'.i* lirt. longo, coriacea, dontibus pauois e lobo bn naargine iindulato el revoluto '•><rinminasis. Pcduijculi 1-4 lin; lou^L CupuJa (iruperf.) 4 lin. loiifta, 4-JJ liu. ial^ DCIISO suptci '"p'-J sf-undo annn** mature Hoctamenex u nwiir li. |i;u. tn, 11, i-v altero dubium. Itittntiiijp jhi liin'liKci' jiitn iilti'S^BrJsiis cst. tied inlfinliini ramus secuiido amio aDWiieiis a;t;Uom lion pfofli^pecies valdo jitliuis Q.])ul(;liellaj, ulii fructna aninti. (v. s.)

112. Q. LAUHiN-v [Hiimb. et Bonpl. ! pl. V><[«K p«32 f. 80), ramis junioribus pilis stcilnlis brrvis-iimis unbcriil is cito g labr.'ilis, *U*>\m o?|tO \d efliptico vrl ol«)Viito nblongls jLciimininis vH nemisvel rnrins olitusis Imsi aculis vpl oblusis Becus petiolum paulo dec".rrentibus i iiitcgris vid rariiij propfj apkom paucidenlatis junioribus supi^a in nefrvo ccntrali tcFiiiis^Hf' sLcHalo-puberulis s[in axillis tirrvnium sloUstn tonicniosis, adiiltis glabris, floribuf... pedunculis I'rucliferis |i^ii<tl(i brwRribus vrl subnullis, cupul} (iraperfecta)si}bglobosâ s u i d i e s v t i s l t i s t i l e r u b V s L b us, glande.... 5 In temperatis Mexici prope Moran, mont. de las Nabajas (Bonpl. ! in h. par.). Petioli 3-6 lin. longi, juniores cum ramulo fulvo-velutini. Limbi 2-3 lin. longi, 9-18 lin. lati, juniores in parenchymate fere omnino glabri, adulti supra lucidi demum utnmjiiP ;J.I;I1HI, if m. liilcr. subtusemiiientibus obliquis ciga ncrvum ccntra-!om, tertiariis parum eminentibus, dentibus ubi jidsnnt aciitis. Peduni 1 lus inn. adest ;I.ii. loiifiriis, liasi'i a|iico1 Inietum gerens, *se*<\ plerumqufl fruclus **solitarii subsessiles** in a\illis lolinnini p**ersistentium amundo annu maturcs-iiuii. ((u|nilff iuniores** If flin. latue. 0. 0cbrysophyllal el *Q, Orttaba*, in sp. r]ii!ius Forsan hie juugqukg. *(v.* s. in h. Mus. par.)

§ *s.ttnthi* ***abtyriivasupera(l)i ideitevrcq w$Hcm se^infea&pressa; mulurdlw fnirtm sir* undo anpq** *< m-mpc (ntc/nx maturi* ***ligno*** *vel i$to mscrti). — (hams amarkwix*

*** Folifs pro tempore orbata (2).**

I lit. Q. FALGATA (Miclix Cben. L '28), arlxir, ramisjunioribus tor lutinis, toliis b;tsi oblusis vel ucuttfl ovatooblongis grossa el iiTegulariter ."j-\fl rariojS-7-l^batis)ol»is vaiie patetilibus mine ralcatis ovatis Unceolatisve mucro'^rsubuIatiB supra glabrescentibus SMIHUS tenuiter T'Dsr* fulvo-velutiDis amentis [jracilibus |»ilnsis, bracteis fugflxibus linearibua perigonii 2-^-partitl]fil»s ovatis extus pilosis. fuitbori^ 4-'i mucronulalisj rructibus Bolitarus geminisve peduiiculo brevissimo inseriisj cupuIA hcoiisp^xricu nn!,in.ua squamis

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{1) Charactwobservatusin sp. n. 1(3, 114, llt>, 117. 119, 128, 124, 125T 127. 138. 129, 131, 133, 189, 143, 145.

(*») Folia pnisso siiiiiato-dcnLala ant spinnsa. Bractc;« H. masc. ssepe nullæ. Stamina panca.

adpn ssis serice is malo-lanceolalis **obtusia** plamlo **cupulam diluidio sffipius superantfi. ,» In Ajnericfl sept, a EJorida (Michx, A. Gray in li. Boitt.1 Tejas (Berland.! 1693 sine £r.), ad New Jowey (Mich*, i'.. Green in)i. DC1) ci Kentucky** (Itidd. II. w. st. p. 29) — Miuhx **I. arb.** Am. **2** l. **21.** 0- **elongate Willd. sp. *h* p. 444. 0-** discolor **A**it. hort. Krw. **cd. l v. 3. p. 358? 0.** discolor var. **toliata Spach** v^. phaii. v. **II. p. 163-** Al'linis Q. **ilicifoliae,** sd foliis **magis lobatis,** sulmis 1'iUvis **potiusquam albidjs, cupulajwn stipitati, nainore. Foln** 3-5 pol**1. longa, 3 3 poll, taU, lobis infer, Bi&joribus, super. remotisuitde** Iblia iuumlum **suWyrata. Petipb' 9-U lai. longi. Amenta 2-3 poll, looga. Cupulafi** lin.laia. **g-41in. alta, basi subconica** vcl **subobjusa, a u n c b i M tic.** Michx r.j. lilans 4-(i lin **longa. (v. ft.)**

β, *l.udar'taana,* antherls muticis, cupulA majors patcnle. *Si* I» Lq^iaianft. Q. fakata A. Gray! herb. Folia lannino Q- falcate. Vestigium mucronis in aiitneris quibusdara. Cqpula 8-iflin. 1;IUL, 3-41in. alta, ba?i planiuscula, muliouc coittvexo mm ^tipitatp. An fonnn i constans i-? An bybrida qiui;i|iiin? (v. s.)

γ, *triloba,* foliis Wiovalo-cunoatis apice trilobis, Inliis abbwviatia obtusis Diucrniiaits,]« lielis brevioribus. j A.^eorgi| ad Novatn An^liani (Mk-lix.) Q. cuiioala, 1'oliis Pic Wans, fii-i). f. I't. 0. triloha Michx. Chen. t. 26. Q. falcatas variatio Michx f. arb. Art. 2 p- [Oil. Folia possidco e Carolina, ;t Prnser nm cupata, quæ iilii U- rdlcata; imliusquam nigni' (lrojtli i inmeritum persistens vidwitur. Peiioli :i-(i lin. Innngi; ex ic. Mlich. :i-4 lin. Folia surculomm ju i, ex icone Mich li. elliptica T-^lopa. lofii - dentalis. (v. s.J

ll'i. Q. luqFSLU fWan^Cnh. Ffjrstw. p. 79 I'. 17), humjlis, ram is junioriljtis tenuitcr incaiii -velutinis, foliis obovatis ^ osse 5-lobatis vel rarius 3-7-lolt; suni icuTWPrelilri se albido-velutinis, lobis apice ft pa ni; . LiiiRromRtis. lu-nclnia fl. mtisc. oliWjcis fu^aci **, p p** ni;i • i-*i lucvissinie tnucmiiulaus um . fructibus aolitariig gpiainisva pedi^iiculo lucvissimo insertis, fujiula supra slijiiu m proprium rcvem sq uamis onus Lnm li'*iiii-j>li:iiic;'i sqituniis adprcssis sericeis ovjito-lanceolatis ohlunis, glande cuiuihui dimidio superafite. j in mont. Virginiæ (A.. Gray, in li. Boiss.) in PenH.sylvauia(Micfci Engelm.!), New Yersey (Michx), New York (id. Kn^olni.!), **Conneclicul** (A. 'Iray!), **Ohio (Darl.u\ VJfccL) et MassacUuaeLts (Emerson rep. p. l;')ft) — Guimj I Ibbild. I. :>'\ (florens), Emers. I. c,** t. 9. **Q Baniateri Michx C|en. i. 27, licba f. axb.** Ann-, **i. 10. Fnjtex 3-10-pedalis. Polia J-6 poll, longa, \{-*k* poll,** latu, **petiplo ;»i;> lin. lonpo,** juniora **supra siellato-pilosula, subtus dense stellato-tomemosa',** luliis **ovatiH** trees Mass. et Layne **oervo mucronatis. Stipulge *'I* lin, li** ongæ, **linearcs. Pedunculj fruciif. 1-4 lin. longi. Stipes ciyusye cupulaa li tiu., subcyliudcjcus. Cupuli I)-4 lin. long»,** -V7 lin. lata, **squajnis obtusis** vel tiiilucniis. (v. s.)

1 l^>; 0. CATESB.ICI (Michx Chen. 1.*1\)* ft I 30). ramis junioiilius **glabris, foliis bre-**x • si<-1- potiolatis liasi l'lim-alis uiiiiuii^is ^« :. 2-5, loliis iiia-iiuxiliHKis sji'im ttirt vel paicnUluis nvatu-acmu'malis : pice et passirn margine suhulatumucronatis centraii saRpius 3-lobo jiinioriniis pultescqutibiis adtiltis glabris, bracteis "ullis? perigonii subplu] posi sæpius 1 luli lobis rnaliSj tmlheus innttuoiKiijs, fniclibus pfi(Iuncuh) l»n>, insertis solitariis geminisve, aipnlà hetaajihiciico-tiiilii nata, siniaiuis adprossis ovatfe olitusis SUIJ ericeis, glands BUtpsoldei dimidialx»ei-t4. *r*> In Ameiicftscpt. a Florida (A, Gyiay! Rygel! in lh Boiss.) ad Carolinam sept. (Michx. Olncy et MetalfUS.lJ — Miclw. i arb. -V"' *• i1- 101. t. '20, Ell. sk. *CM: %* p. 6Q3- Qucrcys Esculi uivisura, etc. Cat. '-".• '• '• 23 (mala quoad IVm-i.). Q. lavis Walt. ? (ex Ell.). &rhu«fela. Folia 4-7 poll, longj, ex inuKiiy*ne lobornao 3-6 poll, lata, intei lobos angusW ntom m;tr f.rilMh dlolisfHsi in petiolum 3 li lin. Ipngum angiistat tnfe-riori|h"s ubi 3 . setiuentibua ubi *h* longiQulms, iuit^ris vcl 2-:t-<lciiLatis. Gemma; sencere, acuminai;,.. Pubes Ibl. iun, Mil^lamluloto, fulvi scens, in axillia diu pereiste Pedu incu ij [ructif. 4-$u n. longi. Cujmla f>-8 lin. longaj 9 lin. lata, ore aunconstricta, basi plus minus in stipitem coiiicutn J-2 lin. longum an gusUta vel convcxa. (v. s.)

HO Q nc IIRA (f inn sp]) 1'il3), i.imis limionhiis KIIIMIIISCUIIS, folin lonipr pKiohhs <• I».IM ac uta \pj s<rj)ius olilusa fllipticis ohlnngis\p giosse lobaio pmnatifidis lobis ma to amtis \ol « iinnn itis apico pt passim marline suhulatorlnntnlis |imionbiis utiinqup pihs stpllatis minimis caduns pubesiPiitibiis, adultisglabns, anmnlis pilosis hiactajjLfiigicibusftiillisvc*) peiigonio sessili vcl bipvissimp ppdicelldlo/i-Vlobo, lobis ov<itis obtusis pilosis, anthens 4 5gla bns, fiuctibns suhspssilibus sohtanisgpminisvp, tupiilA latp cupulifoimi dpprpssa feip scutifoimi \ix stipitntA sqmniis .idpiosMs o\atis glalncsmiiibus glande ellipsoidpA \aldc pxseitf tf In Ampiua sopi a opoigiA (Michx) Pt Ji\as (Linilli .M.I in h Lngplm) .id lacum Hmon Pt Saskatsh.iwan (Hook II lio! ,ini *2* p 158), a man Atlantic*) ad Iowa (Loop] c) Pt Missoun *(\A\W* lm ') - Wang< nh Foist f 7 (fiuttu m IIP fig), Miclix C hpn t ,r> ct .]b, Miclixf'aib am 2, p 126 t 26, *Ilmois* iep tiPtsMiss p i/#8, t 10,Biendcl oaks Him t 9 Q cocempa vai * nibi.i sp.ich \pg plun II, p IR;, Q n,pia Rugpl pi exs Caiol mti Boiss ' (non L) SJJOCIPS iion folus, spd ciipulA dppipss.1 al) iiffinibus distmcU, undo lab (alcsby pt Pink fiuctu non riclinoato aut nialp dpi non ntandd> IVIioli 1 2-poliic , limbi sappius W* poll longi, I *1* poll lati, aiUumno mbii *(* upula ()-12 lm lata, ^4 lin alu. in podunculo nimc spssilis mine in stipitcin squ.imosiim lincam longum abniptp basi angiistata, ininimp cornea Sppcftncn posMdco a rl, f»iay<omm ulu cupulaa gcmnicc adsunt, una stipil.ita altAfa vix ac UP VIV atlcnuala hoha adulta sanpe tomentum subtus m axillis ncivortim iptinpnt, ut in Q palustn (v s)

P, *runcmata,* fiurtu nnnoic, cupiil.l basi bjpvitPi subtiubinntft vel ranus convcxA ^ I nic.i diboi piope Sajnl-Louis, in solo pingm, cum 0 rubrâ, pahislii, imbjicaii.l nnxt.i ^Engrlm'),] olia oninmn *Q.* nibij* Cupula 7 8 lm lata, \ lm alta, iin^niliidiiio idpo pt foim^ basis ad 0 ptilustiem polius quam 0 iiibiain acepdens AnJ^buda* ex Engplm Sppcirapn mipei misit cl Engelm quod a vulgan 0 iubiA »on distmgupie possum.

117 0 PAirsinis (Du Roi Haibk. Baumz 2, p 268, t 57 f 4, ubi fol solum), latnis iiinionbus gl.ibuus(ulis, Tolns longp pptiol.Uis p basi acuta VPI obtusâ plliplicis oblongisvp prolimdp lobato-pnmaiifidis VPI ranus giossp lobatosubpmnatis lobis o\aio-atutis \ol acuniinatis apicp Pt passim maigmp subu- [illegible], iiiiiiioiibus iitnnqiio nilis siellatis mmimiH caducis pubescpntjbiis, a<lultis glfibiis lilimqiif vi litibus, anipntis pilosis, biactpis fugacibus (nullis'), npiigrmii sossilis Iobi!f4-') ovatis obtusis pilo<#s, autliPiis 4-5 glaJuis, liuUimis subspssilibus solii.iins gpininisvp, Liipull Iain cupulifoimi fere seutifoimi m stij)itpm IHPVPITI s<]namosuin l>asi s«ipms angustatA sqiiamis adpipssis ovalis glabipscpntilms, glandp pllipsoidpA rniilto IJIPVIOIP *j* In pahistiibus AmPiitii[1] sppt a Massa< husptls (Miclix f, iloost tampn in hmprs ipp liPfs Mass), Ohio Pt Missouri (Ingplin[1]), ad Ipxas *((*ooppr in Smitbs ipp 1H'»8,]) 2'>f)) Pt Gporgi.B monlps (id), aut solum IWJIIP ad Virginiam (Miclix p pt f) — Miclix (IIPII t JJ et.'M, Muh\ 1 <it> Am 2, p m t 2."), Brendol oaks Him I 10 0 rubra ramosissima Mai shall arb *Arrry* l-()4 0 ilibra disspefa Lam Diet 1, p 721 Kx h(ibams \anqtatem 0 rulmT liuctu mmoip, folus plpiuni([iip magis dissPLtis dixpnm, spd omnps fprp .uicloips aniPiuam disimviiint Pt laim niKrioiPs intricali, mfpIIOIPS ppndpntps, foha S.P|MIIS niiuoia Pt uLiinqnc[1] \irpntia h.ihiluiu di\pisum PX Michx f piajljpnt DIVPIsitas folior in padpm aiborp (ut in Q i^bia) maxima (h Engelm') Cupul«c 6-8 lm longjj, 2-.I liu alt.i», foimA Iprp Q IUI^B, stipilp iaio dcficipntp, magis conico, ubi adpst (1 Lngolm mpcum conUi cupul is l() lm latas basi convpxas non stipitatas, KJPO Q rubrde ex arbore quam loins 0 palustris dicit (v s)

18 0 GFOHGIANA (A Curtm m Ampr journ l^^ILD. ^08, pt hot Zoit 1850, p 5'JO), humilis, r.imis lumonbus glalnis, folus pUnimqup longe pptiolatis p basi MIIMMM nblougis sapius pmn.ilifidis lamis smu.iio- lobalis loins \ VPI ranus :J ovalo ul tnangulan-acutis apirp subulalis jumonhus siipri subtus tompnto sipllato caduco pubpsfpntibus, aduliis supia lucidis glabpinmis subtus ad axillas nenorum dm lommtosis, amentis fructibus ppdunrulo brcvissimo inscrtis solitarnsgeminisvc, cupulâ hemisphaencâ non stipi-

laift squajpis adpressis ovalis subsericeis gfetndeui uvoiildb-globosam circiter parte anipleclenif. j In <eorgiâ Aliiti^iue 6-8 ped. Folia) J-S [) l^n^.i, s-i't tin. hurt, linn jicijolti stfpUis G-lim. lulled, mine (in {•••> unflL ii- Kti gelm.) 2-5 lin. luntfo. I'cihitjruJi fructifori in raiuis dPimdalis secundi •iinn. l-:i lin. lon^i. (^ipulm piirv;e, -'Hi liii. UUe, 2-3 lin. alia;, squamla oblusBut in omnibus afhiiibus. (v*s. in li. fcngelm. el Uuiss.)

int. Q. COCCIXEA fWatiKPnli. Anpd. nonlaui. Holz. p. 44. f. •),) mmis junioribiis glahriusuuiMJ foliia I^nge petiqialis e basi plefumque obiusfl ellipiicis obovatis uva tisve grosse lobatis •.'••! jiinnatilidis loins nval<> acutis apice el passim mar- Rinc subulato-de ni.ciis, junioribits utrinque stellatx>-«pilosi«*, adultis glabris, amentis pilosis, iH'Ufflpis linearibus [love siiblongioribus rugacibus, perigoniu sessili vel snliscssiti li.ltijj^-.'i-ri oyatis obtusis piloOT, untheris 4-6 glabris, Fruclilius stibstissilibns, cupula Lurbinata plus minus basi in Bti]iitc»ra squamosuni couicuui iMi^ustata sqiiiiunis lave inijire^is ovatis fl^ovato-lanceolatis obhi-is vehiiinis, fflamto dllipsoinpA disiujin circiter exserti. ,'] In imei sepl. Q- nilx;i a 1iinn. sp. J'llt iMlKI if-8 pull. Innga, 2-5 poll, lala, petiolo l-2-pollicarf; in surculis junirnilniK (modo sp. affuiium) ampla, non profunde lobai.i. pptiolu In n arlmiibns clutis siRpius B-loba, sinulms latis, lobis dentatis ,n;i(|ii,i!;liii- PubSS sub limbo (\i\ in afliuilms) in Willis nervorum did pnrsiSitns. Color aiiiunmalis (ffx Engelm. in litt.) pro loco el ©state iidniodum v;irians. Cupulæ furma consuKns, ex inuumi'iv specimunibus a ri. Kngelm. mik*.is, nt ii tab. 22, 2•; ei v't Mich\ I'. ;ip[ian>t: difl'on :! ". rubra biisi run,cà nec iutuin!al;'i. Sipiamffi pfffl U'rca niai-jjino Icnuiorcs, siijuTfinai laxioi es, sa pa irausvi>i-se apicc ru^usa?. Magniludo ruriat 7-10 lin. lalitud. nl .'»-7 tin. altitiuiinis sine fructu, in lujrUiufc, a pluribus spcrimiuibusQ. rubnu nun disliuguo, VUJK° lanirn inin mapis paiontes i-t *4nu*± latiorcs. (v, s.)

a, *ettcdnea.* cortice extus cinereo iyjps rubro, fuliis plerumque pinnatifidifl autumao saepiiH rabris, cnpnl;i carne gland is ajjtidis vel luteis. — AFloridA(« (Iiay ! li.]loiss.) el TcKUgrMafihefl I ddfll Wrig In! in h. Kn^lni.nlbinii8SO#i (Engelm.!) ('iTAa&iachussftts (A. Grayl Michx. Emers.), *n* itno ad Novam SSoliaoi ((>. amlii^n a Michx. r.). *Q,* eoccinea Miclix Chen. i. 31 et 32, Michx f! ab. Am. 2, p. I Hi. t. *•!:).* Emirs. rep. trees Mass, p, 1-'I4, I. '» (uln "'.'.r'^'ia dissM'tj. U- ambigua Michx f. arli.#lil. n. 1*20. t. 24. 0- bflfealis Michx n. am. svlv. n. 'JH (in Loud. enc. p.""8711 cit.). Folia in 0. ambi^uA Miclix f. fere *Q.* rubra, sed in Tulgari coccineä accidit, ci fnntu s omnino coccineae, (v. s.)

[i, *nigrescfftu,* corlice <>\Lu^fnsc(^entc> rugasidrc iuius cum parte internft tui|iiitii- iL ^landis iiilcusf' anranftcisMfty*M*^ quara in x auiiiris, foliis sæpe• amplioribus cl minus Inliiitis ajmmTO^iiip coloralis. j K\ Hnupfir (Smiths, rep. 18.'i8, p. "2;).')) a moulillnn (ieor^ia! PI ArkansiLi ad Iowa ot Maine; ex Michx. (arb. '2, p. 110) n iGeorgiâ ad liiuih's roip"! Maine, utroque latere 4ileghanies, sed cl. BgeliQ' (in litf.) el Drcndel (oaks Illiti.) unicamr speciem in IHssuUri «t lilimtis adiniiiunl. ijiue tuibi i coccinea *a* videtur, aut sallom wansitus iuter « et (i pra'bfi. 0. Liuntoria sin uosa Michx. Oieo. t. 25. Q. discolor Willd. sp. 1, p. ViV? (>. Lcli i a Michx r. arb. Am. 2. t. 22, Emerson *ivy.* trees Mass. |kjjf'il, t. 7 r»t.8. Vulgo *black oak.* Kami juniores punctato-glamlulosi (Kraeisun). Folia juniora subtus punctato-glandulosa^Ulichx. f.). An charactores coitslantes et in a (IcficiRtiles? Fructas forral upiillima. Folia autumno ii.avo- brunnea vi-l oJuuun[1] jntrpurea vel rubro-aurantiaca. Majorem pariom materies liiii-ioriii* gaiuce *quercitron* dictapf?veristmilitfir proebet. (v. s.)

Y• *tinetoria,* foliis quami in a amplioribus el minus lobatis jmlx^ subtus "'uiuis caduca, cupubi ii emisphæric i vix basji in stipitem angustata. ,5 \" mo "tibus Vii-giniae et Carolina; (Miclix) . m Pennsylvania (Porter ii h. K!ig«lin.!), <). nnctoi-ia liarti. trav. flidn Michx). *Q.* tlnctoria «gulosa Bicnx Chen. t. *Vi* in Haync Ai/.n^cw u. t. 'Hi itcrfla. 0- velutina i.;nti itn-i, 2 [(• 7•2l_ Fn]j a [„ io(lll!• ;imPi1; ,,ij,jvata, \<*h* lobata, ut siepe in m-bonbus junioribua priorum accidit. I'a^iua inf. [tubescens (ex Michx), '"' hl)|1 . . . . 8QUe anni? Cupula basi olitusa (e\ it.), subscuMUta (ex dea r.), nee laiucn laia depressa et basi plauiuscula ui in Q, ruLra. Specimina

plura in BoM tie Butih^e I'.in Kichx f. suh nomine 0 in.. !.,. intmducta in herb. Wai,, arlsmil, ubi folia mm.: snbl'Zl-T imnc ni tifida, iuniora ocuio inffo subtus pfi;. ;..•-,-i.fl1,, luto-piloaa, gcro glabra, Cupula ut, in ic. Mi.hx. pnonliin v«p. ol a. Engelm. foii» profwA Jo abTata, lYuuu tfv s 1

[Wit Obm«H<.N-!i,;nil^j1]1rti,.|(.i syiiamis sui-ivuns .„[, i i utrnlind sr>p40< palustns (au p> >U 12-18 tin. longi- fimbi 3-4 n.til. purascentes cupirije 6 Im. long«. :> lin. taue^fomd Jusiris (v. ».)

120 0. So NOMENS is CBrnih, fi-lo K-.tscliy in *h.* J*..iss.;, rami* juhioriljiM

lobato-pinnatilidii obis ovatis passim mucronati jtniiiihus utrinque ... liuloiiu, adultis supra prauertini alabra eruis. . . . fr l ll)dtl1„ !previore inserts sæpius 'i iDlitariis, eupulfl Ucriffsnli,.. ns ailpressis obtusis stibSrricfis, ylartile cllijisoiticil ciiinil;, rani.-. £ In ijalifomia circa Sonoma (II HI. fan utr...ii.H>^re I - .lr-nuiiis, d.art^ri s. Fructus maior M 1[t);im in Q\ ni j (iiiKrlis*Cupula onino basi fRuata C-« lin. oipa, 8- NI I i, "S jrt in alfNMlp paulo consuiou, »jj|,iis margino mombS

12I;-0 fNutt rv^iirM. amor.), raoi .^UA elabris folik P 1,'KI T" J adulii Misaplcn el I'xtWmUaUMu-

9-lolin. lonyo, run "M..#l%tilftQ. iiiibrii I ' 'i"",.; ';"•" •, ducu B| faster iKia miXlata, in , u3 ^ veT obala" nunci. . . . I J(jTii1-2-loliata, lulus *nnlte,* panim iin-k • F ins 0, cocciiHsa. Cupiihi .i lin^tujiga (jncluso stipiL«O>ti-7 lin Into i-'uii-i ina-is varinii! ijnain in aHinil . bndiiiw nun cerla (v s)

Vh. < rLEjtsis, ramis petiolisqne junioribus stellato-tomentoaig dta ffln lii-aus, h.hta obovaLo-oblonyiH vel oblougis obtusie muti cis basi cunpWi ObtOBis iiij^iiK- integro cartilagineiii subun t-nnilnis nervis tert mioril.ns passim piJis sti cl soIjUiriis cuiwyewifa nf^S gtahriBj tmentis gracilibus jyr-.- pi u-attoaii*? |, -^ J B|J a| J C J ^ Panni.n., M-tsli vH siibpedrAitu ', .Vlobu gUbrJusijulii a iitiH.,. i !lK iuuiici3j pedunculis rein, gbtiolo subbrevioribd^stylKmii - lurtnibiis, rupuIis $ p ijjiense aprili florens et fructus anni præteriti in ligno aphyllo maturescens. Folia parva, petiolo 2-4 lin. ^.tTidariisJinuibus t«mn$M;.t 'q^crnariis mining 'rertcSiJ^ ITS

'i'-;r ln'i. parurn affiniat liabilu puiiu* speciarum n. J18-:>0. sed m^turatio liuctus itiitio seeundi :iftni. (v. s. in It. Co^ciili. •t ab eo spec nn. aecepT)

123. <}. *I'lltt^ULLmn. ut.* n. Hl'2), mm is jmiiurilw.s stnljaio-nubm'ulis ciio Klaiir: i Rtua vel obtftsll [bniaLlmeari-oblonglis setacei-actiiui- natis vel cuspidatis integerrimis vel indnl^R jiiuii- ftlabris nunc .jiininiilnis tenuiter puberulis pilis subtus densioribus adultis t• -iiK-iiin iloraso utrinque glabris, auii'ims ^i'ai;ilibus, radii part[1] rigonii... piktgi sæpius i-ftdi lohis iHfeLo-aciitia, antb l»ris, TruMiKiis snlitariia sesfflibns vel brnvissiinc [H«1U....il.itis. citpula nemisplj ærico-turbinatA squaniis ovatis adpressis obtusis sericeis, glande CBplilam dintidio sjepiiis Juporaiiic. 5 In humidis et inundatis *A* Louisiana (A. fii-ay!), Georgia et prffisertitn Garolinà (Kll. A. (irayT), So l'hil.nilelphiam (Micbi.) el Lung Island (Cooiwr iu Smiths. inst. rep. 1858, p. *li;*)}, i i H.' mare et in lontos Allftgli'onies, in Ark a n s u s^ (Eugfilm. 1167} ft Ti xas (En.--clui.! herb.). Q. Phellos sylvatica Mfchx Chen. i. 12. "- Pliellos Miclix.r. arb. Amer. % p. *1i%* t. 12, Kll. sk. GeSr. '2. p. :,!!.'{, Lnud. i•,. e. trees ▷. 16(12. Quercus, etc., Hal. Car. I, t.]i;. Kami glabnusculi. Folia juniora angusta, adul•a. 2-'j poll, longa, 3-(i 1m. lata, petfblo l-^i lin. longo, in arbore juniore utroque latere u nilobata (Mi chx Chen n. t. !„", I', -i. in Loudon enc. iterata), certe deci-In:- i-l hum nto dete rsibili. StipflR a n p iste lineares, 4 lin. long<C, jiilysulae. Amenta lullis ifupto breviora; bracteæ fugaces? Cu imla :j liii_alt;t,-'i li lin. lata. (v. S.)

p, *subimbricaria*, foli i**lipticis utriuquo obtusis muticis integris. ,-f In New Yerse•j ; \. • Gray I s nl) iiMju. 11. iitdn-ira: iæ). Folia 2 ½-3 I [mil. loi nga, 10-14 lin. lai.i, petiolo .; lin. longo, latiora et obtusiora quam vnlgo in [11] F'li U toman in pagina• ml. ruin >a fi. imbftcarifl ilill'cri. Ail. liyl a. undo Pliellos et *Q.* imbricaria a Q. aquatica.I, i j • y*^[8] jP

124. 0. IWBHH ARIA (ilicliv Clien. t. fa), ranns jntiiiiniiiis Bt^kfc-pubi rulis, I'olii s e basi acutà vel obtusà i'ili|Hicis obiongis%'i setaceo-acniMiiaLis v<l cus-)>HI:I!IS intRgriij iuniorfbus siipfa s|iarsi« subljs'dense incauo-tomentosis, adnliis supra glabratis^suli^s i omento persiste ine, pilis slellatra non brasvissimis, imentU grncilibus pilosis, bracteis..., pgri^onii 'J 'i-pariiii pilusi lobis uvatiKH'iilis, aulheris /^> Ldalins, fructilms sotitariis sessilibus vel brevissime pedunculatis, **i-Mjuil • nemisphæric• ni^|iiut;\ sijiiaj** ovatis adpressis "lii[1]'sis sericeis, glande cupftUfla ilnmdio sa'pni^iktip^bt". ,, \ nmniilins Georgiee (I;IIO|I. m «p|). S m B-. inst. 1858, p. 255) et Carolinæ (Kll. sk. (icorg. 2, |'. 598) ad Nuwlfcrsfi^ (l^gf. ib.) et Kansns (id.). Michu t'. arli. Am. 2, i. |;:. Q, I'licllotp. Spa- ,'iiiin. II,, pp I (id. Folia certe ilfjeidua, ;t•(poll. li.npjL, 1-2 lyll. la , petiolo J >liiii;;hi%i , aiiilulU .supra jiiliiln. Stipulae .i lin. lon*. -. \nifi • a 1-1 ½ |»ilT. Ini in. longs, ')-7 Itn. lata. Ltlans ovoid' • IJ. 1'lidlus I lalmic, tODieiitO Miblu . (v. s.)

p, spifrttt/ora, l'"liii.passiiti.il Subiilati iis. Pr6pe ^i Louis (Kiif^lrn.! \\>-*iU.)jJ* }

125. 0- NifiHA (Linn, sp, p. 1413, var. p), ran.is iqiie riovrllis inmoMiiibmvissimci stollato incanis, PoUi acutfl vel rihtusfl vel snlirffrdn'i ntto vatis '''''dlitin :jsqtt« cunei - l l < a.finititl iFitiwr, j ... m m i a **ampliatis trilobis vel tnte-** • j s lotMS nni'Mi.iir filifni-jni sa^piiis l/'niiinalis adiiltis supra plaliratts sulilus [tr]>ni(!nto slplllato iilli'i cadtaco in axiliis ricrvort* Acefvat^ adjunctis pilis.adpi'pssis minim is In!-. persistdntibus colomlis. bractefs lanconlatU fuf^icina« note sublongioribtuL perlgonji 2 4-partiti lobis ovatis oxtus ptlosulis, [I]w:llhl1 's subse 'ssilibus solitariifl gABinisv.-. cuptilS fttrbinato hi misphærica S j J a n n s adni-nssis ovalis obti **iHBi wlhd** r rupulam dmmlp. super Bile .»]" \ui"n.-;i sept. . Texas (Wright! B< rland. 1 22• I, \b~1) Mattlif*! IWIJ «* [1]. •"IIIIII i'lfnd. (\. Gray! in |, i:-.. KraserlTRl]. DG.) nsguo *d Miss.... (hnKnlm.! Riuhl i •• 35) et New Yerse\ (Mii-]i\), attain Long Island i Torr! in li. Hoist.) Wangenh. foist, p. 77. r 1:; (nulu), Midi.\ Chen. t. 22 Ri 23. Lou ill[1] t l(ic-ii[rees] P-875,f. [593, 1594. '.» • reri-ufrinoa Michs r. arb Vm. *,if. M, t. IK. Q. Marylamlica, Glc, Cat. (Jar. 1, t. IU (pessinm). 0. nibra Rfigel exs.

e Cju-ulina in li. BoissJ Kolia arborum jimiorum *ma.ua;* variant intcnjiim finTod. nunnjobovaUi vrMiipii,;,, ,;1 „<• mtrgi'a;%i :irlii,nl,iis jwhillis saepius ;j-G poll, lon^a, ultra mr>rliiiin :i-.', poll, taia, pcitioln (in ,|1V ra i n J s i]-« |j h Itjii^u, [HIIM-SCCIIMA numjuain snliius omnfnu evanfs<-<Mii< pilis aut maleruj pilifonni tnirantibiis? fiilvis vjkfufeis inter piHfestenWs ,I Imsc— [orem tabacinum praebpntibJBl.culeis in martfinc fiiliunuu vd apii-p luboruyi i-aiisflnir^iiisjiiuicunllis ant cadtMitiljjjs.Cujnila.o lip. lonpa, T lin lata. (v. s.)

β, *tfuhifjudohtp,* faliis I;itcralitcr paucilobatis ciLiusjg;!ahi atis . tiolis eJonggjjis. ,, I'rope Si Louis (Bngelm.!) An rorora in eaflem a rbore co nstans? Petinli (i-if) liu. longi. Pars lateralis liinlii mm cuneata *v.\ mieuvn tieil* iiiniii[iir] -Muli.il.i vis! imegra,quod in vulgari ijit^nhjin acidit. Vn'ictun ct !l. siiiiillliiui. l.nln in aliiii'o sjiecimiin; h. 13|§I>IITI. clctiitato-iobatt (v. s.).

v. *h-iti-ntiihl* litliis cllijlilicis **ulKjlvatfs** ublbUKisvi! **atiiac It-lfiljis vcl ;i nipdi"** 4-5-1(I1KS vel integrts loins nldusis non innftindis, muc ronibus lililuiitiilnis apice loborutii vel \\ssim in margine, petiolis saepius eloncaLis /) Arhor niiica, nnnc Jpjccta, in afissuuri propa si-Louis, y. trtdentata ai^iyliriiia 0. iiiRrae et iiniricariw Kngptm.! ycrli.) Jvimii j,, e o j ' i.um , :: * vH 't-Ht liu. kmffi, sa.-pius H-10 liu. Toiiu-tUum allnim BU1> I"li<> i-aclucitdi. E-niclus 0- Ul-TM-. Kolia fen; MHM!II |)ussi{leo arlioris # **ulitti cultte? a i»alr« 0- Liiluba** sriijita, **itbi loiiictiluni uintticum aO In loba** Mirli,^i. i.il^.t.c **var.j dilTert. (V. s.)** jfe,

12B. 0. SKINKEHI fpfntli.i)!. llartw. n. (JI5, pjK|,Tamis jftnioriBuH ^laliris fu- liisl1 **'l NiiiWahceolato-obmjlb lnsi acuiis vclolnusis anice** w.... ijialisiiiargincpupic • lo^Jcntaiisdfiiiiiinscbusilana solatä longe liiicw»u* supra juniiirilms n M n |mbcrulis iulifliis Hlafrriftulitu* iuniori-bussteliato-nilDsisadultia in axilli^ticiydnnn din i.,,-,•„:,,.,, (Jcniuni Rjabris, araenlrf puhcs-ceinibus, jim-num cairijifflulaio fi-GV-dmitato, antberis ruucronulatfl^ruotibus iiia.umis siibsessnibus, cujxila Blano-patelbTorini squarais adpressis (Jato-deltoideis subwliutnis, ^luude tflnboso-ovuidea hast soluin inclusil intus ilHs'-|iimpi«is ntronij.l etis irre'^uliirilcr luminsilsi. t In declivibus Mexiei ynrsus uiai* Pucilicuiu (Hamv. ! >>i, in li. Ltoiss. Webb) in iiiialiiuala (Skinner, Warsc.! *M)* in li. Huiss.) - Lindl. *KHM*\. chrou IK'i! p. itOc jc. *{Mi-* auct. cit.), veg, Kingd t 291 • ic, Mimk. ic. t! '(ir>' f ."Jiim.i Lflnit'tit^gae. PoJia^tnniino <*Q,* Xflapniisis. Mores inasc. ex specim! imnerf. Warsc. a^prvaiiiiioii diveisif Fruclas voro valdt; • I hn • in-11^~,. tnagnus peuunculo 2-lJ Im. insertus. (;ii[»ula l.'i-lyin. lata, noargine DXCOTIQ nlana' siruaiuis .irntiusciilis vel «liln,sis. feaj]# 1^1»(.'!!. alia el li;isi |;t|a endi*-car|\>\" wane pi[1]....mentis ad^i-c icas penu^ Syiieedry* a LindJ vocatas accedciis, sutl pluribus aliiapffinis. (v. s.)

127. Q. X,vLAfit:Nsu> (Hunil). el Itonp!.! pi. equin. '2 p. 24, t. *:.). novelHs spar-^iin et lit-nviter«cllaLu-pilnsultJt, iituns cikj fflal)j':itis,|f'oliis longe petiol ovato vel ovali-lanccolatis iiciuninatis basiiioii^'d vel lu'eviter cuneatia regularili i liuijre sflauco-dnntalis adullis sudHglabridubUis in axiyis niT\n n iin dm sfellatn-toiiiciitosis, aiupntis sparsillnn* obrai^Rilis? perigonio turbinato extns niliwo im'gulariinr r>-liilu luliis ulitusis, antherfti apice subcallosis peduncuTis rruciiieiis |>cti(il» multo breviorib carpis, cupula depress*)vel subelongalo-hemisphaerica MHM sijuamis. ai.'press'ls •obtus." — ••• •tenuiter pubfliri'inibiis imbj ovatis aliis ovalo-i longatis, glande semiexserta. ;, [n Mexujp (J|" prope Xalapam (BoiipLlUMirador *(lidmi/.* li. Coitenk^ in monte fflifal,, (Martens el Gal, 1. c. sp. n. I8J et in GuatimalPfcut Costa Kica tWarsz.'' n el W in li. Boiss.). Petinli 1*2-18 lin. longi, glabrati. Limbi juuiures 'uirinaflte passi m stellato- pilosuli, adulti glabra||p-6 pollflongi, 1G-2'* Jin |;tj me m-branacoi-lobib lairralibus utrinijun fi-7 ad raiicroiit>m gracilem 2 '(tin inn giim ye! Fobultiro ^la simili touintialiim tendmitikus. i;,a •„„». au , ,: orsan " iletapsaa in pocim. <•}„, *m,v** |(.m. siylis Huiip* liimarilnis *tm-uii* lec'urvis. PeAincnli rructifc 3-9 lin. longi. Cupula in frfcctibcu conoSS Ml£ |,,l;i. basi ..buisissuna vel paulo elongata, 4-0 lin. longa. Glaos ovoidea vel glubusa. Cotyledones *ems* con^xse, uL vulgo, nee ui in ai(in j n, skinnori ruminatae. (v. s.)

Ufi n WARSCEWIC/II (Liebm in Sprm bot Hci p 252 et in Egesl p 29), winiis junionhus pilis stclhitis iulvis ,5iaepe retrorsis tompntosis, loins apuo I imorum congpstis bipvissimp pptiolatis clongato-obovatis b.isi obtusis apicc ^ cuiiiii.ulis a nieilio ltpnnde d^ntalis memfihinaceis supia glabiescpntibus tostd IUSLO tonipntosa sublus ad costanyBcivoscM^jprdescrtiiii pilis stcliatis fusco-tomentosi^, flonbus , fiuctilnis so^frns peWnculatis, cupulA magna hennsphaencd squamis ddpressis G bdsif>lusminus\e dilataU lanceolatis acutis firmis cinereo-velutinis, glande ovoidea VPI subglobosa semiexserta *$* In Guatimala ot Costarica (Warst ' 50 in h Boiss . 50, a, in h ber e\ Liejim), Veiagiias (Seem ' 1210, 1572? in h HOok) 0 glabiescens Sppm bot Hpiald, |) 2)2(siltemn 12i()')>0 oocarpa Liebm Iiffosl]) 20 (fide doscr. ot (jiisd muiK 11 "Warsc utati) Folia G-10 poll lon^i, J-4 poll lat.i, potiolo 2-i lin longo dense fulvo-tonicntos<x, d(ntibus latis lupxibus AJJICP cdllosis SUpuku 4 lin lonj;*, hnearps, doisfi puboscentes Insertio liuctus non mstiiptd huctus in b Boiss setfiPkMti,indg\ensimiliUTannui Ppdunuiliisi j)oll loiiKUs(e\Sopm) (Jupiat) lin *UUK*\ 12-1 > lin lata, udss.i, scjiidniis doiso non cnstitis noc iiiflatis Du.i .uNunt cupulae in Boiss qu|ruin m<i]oi J> lin hti, sqiidinis m(dns27-J Un longis, e bisi ovatcl 2 mi 1 ltd abinptc angustitis; alicia muioi, s(|iiamis medus 1 mceolatis, b.isi 1-1) bn latis, 7 lin longis, niixti»(]iiibus(l,un jmori sinnhbub. Glaus 12-14 lin longif (v s)

12 9 0 CAIOPHWLA (GJiam et Scbl in Linn 18)0,*If V))*, uiiis jmuonbus Inlvo-velutinil, lolns'ellipticis vcl subplliplius bisi obtusis vel minis subiorditis dcntis\c apicp acutis bask exceptfl diisUio-ihutatis snpia junioiibus adpnsse luho-touiPiitosukddulli^Ubi ills sul)tus pilis stollatis densis bicvilius pcisisU ntibus ui(dins "tel MIMC iniibus, amends ^longatis pubpiulis spaisillons biactPis lancpolatis oblongisvp e\ttff])ilosis *\n* ii^onmin .uiuantilAs, ppn^onio cainpanul.ito p\tus]>iloso orp obtuse pt iiip^uliiilPi lob.ito, .uilln^ris submucionul UIS, pc dunculis liuctilens petiolo]»1PIunique brPMonbus \el IPIC nullis, cupull lipuiisphdiiK A pubestenlp Mjuanns adpicssis obtusis imis ovatis alnsovatu-ldiiunldlis glando selnicxsPiU *$* In MPMCI inontdius jiropp Jdlalip.nu (ScliK dp pi W|»])() Huistd (H.uh\ 42J), Mir.idor, Iotutl»I icbm ' mil (oppnb), OiiLiTil ip i (lie iliml ' 1()>1) SiciidS I'cdio Nolascu, TBPT (Jurgpiison 572' Pt b8i^ln h Webb), Oa\«ic.r(I icbin ' Franco in b Boiss'), mont On/aba (ddUJIl) 0 Ahnio Bonth pi llailw ' p 56 et H48 0 mternipdi.i MdiUns[1] ct Gal in liull Min\ 10, n }, sp n^J3$_{rf}$ # dcummati Martons (t (,al lb sp n 20 (non Rr>\b)[j] liclc d^scr et loci neat, nam depst ui b. Mdi tens Facilp agnoscpnd L lolusr subtus canclicaiitiliiis PPIIOII in pod Timo ^-12 1 In longi I imbi /.-(> ((\ Scbl 0 ^ poll l(»n^i, *1 I {(x* Scbl 2 [>]) poll ldti, meniliidiiacpi, mucionibus npivos^ Iatpialps leijnindiitihus o penphena expuntihusadjcctis inteiduni .ilns. modus (nndp ioliadupbc<ito-denlal.i in (Ji un Pt Scbl), nervis subtus minus (juainparpnchYiin pnbpscpntilnis In i.unis non floiGiitibus loba grossp ansldlo dc nl it i .nislis lobulos o\ ito-fii ingiildK s 1PIminantibus Ann nta 2-6poll longi I[J](ngoniuni line un Inn^iun I*(dunculi 0 9 bn longi, cidssi Cupula 5-0 lin^long«%6-10 lin laid, squanus inaignie dttenudtis (v s)

** Sempen irentcs (1)

13 O . Q ciuNDis (lubm Kgpsl p#5), ramis]unioiibus pubpiulis, loins o\atovol o*>ov«ito-lanceoldtis basi setus pptiolum lne\pm lunge vel abiupte dcunipntilnis npice acutis spaisim denlatis dentibus lanceol ito-setactis inembrana-CC1S l""ionbus utrinque stellato-pilosis suppinpcito glabiatis subtus ad aullas nenoiuni d_{UI} tonitntosis, flonlms , pedunculis pe^jlo bipvionbus 1-2-carpis, cupuM dppipsso-tnibmitA oiPconstnctA. cinerpu^utmdsquaniis ulpipssis ontusis inlpiionhus oviiis suprenus o\ato4«incpohtis gl<mdp dc pipsso globos«\ sulnexserta i In tlld t»ndl4 (Waisc ' n 20 in h Boiss) Poba /|-8 poll longd, j" p ^ lat» pPtiolo ^B lin longo, piopp |)Ptiolum intpgid, d< ntibus ina-qudliUus 1 .Miii]$_{011}g_{ls}$ c iipuU b-7 liu. loi ga, 10-11 hn lata DiflertaO Xa-

(1) Folia in plprisque vix post frondescenti*n novam videnda, in ultimissp tamen iuagi> persisteniia

lapensi (1 foliis subpereuaibus. petiolis breviorjbus, den(jbus folii mibbre^ioribus niiuus regulanbus, cupula turbinatfl potius quaru henihspbuerica. i v. s.)

131. Q. A<:'jTJpfii.jA (Neet in *foal,* cienc. naj. 3 \>- 265 et in K(i:n. et Sims Ann. of bot. *1* \>. H)2), iMiumjunioribji u-miiler puberulis cito tflaliratis. foliis lun^. vel brevtterpetiolaiisinrasi aiqtflp vrl inaequali bbtusa vel acuta ovato- VI-I elj ttoo vel obovat<-lanceolatis acumiBp tis gross" ('i \<>*nw* sna^co-denlalis. junioribus..., adultis p#tiolo et supra in nnrvo tec uiter pubesc i-mibus demum glabratis suLiins in axiilis nervorum di» stellato-tomentosis alibi cjto giabcaLis, bracteis 11 masc. angusle lincaribilS iiutH'scnnlilnjs Bore brevioribus, perigonio eictua piloso irn^nlaritrr *ri* nbiiisc paudlob^lo, antlie/ls apice breviter callosis, peduijculis jjt'liut'j bro\ioribus l-4-carais,, cupula hemispbaerici ore subconstricta ci^reo-pjibesceiite HUami-s adpressia ybtusis infer, ovalis su[i. ovalo-elonga tis, glande sen iiexserta, 5 Inter Mexico et Ac apulco (Nee!), ad Orizaba prov. Vera Cruz (UuttPrM 952 in h. DC:, el Iioiss.), Yavesia |prov. Oaxaca alt. *','AiO* p. (Liebm.l h. Copenh.), Cuesta *tin* s. Juan <|c| Kst,i<|u (nl.!), in ijiiiiLimala lri>(]lij('iisjjex co]ii;l specim. :i Wars&! *i,* 2i(22, 23, 2i, 27, 28, 2 9 , % :i'i iii li. B01M.7I Q. Sarlbrii Botteri! in schu<l. (ii on Lieb,m.), Q, Grahanii f). cnp enh.! et inde i 1 h. DC. (non Itci th.). Q. furfuracea Liebin.! lv. p. ;tl (e Chinantla, in li. CopenJl. et Jill!, foliij maio a (Him; \m\v> minnia sul»li:s in [t.iii-in iiym.iu' v^^tis, rructibus anni pranced, nondum inaiims ot iniperfect is ,iih.-li' usis, squamis deo hiiinribus). SpecimtMi Nn;ri in li.Matrit.fru ct 1 nmiiird caret sed e \ folii-j *ft* fructu juoiore caeteri^ ?imillinium. Ejus •tinli 9-12 tin. loBKi, Innlii *k-'.*> jinl! longi, \-*i y.*>\\. laii, l»asi truncato-obtusi *p.l* regulares, lobis vel 'h'MijIms snbniatis ah inferioribus se mtpollicarlbuq ad ujaeriow.s st;til""i 1 •i'spn|ysu^, norvis later;iB»us uuij sempftr omnibtis fffiite terminal 1- *unvU-*. ,\<-*i'* es a Q. Xahijumsi. I'm hi caeterum annuo differt.) 'Vestigia ad sunt pubis stellatæ st ib folin extra nervum et pubjs uiiimris in parenchymate uu-iusffue p; ranescentis. Polioli variant in eodem ramo specimiiis '••'\ War*:, tin. :i '.), in num. 22^iicis -J-i, in mini. 29 lin. 6-9, etc. Limbi sæpins *:i->* jiull.]•-r •, 1-2 poll. lati, m(>iii!iiM|au>t, uefvifl tertiariis ci-t'lu'tfPt'ticiihiLis. l-'ciliinciili fruclif. l*felin. I'm^i, import, ramo DoLU-ri :i-l'2 lin. I'Wia a|»ico raini: • uoul>r'la . . . in li^iui v^usli' ore sæpius aphyllo. Cupulatignosa, 3-5 lm. longa, 6-7 lm. lala.. LluisfByoiJ. ,1, :, 9 Itn. Ion ga. (v. s.)

β, *Bonplandi,* adultis subtus in parenchymate et supra versus nervum centralem materiâ resinosâ? tabacinâ inter fasciculos pilorum et vestigia pubis brevioris coloratis. 5 Inter Mexico et Acapulco (Bonpl.! h. n. 3917). Q. acutifolia Humb. et Bonpl. pl. equin. 2, p. 55, t. 95. Folia ut frequenter in α petiolo 4-10 lin. longo, limbo 5-6 poll. longo, 2-2½ poll .lato, grosse denl.iisnituiato. Flows duliiifiiti in hcrharin Mns, par. nun •• riimtiirfragmentuni anthoris acute mucroiiuiatis a (luribus b. Copenli. differt, et nubes copiosa racliis florujjMpe a|figur<1 Kutipl. ciUiia,sed pictor ntiliii.iiii folionim i-iiet^prt. t^jiftius ignotus. Vestigia rnaterite resinosæ? in spEciminibus a intcrdu^PviiJi. ;\JI exsuiliitiojje folii? \el causâ alienâ? *y.* B.)

y, *angustifolia,* timbo angustiore basi longe cuneato. - In Mexico. (Q. acutil'ulia Tliilminl! in u. Di veris :iu. a^JIee comm.) et GuatimaU (Warsc.l 6 in h. Boiss.). Peti it'i \i-\-> lin. longi, cum ramq ni parenchym; te limbi adu in Klabri; limbi ft-G poll, longi, 12-18 lm. lali; sells ul vuigo • lin. longU, ted *vn* bail ovata insertU. tomeito in axillis jam parco materie resiuosa oullA, iluitihus nt in a. Fructusjuniorea adsunt in specim Thib Ugno priorjs anJPipserti, foliis ibi dela^sis, pedunculis J-3 liu iongis apice 2 :i carj|i|7^;upul) globusia 8 lin. latis clausis velutinis sauamis ovatis ubtusis arete adpn sis. EJ spucim. Warsc. cupula maturadura', npnawpnaenc. . . . . conica, *t,* \m. longa, (i lm. fcta, squaajis ovatis glabratis glanuc; sciuioxjiurla. (v. s 1

Sj *contpersa,* foliis in gris, v;..| ra't iu8 in eodem ram., dentetw -f In Moxici raontibus Las '.Villas (%rtw. G17), Micuoacan alt 4-5000 ped (dal.! 121, inli. Martens), ut Guatimala (Warsc! 1, 5, 7, ;u,32, 36, 39, ID ii'

Hoiss) Q Lonsppisi Renth pi Haitw p 91 (fide descuptionis el Liebm lnsched h Hoiss) 0 nilifl\ Malleus' <>i <Til in Hull *J\\\\x* 10 n i, sp ii *h (a* speumim Gal 121 LOIISIII *)* Jn sptuminibub Waibc 7 ft I > in li Boiss lolia simul ligno anni piaecedentis et piajspntib adsunl, m alns omnibus el ahaium \aiietatum vctusiiura jam dplapsa Fol a typi, sed ploi unique mUgid in u .{> Waist prajseritm inUgra vel giosse bctdceo-dcntdta Flous i^n Fiuctus ut in typo plpiumqup delapsi, sod in speumme J(') ptdunculo 3 Iin longo Iignd̄wm pi ion adbuo nisprti Cupula saepius maiginp inuassala et taidp mgiiiuis, sriuinns nuncbdbi convexis, ut in typo Pioximd Q b4liufuli<e scd fiuulu nitnui (v s)

e, *longtfolia,* folns integns vol ranuS pauculpnt itis; ppdunculis fructifen-. 3-12 Iin longis, tupuU submijore orp saepius tonui ypiamissublon^ioribus. *$* In Mexico 244,prov Ouacd (dbiesbr 1124) el buatiraila (Warsc ' 46, 48) Q longiioba Liobm Lrfc^l p 27 (p num 47 et 48 Warsc cojibtit) Folia noil longiora \identui, in 4b mine dentata Cupulre basi rotundatde vel subtuibinatdB, in speoim nou uigucuites, maigine teiiues vel tray»ae Pt ubi tenues squfinis supei non niTlovis, 4-6 Iin longa^5-8 Iin. ldt* (v s)

C, *micTouupa,* loins inlegns, fruUu minimo t5 In (juitimah (Waisc '25 m h Boiss) LupuU 3-4 lm longa lUique oiPiiuno tidbsiubuula, HUUL tLiiuis Glant» 5-6 liu. longd, 2-2 i Iin. ldU (v s)

1 U Q WISLIZENI, ramis junioribus petiohsque tpmntei stell ito-vplutmis, folns p basi ovatA v(1 ranus subacuta elliptiois dpup*muci<mitis mirgino liilcgiis v(I pxssim vel ciebre mucronuliUH chartaceis pnviTiiPivis dis^iclis piitun pnnnentibus junionbus adullis subtus in DPIVO et pissiin piopōiiiPiviiin stpllalopulKsLPiitibus, flonlms , fiucliluis gpminis sul^ssilibus, uijjula ob^onitA, squamis LK hio nnbncitis inns ovitis modus Pt sup lance nlatis el anitis puberulis menibi inat^s gl mdn elongalp-ovoided spinipvsprta siibuulA — *W* monlibus niexitinis id occid ^luhffihuce prope Gosiquinacbi, alt 7000 p (Wisli/pnusI in h Lngolui) Ex ramis spccicni humilem iuoiiUiuni suspiuii-(icminis ovoidPO-dLUta3, J Iin longcD, squirais obtusis phis nAus Liliiti4 Folia *LX* sj)pcim annua, sed iulumno(cv fiut tu) lectd, ct inde dni ilio dubu Arfinitas propior VKIPIUI Q^ nit(nti quun ulli j)id3>pnLis §, sod MJII mi^e «d» omnibus distinctae Petnii 2 (t saipuis 3 Iin longi LPIPLGS I iinlu 1) 24 hn long], 8 12 li ii lati, in eod uino muoionibus adinoduin varianles, mutionp teiminali } Lin lengo, alus minonbus, IIPIVIS terliatus ipticulitis utiinque in SILCO Msdnbbus KIULLIU in ligno anm J»I oj(p''d(Milis, pcdiuiLiilo communi Iineam longo (upula 4 > lm lon^i, 5 b Iin suppine laid squamis malm is in sit to In iiniKMb dnguldtis, mediii uon aiote adpiessis blans in s])cuiminp **umca, 7 lm longd, 3J Iin lata (\ s. comm del Engelm)**

13 3 Q AQU\TICA. (Walt fl Car p 384), rami>, junionbus glabi msculis, folns polymoiplns in pptiolum brevissimum bisi uuipatis obo\ Uis VPI obovatooblongi<> vel lanus oblongis oblusis vpl acuhs mucionalis mlpgris VPI IHPgulanld siniutiN lobiiisv(lobis iilyumqiK nuiLionatis gldnib vel siibtus in jjxilis ncrvouun stellato-pilosis,^! *u* t(is hm in bus pilots flnio snWongionbus '"ginbus ppiigonio 4 hdo pvtus piloso, anthciis 4-5 glibus fiuUibiis in J>Pdiinculo **biou 1-2, tupTila hdnisplideiibft squ imis** ovitis adjjnpssis obliisis SP-**J^^^sJ glmde cupulam dunidio saepius suppiantp J I'' piludosis a Floridâ (Michvl Gray'), Texas(Lindb « in h En„'elm , Beilaiul' 11)8^, nu**m nov 405 »>id) ett Aikdhsds (h(h LnLgdlm '), usque ad MalyRRd (Michx) —Ait li K ed T o t i, 1 V 3 l } 3)7> Mlchx Gllon_ l 19 20> 21> Michxf hf aib Am 2, P Wt 17, Loud enc tiees p 87» (cum dg MH hx mut) Quprcus loiio, etc (at Uii t **20 (mala) Q nigralinn sp p 14H,a(f** \ \L til (at) U uligiiiosi fohm etu wdngeiih I 18 ^ubi fol bolum) IMi^ll Michx(fi? l / U 3 f i ; # 0 maiilimi Willd sp 4p 424 (pi«ipt(M folia poinnnia). holia (P\ MILIIX) in arb)ip jmi dixoiMssima, Pt equidem in rainis npibaiioium polj,mo,pinU| supi i dosunpsi, l-4p>ll longa, 0-24 lm l.iu, P(" tiolo s^puiil-2 **lui** i mils J lm longo, membiauaLea, neivissubtus emincn-

libus Gupula basi oblusa, caU ut in Phellu. Aiboi ioln> deciduis ex Michx, loins nunc deciduis mine per annos 2-3 persistentibus ex Michx f (v s)

p, *launfoha,* folns obo\alo-oblongis oblongis\p ,*u* utis vel obtusis intcgns \p| larms lobouno altprovpauctis ,*f* I» umbiosis pt mantimis Carolina[1] nip nd (Michx), tKoigiar* (Michx,Rng^l''» b UC uBoiss asbuttlpw comm) ct Louisiana (A Giay I) Q launfolia Michx Chen t 17 Pt 18 Lll sk Gpor 2 p 597 0 hejBispb.pru a B.iru trav p 320 ifide Ell) ExMliottai-bousjuniores s(inflf virc ntes, v(tustioipsmonspmartiofoliiscarpfit Speu-mma Rngeln, ubi foliaquaidam paucilobaLi, transpuntad vulgarpm 0 aqua-tic.im E\ biscp folia nascpntia, pubpsi pntia (ut <fe>po $_m$ Q aquaticA), cito Klahiala, pilis in axilbs npnorom magis ppiMstentihiis, ampnta 1-1) poll longa, rathis pilosula, brae *tote* fugaces, linpaips, pilosuhr, pengonio sub-longioips, ppngonium sacpius 4-fidum, lobis o\ato-acutis extus supeinp pubpscentlbus; anthcrae sjjpius 4^ vix cxscrUe, glabiae,muticcfi (v s)

y,hptcroi>hylla$_y$ folnsoblongis acummatis liro^ul.iutor lol)atis lobis sptacpo-mucionaus $_t$5 Umcft aiboi obni in iundo Bartiami propePiladelphiam, unde in bortosintioducta Anbjbudrf^O bplpropbjlla Micbx f aib Am 2t 16 Pptioli p\ ICOIIP 6-7 lm 1«»IIKI, bnil)i J-4 poll longi, pollicpin LLLI Si)8Linipn vidipxb DPSF in h Webb aQ hplpiophjlla Midi 1. hdp lull) » dictum, iLoni fprp simile, spd folns in podeni iamo lobat.s \o\ mtppiis, pptiolis in .iltpio ramo 2-7 lin longis Similitoi vamnt spocinina lioit Hcmibauspn in berb Enpplm ct mpo p seminibus arborisBaiiiam (diiLata, spd in biscp ^liasaepius Integra, ldco meiaforma Q launlolijj id (st aqualicac (v. s)

ð, *st i pi fata,* cupulA sup* slijjftem propnum squamis onustum cylindncum abbiPxialulPlaLp hcnii*>pJidPiiLc\ —inl/miManA Q arpiaticavar A Gray! Folia ut inteidiim in "vul^.in oblonga vel obo\ato-oblonga, intpgra vel lo-li.il.i glabia, fun lus subscssilis, cupula ipsa stipite 2 lin longo (ut in n tliulolia) IIISK1(IIS, majustul^ 4 lin alta, 9-l^Jin lata. Specimin.i cum luscc inixta stipite taipnt s) ,

e, *drni&a,* arbuscula, folns angustis lrregulantpr dentate?^ In arenosis maiimiHs dpoipj' pt Flondae (Micbx) 0 aquatica var Micbx Chen I 201 2 0 dpntata B.nti tra\ p 14,20 Qi320, fide Micbx (conf supia .id vai 1«) Q nana Willd 4p 443^

£,' *myrtifolia,* folns pprpnnantibus oblongis polTicem Pt ultia lon^is utnn-<|IIP acutis biPMter j)etiolatis intp^piiimis coiiaceis supra nitidis subtus tflabnsopacis, fl etli Tgn — In Caiolma (Willd)etFlonda (Nutt) 0 myi-lifolia Willd sp 4 p 424, Nutt gpn 2p 215? (qui plant Willd non co-KiioMt) Q Pliellos vai Uiapm south H p 420, cum dubio Pioblpma iiuiiqii.ini solvpndum, nam ipso Willd flores et fi ignoti

1)4 Q NiTiNsfMairpii^'ptCal inBull Br#x 10 n 3, sppc n 10),ramibgiacih-Uisjunioiibiisstpllato-pubpiulis])prsistentibus, folns bipvitorpetiolatisangusti[1] lane oolatis acuininalis apicp Pt niaiKiiiP lPinotP subulato-dpntatis supprnp cito ^labi ills pt nitidis subtus ad a\illas iipnonnn pubo SPIO (.idpiito tomentosis ciilfiurn glabialis, floi lbus , p(dunuflis jruclifpus pptiolo bipvioribus VPI subldii^idrTbus oligocaipis , cupula bpmisphapnco-obovoidpA cinpipo-puberula s(ju«unis iidpiossis ov<itis ol)tusis doiso basi convpxis,»glandp subpxseita" o\oi-dpo-acut«a *y* In syhisMpxici prone Real del MontP alt 7000ppd ((jal ' n ir>), circa rolomho (Borland 1 410, sine II noc fi) pt in prov.Veia-Cruz (Linden' 21 in h Wpbb sin(M IIPC fr) 0 commutata Lipbm Lg$_{Os}$j p jq j $_{)\,l\,o}$ paite 0 affnns ScliPidw lioit bplge, oct 1837 t 17 (PX Mart etdal (lui)ita-Lim) Folia insppciminp autliPnticoMertensii spcundo anno usque ad matin itatom liuctus pcrsistnntia, basi plus minus acute angustata (in spp(im Bciland basi acuta VPI obtusa ut in seq var), ngida, non conacoa, 2-} poll lon^i, 6-9 lin lata, ppliolo 2-5 lin longo, nervisspcundanis*paium distmctis tertiains ••upia in sicco IPIK ul itis subtus vix perspiciendis, undp a Q. lancpolata diffpit In sppcini. Beiland. (minus certo) folia ejusd rami aculeato-dentata VPI **mtegia. Cupula (in specim. Maitens)4 lin. longalataque, pedunculo 2-7 lin**

inscrta, m spcciminc \erisim.f nonperfectissiraa et indebasi angustata, ehgno iinni pnons, nunc in iixillafolu. (v s)

p, *podocarpa,* foliis siilmersistentihus mtegns \ol passim setacco dentatis, pcdunuihs iiuclifcns plei unique petiolo longioiibus ct polylcaipib, < upuU ncmisphairicA vel obo\oidcl — In Moxici moniilms piov. Pucblde ct Oaxac<e (Liebm ' m h Copenh ubi piovisone? *Q* lanccolata vocavi!) Q commutata Liobm Fg(sI p 19, pro pule Pctioli liec|iioiitci in cod lamo 2-r> hn longi Iimbi Stepius 1 { poll longi, 0-8 lui lati, p.issim 2-2 *j* poll longi, poll lati Pedunculi e lignafeciiindi anin aphyllo, \-*l* lin longi, 1 J-caipi, in (juibusdam lamis simul lc< lis 2-,J lni longi, *ot* tune vanetas in a vol y mugit (upulae 4-0 hn laUB, lnteidum mipoilecttc et tune olKNOideai, raulto unnoies (v s)

Y, *ocolexfoha,* folns subpoisistentibus mtegns, peduncSIs liiitlifens pctiolo brovionhus vel apquahbus \pl longi&ibus, cupula bomisphaeritA — In M(\ILI syhis tirui Talca, laguni, JMOV Oa\ac«», lit 4-')000 p 0 ocotCiLfoha Liobm ' Egesl i) 18 In podpm ramo])etioli 4-5 lin longi, Iimbi ovato-^pl oblongo VPI obovato-lanteolati, pedunculi tfindem 2-5-9 lin longi Squamae doiso non inflate (\ s ID h Copenh)

6, *major,* folns subpcisislentibus plensque giosso setacfio-dpntatis petiolo sublon^iore, fiuttu niajusculo, cupulA henuspbajiicâ *-Ad raflites mon tis On/aba!, loco Alpatlahua ditto, alt 7'>00 p (Liebm • in h Copenh sub nom piovis Q baibmeni affinis) Petioh 4-8 lin longi Lnnbi 2i-3^ poll longi, 9-12 lin lati Pedunculi .1-8 *Ifi* longi, sa?pius 2- J-c irj)i Cunula ciiHrca, 4 lin longa, 0-8 lin l.il.i, bquai||s dorso non infltitis Longitudino ppiiuli et lUiigmt CUJUIIT mo\iniJ#0 acutilolia?, sed difficit neivis tertiams subtus viv pcikaicuis, pu»je oxtia axillis noixoiuin nulia (vpusim etiam in jiiniorilms) ,4puttibus niagis peisistpntibus Spccimina pjusd loci, a cl Liebm lpcta, (Jum hisce giosse dentatis mixta, forsan PX eadem .uboip, lolia pi<rbpnl intpgi i VPI j)aico Pt bie\itei s(ta cpo-dentita, pcliolo 4-0 hn longo, cupukm J 4 lin longam, 4 0 lin **latam, unde ad *a,* et ad var subintegram transeunt (v s)**

e, *subinteqra* , folns subpoisistentibus mtogiis \el])assim SPULC o-d« ntilis iflulLis glabpinmis, liuclu])iulo mijoK , cu|)iilA']ieini6plia nct^ In Mexico ad /icuikllipdn(Haitw ' 422 in h Boiss) 0 lanciloha lipnth pi Haitw p 55 (non Cham et bchl) 0 commutata I lcbm I gesl p 19 (quoad n 422 Haitw), Benth pi. Haitw (semis) p 348 Folia hgno spcundi anni non adsunt in spotimino Petioh 1-Mm longi lnnbi 1 >-24 hn long), 4-9 hn lati, m (odem l.unu s.ipius lntp^n, lanus hinc 1 dpnlati, vel plundpntati, dcntibus sivo mucionimis o pcii]>hciid suigtntibus •} hn longis Poduntuh 14 hn longi, nionoLtiipi I upiihi 1 1m longa, 5-0 hn lata, squamis valde adpiessis, doiso j>ubcon\e\is (v b)

135 0 IANCIOLATA fHumb ct Bonpl ' pi <fiqum 2 p 34 t 81), ramib junionbus et petiohs tenuiter stellato-velutinis, folns p basi acuta VPI obtus\ clhpti co-lanceolatis setaceo-acuminatis vel acutis>d oblusis mtcgns \d lnnc drtitatisad ncrvumutnnquejanutterstpllulato-piibpiuhsadliltisin axilhs noivoium Sl[bu S (^lu sl0^« ll()_ toihp nt5sis, flonbus , iiuctibus saopp gpminissubsessihbus VPI btovitpi pedunculatis, cupul«\hpmisphaencA(imporlect«\ subglobos^) squanus adpicssis, l.iic ovatis dorso plus minus cornoxis ghbioscontibusf glando SPmiexseita ^ In%exico inici Moian Pt Mnta Rosa tolia in nmuhs anni somm aastantia(ex *b* specinnn), MX ptrsibtejitia, unde a similhinis Q nilento In iff" 7i \ i Potloli m C0(l r «lmo 2„c hn lon 8^ tpnucs Lnnbi 2-3 poll joiifci, 7-12 lin lati, margine (in sicco) undulati, non conacci, JKHIUS mpniuran.icpi, neivis tpiiiains utiinqup \isibihbus, siplhs mmimis piloium m juniouDus extianeivum conti ilc m l ms aui nullis <Ufcu \ibi .uhst ninciomto lomcntum in axilla \dnat m loins ejusii i nni J uiitiis li^no SPCUIKII .mm peduncuiis l-j im<]on^ls tl<lssls insertl Cuiiufrf-/* lin longa, 5 hn lala, squamis suporpositis nunime rcflcxib (invito Bonpland qui male-obs), in proximib cupuhs planis vel convexis INimis 0 nitenti aifinis, foisan jungenda, sea loha raijus acuminata, potiub acuta, nervis tertiams ra.igis subtus dis-

tmctis, pube in folio junioic minus deficientQ| squamis cupulae ranus dorso Lonvpxis (v s in h Mus par)

p, *undulato-dentaia,* Joins maigme undulatis vcl undulato-dentatis", lobuhs piuLisfprpguliLnhus mucionpm tenuem gerentibus — In monte On/aba alt. 8000 p et piov Oaxaca ad Pico de Pelado alt 9000 p. 0 faunna Liebrrft ' in h Coppnh (non H et B) Folia omnino a, sed frequentius maiginc mucronato-dentata, in codem ramo undulata submtpgra \el utro([ue latere 1-2-dentata Fructus squamae minus dorso convexse, sed juniorcs Diflert (ut»a) a Q. lamina ncivis later magis patentibus (\ s)

136 Q DFPRESSA (Humh pt Bonpl ' pi cquin 2 p 50 t 92), fruticulus scmpprvirens, lamuhs pulvprulento-velutmis, fohis brevipetiolatis ovatis ovahbus oblongisve baswppius ohtusis apice acutis vel obtusis'conaceis integris vel spaisimiripgulantpi acute dentatis jmnoiibus glabiiuscuhsvel adneivum piffisertim pulveiulento-puberuhs adultis glahns vel in anguhs nervorum saipe <=tpll ito tomcnlosis, amentislongitudiiip lohoium, biactpis nulhs (an semppi[u]>), pm^oiiH) piloso lriegul 4- l-lobo, anlhpns suhmucionatis, liuctibus soliiams ppduiiLiilo hiPMbsimo inseitis cupulA dppiPsso-UPinisphspncA, squamis adpiessis obtusis (xtus pubescrntibus imis o\atis cartons owito-elongatis, glande subpxscitA. J Irumontibus MPXICI, ireqiieniius juxta Moran (Bonpl '), m Pelado Seirama dp Uaxacn, alt 10000 p (Liehm ' h Copenh) 0 lamina? Maitens' et Gal Bull Brux. 10 n 3, sp n 5, herb n 10G, 107 (saltern specimma fruticosa montium elatioium) Num 106 in h Mai tens, flor fiuctuque carpus, con\pniflfum sppcimmibus Bonpl indi h Mus pai Fx hiscp folia confpita, c(iWJpprenma, 1-2 poll longa, 4-9 lin lata, petiolo 1-2 lin longo, neivis tpitiaiiis vix flistinctis, latPi ilibus magis qu«yn in 0 launnA patenlibus, puhp socus nenura centrSleni subiys vanante, mine fere null.! Peiigonium hcmis|)haenco-turhinalum. Stamina 1w-7 In specimimbus Bonpl huctiis mucus JUTIIOI adest, sed m similhmis h Coppnli pluies observavi et ex hisce phrasim scupsi Podiiiiciili hgno mm pnonsjam aphylh (in specim Bonpl interdum lolnl) msident, 2-J lin longi, ciassi Cupufe 3-4 lin longa, 5-6 lm lata, glande globosA \ix exsertA (\ s)

]J7 O GRANULATA (Liebni 'Fgesl p 28), ramis junionbus parcppulverulentopubpscentibus, foms brevitei pptiolajjs e basi obtusA \el acutA oblongis \el ohlongolancpolatisvpl rums obovatis acutis \cl obtusis margine integio undulito subrp\olutis junioiibus glabnuscuhs adultis glabernmis et chaitaceis, stipulis loiiffe hneaiibuspptiolo multo longionbus extus adpresse pilosis fugacilm^, amontis spirsiMoris ioho suh.Tquahbus, rachi passim stPllatO-pilosA, floiibus l)ipvitfi ppditpllatis cv axilla lnactea^ rugacissmisc hiieins pilos.e, ppiigonio campinulato irrpgul mlpr 4-6 fido lobis«vatis cihato hnuginosis, antlipus muticis, liuctu J? In Costa-Ricae monfe ignivomo liasu ((Eist » 1 L) Pubes stellata m novelhs spaisa, cito cadna Folia perennia, petiolo 1-11 lin longo, limbo 1-2 poll longo, 5-10 lm lato, extremitate in novelhs mine subulate, in adultis acutiuscule *el* obtuse attpnuatA VP! obtusA, nenis t^tiuiis non distmctis. Stipulac 3 \ lin. longa) Amenta in basi ramulorum a\jlKiia ^ol extraaxijjan,i, I[1],-2])oll longa •Peugonium hiieam longum, pedicello HIPO fnplo quadiuplmc longuis, excpptisfl[p]icibus lohorum glabnusculum An a Q deprp^sa dilleit? Floics miscuh in hacce sessiles Fructus in praesente l^oti (v. s comm a cl (1 i^-t)

1 {8 0 iiNGU/rFom (Liebm » EgesI p 22), ramis junionbus fohisqup novelhs utiinqup lonipiito (uho stplhtocadiKo \pshtis, fohis bicMssimc pptiolatis basi (ordata v l ohtus.l elliptic is oblongisvp obtusis VPI arulis COIIUPIS mtcgns maigino H\olutis piopp nervum rpntralem siibtus dm tompntosis amentis giacihbus, rachi p^los^ bractpis nulhs, perigonio mrcqudlucr 4-fido lobis obtusis extus Pt basi irmis piloso, anthens paucis muticis, ppdunculis folio multo bievionbus 1-2-caibis, cupulA hemisphsencA cineieo-nubescente, squamis adpressis ovatis oflnisis, glande subexsertA ovoideo-acutA 5 In montibiis MPXICI pio\ Oaxacae alt 6 6000 p , ad fuesta de Lachopa Folia in duobus ramis e 4 mense junio lectis peisistentia Petioh crassi, 1-2 lin

longi, velutint. Lirobi 2-4 poll longi, fl-2CLttn. lati, in eodem ramo apice rotundati vel obtuse angustati vol ;n:utissinii, deuium gla!>ri$ nfrAflgteralibus subtus eminentibus prope inarginemconne-vis, tcrliariis vix distinctis'.-AuLe.nta liipnllicaria, medium usque sparsiflofa. Perigoniura hinc parti turn veUissuni, lobis nunc lobatis. Pedunculi ex axillis I'oWanni praelerni , 8-9 jH^limEi. Cupula in specimine 3 lin. longa, 4-5 lin. laTa, ore constricta, nun pfiri'ect; (v. s. in h. Copenb. et ab eo comm.)

139. Q. ELLIPTICA (Nee! in Anal, cienc. nat. 3 et in Keen, et Sims Ann. of bdf 2 p. Ill, noii Liebm. b. Cop.), ramis junioribus fulvo-tQmeniosis foliis brevissiino petiolatis obovaiis vel sienius obovato-oblongis vel obloTngis obtusissimi* JKIM obtusis vol subcordatis integris nwrgine suiirevolutis supra prseter nervum cenlralem fulvo-velutimini glabratis subtus nervo ceninili et *cir$i* nervmn stdlato-pilosis caetonini glabratis, racbi sparsim sldlatMitosa. bra etc is nulli*?, perigonio campanulato fc-5-ndo margnjLvillosnlo I" bis obtusis, fruciibus breviter peduncuhilis, Cupula late hemisphaTica basi subangi istatâ t Pimitcr vel\jtina squamis arete adpressis ovato-elllpticis ohtiisis, glandc ovoidei v;ilde exsprtA. *$* In temperatis Me\tt:i prope Cimapan el TiJBala (Nciri), in njonte Orizaba alt. 4-0000 p. (Onl.! 134), prov. Vera Cruz (Linden! ior>5 in li Boiss. et Webb.JT, in Sierra iroidre (Seem.! 1975). Folia ox specim. Linden fit Seem. perennia. Petioli 1-2 lin longi, in ramo slwili h. Seem. '2-4 lin. longi. Limbi ^-o poll, longi, i-14 poll, latij chartacei, juniores interdum ^si subacuti, iif'rvis lateralibus sulitus eminentibus, pube <ti;im in junioribu^iaii .1 slo.llulata, in adultis supra in nm^o mag is quatu vulgn persistente. Flores ma^c. PS specim. Seem, descripti, anilieris muiicis glabris p,-nicj^ Tnsortio ot duratio fmctuS ign, Cupula (ex specim. Martens.) pedtmcnte 4 lin. longo tenui sufFulta, *',i* lin. Innga, 5 lafci. f;l;ms 7 lin. longi. (v. s.).

ft, microcarpa, foliis obtusis vel rarius ocutis pelfolo paulo ldfcinre, fruclu minore. *$* In Guatimala (^yarsc.! n. 8, iit It. Boiss.), *i%* prov. Vexa-Cruz Mexici (Q. pprseaifolia Liebm.). Q. ini<,-rocitrpaf*pfcbin. Egesl. p. 26, ubi num. Warsc. citatu% 0- perseeef<»li;i Liebm.! Egesl. p. 30 in h. Copenh. foliis acutis sine fl. et fr. (ideo m irjn am certo definienda). Folia perenniu ut in a, pntinlo '2 lin. longo, ciBteriim simiUima, unum ex pluribus in ramo apice acutuni Ikucronulatum. Fructus e ligno prioris anni, pedunculo nullo vel (ex Liebm.) 1 —3*Ilr>. longo. 'iunula 2 lin. longa, 3-4 lin. lata. Glans 4-5 lin. lunga, 3r4 lin. lata. (v. s. in h. Boiss.)

140. O. NECTANDILFFOLIA (f.!- Inn. ! EgPsl. p. 17), ramis jm!roriliuVflilvo-toni(nlosis, i'olits brevissime [letiolatis obovato-oblongis vel oblongis obUjsis vel rarius acutis basi obtusis vel suliacuns tctegris margine sTibr^vfiluns supra prseter icrvum centiulem ftlvo-velutinum glaliratis subtus oeivo centrali diu stellato-pflosis depum glabris, perigonio campanulato 4-5?-fnlo eitus pioso, antherls apice callosulis, pedunculls brevibus ssonocarpis, cupula hemis[ihaerica]jasi obtusissima squamis adpressissimis'cinereo-velutinis ovatolanceolai is obtusis inferiorib„1S „.[mediis plus minus dor>o gtbbosis, glaade ^r^1|x^ta ellipsoidea. *$* In Mexici temperatis moniium onent. alt. 3-4S00 Mirai].,r, Totutla, San Bartolftne. Folia. Q. ellimiccu quoad inervos, petiolum, pubem, sed rarius apice obtusissima, juniora forsan minus pubescentia (quod e specim. non patet). Petioli 1-1½ lin. longi. Limbi 3-5 poll. o Pi . *tFuu. lau. Amentain specinune utii ausunt vetusta, iacerata_vesngia .','!'",.f'' I'^iio vetusto, ubi nonnuncniaMfolia perstaijt. FrucBB (s ;-.. -V"1 ' Pedunculo ;j-'i lin. longo, i-UBUfflfe-li lin. longa, 9-10 nnJiUia, Sioois «pamarum jnaequalibu '«T%I. (v. s.)

141. O. i';J-^'l'tf^^ljA, mis foliisijin' etiarn nnsfehtihiis glabris, 'oliis brevilnr pf1- ^u^ vel obtusa a|*i3te ir, f, H olmvato-lanceoiau?. dcuminatis integris vel ajHBdio remote undulato i-dentatis. minmis..., petlunculis fructifeai petiolo sublongioribus pis. L-trpula Uemispnsenco-turbinata squamis cinereo-vclutinis adnssis inferioribus et memifl ovatis obtusis dorso valde convexia superiortbus ovato-»lanceol atis minortlius crebre superpositis, glande vix exaertft* j In sylvis Mexici ad

liiiiitainulrij prnv. Piiebla, Dospiiontrs ot S. fiartholome {Q. landfotia J.ifhm.' in h.GoiHinb. Pt hi:.,i. . . . Cliam. ft Schl.). Rami volustf albidi. Novella urn- • IIIIIM ^laltra, quod in fieneie rarisstmum. Folia secundo anno passim persistentia. Betioli 1-1.}• lin. Inn^i, giabri5limbi 2-4 poll, lonpi, 7-12 lin. lati, i'-'-n vci h- \.. . . . an^iisiatigM-igide membranacei, nervis tertjariia subtil m^^^ltiticlis. dcnhbus mlWimis subcallosis vc] ovalo-acutis non mtbulatis. Pedunculi 2-3 lin. lonKi, e ligao vfetustiore. Cupula 7-8 lin. longa, <) lin, lata, ore subco astncft.glande ^loljosa vix exserta.- — ▷• scripsi ipodmpn h. Copenh. ubi TruQtus ram<i insidet. Segregftti fructus curh loll is simililms in sacco adsunl nlii cupula vera hcmisphaerica*, ort Dfin oojfiricta, (i lin. lonpa, 8-9 lin. iata, squamis similibus, f,'lando» cllipsr- ideâ 10-II | j n |(11)*r a< ,\d n' lancifoliam (sp. dull.) Cham el Schl. accldunt, ^ml |ni|((.s squamarnm :nargine poff reversa et pedunculi iniitto broviores. (v. s.)

142. 0- ':.*STANEA (Nee! in Anal, cienc. nat. :t, p. *TiG*, et in Sims oi K▷ Ann of bot. j p. llii), inin^Villd.), arbuscula, ramis juntaribus pubescentibus, li>ifis bri'vitr-r pcimlatis e liasi obtusA vel subcordata nblongis apice plus iiiinii> attenualis niutronatis vel rarius %iuticis maiftinr a media remote si'tacfiordentatis vel subinlcgris vel rarius integris supra glabratis subtus }»iiis stfillatis lij-"Vibn>i Cinereis vel fulvis diu tomentosis Hemum glabrescentiuus lloribus..., [K'dnnonlis fruciiferis submillis vol petiolo breviorifius 1-2-carpis' cupula bero^sphKrico-turbinata temttLrr pubpscente sfjuamin adpresais ovatis oblusis, glande ovoideâ semiexsertâ. 5 In Mexico ad Ixmiquilpan (Nee!), Mirador et Yavesia (Liebm.! h. Copenh.) et in Guatimala (Warsc.! 9, 12, 13, 14, 49 in h. Boiss.). Q. mucronata Willd. sp. 4, p. 436 (mutato nomine Neæi, SP(I Q. Castanea Willd. cadit in Q. Prinos var.) Q. tristis Liebm.! Egesl. p. 16.

Folia ex 2 speclm h. Copenh. el a. 13 Warsc. in b.Boiss. usque ad maturit fnictus encumlu annu perstan| Rami fructif. saspe Becundo anno QUO elongati fit inaff'duratio "ol. et IV. frequenter annua videtur. Petioti l-;>, saepius 2-:> lin. lonfLLimbl I.;-:t -V poll, long!,6-t2 lin. lati, mucronibus el dentflius ½-1 lin. lunfti.-, in sp'•rim. Guatimal. passim deflcientibus, e peripheria vel it-- tjvato SHromtibus. Parem hyma pube subtus drrasa vel lapsa ad Icntem liullafntn, nrrvis tertiariis reliculatis dfstinctis. Podunculi !-•» lin. looj^i, crassi; flujinla 4-.'i lin. Irm^a, fi lin. lata%Spncimon JJra'i in h. Matr, untcum^ floribttset Inliisca ret, sed alisi|tTf> tlnlnn hir ii'lcrendunfi.Descriptioex aliis. (v.s.)

[l, *sublnlnta,* foiiis majoribtis angulato-lobatis lobis mrfcronatis, fructibus minori ▷n. — In i.ii.iiiinala (Warsc! 10 in h. Boiss.). Folia 3-4 poL Iflnt-'a, !H« lin. Ja^«. [wiiolii 2-3 lin. longo, oblonga vel obovato-oblonaa" nrrvis ct |.arfflWTj-inaic pnorum; an e surculo vel ariiorc juniore? Cupnl e (segregata?) 3-4 lin. longse, 4-5 lin. laUe. fv. s.)

Y, *'ridens,* rutiis vel integris apirie SCUUTH vr-i aUjunctis Inbiilis duobua mu **crbnatis pwpe apicem 3-dentaUs, dentibus s«nceis. i Ptope Moran Mexicanorum. 0- tridens Huiubi et Bonpl.! pi. equin. 2, p. 56 t % Folia omnino var. a, ifyoad formara, pubescentiam, etc., nunc inUtoa apice setaceo m^cronata at frequenter in a, mine in eodem ramo ii dentata dentibus setifens majoribus ri nutgu symnietricis quam in MUs var 7 ulu *setiu* latent^adsunt. Flores similes. Fnictus ign. (v. s. in h, Mus par }**

ô, ***glabrata,*** **iViliis obtdmgo-lanceolatis basi aentt vel obtusi tenuiorilnti in** costâ subtus pubescentibus cæterum adultis glabris integris apice mucronatis vel subulatis. In Sierra Madre Mexici (Seem.! 1974). Q. Mexicana var. glabrata Seem.! bot. Herald, p. 332. Petioli in eod. ramo 2-4 lin. longi; limbi 2-4 poll. longi, 6-8 lin. lati. (v. s. comm. a cl. Seem.)

ε, ***Mcxirttna,*** **fohis biw,.. inifRria vel rarius prone anteem 1-2 'Vnt.iiis. ,; I„ Mexico (Pav.! in h. Boiss et Webb) inter Mexico pulco, ad Cliilpancindtfc Moran, Regla etc (BonpU) in editioribns Uadre (Seem.! 197flf5^77, 1978J. Q. mexictoa Humb et BonpLI pi equin-J p. 35, t. 82, % u.! bot. Herald, p. 336, sine descr. (non Benin.J. Folia in specimuiibus obs. nun persistentia sed character in herb, raro videndus. Petioli in eodem ramo l J -;t 2-4 tin longi. Limbi 2-3 pc41. longi, 8-15 Un. lati. Flores atlsuut in spec i i i bus**

h Mus par ubi amenta vidi quae folio breviora, rachi pilosA, biacteis lanceolatis ciliatis dorso pilosulis floies apquantibus, pengonium late t inipanuldtum 4-">-fidum pilosulum, diithejcp 4-7 glabiac apicc §ul)callos^ peduncuh 2-4 hit longi, cupuld 4 lm longa, 6-7 lin laU (\ s)

143 0 IANIGFRA (Martens' et Gal in Bull Brux 10, n 3, sp 16), laimilis junionbus toinentosis, folns c basi corddtA \el obtusA oblongis apicc ohluso \el acuto miiLronatis ot nicdio passim mucionulato-uVMitatis supia stollitopul)tiulis suhtus pilis stellatis peisistentibus dense cinpieo-tomontosis, MOMMIS , liuclilms subsessilibus solitarns, £upuU homisphsnco- tiirbmala, squamis adpiessis subxplutinis imis o\atis obtusissimis alns lanceqjatis obtusiusculis, glandp o\oidea semiexseitA, t5 In Mexici editioiibus, propp Chxitd, alt 7-9000 pod (Gal n 104) Ail)oi i.unis non \alidis 1 olia in ramulis anni appioYimatis, xerismi subppiennia, fine secumli anni cnca iructum in sppciminp dolaps-i, 1 '-2 pull longi ()-8 lin laUi, pptiolo 1-3 lin longo mpinbianacca, dentibus lincdiibus mollibus extiii ponpluium abmptp piominpntibus l-j lin^lon^is nunc rails Pubes subtus allmla ut m 0 cinpic^, pili*. lon^ioninis, tompntiim \PIO potius qudm lani xocanda Cupula 4 lin lon^.i I.IUUJUP, poduMuilo linoam lon^o inseita — Sppcimina lej^it cl Lipbm in Cpno de San Felipe OaxacdC alt 0-7000 p , qu P sub nomiiubiis ldlsis in h C opoiih dd pi«psontem ex loins ieleienda sunt Fructu junio nipn^b cdient \incnta 0-12 lin lun^a, biacteata* Ppn^nnium iiici(|ialitci lissum, extus pt l>asi mtus pilosulum AntberdP mutic*fi \e\ submucronatd? Folia pcrMstentid non \idi (\ s comm a cl Maitpns)

14'i 0 CRASSIPFS (Hum!) et Bonpl '])1 equin 2, p 37, t 8i), aibuscula, 1 inns junior pubcscpntibus, loins breviter petioldtisp bisi obtusi \el conlalA oblon^is inteKciiunis obiusis cum acuminp molli ad apicem supri glabiiilis subtus pilis stellUis uobi is pcisistentibus fuho-tftm%itosis, flonbus * Iiuc-1ilms sdlitims \o\ ^cininis pedunculo crjsso LIOM insidentibus cupula sub-UnbimtA tpnuitci jmbpsuntc squimis .ulpressis obtusis inns o\atis c^Uiis o\dto elon^«itis, phnde semiexseitA ovoiaea 7 lp Mexici montibuf juxta Smta Rosa et Ano (Bonpl ') et imuxahua (Haijfct' ;>M in h Boiss) Q. Mexic.ina Benth]>1 Hartw num m (non H etn.) Diffcit a 0 fdstanea 6 tomento sub folns densioic persistpnW nenulis ma^is distinctly holui 2 \ poll longd, 4 7 lin hta, pptiolo 2^^n lonnro, supia pillidp vnentia, subtus pdllide ful\a])ilis brevibus \ensimilitpi ultia annum pcisistpntid Pedunculi p li^no <imn pnons, 3-'i lin longi, 3 lin feie ciassi (upuli r> lin longa, 7-9 lin lata (\ s in h Mus pai)

14r> 0 CINEREA (Michx (hen t 14), iamis junionbus pilis nunimis incanoxplntinis, folns p basi acutA vel obtusa oblongis \o\ obo\ato-oblojij;is strj)iiis obUisis mucionatis intp^ns supomp bpiisim subtus HPIHP i>ilis stellatis bieMssunis peisistentibuscirHieis, biactpVfl masc fugacibus floip aeqiiabbus pfriK°nn 3-4-partiti pilosi lobis »\ato acutis anthens 4'i, fruclibus solitains sessihbus vel nieMssimeppdunculatis, cupulA hpmisphrcrico-tuibinatA squ.unis ovatis adpressis obtusis sonceis ^lindo cupiilani dnnidio StDi)ius supciiulo > In siccis pt steiilibus Flonda ((.nj ' b Boiss), ICMS (Lffdb ' l()9 in h Boms Holland' 152(> in h Webb Pt D(" sine fl pt ir), (.corgi P(1 11 A Giay!), fdiohn.p (Michx 1 A Gray), Virginia? (Rugol' in h Boiss) — Michx I aib A.m 2» t 14 Q sempeiviipns, etc , Catesb far t 17 0 Pnnos p Linn SP p 1412 o Phellos cineioa Spach APg phan 11, p 1(>1 loud me »ees p 878, f 1G01 Arbuscula tortuosa, semppmrens (Lll) 1 olia non per pniiesannos pprstantia (ex specimin), 1-J-1 poll longa 6-}0 lin lata^pe-1101,0^3 i1n lon^j, stipuhe oblongse, basi angustcT, T lin * long.T, pubps-"ntps Ampnta 1-1 *L* poll longa Tupiila omnino Q Pbpllos Differt a 0 Pnpilns loins minus deciduis, tomento persistentp, ab lmbncaiiJl, pptiob, brevioriHis t l bb jhP dd t P I , tonipnto pilis biPMonbus, iohis minus dpciduis, tomento THIsistpnip Folii I Q P dfl t\ l j t f b u s lii IPIP Q Mrentis, difit it statin,\ mmore, loinsvix persistentibus, anllieiis Klabus et loimA squunaium (\ s)

$,. dentato-lobata, folns integns \el passim lobAuno alteio\e dentatis, lonis obtusis vel mucionato-subulatib In Flonaa (Rugel? m h. DC et **Poiss. a cl bhuttlew comm)**

y, *humihi* inthons mucronuhtis —In firolmi (Walt Bosc') 0 humilis Wilt (ar p 2*4 (hdo Bosc in h Df) qua culom K *Q* cmoroi (x HI * Geo 2, p rM Kunus ct folu omnino vir a Antbcrae in quibusdam sppcim a ct y alumni mucronul itum ipico pyr bent (v s)

8, *pumila,* hiimilis (1-2-pedibs) —In pmetis ct hnmidis Hondae (RugeM Mien* f) Gcoigiae Pt (irolmap (Michv Rose') Q pumila Wilt Car p *2\k* Mubxi.aib 2 t h Q Pbpllos pumih Miebx Clien t H f 1 et 2 0 seneei Willd sp 4, p 424 Q unprec \ai Nutt 2, p 214 Foh i ex Lll dceidui ex ,spceiminibus plurihus in h mco et Boiss persjstentia, junioia mtfiislissimi, iciulti ut in var a, nunc (in specim fl<na) tirde subglabiata, sed imo tune a Q Phellos petiolo breviore (JlstlllCtfl (V S)

E *nann* (Micbx arb p 82^ suffiutpx J 4 pedilu, folns mmonbus dontilis magis])oisistentibus — In mantimis (noliiid Foln pollicpm longa *IK* Micbx I fob i vir a in suiculis intordum j)i LSPIUI similia ^ n 0 nana Willd ubi folia m a\illis ncrvoium solum pilosa et qua3 forsan O aquaticap vir

146 RUGUIOSA (Mirt ' et Gal in Bull Biux 10, n 3, sp n •)), ubor nmis jiinioiiliustpnuibiis fulvo-tomentosm, folusbroMtcr potiohlisoblongis \rlobo-Mto-oblongis pirvis bisi obtusis \fl subcordifis ipiu *t* btusis mucionulitis interns supn pilis stellatis miniinis conspcisis subtus lisciculis piloium c l)isi crftssiusLull vonucifi inn (li\trf,renlium pubc^cpntibus flonbus , Jnictu (imporfpi to) subsossili tin bin ito IK nuspb i ruo scjn inns idpnssis ovitis obtusissirniM PYUIS pnborulis *ry* In ylvis M(xicains pioj e Real del Monte witfmpiifum \idi m b Mnlnis i ubi i miiis f^iicibs, secundo anno gl«il)rescons^ ((Ma 9-10 lm l^»'ti *fi* (> lm kit L subconuPT potmlo 2 Iin longo lul\o toni(ii(os(pilis*jiijri uimimis \cnsim sorius evinpscPiitibus subius uhj pclum niRulosum] IT bdilibus basi fisciuib CUJUSVP punctiformi sub lpntp ovc HIP! pilis rampn lio\iorc PinVs sub folio pprsntens vidctui Cupuh unici o li^-rio prioiis jArn loins vicious jam dehpsis, \ 1m hti, sed ex f^hndp nboitipntc mclijpimpdfpcti rf^imiQ Mpxicaiicp, Q crassipedi, etc , sed basis fasciculoium in biscp tcninor (v s)

147 0 ioNFnrriFOLiA (Plumb pt 4ftipl ' pi pqum 2, p "ii, t 94), rimulis pubprulis folns c bisi (blusl \i\ KUII obi m^is \d plon^itis I mcpolitis acunnmtis ipi<(miu mints rmr^nip IIUP^MS SIIIIIC «ur vis suj 11 #] ibritis subtus pilis miniinis stellitis «. ulm is pubcnLiIus flonbus liuctil>us sessilibus srj)ius geramis, cuptTlI (jumoie) sub^lobosl squinns'ulpiessis ovitis r])tusis p\tus j ubftstpntibus, ^hndc 7 In Mexico, praesertim pionp Sinta ROM (iiiinaxuito liutpx \(\ ubiisciih semppr\irpns PX met Iolia in i uniilis iipjoxinnli 2-) poll IOURI,*1) 8 lm hli not olo 2 hn loniro co mcpi, supn pulvc iuJonto-\(Iiitm i ripnium lueida sibtus IIPIVIS lilpifibus patPiitibus, tPitinns vi\ distinetis, IIPIVO ecnliabdiu 1 re\itpi velutino fiseienbs ilibi sj irsis bip/issimis oeulo nudo piinctilormibus doinum dpi ipsis Iruetus nondupi mTlini 1 gno pnons anni, folns ibi j im dphj sis niscrti r ujuli (imperf) 3 lm hti squirms mir^ine tenuibus (v s in b Mus pu)

§ *k Oviila aboilwa nut rnatmntio purtm rwndum coqmia* (1) *Dwatw fnhotum simihttr mphnsquu ignota — Species dubix quarum plurcs fonan a prxccdcnlibus non divtrsae.*

A *AmcncSiv*

* *V (irolin*

148 0 SINFJATA (Wilt Cir p 23r>), folns smuatis Iffivibus ohtusis supn p-ilbdis subtus subtfhiK is, eupuH subphna, phndc globosi mpdiocn ~ in Cirolin\ Ab bodiprrns non in* in%ati, obliuo non sine eius\ ti uliti

(1) Afflhitates nullo modopidLsentienda3 quum saepissime e duabus speciebus

***JiE** Mexico vel America centrali.

149. Q, ABISTATA (Hook, el Am. l>ot. Beech, voy. n. 444), foliis brevissimo petiliis **oblongiK** l»;i»i **cordatis apice obtusis et anstato-'cuspidatia coriaceis** integerrimis, junioribus ramulisque pubescenti-tomentosis, adultis glabris juxta nervum pubescentibus. — In Mexico occid. inter San Blas et Tepic. Folia 4-5 poll. longa, setâ 2-3-lin. terminata. Flores et fr. ign. Specimen Seemanni n. 1458, e Cerro del Pinal, quod Q. ai islal am Hook. vocavit (viso verisimiliter herb. Hook.) differt a descriptione foliis prope apicem integris vel 1-2 mueronatis. Kami juniofta in illo tomento pSWdn Itnccoso caduco <l<;nsf vestiii; Ealiacadacajpetioli 1-3 lin. lon^, limbi *1\-t* poll, longi, 12-It* I'm. lnii, sulilus juMjir tn-ivum lomeninsi. ncrvis tertrnriia vix tlistinctis; II. *oi* fr. *iqnf* Allinis vid(Mur *(j.* agrifoliw Nee, sed tumfiitum ramt brevius. (v. s.).

150. 0- BBAr.rrvsT.\cnYs (Beiilh, pi. Harlw. n. G1R, [). 91), • ramulis nbtnsn anRulatis laiiatis, foliisobovatis pblongisvi apice s iiiiiatn-ilentaiis dtmiibtis obtasia mucronatigque basi truncatw coriaoSs ragosis supra glabris sul)ius aordide lanati; sjiicis btevibus pleiocarpis, cupulfl hemisphserica, squamis luiis appressis tomentosis, L'!;f!H!(> oblongo-OToidea. *j* In Jnexico ad Cuesta de Mixto, pntpf San Lucas, in montibui enanaensibus.—Folia A-^oIlic^ petioio senaipoHicari. 5pic» l-l*)*- pollio. Glaus 7-fi fin. Iqnga. Aitinis *Q.*cbrysopnYlt^, folia tnajora, ueiisiits tanata, pedtmeuli flm-it'eri hreviore* An Q. calopnylla Cham, et Schl.1 »

151. 0- BiraqxiOlDES {Liebm, in Kenm. hot. Her. p. 251 fit Egesf. p. 30), rnniis albicantibiia verrucosis, ramulia aneulfnis (fracilihus, foliis approzimatis brevil(i petiolatis onovato-lanceolatia irUmsis apice sfnnn leyiter eraarginatis ktsi c....MIIS intcgerrimis margins subrevolulo supra glaberrimis subtus in axillis oervorum parce barbatis. fruclu.... In Veraguas Ariiei-icap centr. ad montcifl cliiritjiii (Seem.), Kolia aduitaS &~*t*t jiull. longa, t-]-J poQ. lata., petiola 2-3 Jin-lniifr<i, jnvciiili.! *et* Seem, ciltala caeterum glabra, 9e<] in phrasi folia adulta m axillis]jarbata dicit. Amenta gracHte l'i-16 lin. loriga, uansiflora. Pruotua iA — Specimina yidi in h. el. Seemann, ainp nomine, e Veraguas, quæ cum des Liebm. conveftiuntj sed in oadpui pagina dute *P* [orsan 3 divoi-sa; speciea adsun.. Numcnis 1, sine floip noc TrcUi, Q. bumelioidi dicondus, csl forsjm 0- filUptirai Nee. (v. s.)

152. 0. CANDICANS (Neel in Anal, cienc. nai. 3 p. 277, el in Keen, el Sims Ann. Of ijiii. 2 p. 110), ramis..., foliis ellipticis utrinque subacutis subpinnfttifldia l"l>is utrinque 4 [ale ovato-acutis apice et margins mucronato-dentatia m-embranaceis supra junioribus Encanis tomento seriua cadivo subtus pilts breviboa stsllatia peraistentibua incanis, Hdribus.... U'licin.....;. In Mexico^ropd Tixtalft. Petioli 4-6 lin. longi, puùpscentea, pui deterslibili. l.inilii esWee 9 poll, longi, *k* poll, lati; ex foluff diiobus in Mus. Matr. servatis 5-6i poll, tongi, 2^-31 poll, laii, loBis 5-9 lin_. longps tottdem *aSa* latis, siaubua obtnsis, mttcronibus ½ lin. longis. Mihi videtur a Ouercn aliena, propter dentes mucronatOlB Boeiiti zoannes toborum et pnbescentiam modo Popali albic.

153-0. cmtVsoi'HYLLA (Hum)), oi Bonpf.1 pi. eoain. 2 p. 42 t. 87),raraisgunioniwis pulveraceo^inbentibufl alto glabratiSj foliis oblongia ve] obovatis '••• I'ltusis vel subcorda-tis apicem versus 3-^-5-9etaceo-dentatis membranaceis, i ••"•"!'i steliatis piibescentibus.adiillis ^labriitsculis, *iwnm* * <"||I1HK s[iiirsitl<jris I'olin dirnidio brevioribus, bracteis...., pfflgonio 5-den- • >, suriiiiiiiuiH (;, jicdunculis j'emineia petioio Eeqaalibua vel brevioribra, ...*••" 6 In tRmperatis el rupestribiifi Mcxici inter Jfnran, hidiuca et ^.i..iii, 12-13U0 bexap. N....en iicssiiniim. Arbor efceisa, sylyaa consd- ex specimme caduca, tenuia, bipollicana, 8-121in. lata^fietiolo 3-4 "•• aentibug 2-5 ijn. longisebasi lanceolatA aubBiatis, ncrvis minim

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u, Qore et form* fruotua Bimiltbus una ovula infer*, aiiera supera, vel iiucium maiurum in lignu **velusto** pwebet^ altera in ram" **anni,**

teitiarns \i\ distinctis Pubes etiam in folio adulto videndi, sed sparsa, mi nima, rara, m pctiolo et nervo centrah solum cqflbsior, pulverulenta Floies masc ex ic et descr Femmei J 4apice pedunculr«cillans,3-5 lin longi An 0 lauxina H et B ? (v. s in h par)

154 0 CORDATA (Martens et Gal in Bull Brux 10 n 3, sp n 8), glabra, folns subscssilibus elhptico coidatis integernmis nitidis, pcdunculis brevibus fructibug br(Mtcr spicatis imniaUms lamiginosis pan uhs ; In editionbus montium Me\iu Misteca Alta alt 6r0(Mr>00 *pod* (Gal n lit) liuncus 8-12-ped , ramis tortuosis, cyma lOtundJIf Folia *1*\ poll longa, 1 • poll lata, basi proiunde coidata Fructus lmmaturi magn pisi

155 0 (UNLIFOIIA (I lobm in Seem » l)ot Her p 3J3 ct I gesl p 24), ram is pf tiolisque)unioiibusglabiiusculis, loins brovissime petiolatis obo\ato oblongis uileine longo <ingusl.it.is basi insa acutis \ol subacntis apice obtuse acuminatis cxcepta bdsi maigine dentato lobatis dontilms o\atis piucis obtusis apice subcallosis, supia junionbus spaisim pilosulis adultis ghbns, sublus in a\illis neivoium pilis stellatis floccosis dm tomentosis, flonbus , fructu $ In Mexico, ad Ceno de Pinal (Seem ' 14^6) et pi ope I.icoba distr (hinantla piov Oaxaca 0 (.hinantlensis Liel»m ' Lgeisl p 21 Fx specim Seem folia poicnnia, in r.unuhs appioximata, 5 7 poll loiifji (7 10 poll ex seem), 1 '-3 poll lata (2 }-4 ex Seem), consistentia Robons, nei\is leit et quatcrn utiinquc in SILCO ^sibilibus, dentibus \el lobis utioque lateie 5-6 versus .ipicem txis,])etiolo 2 lm loiigo Specmuna 0 jCbinantlensis I icbm in h fopenh nlitei floic ot fiuctu cdient, loin incnse junio ligno «mni pra3ccdentisadhuc peisistentui specimiiu Liebm similui^sed numeiosiora et ideo magis vanantia Petioh 1 2 lm longi Lobi linibi plci unique minores et latiores Limbi 4-7 poll longi (v s)

156 0 DYsopmiiA (Rpiith pi Hartw n 421 p 15), « arl>orea, petiobs bie\ibus ciassis, loins oblongis pleiumquo ad apicem latiotibus acutis mtegerumis \cl piucidontalis bisi Ktusis ciassis supn ffhbnusculi^deraum rntidis subtus dense \ehit\Mo-lanatis, lnictil>us s^ssililnis subsoluams ^ In montilms Mexicanis prope Huasta, uln Man/anilla dicitui Folia 2 \\ poll , lonn.1 Q tudentis H et B. (supiaQ (astanea y), a qufl b.ic sp diflrrt pirPcipue stituia et Ifjna pagnitP mlenoiis loliorum Quoad tolia comenit cum descr Q divcisiIoli<eNee (supia Q tomentosa), sed mflorescentia disciepat i

157 0 LXCFLSA (Liebm ' Fgesl p 16), ramis iimioribus pubescentibns fine anni fdabns, loins l)ieMtei ul bie\issime petiolatis obovato-oblongis bisi obtusis ^ el acutis ol)tusc acuminatis \nsusbasim undulatis inde giosse et in«rqualitei lobato d(ntato senatis dentibus o\ato lauceolatis extiemitate subcallosA acuta at subcallosA acuta meuAiaMaceis amplis, juniMibus adultis utniKjue glabns, flonbus cupuliT gkiide magnd cllipToideA j In Mexici syhis supia Matlaluca pio\ Veia Ciu7, alt 3 1500 p Jai^uano lecta adsunt in ligno ^Ptllsto albido lolia peisistentia Pctioli in duobusiamis \-l hn , m teitio 2 4 lin longi Limbi 4 (') poll longi,] J-J-J poll lati, l)asi pleiunique longe cunfati, acunnne in phiisjiie mpto, dentibus nunc 4 lin longis 2-3 lin basi latis ^e^sus apicem loin fkxis, nunc bievionbus, nenis toitiams et quiteinams subtus distinctis tenuibus Inseitio Iructus lgnota, sed cl liebm sessiles solitanos elicit Glandes 15-18 lin longae, l> lin lataa, umbilico subcomexo umbone e depressi6ne suigente 0 cuneiiohae proxima (\ s in h Copenh)

r,8 0 EUGCNI^OLIV (Liebm Egesl p 27), folns subsessilibus hnceolatis acunnnitis atutissnnis mucionatis basi longe attcnuatis cuneatis m petiolum biewssinnim decu^entibus lntegeinmis undulatis margme carhlagmeo reile\o utiinque glabemnns nitidis, flonbus liuctu In Guatimala et fostanca (Waise\\ in h Berol) Petioh i-l lm longi Limbi l±-4 poll longi, b 12 hn lati, conacei ex liebm qui sa3pe folia ngida non crassa sic \ocavit Affims e\ eo 0 saliuioliae ^ee

l,9 9 0 PLVVJDA (Liebm ' EgesI p 20), ramis junionbus floccoso-tomentosis **fulvis, folns breMssime petiolatis e basi obtusa vel subcordata obovatis acutis**

sinuato vel grosse dentatis dentibus anstatis, junionbus utnnque pihs stellate lulvo-tomentosis, adultis supi i ^hbiescentibus, stipulis linen 1 -lanceolatis extus pubescentibus petiolo sublongu)] ibus cadivis, ilonbus , liuctu § In Moxici or ditione Puebla, cnca Clfhintla et Tiu/utlan, alt 7000 p Pet oh 2-J lin longi, unde pireseitim a 0 calophyllà diffeit Limbi 5-6 poll longi, * poll lati, non conacci ut dixit Liebm sed potius membianacei, non pellucidi, tomento supia cadente floccoso, subtus peisistente (in iinem usque ?), minus quam m Q calophjlU pallido, apiculis 1-3 hn longis pxtiemitate nervoium sitis adjunctis passim alns, lobis ieic nulhs (setis tune penphencis), vel ovato-subuhtis Stipulse 4-5 lin long* Duratio lolioium ct liuctuum ignota Affinior videtui Q grandi, iiit Q Waiscewiczn quam calophyllde, invito cl Liebm (v s in h Copenh)

160 0 FLOCGOSA (Liebm ' Igesl p 20) nunis junionbus petiohs et paginà inienore lohorum tomento stpllato lulvo floccoso cad^ilco \estitis fine anni glabratis,iolns olwatis vel elhpticis amplis basi obtusis \el acutis apice subacuto\el obtuso subulato-mucionatis miii^ine levoluto undirtatis pi ope apicem remote subulato mucionatis supia in IIPIMS tenuitei \elutiiiis adultis cdeteium gl ibiatis, flonlnis , iiuctu ^ $I^{n\ S}>1^{VIS}$ montis Mtxicam On/aba, all 8-10 000 p Petioh in eodem ramo 4 8 lin longi Limbi 3 (> poll longi 1 -J- i poll lati, nun 'conacei ut dixit Liebm sed himi et tenues, dentibus subulitis apice et passim piope apicem lineam longis, npivis teitiams subtus distinctis Mense spptcmbi lecta lami])nons annPaphjlh et lolia adhuc subtus tompntosa, scd tomento cadente Stellae piloium supia citius evanescentes,$_w$minimae An eadem quam Q Oruab<£ Liebm ? (v s in h Copenh)

161 0 FULVA (Liebm ' in Seem bot Hei p 3*3, JSgesl p 2^), ramis junionbus petiohs folnsquc subtus tomento stellato brevi fenugineo dense \estitis, lobis plhpticis vel obovatis basi subcoiditis vel obtusis ^pl subacutis apice muurmitis vel obtusiusculis maigme intpgns \P1 pi ope apicom extipmitite]Hi\oiuin 1-2-mucioiiatis conaceis, supia m IKIUJ conn ih tcTimtoi pnhoiiilditu-ulutino CcClPium $_n$labns ($_{to}$labiatis [?]), flonbus , huctibus (]umoiibiis) axillanlms subsessihbus geminis ^ In MPXICI occid Siena Madip (Seem » 107(> h Hook et mde in h Copenh[1]') Folia in 3 Iamis hgno anni msprta Pctioh 6-12 lin longi, tpietes Limbi J-5 poll longi, 1 ^-3]>oll lati, mucionibus apicis et lnteilum extipmitate neivoium]irope exli^m lineam longis *1*1 uctus junior deestin specim h Copenh AifinisQ sc\toph\llae, spd lolia basi obtusi, muciones I moies bievioies P peiiphonA nee e lobulo \el drnte suigentes, tumentum fla\um Inscitio li uctus ignota et inde duratio (v s)

K)2 0 GiRMANA (Schlecht et Cham in Linn 1830, p 78), I amis , folns snbstssilibus basi acutis vel obtusis nunquam mjinileste cordatis o\ ito VPI obo-^ato-oblongls obtusis subintegen inns vel obtuse sinuato-dontat s dentibus cilloso-muuonatis juniorfbus , adultis glabns, fiuctibus m peduncuhs bic-Mbus g(mmis teinis\p cupula dppitsso-tuibinatà glandtm mcludpiitp squamis lhomboideo-dVatis doiso gibbosis et tompntosis apicpm VPISUS obsolpte uh His gl mdp sphseioidp«\ — In Mexico pi ope Jalapam (Schu dp et Df])no), in l»io\ Vera Ciu/(linden'n 10, in h Flor sppcimpn ii doficientp dumum) 1 ^ cl luctonbus ioha mijoia6 poll longa 1J 2 poll hta Cupuldllhn lata Dim it (PX auct) a Q pohmoiph\ ut 0 sebsilifloiaapedunculità in Q Robore I'nn , sed tune meo SPHSU vanetas esset — Cl Liebm inn, qui vpnsimiliter specimen authenticum BPI JIIIII Mdit (conl Egpsl p 2) ramos ex Alpatlahiici, sinp n $_{cUmi}^{necfr}$ ^ ,n n' ($_{()}$Penn'^ Q ppimanam vocavit In hisce ioha piaetenti *Versistentia* 2 idsunt, petioh 2-* hn longi, effiterum omnia toliorum juinoiumet vttustioium Q polymorphae (v s impeif)

]6,3[9]0 GLAUCESCENS (Humb et Bonpl ' pi pq 2, p 20 t 78), i.imis jun glamis., tohis annuls bmitei potiohitis cuneato-obo\atis obtusis ^o\ acutis a medio H pando-df ntatis mpml)ianaceis, supi i junionbus ^libnuscuhs adultis glabns, subtus ncrvis gl ibiniscuhs piicnch\mate pihs adprpssis tcnuissiinis peisistentibus vestito mdc pallido, amentis folio dimidio biGMOiibus pi icilibus sparsitlons, lachi pilo^uia, pengoniosubcampanulatoextuspiloso, lobis ma-

(judlibus, sLammibiH 5-8, peduncubs fern folio dimidio brevionbus, fructi bus -5 In calidis Mcxiu intpi La, Venta de Id Motoncia pt Acaguisotla Kuuth in H Pt H iiov gen 2p 14 iftami juniore* angulosi Folia 3'* poll longa, 1 2 poll UU, pc tiolo 2 4 1m rongo, b.isi intpgi i, apicr m VPISUS un diil.ilo dditdtd, ucnis muticis, mduimnto 0 bicolons Amenta c basi raun diim Fiuctus JUII ex ic dpscnpti dtsunt in spptuniiip Mdtuiatio VPIISIIII diuiud quum iiuctus per flordtionem non lecli iuerunt (v j>. ui h Mus'pai)

164 0 GHUIAMI (Benth pi Hutw p J>7) « potiolis giacihbus lamisqun gldbpi-iimib loins oblongis ldiicooldtisvc acutis ni«Li$_n^r$ni(unduldlis smudto-dpntatis tie iitibiis mucrondtis utnnqup gldbemrnis mtidis, Jructibus subspssilibus sub-solitarus —In Mexico (Giali) Q Uuiinde Humb ct B afflux, sod vena[1] ldtoidles niaioies omnes muciorip tciuujiata? et lolu sxpius liuoia nidgis leguldnlei dditdtd, Pt wep(laltdtd (t b LSI oblnjua sunt SiippisunL speu-min.iduo, dlUuum flonfduin a O IPIIUIUU paiiiin diffpit loln^ (junionbus qiiidcm) utniKjup iiiliigiiioso-tomciitosis, in dlieio nee floies nee fiuctus buppetunt, cujus veio lolu in omnibus nisi petiolih bievibus crdssis cum dobcuptionc Q dcutifolid) Nee tonvc munt »

16") Q GUATIMALI NSIS, folns potiolatis oblongis dcutis mucrondtis basi obtus\ vel cunrati^ saepp HidLqudliBus uidigine lellovo undulatis supia glau co-vin-dibus gkbiis siibtui Jusu^centibus .id JTillas IKIVOIUID ot SPCUS costain lusco-bdibdtis uetPium pnlvpiulcnU)-piib«ulis huctibus gcminis solitams\o siibspssilibus, cupulâ tiiibuiat.l, gldiidp oblongd pubeiuU — In diidiimal i (W.ir^cw h 37 in *h* Beiol) Q. tuibinata Liebm Egcsl p 28 (nou Blunii) 1 olid 4-i poll longi, 1-1-j poll Lit L, p(tiolo 2-(> lin longo compiesso pul-veiuluiLo, coiidccd o\ Liebm qui siiipo loha numbidnacpd ngida sic vocdvit. Cupuld 5 lm alU; 4 hn ldtd Gldns 7 lin lonja, 4 hn latd

166 0 JUROENSENII (Liebm Egesl *y* 30), folns bieviter petioldtis ovato-lanceo-ldtis obtusiusculis bdsi cuneitis maiguip pamm ipflexo repandis supid in Lid is ^lahns siibtus palbdionbus ad costun Pt dvillas iioivoium pdice bdibdtis mox glabiPsccuLibus, flonbus , iiuUibus gunuiis solitamsve |)e(Junculatis, cupuU ciatdimoipha, glandc ovoideo-conicd — In MOXILO <id f hinantla piov Put bid (IiPbm) Pctiob 3 lin longi, gldbn I niibi J-4 jmll longi , 1^ lali, conacci (s(d J u bin lolia chaitaua, non cidssa, hit vocavit) l[J]edunculi 4-(> poll longi, gl ibi (SCPIIU s (upuld >-b lin longff, b-7 lin ldtd Oldiis polliw m 1OIJ$_0$M, j-7 lm laLa Alfinis ex Liebm *Q* lanceolataj Humb eLBonpl DePsL in h Copenh niPcum comm spd Iiuctus adsunt in sicco sppiiatim ubi spqupntid VHIPO prdunciili liuctilpn i-b lin solum longi, 1-1) lm ciassi, unde vdisiraililPi anniu, s.epnis monocaipi, cupul.u liemispb,jeiicdi, basi ob-tusde VP! subdcuLdJ, liidgiutudiiip citdtd, squdmis aictp adpipssis e bdj»i (jvat.l LoiivexA obtusp angusldtis lulvo-pubescentibus, gldiidc oblongd vel ovoidpo-oblongd 10-12 lin lougd (v liuct)

|67 0 LANCIFOIIA (Schlecht et Cham in Linn 1830, p 78), gldbra, fohis bipvitd petiolatis «ui>fistp oblongo-ldnceolatis anticc puce sinuato-undulato-dpntdtis nPLgimonlacPis caitilignipo-maigindtis, ppdunculis oligocdipis, cu-pull siiblidiiispliiciic A, s([iumis adpiessis obtusp acuminatis margnip jpveise cibdUs doiso tonuntosis gl wd(*, PVSPIIA — in Mexico piopp pi Mohno dc la ppdngiiPid (Scbiedp Pt Doppp) Folia <-5 poll longa, USIJIIP *u]* polli em lat.i, IPIP vasculoso subtus prominpnte, subconacpa Pedunculus in sppciminp dwllaiis, tncaipus, ses({uipollicans Gldiis conoidea, 9 lin lon^d Duiatio lol et fi ignotd Confei dd Q leiophyllum

168 0 MOLIis (Mdiuns' et Gdl in Bull Biux 10, n *)*, sp 17), ramis junio-nbus dense lncdno-tompntosis, loins biPvissime j)etioldtis obovdtis basi coi-dâtis apicp obtusis subcoiidceis undulatis mucionibus linpdiibus a medio passim dditdtis supia gldbidtis subtus dpnst Pt | dllidp hilvo-ldnuginosis, «uncntis folio bievionbus i)ilo«,is, biattPis , ppii^omo campanulato extus piloso OIP 4-5 lobo , anthpiis panels muunnulalis pfdunculis fructif sulila-natis petiolo majoiibus oligocarpis, cupiilA pdivA idiiuginosA sqiiiiiiis $ In Mexiu mont Mibteca Alia pio\ Uivaca, alt 6 J- >()()-7OOO ped (Gal » 102) IA

specinnne florii ,id Mai tens benigne comm rarai non vabdi, secundo anno 1M uuiici et glabiescentes, folia annua 2-2 J j>oll longa, 1 j-18 lin. Jala, »»m. basi obtusa, petiolo 1 £-2 lm longo, pilis stellatis supra bievissimis taduus, subtus longioiibus peisistentibus stipules lineaios, e\tus villosai, Jim longa 1)(nUs toniK s lolioium | lm longi, ommno ut m Q u assault A An idimis junioi istius sed iolia caduca An Q ietu,ulatai piopnoi sod matuiatio ign Specimen 102 Galeotti in h Doless petiolis 3-4 liti longis di^eit Pedunuilus 4 lin longus ade^ e\ axilla loin anni, apicc Iructus 2 junioics geiens Cupulde globosae, Jmamis o\atis obtusis, glande inipeileUil Specimen subsimilo adest in herb Copcnh sub *tt.* 149, a cl J icbm.nm Ya\esia3 mouse scptembr lectum etQ uassitoha nuncupatup, ubi huctus JUC florea^idcndi, et liuctus lamo anni inserti, inde a Q unAiluliA divcisi. (v s)

169 Q MOREHUS (Kcllo^ in Proceed of Calif #ad nat sc 2, p 36), fob is oblongo-lniuolatis vrNu*> bastni acutam suljin^ustati^ (;iosse vel oblique siiiiiato-dentatis d#itibus c basi lata cuspidato-subulatis utrinque glibns, huctibus axillanbus solitciins, pedunculis petiolo subbievioiibus, cupuKi hemiv plicurica basi angdsUUl mai^me tenui, stiuanns oyatis subduuLia mai^ine inembianac(Ms dense adpressis basi ciliatis aj)ite iricgulaulci ctlians, glindo olilongd. -J immers«\ -y In Calilouua <id littus Cleai lake Aibuscula suffiulicosa Folia 3-4 noil longa, J-2 poll lata, Iolia CastanedJ vulgans paulo iclclentia, petiolo J-J poll, longo

170 Q OAJAGA.NA (Liebm. E^esl p; 20), lobis bieviter petiolatis ovato-lanccolatis subacutis basin versus aLtenu«|,tisbasi lcvitoi coidatis liitegeiiimis mai^mo caiLila$_0^r$inoo lofloxo iu$_o^r$0sis suj>ra nitidis glabns seuis costam]iulvc^{a}i ulentis subtus pilbdionbus SPCUS costam noivos(|up lloccoso tonionlosis domum glabioscontil)iis; flonbus . , lructibus geminis podunculatis, cupulA dcpresse patenloiim, glando o\oido«\ apimlata 5 In MOMCI montibus onent piov. Oajacaride, alt 2)00-3000 p (^al), piopff ZooclnLi (Liobm) Q lanceol ita Mai tens cl Gal (non H B), Gal 108inh Hook Peliob 2-i lin longi Iimbi 3-4]M)11 longi, 1V-18 lm lati, toiiacei^ev Liebni (<(iu s.i |>e ioLjp ngidi, chaitacea, sit vocivit) Pedunoulus polf loo|iiS| loio^ntosus Cupula *A* lin. alta, 6 lm lata Glaus 7 if a longa, 6 lm laid *Lx* Liebm acccdit ad suam *Q*+ neUandiaefobam.

171. Q. OaizABiE (Liebm » Egesl. p. 31), ramis junionbus petiobsque pulvemlento-velutmis peieninbus ovato vel ovali vel obovato^acuminati* baei inæquabter subcordatis vel obtusis vel lanus acuIfc apice acutissimis vol atulis vel ranus contundatis intogris vel pi ope iijnceni 1-2-setaceo-dentatis \el giosse 1-2-dontatis dentibus subulajis, junioiibus , adultis supia nitidis nervo centiali])iilverulento-volutinis^subtus neivis teitiams et (juaternaiiis tcnuiter reticiilalis fid net Mini untialem cojiiose tomento*Caduco stcllalu lulvo \ostitis cum vesti$_n^p$ns alibi jmbis cvanescontis, floiibus mast , hmmeis solitains in axilla ioln subs^ssilibus \el pedunculo bievi suflultis, Iructu ,) In nionte Mevici Orjzaba, alt 8-10000 p Pctiolibn uno lamo 3-J, in alteio C-lOhn longi Limbi 4-5 pfil long^wl J-2 poll lali, non conacei sed n[illegible] Atremitas et dentes qandojieilecti subulrili PedMcub'fem l-2i lin lon^i, nec]>eti(^lum djquantes ut aixit \ lebm Fois.m 0 lauiina H ct B "? sed j)iibe«» foliorum lujpiosior. l^eivi lateiales magis patentes. 0 dnysopbjlla loisan cum bisce jungenaa Pluia in omnibus ignota. (v s)

2 . Q SAPOTyFFOuv (Liebm Egesl p 27), folus bievissime petiolatis anguste oi)ion{r$_{ls}$ SUP$_{r<1}$ m P(i l u m p,uum Utioiibus basin versus sensim attenuatis obtus's basi cuneatis mtegeirimM m.iigme caitilagmoo ie\olutn litiinque plabeiimiis, ilonbus , fniLtu *— In Guatimald ad Luista de IiiLensio (Skinnei !^{n} ^{n} *|ook) Petioh line.im longi, ciassi, supia caiidlicuKUi Limbi 3-'> pull 101|K«' '-Hpoll lati, coiiacei ex Liebm (qui s«epc iolia thaiUtea \el ngide ticae Ne ! membr. l Utfia S1$_o$ vocau1 f- AUinem dicit siue Q pcisecefoboj, id est Q elb|)-

17.}. 0 SFCOVUNSIS (Lubm E^esl p >8), folus subsessilibus obo\.itis obtiisis Dasin veisus attenuatis basi cmaiyinalis cicnato-iepandis, crems inauiualibus

ublusia intpgris ve] rqiandis saepius calJoso-agiwriatis, marline carlilaginea i-filcMj, supra glaueo-viriritbiis mlidis gflaberrunts, aubtus ftavidis pilis steilalis ninx ₖ|ₐ|,n ccutilius *mh* lente subtilissime granulatis floribus . fructibtis /, in Nicaragua, prope Segovia, alt. 4600-5000 p. ((Erstedt). Arboi pxcolsa. I'tl^t I Em. liiiiKi, rrassa^jiLisM'sciijrs, Limbi 4-6 [toll. longL 2-; I ' - l^ii i ex .! Liebjff. (qul ia rigida, ciiartacea sir vocavii). AtJniem ditii *Q.* circiitatoe Nee et 0- spicaue if. et It id ≤st,Q retiCULAUE.

174. 0- SMURA (Liebm.! Egresl. p. 16, ppn ᴵ",^'- fcae.), ^ [s foliis&ue novellia sji;irsixu BtellalQ-pilusis cito glaljratis, ioltis k-eviicr pctiolmis longe lanceolatis auiimftialis IKLW ciinpatis yel (j«usis siiiu;ii')-(lent#ti8 denlibus Idngc ;iristatis i4embtauacoi<t wlultis rtlriiiii^e glalierrimis, stipiilis caducis longp linoaribus ilnrso pilosulis. IIfiriluiM,.^l'rin.ilu.... ,i Ni Alcxici jtruv. i'lK-hl.^ ;ilt 60001) H.UII: virgati. Kn!i;t iiiitio sal (em secundi aijjii pwsislentia, 'j-| i,o!l lonca 12-pll. IQU, jiiiiu .) lin. IIIKU *Imiir* vi-1 alirt%Lc angustata margiiie ubcrispalo §roiw -dentata, fere m in n Sltiiiieri, Q. Xalapensi .iliisijin:, [JUIMS itTliariis rctitulalis creljiis. Stipuhu 'j lin. IOJIKEK. *(y.* g. in ii'

I",[1]). Q. «oncim.\ (I.. • • i.:. i. I.:'-! p. [7)>ₜfoliia brevisaime petiolalis lingiiieformilnis VPI ii|iKi.i,Mio-i)!)()v;it.is nlidisis basi nbtuais vci f[J] margin at is integerrimis

)nis sohtanis scssilibus, {•iijmlA]i;iu*ri!i)pial- si[ii;imis l;i\e imbricatia lanceolatis aculis gl;ilir rivoirlfil utrinqtip OIHURA. — In Mexici prov. OaJAca prope Chiiianua (Linbrn.). Folia^ \ *J* poll, loiiga, l-'2 [inJI. lata, petiolo l-ijlin! longo supra]il;inu L-I.-IIHU. i-i.riacr-a c\ Lidim. sed cl. auctor coriacea dicii folia riufp chartacca rigida m.... rassa. Cupula 'i Im, alia, 9 tin. late. Glans f) tin. alia, 6 lin. lata. AlTinem aii ffobm. suaB y. aectandraefoliae. Deest in b. Copcnfr; saJtem in Ojliis ⅛»«_•• im.

*** **Nova Gran**

170. 0- Al.MAGi.T.iu.V!- (Kin i|il. **pi. equm.** 'i, **p.** i:,7, **L** l:t|J, rauiK **glabris, fnliis apice ramulorai . Plbus cuneato-obovatis obtu**sis vd acutis hasi jjisfi anjjus!.. i..... Imm *u*<„\\\<- mnlulalis inde ad apiceni sfirrattt-deiilalis incinhranaccis utririqun glabris subtus glalirescentil^|s,^n.0fl fr.... ,j In \MI[IIIIH Novo-Granatensmm juxta Almaguer Folia **4-5** |M.I1. **longa, 2 poll. l;ita, dentibus non profundia (ex icone), acutia mucronatis; peli<il<j cntssu™-2 lin. longo.**

B. *Gerontogeæ.*

177. 0. AVRLI.AN^:FOHMIS (Culm. Pt Boutcl. exami nas p. 8), corticc era

178. I 'NIANA (Cuss. syu. II. sic. 2, p. GO-'i), r a m al!,,,-i,,ti|«.rilosis, toliis ovato-obloitgig , inedio linearii«l)li ." lohgiorn int"gro vrl vain[1] inciso-lobato, pagina superiore glabrft, inferiore albidd i.... gjitoso-villosa, cupulaa hemisphasricffi solitaria; se^ilis squiunisacuLis suhpnmtis, glanilf cujiulam • t*\i"-i|cntes. ,» In npmoribus SicilSaa ad Boschi di Gerace (Biv.), in Nebrodibi , 'jM [j(»rt0] .) **Folia** i<\ (iil*i.) i-n-iiina, **uujic** oltloi !-^-|>nllicart;i ad suiiiininii [Kill, lata, irrrgularil ito-lybata, sa.'[iitis infra nifditmi 3-partito-triloba Ioltis latoralibus acutis :n: i....;n....|ₐtjn i ₙ]₁ angtdato Int. \\\ cl. 1'xTlnl. I), it. in, p.210, qui spejpim. 'Inæi observavit : cup,nl:r crin itæ, jiiiliamlii'. Sptamid LlifPriuriims subrecurvis, suppi'toribtis |IP:\ im ihns angustioribus aciuuinaiis demmn recurvis. Duruiio fructus ignota.

179. Q. CKRitioiriES (Willk, et Costa in Liniuca 30, p. 123), raraia jiinioribus pe-

tiohsque rufescenti-tomentosis, folus breviter potiolatis elhptico-oblongis basi subconlatis grossp inci^s lobis utrinque circitprC triangulanbus acutis calloso-mucronatis sinubus Sutis vel obtusis adultis subconacois supra glabns subtus tomcntellis, flonbus ., Iructihus sessilibus subglomeriitis in pcdunculo brevi crasso tomontoso, cupulae hpmisphaenue squnmis adprpssis ovatis breviter acuminatis obtusissinus basi (praecipuo inhmis) gihbis lomentosis apiccm versus Tufescenti-margmatis, glande ovato-cylindnca \ exsttrta. 5 In Catalauniae rpgione littorali,«octobr. fructus maturescpns (nunr anni aut anni prajced. nou ail cl auctor). Folia (licit 0- Gpndu cum cupula Q. pubpscentis et Q coniertac Kit. undeinihi vensimiliLer var. 0 Kobuns videtur, sed duratio foliorum et fruct. lgnota. Folia cum pfetiolo 3-4 polLfclonga, 1^-2 poll. lata: Petioli 3-4 bn. Gupula 4 hn. alta, 7 lin. laty. GlansTnlii. longa. ,

180. 0. HYPOCHRYSA (Stcv Verz. Taur. flcilhins. *f* 307), loins subtus flavo-pul)pscpuiibu*> oblongis *yp*\ coidaiis vi\%ifpistioiibys $^{0}1^{1}U^{S}G$ sinuato-cn»natis, podunculis brcvibusl-3-lloris, cupulcc squamis adjiressis torulosis. E niontihus sunid Gandscbam piw. transcaucas. Ab omnibus divertfolus5-6 poll longis, subtus subauieis, f,'pnnnis majusculis acutis. A Q longifolift Koch differt loins 2-2 \ poll. Luis, .Kihuc longionbus, subtus iiuboscentibus, 111 adultis saltern axillis vonarum b.ubatis pt liipninis squamis cupulae adjiressis; a Q. Dshorochpiisi Koch (supr.i U Hohoi is ^pssiliflorac var) folns duplo pt tnplo IOIIKIOnbus iioqiiafjuam glabpinmis; «LQ ibencc'i (Q. Hobur PL *Q.* macranthcia nob.), cui ad mod u 111 alfinis, loins lon^iorihus an^ustioribus, lrucLu pcdunculato.

181. 0- LOUENTII (Hochst. in Lorpnt. Wander. Orient, ex Flora 1845, p. 26), loins l.incpolatis pinnatilobis sublyratis basi obtusn hunc subconlatis utrinque glabns subtus rpticulatis pallidionbus lobis trianguldribiis puiigenti-acuminatis interdum later.ikjqf l-drnticilatis lolio terminali majorc lanceolate* grosse serrato dentibu? omnibus lon^iusculc punf;pnti-.icuminatis, petiolit semipollicanbus, limbis 4T> poll, longis, fl. ct l'r. ign. Propp Sploucia Asiai mmons. Forsan (cv auct.^ vanetas Q. Libani. — Oblivio aitesuo tradenda quum sine fructu et flore species Quercus non definienda sit. „•

182. Q. OBTECTA (Poir. diet, suppl. 2, p. 218), ramis ^labns, folns ovatis aut lanceolalis obtusis vel acutis utnnqup glabpi rimis interns aut breviter spinoso-dcntatis, ppdunculis 1pm. 1-2-floris, cupulae squamis imbneatis lanceolatis acutis ngidis, supremis libens apice subrccurvis, glande inclusa. — Circa Tingidem (Brouss). An Q. coccilera? aut Q. Lusitanica? fructu imperfecto.

183. Q. SCLFROPHYLLA (Lindl in Paxt flow gard. 1, p. 59, t. 37), sempervirens, ramis glabris, foliis petiolatis ovatis aut ellipticis basi subacutis apice obtuse angustatis grosse serratis coriaceis supra glabris subtus glauco-pubescentibus, fl. masc... , pedunculis fructiferis folio brevio 'bus ol ar is fructibus sessilibus approximatis, cupulA subglohosa tomcntosA squamis adpressis ovato-acutis, glande paulo ultra cupulam protrusis pubescentibus.) In China boreali (Fortune). Rami adulti ex icone glabri. Folia ex icone 3 poll. longa, 15-16 lin. lata, ex uescr interdum G poll, longa et 3 poll, lata, ex icoiie serrata, ex descr. ultra medium grosse serrata. Spicae fructil'erae 3-4 poll, longa*, PX ICOIIP fruti-fri7't r a me(*10 onustae. Duratio fructuum PX icone nou patet : pedunculus tur f C er m aturus? ex axill.l foln iprtn ante fincm rami, inde annuus vide-1^u Pula (px ic) 6 lin. lata. Squamaf dorso rugosa*, rlpvatae. Glans apice antum ex serta. An sp. alfinis Q. Mongohcae? spd folia pcrennia.

Sectio 11. ANDROGYNE Alph. DC. note nouv. car. fr. Chen. p. Q — Sprimniq Lepidobalani sp. Endl. gen. suppl. 4, p. 27.

Capula squamis imbncatis tecta, ore aperta. Flores masculi in medio pi«»«i ibsque rudimento manifesto pistilh. Stigina^ fl fem, (in eodem ramo) 3-4-5-G, neana, aivergcntia. Spicaj axillares basi fflorps fpminpos paucos gerentes, inde 11 amenta erecta mascula caduca elongatae, flonbus masculis fasciculatis, bracteis J cuiqup fasciculo. ppngonium masc. ,VG-fidum. Stamina 10-12, longe exserta, antnens munirus. Ovula aborts a supera. Maturatio l)icnnis. Folia])e-

rennia — Noraen e spicis androgyrm — Cupula srunmis Lepidobalani, infloresnontki R-is;ini;e, stamina el numeral) Frequrnler auclus stiyrjiatum grneris Castaneæ. j i l i voro a Castiinta. Hue fom. ititrit tnMuerum solitariis- cupula apertâ.

184. Q. DENSIPLORA (Honk, ct Am. Lot. Beach, voy. p. ;wi, Hu„k. ic. t. 380), ram is jiuiiorikis fulvo-tomeatosis, fojlls e basi obtus;) vnl rSrius acutâ oblongis vel (ivato #1 obi ipioe tilmise yd aubacuto anguslatis margin© canU;i#iiieo rovoluto uudiialo inlet--: •li'inte^ris junioribus utrinque lomento sicilato flavo caduco Ustitia flue anui glabratis, amentia densifloris tomnniusis InLo aiimalibus vfil suWpngioribus, pedunculis 1-3-carpia petiolo ^Vix longiuribus, cnii(BR"li"inisji!!:i'ni:o-iil)brt'Vi;m1) .stjuamLs extus sericels tufc- rii)n!)u» oblnnftis vcl ulim tio iW • is (iflpressis, ,-i SUP< angustioribus jtibtiM dciaum |iaie]iii-rftl'i\i», tiaini* ^"inijursertl ovotdea imbosceute. ., hi QtliiorniA (Dotigl.! li. DC.). .H;imi sec undo anno fosoopubfi»ceute3. Fuli.-i ;i(iproiiniata, ustjue ;id maiuniatcrn IVIUMUS secundo anno ta IMIS.KI ultra])orsisi«iiiia; petio 6, liu^m -\.\i i,iOn,w lon-ii. H-1'2)in. tongo -•/•<> vt'l rarius aumcnUilo, in nariis subtus di.stiactis. Stipula; utrunfue 1 ti-lH fufta us pnhi , in loliis siiprciiti- I....:irr-..l|Mf [g^ g Tin. luiii,':ii, si|u;iitii.- (folior. infcriwum) ubovatis subacutis '2-;j lin longu, ii lin. UJORLI. Bractea pr«cipua cujjlva u ma»c. Qores'atmaas extua pilosa, Lobi pejig. ovaio-acuti. Ciipula 4 lin. longa, 8 9 li«! l,ii;i, s.|u;i[iiis :) lin. longis, mediis patentissimi^ ; lin. latia i tbiaflexo- Stiymata in uno frucm J, in alus truncata. (v. s.)

P, *Hart-wq/i,* foliis obtasis vel acntia apicem versus sensim nee abrupio opt;) diiiitilms brevibus cartilaliiifis serratis. — In Cruz (fl artw.! |%8)t«C- flensjflora BeiHh. pi. Hartw.]>. *:V.l',)* >i Pol. i-egulanter dispositi. S|.i.-:c LJ [ongi'rç s, *su*. lire. ,i;, siiymata liuearia, ucuta, (,'liibra, ;;-i-5-ti iu lloribus ejusd. cami. fv. s.)

0+**

Sectio in. I'ASANU *tftf. fl. lad. bat. i. p.* 480 *[adjunetU chur.). A}ph. DC. mte nouv. cor. fr. Cken. p.* 'i. #/</. *Ann. Mus. Lwjd. bat.* 1, *p.* 1 ns. — Sfct! tobafcinus (partim) *Kndg gen. suppl;* 4, *p.* 2, p. 27 Bem/i. //. *Hongk,* p. 3• • •_ — Quercus «> v, /flume J/us. *Lugo. bat.* 1, p. 28!).

Cupula smiamta imbricatis tecta, r.ro aperta, fistillum in flor. masc rudimeutamini, liberum, globosum, hlspiqum — ArWus Anpervirentes, Asiai merinudis. Folia plerumque integra. Am.-nu H-,-,-.. , nunc paniculata ;m|lis, **T"11 !" nmul1^ , secis rachin** •"iltlSl **Myfe'''111,1'?** ( ) ; ""•' - majorc SUAJ sii.Kul,, ninm fl. ma trice disposita. Spica fbrnine O»;t;. »as" >"••) floribus et id«i fructibus conaiveirtibus. Ovula abortiva sapera y). MaturaA posi primum annum. Squamae involucn in ultiinis (Q. Sundaica, Kortlialsii) sub\ nd« transltio ad sect. Cyclobaljinum. Cotoledones tnterdiim (in ultimis sp. GI forsan aliis) m in Q. skmiK'ii sect. Lepidobalani etQ. fissa sectionis eiilumydobalani tamen tntegrae,

§ I. *Folia mtegra.* — *Cotyledones plerummie integral, in specie n.* 206 *(solum?) .sinuato-(obal%.*

185. Q. OLIVAEFORMIS (Thunb. fl. Jap. p. 175) gi.Lri, Coliis d obtuse acuminaiis mtegRrriniis mascujis stephw solrtai , pfl osulà , bracteia

(1) Vidi in Q. spicatâ, Q. Korthalsii, et ovula omnia juniora in angulis super. pendentia, septis in centro imperfectis, in Q. fenestratâ, Amherstianâ et glabrâ.

ovdto-acuminatis uliatis pennonn 4-6-p«iititi lobis ellipticis ciliatis anthers glabns, iiudibus sccus |H (Juiiciilura SOIIUHLS vel fasuculatis et conuatis cupiila: ncmisphmcae squ<imis einoico-velutims ddpiessis, mlerioiibus qua dian^ulis, supci 101 ibus ovato-acutis, gldnde o^longA cupuhm tnplo supeicinte ,5 1° mendifliidli parte msulae, Kiusu Japoniae — Sieb et Zuccdi il jap I p 170 t 89, Gay in Bull soc hot 1858 p 32 Novella glabnus culd Folia ppi pluies annos peiftaiitia, 2-4 poll longd, 12-18 lin lata in pi tiolum 5-6 lin longum attcnuata, obtuse et bieutc^ acummati \el obtusa nuigine (in sicco) levolula subtus phis nimusve dlbido puuctulili SLipula. iugacis Spicdi nrasc 1 \-*l* ppll longje, eicetae, conieitifloid* lli icU r cmqui flon dut lasciculo floKum ternx, acuminatae, floie brevioic«>, Uu idles luinnua', mine deficicntes? Lobi pcugpnidlcs J hUMongi FiLimeata 8-12, iuult(» Ion gioia Pulvinus contrails hispidus Pedunculi liuctilon secund/) anno inatu icscentes (ut in it /ucc male mUidum mtcipieUU), 2 poll lonp, li^nosi Cupula 7-8 lin ldta, intus gldbnusculd, squama in I < • ? i M- i *()* snlil n giores. *(y* s comm. ab herb Lugd. bat)

/3, *micrococca* (Blume' Mus Lugd bat 1 p 2!XJ), 1 ins SLJILIS majoiibus, fructibus minonbus — In Japonia Folid 2^-0 \ poll longa,])0tiolo **6-10 lin. longo. Cupulae 5 lin latae, in specinx, nostro id hi comm** (v b)

186 Q^ AMnEnsTiANA (Wall ' list n 2781 partim), ramis glabns, folns e basi dcuta oblongis obtuse atuminatis lntegemmis gldbns conaccis, sj)icis mdsc saepius[9] sohtains, iacbi mcano - tomentosJl, biatleis lintoolalis acuminitis; peiigonn piolundo 5-6-fidi extus pubobcentis lohis obtusis, diUhens glabns, lructibus SPCUS pedunculum crassura folio sublongioiem solitaius, tupulae hcmisphaenoffl tinoieo-velutinae squamis e bdsi ovdtA adpiessA conndta atutis supononbus crebns minonbus, glando globosa cupuldm p.iulo supci auto ,5 In Maitaban ad Amherst Rami etiini pnmo anno giLlui Folia J-6 poll longa, 1)-18 lin latd, petiolo .)-5 lin longo, |iinioia niilii ignota, adultaglibcinma, nervis lateialibus utnnquo 9-12,U itiaius vix distmctis StipuldB i^n Amenta 2-3 poll longa, simplicia, ioisan in axillisplura? tomentol)ievi, flonbus solitaius vel fasciuildtis, bdsi dissitis apiu appioximihs Biactea sub flore vel lasciculo pengonio pdulo longioi; oxUis puboniili Stamina 8-10, exserta Spicae iem semipedales, iamo^ anni ciassioies, bieviUM pubescontes, eiocte (upuKii sessilos aut subsessilcs, V7 lin longae, 6-0 liii latae, squamis mucione ciccto mmirno libeio tanlum pnmo ddspottu distinctis Glans tenuitei pubestens Vaiidt cuj)uiis oie patcntibus \cl subtonstuctis huctibusque laio aboiti\is cnta bisin cupulde adnalis Mixta in bcib mco turn Q andiogyna et Q. drgyrophylla (v s) ^r

187 Q MIXTA, ramis gldbns, folns e basi angustdtil dcuta oblongis vel lanceolatis obtuse vel acute acuminatis liitegcrnmis glabns coruccis, spicis andio-Ryms loho subbiCMonbus incano-vclutinis,tasciculis floium km in minion parto dissitis, m.isculoium in sup pditc dpproximitis, bi icto1 Liijus\clasciculi ovato-acuminatA doiso mean A , peiigonn masc pi oJ undo 0-(idi extus puboscentis hjbis obtusis, anthens gldbns, huctibus (dfl ejusd sp^) conglonicialis, cupulA domum plumisculà cineren-velutinA s(iuamis adpiossis o\dto-
fU Blls nnninns ^l mdo exscita 5 In Mait iban ad Amlieist 0 AmliiMsti md
\tX\ *Vf)* ^d11 ' llst n 2783 * Folia 0 Amhci^tiaiid3 (([uacum conlusa
rail ll sea * ^ *i* longius diigustdtd, petiolo 0-9 lin longo, IKIVIS ldto-
anmis nunc numcrosioi ibus Acumen loin in eodem ramo obtusum ^ cl
l>Ica <ln(i P°?ynd, 6 poll longa, usque ad *j* longit Jemima Spied*
m ^°^le S^»1 dubiae) mdseulsp Peduneulus liuctiler spgregdtus (idon
d ^ AmluustiuiA tamon diversissimus) 5 poll longus dpiec(ubi
(Mini HOIos masc ?) tinncatus Cupula* in lasticulo basi connatdi, ut IIUKS lominoi, imperlecije, ovoideae, sc[Udmis laiiecoldtisdistuutis, pciloetT paUMitissimap, 2 lin long», (} lm ldt«, squamis ovato-dculis vi\ distinctis. subsimiios liuetus e Taong-Dong, iegQi A\di, comm eel Walhch, ubi ^landos Mlsunt ovoideae, glabi®, 5-0 lin longae cupulA paulo minoit similiici pi **unte msertae (v s)**

~188 0 PALIIDA (Blume' Bijdi p ^24), dioica, ramtiUs glabns, folns e basi saepius acutà clliptico-oblongis vel lanceolatis cuspidatis mt longp acuxninatis integeniinis Lonacei>> supra glabns subtus pillidis et ad neivus subluiluiaceis, pedunculis amentiferis simplicilms aut i imosis ciectis pallide pubescentibus, flonbus masc ,in spiel soli tains biacteà unicA iaiiceolato-arummatA mmonbus, pengonio e\tus pubeiulo 5-6fido, lobis ovatoacutis, liuttibus SOLUS spicini sessilibus, cupulA acetabuliloiMm , squamis (jun) lanccolatis , glandc depresso-hemisplijincfl. cupulam dimidio superante ^ In Java• — Blume' fl Jav Cupul p 12 t 4-5, Mus Lugd bat 1 p 293 Q pseudo-moluixa ^a^ pallidi Miq Ann. MuT L B 1 p. 108 Q psoudo-molucca vai rosti ita Blume' Mus L B 1 p 292 (e\ lamo fo**luf** autbont). Folia 3,±-7j poll l»ngi, 1-1 poll 1 ita, potiolo 4-'> lin longo, acumme obtusiusculo, noivis latcialibus utnnquc 9-12, in SILLO coloiitis, pissim piloso-puncutis Amonta ex Bl dioica, saltern m lamis divcisis a iructilens, SOLUS pcduiiculuni 1-1 P°H- longum spaisa aut appioximati, polliLom longa Biactea tujusvo flons I-ft, bn longa, extus pubeiula Fiuctus distniLti matun ignoti Var. ô Q psoudo-molucL«fi forsan hiL iclerenda (v s comm a Mus L B)

"189 0 THALASSIGA (Haiico in Hook journ 1849 p 176), lamis tomentosis, loins c basi amtà vcl aLiiminat.'V olhptius vcl obo\ato-oblongis obtusmsLule fiLiinnuatis mlcKiis \el piopn apicom subsoiiatis LOIIILOIS supia glaluinmis subtus glauLO-tomontosib, amontis clongatis donsiflons , flonbus masc iasLiLiilatis? peiigonn G-pntiti evtus lnspidi lobis ellij)tiLis, liuctibns in spuA. plimbiifc appiovimatis sessilibus, LiijuiH bicvi homisj)haeiiLA tomentosà squamis adpicssis o\cito-lancooldUs mucion.itis, glande obovoide.^ longp exsPitA *$* In (lnnA. sept (Foituno), Hong-Kong (Bcntb Seem) et JaponiA (Sinb) —Bontb fl Hongk p \l\ *Q* mvoisi Lmdl m Paxt fl gaid 1 p ">8 1 lG(<innn 18')0), Seem bot Herald p 414 t 88 0 ieuMsi Bontb in Hook jouin 18)4 p 112 Q acuta Sieb beib (non Tlunb) 0 bieboldiana Blumc Mus lugd bat 1 p 290 (fide LI Benth qui speLimen bieb vidit) Soinpoivnons Tolia *l-"*> poll longa,12-lfalm lata, potiolo 4-b-lin , obtusiuscula, Liispid.ita \ol ciLiiniiu it.i, .icumine ipso obtusiusLulo, <][ntt> inteidum lino pmjip api((»m, junioia supra pulveie auieo puboiula (Bonth), adulti supia, glabia, tomento subtus bicvissimo glauco Amenta pilosa Pedunculi iiuctif 2-.i-poll , fiuctibus 7-9 Cupula 5 bn lata, 2-3lm longa Glans 8 lm longa, ox iLon Scorn obovoidea vel ovoidea

190 0 InwiNii (Hancc in Ann sc nat soi 4 v 18 p 229), ramubs glabernmis angulalis SUIL.UIS, loins 1 uiceolatis oaudato-aLuminatis intogeiiimis margme subipvolutis valdo LOIUICOIS Lostato-norvosis, nei\is in imams subtus |)iominulis sunia opaxis, subtus donsp fhvido-hpidotis, basi in petiolum bievem ' angustatis, LiipulA s(|uamis Liassis lato r»\atis pliin-(uic 10) seiiabbus cinoieo-tomentosis, glandc poilOLlA ^ In ins LIIIIIOIISI HOIIJ? Kong, raia Folia 2-Ł-3-J- poll longa, lesmA odoiA modo Juglandis praidita Fiuctus biennes Cupula immatura 7 lin longa

191 0 tFNtsTRATA (Ro\l) Wall f l^t ii 2784), iamis junionbus puborubs loins o basi angustatA (lliptiLO-obovatis vol oblongo-laru oolatis acummatis intpgPMimis LonaLCis glabns, ^jpiCis solitams aut lasLiLulatis simj)liLibus loho (PMiialibus vel longionbus incano-velutinis, glomeiuhs fl masc sa> pius J-flons J-biactcatis, biacted exteinA ovato-acutA flonbus bievioie aut «cquali, jjengonio 5-6-partito extus velutino, liuctibus socus spicam lasciculatis aut solitams, Lupulis subglobosis, squamis ovato-acutis subadpressis, glando globosA cupulim \i\ supeiante *$* In montibus Silbet India[1] 01 — Ko\b fl md od 18i2v 3p 63^, Wight ic t 219 Pih iamoium jun patontos, In eves Folia jun ad nervum subtus passim pilosa, caet glabra, adulta 3-8 poll longa, 1-1} poll lata, petiolo 4 lm longo, glabiato, aLUmine acuto vel acuniiiiatissirno ut in ic cit Spicae masc numerosioies (Koxb), fasciculis floium ovatis, minonbus quam in *Q* spicald, et pauciflons id ost 2-4 flons Bi ictca oxtpina minor ct minus acuta, extus vplutma, latprales minim* obtusissiraiE Antheiae minima!, apicp filamenti clongati Cu**pulae (ex Roxb et Wight) 8-10 lm latrc, nunc glomerattp, tamen distinctap?**

ore constricts ct lbj^fenestiA rotunda gUiidem monstiantes, squarais pah is sparsis acutis (\ s rloi)

P, *Khasiana,* mmulis jun ot pedunculis fulvo velutinis, petiolo longiorn, acumme folioium tontundato, bracteis florcm masc aequantibus $ In Khasia Indiaeoi 0 ionestiata Hook f et rii o\s ' Magis Q spicatae proxinia, sed diffeit flonbus mast in glomemlo puitionbus, ramulis pubescentibus et piaeseitim glande vix tupulam supciante Ex spetimimbus plimbus bene\olpnter* a cl Hook I tommunitatis, potioli 4 9 lin longi, limbi,]Uiuoies pi$_t$cseitim, secus noivos utiinquc pilis longiustulis adpiessis pilosi, iiuttus jumoies ploiuniinio bisi in fastitwlo codlili (ut in 0 spitatA), squdmis hnceolatis adpiessis lWo-velutinis, niatuii globoj»i, omnmo ut in icoiie Wightn, gldiidc ideo quam in Q. spitatA multo bieviore (v s)

"192 0 DFALBATA (Hook 1 ' et I h in h Boiss , non Wdll , nee Roylc), lamis jumoiibus tenuitei velutinis, folns c basi atutA vel subatutà lantcolatis atumindtis inttgns conaceis, junioiibus tenuissime puboiiilis, ddultis supra glabns mtidis subtiis <id IKIVOS pub(mils,])(uencbyin<ite albido glabrato, amontis su])idmosis lolio breuonbus, lastituhs 11 masc appmumatis, Ijiacteis doiso pubomlis, e\tirn\ ovato atuminatA majoie, latcialibus o\atis oblusis, pengonn b-pailiti lobis (lliplicis extus pubeiulis, 11 fern in Idsciculo basi connatis, iiuctibus jun su))glol)osis, squdmis ovdto-lanceoldlis crebns apice mflc\is \elutmis ,^{r} In NopaliA (Wall) et mont Khasia alt 4-6000 p (Hook f et Ih), Bengali A oi (Guff ' hoib ab h Kcw sub n 4i74 comm) — Miq. Ann Mus L B 1 p 107 0 dealbata Rfjylo ill m it (non in to\tu) ost 0 dihtata Q doalbata Wall list ost 0 incana Harnuh luho \clutiiu Folia *1-1 i* poll longa, 0-18 lin lata, i>otiolo 2 4 hn longo, pubeiulo, nenis l^to lalibus utrmque 8-9 cum centiab eminentibus fulvo-puboscpntibus, toitiains vix distinctis Amenta 1 1 \ poll lonpa Rachis volutina Biacteae extonoics cujusve lasciculi mast leio linoim long$_t$e, latciales multo bievioies Stamina ciidtei 12, cxsdia Biiiotod tujus\e fasti tub fern ovato-atummata, ngida, lincam longa Stigmata J, lmeaiia Squamae li jun con\e\d), acutde, ti**nereae, glandem juniorem includentes (v s)**

1911 0 SPICATA (Sm in Rces cycl 29 n 12), subdioica, ramis junioubus glabniisculis, folns e basi angustatA plbptito-oblongis \el oblongo-ldiiceolatis atummatis inlegemmis tonaceis glabus, spitis sohtanis aut lasticulatis simplitibus lolio subaequahbus lntano-velutmis, glomeiuhs mast olongitis 3-bracteatis, biacteis atummatis exteinA floiem pioximum plus minus supcrante, pengonio 6-ńdo extus piloso, liuttibus setus spitam dense lastitulatis, cupulis basi tonnatis late cupuhformibus, squamis ovato-Ianteolatis adpressis convcxis \elutmls, glande O>OUIOO-K1ODOSL tupulam J)1UIIPS supeldnto j* Aiboi maxima, irequens, in montibus India}, a Nepalu (Wall ')» ad Sillot (Wall i), Chittagong (Hook 1 '), in Bengaha or (Griff ' 447 3, ubi biattp«e bieves, ut in \ar 6 sed petioli longi), in Borneo (Blume' in h DC), et Java (Blume) — Don prodr fl nep p ^{r}>6, Wall plant asiat rai 1 p 40 ^{1} 4G, list n 2781, b CL squamdta Roxb fl ind ed 18.J2 v 3p 638, Wight ^ t 213 0 olegans Blume bijdi p ^{r}>18, 11 Jav Cupul n 21 t 10 Q pseudo-molucta MorTt7i n° H, 17, non Blume Q Aicaula Ham olim, «l»mie Mus i$_U$gd bat lp 290 0 giandilolia Don in Iamb desti Pinus \ 27, $^{1\ 8}$ 0 platentaila Miq pi Jungh (paitim) fide Miq 11 Ind bat 0 Pjniolia Blume Mus I "B 1 p 304 (loima juvenihs praesentis ex Miq Ann WHS L B i p 105, q$_{U0(}$i equidem ex loins a Blume ohm tomm non cieu,ù>lim F()ha 3_? i)oH lonKa J , _ 2 , 1)oH lata^ pptiolo 46 1|n ,0||ff0

DLitteap cui(|uo lasticulo fl mast 3, um oxtenoro, lantPolatA, atunnnatA$_7$ jionnus longioio, bisi pxtus pubestentc, alus laterabbus, bievionbus, e basi .up ^{acu}mmatis, biatteohs interdum flonbus mixtis Spitae Icmineaj micrciuin mascubs mixti (Wall), baepms in div aibniibus, 6-8 poll long®, secunuo anno mature Gupulae 6 bn latap Glans laevis, obtusissima (A S)

p, *racemoia* (Blume Mus. Lugd. bat. 1, p 290), glande saepius depressonemisphaencd— In Sumatra (Q. ideemosa Jack in Malay, mist , Koith. in

Veih Nit Gescli Dot p. 205) «et Javà (0 fflabei^ma Zoll' sine mini in h IIK(I) I x siiociiiiiiiulius / ill fiiiLlu mituro, potioli 2-G lin longi, pc-duncculi fructif 5-8poll longi, cupulap bisi nunc conricUi, dcprrssit pollicpm ldtao, 5-6 lui longae, squiflns crassis p^iamid itis patpntibus lut piulo di\oi^ntjbus (in Iruclus 0 spicatae uilgms, omnino nidtun, squaimis idpir ssisdifftmnL' in arbor indici squamis adprcssis ct insuldiis squaniisduniim di\pigentibus[7]), glans cupuld dimidio longior, dpicc dc-pipss , hilo ttrpjto phno(> 8 Im lato (v^s)

Y *microcalyx* (Blumo 1 c) liur tifom minonbiis — In Boinpo 0 miciocilyx (I *0* inccpsK illi m VPIII Nit dfsch B I p 2()4pt20ò *Q.* tuibwata Iloxb_fl ixid],p 6i6>(exHook 1 litt) Wii^bt ic t 221, i 1-5 (non Con i) qua? (si Q 1 honisom Miq Ann Mus L B J,p 109

5, *bnupttiolata,* pdiolo brevion (2 3 lin), hi ILUIS cvUiioulnis 11 niisc suliluf \ioiibus 11 JKIU pioYimuin non suppidiitibus — In Khasi i (I Sikkim Indu or «lt l-r)000r> (0-spit ila Hook f>Lt'lh exs')etm loiinasspuni (Hdfei bcib i icg liotb KPW. coinm *n* 44d8, fr ign , pctiolo l-2lui. Ion go)

e *qlabrrnma,* spicis huclifms abbitswlis — In Javi, alt 4-">000 ped 0 fflalxiiuiii HluiiK m 1UI Vprli (') Bijdi p >17,11 Jiv Cupul p 17 t 8 Mus I u^l bil 1, p 200 L\ spotuninr flonl a cl Ijlumc coinni' lolja (iniiiino Q sjuoitdL, pctiolo ut in vai pidLLPdr nLi tine nl i in tsc acci vitH,2poll louga *Lx* icoiit huUussimillmii,ptdii]iuilo 2-poll ubidcntcs ^v s)

ζ, *graulipts* (Miq. Ann Mus I B I, p |0ó), i uiiulis glibiiusciilis, loins ^i ltilild pptiolatis P bisj JCUU OJKIV ito-dliptius oJ)longisve niodiLP ion iTiiiutis rni^nis tostnlis iiliinque 12-15 — Ii) Sumati i Q graulipcs Mi<| 11 Ind. bit suppl 1,]) ,}47.

'i!94 0 PSEUDOMOII CCA (Blurae' in BaLav \oih (), p 214), i iniulis fflabuis, ! luis (bisi icufi oblon^is VPI clliptico-oblongis acuniinatis mUgi minis LOiiauib mldbrit spins solitains crcctis sirnplicibus f ilio subbr(vionbns tc jiuiloi uicino-\(lulinis 11 inISG in glonuiulos dissitos dispositis, icuiinois SCLIHUSsolil tins, hi ICICIS hiiLCohtis dcuinin itis L.KIIILIS, JXII^OIIII misc 0-7 full loins (lliplius o\tus pubfMub&j liuctibus WCIIK spjcun subsp irsis, uipulis distinclib m ironic mot issito pitf nlormibns squ imis ovatis idpicssis\olulinis ^landt obo\oid(o Pfloliosi ciipiilarn plimts Hiipdintt ^ ^n J|VI — Bluinc ' p >l») fl j^y (upul p Ki t () Mus Lii^'d bit 1 |) 201 (non Mont/i) I *x* loins vidttui 0 spicita sfd tloics c(iU moiioici (ti mi iicqui nUi lonnnei niasuulis mixti, llorcs 1 ixius dis]»ositi, liuctus non basi connati, cupuld magis abbrevj ita, glans basi diitfiislioi (v s)

p, *iiurassata* (BluniP[1] 1 c), folns fnmioribus subtiib pillidionbus, cnpn] i squanns subinci issatis, ^liiidi hU rvoiilci 0 lin If cii| «i.Miq plant Jungh I, p. 0, fl Jnd bat l,p 85J? (v s flonl a Mus Lugd b comui)

y, *anqustata* (Blump! lb) loins 1 inceolatis utnnque ingustatis, glandc o\oi-do^ 0 ingustata Blume obni, fl Jav t 7 0 prumosa Mont/i i n if)(, (non Illume) Q tbclccarpa vm inRuititi Miq 11 Ind bat 1 n 8,2 o Ibfltcirpi Mi | Ann Mus L B 1, p 108 (ex so ipso) Cl auctoi in bua tliLlfcaipi s(juarnas cupul c mitai P subpatulas dint sub vanetatc vcro mgustataiconcm 7 Bluuici citat ubi srjuauiLadpicssjL (v s)

10) 0 MoiUCCA (Rumpb Amb]} p 8), *i*\ piitc, t >b, ppssinn) rannilis trla-bns foliisclliptno-oblongis vd oblontfo-lancpolatis utunqup angustatis mtc-ffpinnus Lomcus f,labns, flonbus , Iructibus subneeraosis sfipuatis bre-vissunp ppdiccllatis cupuli ci lUnJoinii squuniiloso- tulioicniaUi tfkndp InmispliTnci bulcita tnplo buvion > In Molucca (drbes (tc — Blunip' Mus Lugd bit I ,p 201 lol. i7-io; poll IOIIKI 2 l 4 | 11 1 iti pctiolo 0 12 Im loiuo, nervis hlprdlibns utioqu Jdtuc 7 10 ucu Uo-1> iicntibus reliculo puuiriconspicuoconncxis Lx lolio umco ctli jun a cl Blume comm pigma inlciioi I jln libido pum lulati, siuunae |uniorps cupulae vclutmsL subidpicssa3 inJciK r s ovaLE, media? et sup ^radatnu lon^ioics ct liuccjldta, (v lra'm s)

1% Q PIACFNTARIA (Blumo' Bi]di p ')18, non Will), lamulis glabus, loins e basi saepius obtusa ovalo-ohlongis cllipticisvc obtuso| acuminatis \cl obtusio lntpgommiB conaceis glabns, spitis bibexualibus apice ranioium tongostis simplicibus lolio subaequalibus volutmib, fasciculis florum mtPirupUs bi ictea lmceolali acummata bractoisque lateialibus lationbus bicvionhus stipatis, pcngomo masc 6-fido lobis obtusis ovtus pubtsccntibus, cupuhs bisi connLtis cratenlorniibus, squirms ovatis ddmcssis subvclulmis dorso comexis, glande deprcsso-oibiculan cupulam dimiciio supauilo ^ In Ja\ i dUionlms (Blume) — Blume'fl Jav Cupul p 19,1 [illegible] Verh. 9, p 209, t. 1 0- spitata *t* platen UiiaMiq "II Ind l)it 1, p 849 U Ann Mus L B 1, p 10b Folia 3-7 poll longa, \)-*2** poll lata, petiolo'2-J liii lon^o, m aiboiibub novolbs nmplioia, soepe lecurvata ct phcaU, norvis latci utimque 10-J'i Tlorcs maso (ex Bl) basi rtapipe spicaium, ox spetun nico)> isi solum 13i icte*. pidciipuap lint im lon^ae, a ftisuuilo 11 1cm sub-(lisUintcs, cxtus pubeiu]a3 blimin i cxscrti Styh 3-4 (iecti ,"c}lindnci, bisi pubcsLcntes Cupiilse (ox ic) 12-1 > lin latcP — Cl Hook f in lit! similem 0 spicatde Sm ait, quod ox iconibus elspeciinino imperfecto netalfiinwreiKC netf ire possum —(1 Wallith anno 18 JO, fructum m^l^nem, o Pen ui£ sub nommc 0 platentaiicP 131, metum tomnumitivit, ubi omnia uonis Blunui a(,'iiovi, diametio solum paulo nnjoic, lere bipollitaii, sod spocinmii soiius sub num 2279. d, Wallicbu, tommumcitaa plant« Blumcaiii ommno difleiunt. Ibtiuscupula meae Q cUidiogynae sinulis, sed floies(in alt ^spctiminc) diveisi Confubio mamlcsta adluit in distnbutione num 2279. (v s iloi abb Lu^d bat. comm)

197 0 CLASSINERVIA (Blume' Mus Lu^d bat J, p 292), iwnulis glubus, folus c basi aculiusLula vel oblusa olliptiLo-uJ^lf^iKis lanccolalisvt[1] acuUb v< 1 obtusis intc^(inmis tonatcis glabns neivis scctmdaiiis subtus \alde pionniKiilibus ultifflis \cio noil distinctly spiuis SIIJI|)1ILII)US icctis folio subd-qualibus cineicd-vclutmis, (1 mast lomnu issotus spitani sobtains, biattois , squamis junionbus ad])iossis \tlutinis lmis ovato-acutis alns lancoolahs, fiutiu niiitiiio [r] JiiiUvcF syhis raont Kondanf? (van Hasselt) *Q* pseudomoluttd vai p Miq fl Ind bat sp 849 (an fiuttus vidil ' iin spotttmina aulbonticd toinparavit[?]) Folia 4i-7 poll longa 1^-3 poll ldtd, petiolo 3-4 lin lon^o, neivis setundims utiuiqun 7-10, tertians multo minonbus, ultimis non pcispituis undo ICJIH sitti ab afhnibui> diffoiunl lions fern juniores globosi btyli 3, lecti, bieves, tyhndnti, glabn (v s tomm a Mus Lugd]>at)

198 Q LAPPACEA (Roxb fl ind ed 1832, p (>tt), lamis |unionbub fulvo-vclutinis, folns o basi obtus«\ \ol atuti lintoolaLis obloiigis\c dtummitis intPgiisbicvitcrpctiolatis]IIIIKJI ibus utiiiiquo uliiltis sulituspubestoiilibiis, spi tis mast et hcim axillanbus solitams lolio subdequalibus densiilons, biacteis lanccoldtis acuminatis iloio bievionbus, floubus plerumqiu fasciculatis, pengomo 5-(>-paitito oxtus piloso, huttibus sccus spicam glomciatis ant sobtanis, cupul* hcmis|)hdviicd3 squirms lintooUtis acuiis mibiititis diduse patcntibus, glandc pilosA tu]uilam dimidio sii])Oi inU [;] In mont silliot (Koxb Wall i) ct Assam (doni[B] Mack) Upngalue oi (Guff 1 ab h icg K<w tomm sub n 4462)- Wall ' list 2780, Wight it 1 220 0 hiisuta Lindl in W.ill l^t n '3734 (ful(Hotk f IIKII) 0 Matkiana Hook it t 224 (ubi gLimlcs glrfnao, scd cl H >ok f cimdcm spotiom (v>c inonot m litt) Rami secundo anno fusco nee iiiho-\clu1iin Jiolid 4-8]>oll longi 1 J-2 poll lata, membi indtea, pihs solitams \d fdscitulatis, petiolo 2-3 lin longo bpitcP gratilos, radscul«E aut medio femiuede Rdchis fulvo-tomontosd Floies masc s^epius m f«istitulos3-4-floios approxmidti, fasciculis pioximis Bractea s.Lpius unitd subfisciculo, J liu lonjfd pulicsuns, Ufoi llnsnuiu rxiiintosinmiiudi Starnin«i cxsoita, glabid Cunula (c\ it)[1]) lin laid, mollo ethinati dldiis ovoidtd 0 lappatea Hook el Tli e Khasid, vix convcnit. scd folia ct fl jun bolum vidi **(v, s)**

199 Q PHL'INOSA (Blume» in Bdtav Veib 9, p 217), lamis junionbub dense fulvo-tomentosis, folns e basi obtusa o\atis ovdlibusve atutis \cl atuminatis mtegenimib coridceib bubtub ct ad neivuin medium bupid pihs stelldtis fulvo-

velutmis, amrntis simplicibus \el mmosis folio brevionbus fuho-ielutinis, fl masc sohtanis vcl fasuculatis ox axilhs bidctefiium \ biacteâ exteinA longiore ldiiccoldtd, mternis ovato-acutis mmimis, jwugomo 6-ńdo extus pubescente, spicis fern sublongionbus vplutinis, fiuctibus solitarus aut glomeratis imo coaJitis. cupulå Idle cupuhfoimi, squamis adpiessis velutmis ovato-acutis, gldnde ldto ovoideà cupuliim dimidio supeiante $ In Ja\å (Blumc! Zoll ' 1406 in h Boiss), et vcnsini Pluhppinis in Lucon (fide IC a cl Llanos comm) — BlumelBijdi p 521, fl J«iv Cupul p 9, t 1 Folia 4-7 poll longa, i;-J nnll Loa pntmln 2-3 lin longo, nervis later utnnqup 12-15 Stipulae caduca[1], oblonga[1]·\ol ovato-oblongfr, velutinae, 3 lm longac BidctcdD fl masc hneam longae, intenoips dunlo minoips, omnps vplutina? Lobi ppngomi ovati, inflpxi Gupulae 12-1[r]> lm 1 it<T Squamae juniores lancpolatir, laxiusculae, senus ,adprcssae latiores Glaus late conico-o\oidea, cxseitd (v s a Mus I ugd B comm)

200 0 PLUMBEA (Blume I Mus Lugd bat 1, p 293), rdmulis junionbusfuifuracco-lepidotis, folns ol>longis VPI lanccolatis bdsi augustatis apicp obtusp acuminatis Integornmis coridccis glahns subtus dd nenos lopidotis, dmentis lamosis, biactPis , fl masL subsohtanis, spicis femineis simplicibus, flonbus suiisoliUnis, fiuclibus in ncln subiacpmosis bievitpr ppdunculatis stipitatis, cupuld squimuloso-muiiLdtá In SumatiA tolia J- >•} poll longa, 1-1$_4$» poll ldta, pptiolo 2-3 lin longo nervis I.UPMIIIJUS utiiiiqiic 10-11 panllphs subpdtpntibus dcraum glabus Spiui ftm in sj)pcinunp nostro pollicans, floies lem tres veisus apicem goicns, cum florp uno m.isculo ad\entitio[9] Biacted singula lanceoldtd, \ lin longa, cuique flon fomineo (in masculo delapsa) Pulvinus in centio fl masc Stipps flons fern Imearn longus Squamtp junioieb liiiLoolatce, adpiessdn Styh 3, conici, Last pubciuli (v s a Mus L B coram)

201 0 OLIGONEURA (Koith in vpih nat Gesch Bot p 203), ramulis novellis fuifuiaceo-lppidotis, folns e basi acutA VPI angustatA clhptico-oblongis acummitis mifgdnmis conaceis firmis glabus subtus palhde gilvo-lepidotis, spicis andiogynis simplicibus aicuato-patpntibus fuifui.iceo-lppidotis, fl masc supenonbus confprtis tnbiacteatis, fomniPis mfpnoiibus solilams In icteis 3 lanceolatis acummatis, fiuctibus $_t$5 ^n Suniiitift Folia 6-9 poll longa$_f$ 2-4 poll ldU, pptiolo 5-8 lin longo, IKIVIS lateiahbus utunque 8-10 pdtulis StipuKr somilancpolatap, utnnqup pubescentps Ppdunculi basi glabiati tprotes, apicc tngoni pubciuli Hoium masc biactPd inferior semilanceolata, acuminata, pubpsceris Hoics feminei biacteis et squamis imbncatis lanceoldtis tccti Styh 3,patpntps, medium usque connati, elongato-conici , glabu (v fol etfl. fern, a Mus Lugd bat comm)

202 0 GEMfciiiHORA (Blume! in Batav Veih % p 222), ramulis junionbus tomentosis cito glabratis, folns lanccolatis plongatis basi angustis acutis apicc acummatis a medio ad apicem Iemote spuatis .id piliolum subtus]>ilosis ca?tcium glabiatis, stipulis Jonge Jineaiibus fl masc , pcdunculis fr mmcis in axillis siipr nonbus solitams pptiolo brevionbus 1-2-flons, cupulA hemispha*iic.1 basi non squamigeîaa ni(dio squamis adpiessis semunatis tectc\, glandc cupul.1 tuplo longiorp (f In Ja\il ct SumatrA — Blume' bijdi p [r]>23, fl Jav (upul p JO t 17 Rdmuli tomento ddapso jjassim lamentis oblongis membracaneis caducis stipati Folia 4-7 poll longa, [(])-24 lm lata, petwlo 3-6 lin longo, junioid subtus adpiesse pilosa , pilis pi ope pPtiolum post alios cadentibus, neivis lateiahbus utnnque 8-12, venis ultimis in sicco distinctis Stipule 4 lin longae, angusta[1], apicp praesertim pilosap Biacteae ign Styh 3, **apice clavifoimi-uncmato Glaus ovata \el ovato-oblonga Q rotundatae ex cupulaanaloga (v lamum fohif a Mus L B comm)**

203 0 noTUNDVTV (Blume in Bata\ Veihand <), p 219), lamnlis glabns, foliib (bisi acutA lanus obtusil ohlongis vel oblongo-lanceolatis icummatis mtegeinmis conaceis supiaglabns subtus glabnusculis ct gliucescentibus, spicis simplicibus androgynis, fl masc in apice lachis tomentosaj, pengonio , fructibus subsessihbus solitanis, cupulå juniore turbmatl undique squamosA, adultå subhemisphajncâ basi nudå supeinc squamisadpiessis velutinisovato-

acutis tectt, glandp informe lotundatA impolitA adhderente A medio circitei ion\e\A cupulam suppiante et ejus maiginem cxcodenle [illegible] In J[illegible]nae monto Salak — Blume fl Jav Cupul p 21 t 11 Folia 4-6 poll longa, l-"--2J poll lata, petiolo 4-6 lin longo, neivis lateialibus utunque cuciter 9, teitiarns vT\ perspicuis, pilis aliquot in paginA inf (undo vons folium junius pubesccns) Stipulae lineares, puberulae Spic<e flexilos, 2-3 poll longae, 11 masc apice appioximatis fere ign., fern basi segipgatis Fructus uno feie lateie spicae Gupuld junioi squamis ovato-lanceolalis adpiessis undiquo tpcta, (lcmde parto inf iuwlA 4-> lin longA MibUubinatA, maigine incrassato squamoso 2-3 lm lato Pais infoina glandis impolita, pais supcuoi lccvis, latior, maigmc sinuata IA icoiie glans omnmd Q cornea[1], sed cotyledoncs non desLiibuntur ct cupuLe pais inftiioi squamis destituta ut in Q gemellifloiA (s \ folia a Mus Lugd bat comm)

"204 Q SUNDAICA. (Blume' in Battiv Vpih 9, p 21b), lamulis ct novcllis tenuitpr fulvo-velutinis, folns e basi acutA VPI obtusA plbpticis cuspidatis mtegernmis chartaceis utnnque ad nenum fulvo-subveliitmis, pedunculis amentifeus axillaiibus eiectis elongatis lamosis ochraceo-tomentosis, biacteis lanceolatis poisistentibus basi cu)us\e amrnti, fl masc , fiuctibus secus pedunculos fulvo-^elutinos folio bicvioios j)aucis sparsis, cupula late patonfoimi squamis velutinis adpressis o basi oval A vicinibus connate abiuptc cuspidatis, glande depiesso-hemisphdencAcupulam paulo superante [illegible]5 In lav A occid — Blume[1] fl Jav fupul i> 11, t 2 et 3 Folia 5-0 poll longa, 2j-4 poll lata, peliolo J-4 lin longo, subtus palhda, neivis lateialibus utunque 10-14, cuspide obtusiusculo Stipulae taidp cadentps lancpolatct ^clutlnai 3 lin longae Infloicscpntia mast composita, a ffminol sc^io^ila PLduntuli mid e\ axillis biacteaium stipulis subsimihum Amenta polliccm longa, densiflora, angusta Flores masc (ex icone) bratteati ? (upulae 9-10 lin lata? Squamae infei obovatse, cuspidatac, mediae et supci giadatim magis ovato-acummatae (v s liuctif. a Mus Lugd B)

20'> Q URCEOLARIS (Jack Malay misc ex Hook comp bot mag l, p 2">b), folns elliptico-oblongis acuminc giacili mtegernmis ^[labpinmis conaceis subtus pallidionbus, fl masc ., fiuctibus spicatis. cupulA siibhomisphxricfl. squamis]>arvis aculis \piticillatis margine subintppia patentp glandp cupulam dimidio suppiantp globosA supeine planiuscula et mucionatA j 1[illegible] Sumatia Folia 8-9 poll longa Racemi fiuctifen lateiales.

206 KORTIIALSII (Blume i Mus Lugd bat l, p 292), iamis junionbus subtomentosis, foliis e basi acutA vel obtusA ellipticis \c\ elliptico-oblongis acuminatis vel cuspidatis intcgemmis couacpis subtus palluhs in ncivo medio utunque etnervis lateialibus subtus fmfuiaceo-\elutinis, pcdunculis amentifcus snnplicibus \el l.imosis fuho \elutinis fl masc sohtanis \c\ glonipiulatis, niactpis *I* lanceolatis pxteinA longioie, pengonio 6-lobo evtus tomentoso, fiuctibus in spicA solitainsaut glomeiulatis, cuj)ulA late ciatenfoimi squamuloso-asperA, glande late o\oideA cupulam dimidio supeiante $ In Java (Blume) Q piuinosa p Blume fl Jav fupul p 10 Folia 3] poll longa, 1'7-)} poll lata,])Ptiolo 3 4 lin longo, neivis latei utnnque 9-J4 Pcduni till masc 3-> poll longi, biacteis oblongis lanccolatis\e 2-3 lm longis paduus ad basin ramificationum BiacteoUc cujusve flous aut fasciculi iniilto muiores, exteina vi\ -J lm. longa, lateiales minimae (\ s. a Mus L B comm)

P, *Kajan* (Blume 1 c), lamulis no\elbs folnsque subtus praesertim in nei\o medio et veins fuifuiaceo-tomentosis — In Java Q Ka|an Miq mss Zoll ! *\er7* p 87, heib 11 22b4 Lx sppcimine Zoll folia junioia ubique stellato-pilosula, stiimlrf oblongae vel Uincpolatae, 2 lm long«c, velutinaj caduca[1], amenta spaisiflora, basi denudata, 2 *J* poll longa, bracteae majoies lin longa , spica} fern m eodem lamo, floubus 3 bractcdltis, st\hs lectis puberulis, lirotus m pcdunuilo sub\elutmo sparsi, bievissimc stipitati, cupula late pateufoimis, 1 > lin lata squamis subveiticillatis adpiessis maigine connatis fuho velutinis dente soluni minimo libens ad marginpm appiovimatis, cicatiice plana polliccm latA , gUns depressa, b 8 lin alta, 10 18 lm lata, umbilico excepto lasus be-

men obovoideum iriegulautpi coiilPiMiminato-Iobatum Haec omnia cum fragmpiitis cupulseQ Korthalsn a Wus L B comm conveniunt Embiyo ex forma scrainis ad Q coineam accedit, sed pencarpium non osscum

Y, *pachyphylla* (Blumo 1 c), lamulis novpllis paice fuifuraceis, foliis obtuse acummalis glabnusculis In Javà occid

6, *mappacea* (fllnmp' 1 b), ramulis tomrntosis, foliis jn nervo medio et v(in«> uLiuiriue subtonipntosis, anicntis pamculatis — j_n Borneo Q mappacpa Koitli in Vcili Nat Gesch Bot p 202 (\ s coinm a Mus L B)

t, *hystriXy* lamulis tomontosis, foliis basi aculis, ncivis utnnquc subtomentosis, squirms cupul P longionbus subsqumosis. — In Sumatiâ Q hjstnx Koith 1 c p 201, t 4i Cablnma? Imluiclld Miq II Ind liat suppl 1, p 352 ex se ipso in Ann Mus I B 1, p 108 Lx spLurume a Mus L B comm folia utnnqup stellalo-pilosula, squama*; cupulde lciniginpo velutinae, margmc mutuo connate, niif noies oblonyo obovatdj vix mucionatae, medi<e ct sup ovato atutde, cuspide diveigentes (v s)

207 0 ACUMINATA (Roxb 11 ind ed 1832, v J, p 630), ramis junionljus puhcsuniibus, Joins c basi jicutà oblonps vol late lanceolatis acuminatis interns fil LIIIIS, diupntis , spicis iom a\illanl»us folio l)icvionbus puksuntiljus rnultifloiis, IniLtihus alt(mis bolitams, cu|»ul i- lu inisphd'ncA squanns ldnteo-1 ilis subvr ilicillatis acutis patentJIJUS ^landp ovoideA cupulam tuplo-quadiuplo\o quo id loii^iliKJiiKin supddnU ') In Chitlagong — Wi^ht ic t 221 I lr0((\n Roxb fig), Wall list n J7J1 0 glabjaMIam luib *(cx* Wall' L c) Rami junioies « somewhat villous » (\ Ro\b Tolia 6-12 poll longa, 3-4 poll lata, potiolo circitcr 4-*5 lm lonffo Fructus junioies (ox IC) ovoidei, squinus lmoiii lanuolatis adpiessis, slylis 3; matun cupulà 9-10 lm latà, ciiLitd 4-[r]) lm altâ, aculcis Jjic\ibu& ngidis cihmatt PV Roxb , sed *c*\ icone squanns IJKMIJUS acutissimis basi crassis? uncll Cl Hook 1 (in litt) synonymon dicil *Q* fenestiatae, ubi *ew* glandcs lore mtia cupulam mclusae

§ 2 *Folia dentata — Cotyledones dorso irregulanter nmosositlcattc k-b-lobdf* — Genus Synedrys *Lvndl %nti. nal. syst. ed* 2, *p.* 441, *ic</. kinqd.p* 29, *Hance m Hook jouin.* 1849, *p.* 175. — QULTCMS sp. *Lout Benl/i. Se<ni hot. Hciald, p* 413, /. 87. Iliibitus, lnllorcsccntia ommno piasccdcntium. Glans ossca Cotjlcdones smuald? vcl divisa; passim appaionl in alns Qucicubus ((J. Skinnen, Koithalsn, hsbd, Teysrridnni, costata).

!208 0 coiiNrA(Ioui fl Coch p 700), novcllis tonuitn lompiiiosis folns c l)asi <u ut\ oblon$_n$'o-lancpol«itis acummatis sd plus a nudio smiuto dtnlitis coiiaceis ghbus, spicis indio^yius])aucis siniplicilms, lloiibus saepius solilniis mast sii[)ciioubus, pciigonn 6 paiUli lobis (llipticis, 11 inf leminpis, cupiil\ lipmispliajncl s([iiaiiiit» ovato tiiangulaiibus idpiessis lmljiK.itis, glande humoros iisqup mtui cupulaiu lmmcisi mlcme convcxA impolilà, supemc I1 vi comcxà subpulipscinK \eisus maf^mpm cupuU mflali undulatA ^ In sylvis (ocbincbine d ChuidC (Loui) insulà Hong-Kong (f hamp S(un) iMuctus vulrfo veiiduntur et corned sub noimiiibus King li vd bhi-li (Hance) — Benth in Hook joiirn 1854, p 112, Seem hot Heiald, p 4U, t 87 Sjrwdiys osspa J null jwt syst ed 2,]> Vil (fimtusol dpsci) Folia 2-J poll longa, suhlus pnlliflioid, nervis lalPialibus uliinquf 9-1 > ennnentibus, tPitidins MX ppispicms liansvpisis, petuilci sublomuitoso J-b lin longo Spice folio bipviorcs, pulMscentes Hores inn sj)ic«i 1c mine I, crcten masculi Styli J, lineares suiinma ex Bomb 10-12 (loui dixil ,>, icon 6 ostendit) Fructus sob tarn VPI (ex ic) uno aboitivo basi adjecto, undo florcs intcidum fasciculati videntui Cupula 9 12 lin longa, 15 lm lata Glans (ex specim a Banks comm) 9 lin e basi alia, 15 lm lata, forma lcie Aganci)unions

(pioplei partem libeiani basi latioiem), tomcnto deiaso cvancbccntc, scptis 7-8, ex auct , see pi us 4-5 (v glandes)

Scctioiv CYCLOBALANUS *Endl gin. suppl* 4, *part* 2, *p* 28 (anno 1847); *Alyh.* ***DC. Note nout caract ft. Chen, p 4, Miq Ann. Mus. L. B.* 1, p. 108. —** Sectio Gyrolecana *Blume* JTUA. *Ludg bat.* 1, *p.* 299 (anno 1850)

Cupula oreapeita, squamis m lamellas concentucas vcl subapirales, intpgias vcl seio crenalas aut denticulatas latcialitcr coahtis Pistillum ludimentaiiuiii bbcrum, globosum, hispidum in centio lions masculi — Oiniips ex Asiâ me11 dionali.— Folia p(nnnia Amenta dcbib i vcl sLncle encta, mine p.uiu uldt.i (modo sect Pasamae) BiaUcde sub smgulo floie m be vtl USLILUIO flmum una aut 3 Flora* mast ut in sou Pasdinâ hpicae lem similes, llonbus veio scmpci bohtanibfUunt stipitatis Ovula aboitiva bupcid (1) Matuialio pobt])ninuin annum

* Folia Integra vel subintegia

-ftO9 *Q* ACUTA (Thunb fl Jap p 17")), ramis junionbusluho-tomeifiosis, folns e bdsi acutA vcl obtusfl cllipticis oblongisve abiupte acuminalis intcgeiiimis vcl apiccm veisus unduKito-cicnatis, junionbus tomento lulvo intntato vcstitis, adultis glabns, anuntis flcvilibus folio bio\ionbus penduhs, i.ichi tonugincotomentosA, brdctois o\,itis ULiimmaLis vcl ncutis (Mus pilosis floie sublongmnbus, pciigoino IIKMIOI lobdto p\tus (I bisi interne piloso, antbens glabus mutiLis, spitis lem KUIS paucifions tiquila hcmisphfleuci contPiitrice annulatA, gldiide tupulam tnplo su])Cidnto — In Japonid — lilumo' Mus Ludg bat lp 209 Folia 2-4} poll longa 9-24 lin lata, petiolo 8-H lin longo luniore tulvo-toiiu utoso, nctvis laterahbus utnnquo 0-12, tomcnto 11)un longiusLiilo dct(lsiluli Stipuli 8 lin longe, dngustc luipnies, apice latioics, dorso pilosae Amenta solit.uid \cl fdSLiculatd, basi (\ccptâ dcnsilloid Bidttec B lj-lhn long«e Ppiigonium extus dpnse pilosum, iiicguldntci lubatum Antheia? subglobosae, vix cxscit<c spicai fem (PX Blumc) IJPPVPS dlans (ex cod) o^idca vel ellipsoidea, apiculala (\ s floi a Mus Ludg bat oomm)

T10 Q BURGERII (Blumc' Mus Ludg bat l,p 209), l amis junionbus ochiaceotomentosis, folns longe]>etiolatis e basi ouitA. vel obtusd o\atis vcl ellipticooblongis lduceoldtisve duumindtis integeirimis vel dd apicem lepdnde LICIIUliilis fiimisglabns, amentis , spicisfern petiolo \ix acqualibus dut bie\ionbus, flonbus])ducis bidcteâ ovato-acuta stipatis cum raclu luho vdutmib, cupula homisphipiici concentnee ldmcllatii dejise hilvo sencei, glandc cupuldin vix duplo supeiante (5 In Japom i Q gemdlifloia heib Buigei (non Ul) Folia 2j-5 poll longa, J-2^2, poll lata, petiolo (-)-J0 lin longo, adulta ccitc glabia, neivis latei utnuque 9-1") tcnuibus, teitiams vix distmctis Opiums o\oidca.} acutde, glabnusculae, squamis obtusissimis Stipulap i$_n^r$n Florcs lem 2-4, sccus spicam eiectam Cupula 6-8 lm longa et lata, lamellis mfenonbus cienatolobatis, bupcrionbus dpproximatis bubintegns (v s comm. a Mus L bat)

»tll 0 ARGENtvTV (Korth in Veib nat Ocsch Bot p 215, t 47, f 1-17), laniulis glabnusculis, loins longe pctiolatis c bdsi dcuti oblongis vel oblongolanceolatis acummatis integeiiunis vcl subiepandis conaccis, junionbus subtus^ibs longis vestitis, adultis claims, amcntis , spicis lem pcLiolo subdjqudbbuspaucifloris, cupul L sub$_0^r$loboso-tuibinatc» ldinellisconcentiicis sub\elulinis mulucreiidtis, gldiide saepius inclusd umboneexseito (5 In Sumatra ct Boineo BluriH ' Mus Ludg bat 1 p 290 Kami cicbie lenticelbs iotundis dsperdti Tohd J-8 poll longa, 1-2J poll lata, petiolo 9-15 lin longo, nervib latei utnnque «)-r> teiti.irns minimis, adull i supr«i mtidi gldbeiiinid, subtus passim pilosa aut glabid, in podem sj)ecim Ippidolo digented \el pdllide concoloia Spitde fem saipius 1-1J poll longae Fiuctus secundo anno post folu pcrstantes Cupula e\ specim nosti et IC 7-8 lin lata (>-7 lui longa, tenuitci pilib ddpressis cmerea,, crenis plu& minus dibtinctis, gldiide inclusa, ex Blumc

(1) Vidi in 0. Reinwardtn, Icysmanin, conocdrpa

1 c cupulim dimidio superante, an ideo saepe impeifecta[9] (\ s comm a Mus L bat)

212 Q REINWARDTII (Korth in Vorh Nat Gosch Dot p 211), ramulis sublepidotis, fohis o basi acuU vel angustati cllipticis \el lmceol ito oblongis obtuse acuminatis lntpgcmmis conaceis junionbus sp.usim pilosis adultis grabns subtus gnsco vel argenteo-lepidotis, amentis suhpaniculdtis spicis fern simplicibus, fl masc interrupte glonipruhtis \ hi icteatis, bracteis <cquahbus trnngulanbus acutiusculis ppiigomo pelulornu intpgio \ol obsoleto donticuldto (xtus pubesconto, fl lorn solituiis 1 bi ict< His shpitatis cupulA applanatohemisphiuid concpntncc /onata glmd((i\oul< \ cupulV lc ic tnplo nnjore 5 In Suinatn — Blume' Mus Lugd bit l,p i()0 loin \ > poll longi, 12-30 - lin lata, pptiolo 4-6 **lin** longo, IHMVIS lateiabbus U nmbus ulnnquc 10-14 Gemmae sub^lobosac Amenta mascula vd andiogyiu \ ^ **poll** longa Rachis purpuracea Ui ILK P sublepidotac atutiusuild Stipes fl Jem et tupulae 2 J lin longus Cupula pollicem ldta, /onis lineaiibiib scjiunus ommno toncrptis, pelvilormis, cmereo-lepidota, mtussencea (v s comm a Mus Lugd bat)

213 Q PLAVYCVRPA (Blump' fl H\ Cupul p 27, t 1 >) ramis junionbus gldbns, **loins** L bisi LimeatV cllipticis dbiiipu **iciiium itis** obtusis\e coiiaceis intcgcinuns glabns, spitis andio^yius siinpliciliiis lolia subi qu mtibus i ichi tenuitPi caiio-velutind, fl masc glomeiiil itis, luactcis , fl km solituiis bractea subuldtd stipatis, fructibus bi(\itti stijntatis, ui]>ul i])iklld-formi zonib 4-) concentiicis lineanbus dcnliculalis oimti, glandp d(|)KSSA O\OI-*dei* SPIIIH xs(rt(\ *$* In I iv L occidpntali R unuli angulosi, suhlcniiloti vel scabnusculi Folia *1J* 4 poll longa, 1)-2])oll 1 Hi pcliolo *k* 0 lin loii^o, cuspide obtusiusculo intPiduiii nullo, ncivis laUialibus **uti**mque 0 8 iniiiutis, junionbus tenmU i Ippidotis Gemmaj(an constantci ')**phyllislincai**i acunnnatisciebre imbncatib lorrnala, Hoies masc Poduncul] liuctihn 2 J poll longi Pedicelli jumoies braclei minima s\ipati, dcmum 2 lin longi Pt inci issati (upula junioi bcmisph Piica, bisi turbinata dcmum patenloimis, 14 1) lm latd, /oins sub lpntp undulfitis (t dniiticul itis Glaus latior quam alta, mcdio um-**bonata (\ s comm a Mus Lugd bat)**

114 0 TYSMANNII (Blumc' Mus Lugd bat 1 p K)0), i imis jiiinoiibus glabns, fobis P bisi acutl vel obtus^ oblongis acutis \i\ hi(\itpi obtuse acuminatis integus coiiaceis supra ^libus subtus gl lbmisculis j) dlidis, stipulis pptiolo suhduqu ilibus, (imentis simplicibiis IPCIIS, fl masc dense glonu nil itis biacteis , pengonio , fl IPIII solitams, bracteà , huctibus spssilibus, cupula latd zonis o 6 concentiicis depiessis lineanbus ornati inter /onas toiulosa concpntncp annulat J, gl indc ovoidco-lipmisphdJiici cupul i dujilo tnploxe majore 5 In Javi OIK ntdli (Mus Jugd bit m 1) meo,Jungh » *t*\ inict a cl Oudem comm) ct Sum ill i 0 1 luyJplid Miq pi lungti 1, p n (*0*\ ipso Miq in fl Ind bat n 860) 0 jivpoKuci Mm fl Ind bit 1, p 860 (fidp cl Oudcm vooil meded Juan (**upul** p ^) 0 annulaU Koith ycih N,n Usch Bot p 2H,t 46 (non Sm) fl Korthal^n Endl gen suppl 4 p 2, p 28 (non Bl), Miq Ann Mus I B 1, p 113 (Tpspudo-annufcita DIHIIAI MIK Lugd B 1, p 2()0 (\idi sinefr) Nomen pseudo -inmiTlti gTaeco htinum, ideo despicieiiduni 1 olia 4-0 poll longi, 1 -4- 5 •} poll 1 it i pctiolo { > lin longo, nprvis secundains utnnquc 9 14, junioia ioisui piibcjuh^ Stipulv 4 i lm longa[4], minus iugaces quam in alns, linearcs, apic(angustio es scd obtus«e, cinerpo-sublppidotcp, m gemmis imbncatae cipbue Pedunculus iructilpr j pollic Cupula pollicem lata, cineieo-subxplutina, /onismargmennersus piopionhiis, aimulis mtei /onas nudn cnsti inpgulan subietiorsa stipatis Cotyledones doiso sinuoso-lobatae, ex fr a cl Oudem comm (v s)

215 Q OMALOKOS (Korth in Vprh Nat Gesch Bot p 214), ramulis glabns, folns c basi cunpatA obov ito oblongis lancpolatisxp obtusis vel obtuse acuminatis intcgns subconicds glabns, spicis simplicibus rectis androguns vel masculis rachi cimreo sublppidotà, fl masc , lem solitams vel intenuptc glomcruldtis tnbracteatis, bractel inlenoie tnangulan acuU, lateralibus au nculatis, cupuIA sessili solitanA plana /onis concentncis 8-10 lineanbus undulato-denticuldtis orndtà, glande o\oideo-hcmisphaencd cupuld 3°-4° majoie

.5 In Sumatra—Blumet Mus Lugd bat l,p 301 Folia 2 4poll longa,9 181in Idtd, potiolo \L-l lm longo, nervis stcunddnis 10-14 \ix distinUis StipuLe ldnceolata[1] acutiusculae lppiosT Spied in nostio speum ò poll longd, dngulosa, subcineiea Biacteae dontilornies, mi in ma? Floies F metis rdii Cupulapoll lata, subemered, /oms mdiginem versus approximdtis tenuionbusque (v s comm <i Mus L bat)

216 0 LFPTOGYNE (Korth 1 c p 20G), ramuhs fuho \elutinis, folns e bdsi obtusa vel subdcuti oblongis acuminatis integns junionbiis pilis brevibus spaisis stellulatis ahisquc longionbus lans pubpscentibus adultis glabrescentibus, spius erectis simplicihus andiogynis vel raasculis rdchi iulvo-lcpidota, fl mdsc lnterruptc glomeiulitis sohtdins\c, bidcteis J, miciioie ovata dcumnidti mijore, lateiahbus oblongis acutis, pengonio b deutato cxtus pubescento, 11 lem solitdins, Iructu ^ In Borneo — Blume' Mus Lugd bat 1, p 101 tolia J-» ± poll longa, 1 ' *1* poll lati, pctiolo 1 -J-2 lm , nervis ldterahbus utiuique 10-12, teitiams minimis Stipulde semilanteoldtae, pubescentes Spicre 1 -i poll longdp BiactPte flore bieviores, extus pubescentes Perigonii mdsc lobis ovato-acutis Stinnni 10, e\serta Pulvinus centrdlis globosus (v s comm a Mus Lugd bat)

217. 0 GIUCIIIS (koith 1 c p 207), ramulis gdbnuscuhs, folns e basi acuta. vel obtusi oblongis acuminatis intpgns gldbiis, spicis laxe pamculdtis larius simpliubus andiogynis vel masculis, laclu incano-vplutinA, fl. maso glompmlcitis aut solitdins, bractpis 3 tiiangulanbus. externA majoie, perigomo Gdpntato pvtus pubescente, fl fern solituns, fructu ,5 In Borneo —Blume' Mus Ludg bat l,p J01 Folia 4] -(') poU longd, 1 \~% poll Idta, petiolo 3-4 lin longo, subcoiwiLea, neivis latpialibus utimque 11-lfc, teitiams distinctis Stipiili lanceolito-hneaies, glabnuscul«T Spicai 3-4 poll longae, semel raiius Ins composite, ramulis giacilibus iectis Biacteai in omnibus flolibus i, flore bieuoies, (\tus pubescentes Peiigoiiiuin masc ut in pieced Ovanumjunius 7onatum (v s comm a Mus Ludg bat)

218 0 CONOC\RP\ (Oudem \ooiloop modedol. Javan Cupul, 1801, seorsim impr p 4), idmulis jinuorilius cum pptiolis et folns jun. ddise stellato-lurfuidceo-tomentfjsis iiids, loins P basi subacuta ovato-oblongis \ ovato lancpolatis obtuse longiusculc acuminatis integeinmis, supia ad cosiam lurliuaceosquamulosis ca[1]tomni glibns, subtus ad neivos luifuraceo-pubescentibus sensim glabrescdilibus, 11 masc glomeiatis cupula plano-cidtenmoip nabrevitei stipitata t(nuiter velutma zorns 3-> vi\ distinctis, glande ovoideo-acuta perlecta oinmno exseita /> In monte Mal.iwar JavoB (Jungb 1 c) et iorstn in Borneo (Miq Ann Mus I B 1, p 112, ex fructu allato) Petioli 3-4 tin longi, limbi 3-4 poll longi, 1 J poll 1 iti, neivis laUialibus utnnque 10-12, spica> nidsc subeitctdU frructus so^tdin vel appioxnnati, laxe spicati (upul«k junioi et impnfecta obovoidea, peifecta 7-9 lin lata, cum stipite 3-4 lm. alta, mirgme vix inflexo Glandes perfectae, 9 lm altae, 8-9 lin. inferne latae, subvelutinae (v fruct a cl Oudem comm)

Rl*) 0 COSTATA (Blume bijdr p 522, fl Jav Cupul p 25, t 13), ramulis juJUpnbus sublepidotis, folus e uasi .icutA elbptico-oblongis lanceolatisve obtuse cuspidatis integeriimis conaceis glabns, spicis lamosis vel intPiduin simplicibus mcano-lepidotis, fl masc interrupte glomeiuldtis vel solitams biactea majore glomeiuli Imean subuldta floies superdnte, lateidhbus 2 minutis semiovdtis, peiigonio ri-6-lido lobis o\dto-acutis, fl fern soli tan is, cupula stipitata glandpm fpie totam vestiente tuibindto-bemisphacnca tenuitei velutma in memo annulis 2 ciassis undulatis et apice lamellis paucis concenti icis minimis crebns omati, glandc supeine planmscula umbonata 5 In Java (Bl) et Sumdtn (Koiih hub Mus Ludg hat[1]) — Koith Ndt Gesch But p 212, Blumei Mus u,dg bd! 1, p 302 (mcl Vdr y) Folid 3-5 poll longa, 9-24 lin lata, pptiolo \ (, l_m longo, nervis literalibus utnnqup 8-11, margine subreruivo, junionhus sul)l(pidotis? Spicae VPI lami spicarum gracdes, lolio subIn euores, unise\u Ues Biactean majoies fl masc A-1 lm longs, cxtus VPIUtiiid? Floies jun fern (e spec Sumatr) secus spicam semipeddlem numerosi,

altorni shpilp iccrpscente 1 3 bn longae, biacteis ovato-acutis et squarais obtusissnnis \(slitcp (upuld (ex ic) polbeem lata, grosse annul ita (v s)

fafiomexa (Blume fl Jav Cupul t I[7]*, Mus 1 c) eupularum costis minus piomuuntibus, gland* supia convt viustuh > In Javae raonte Salak et in Sumali i (Bl), in monU Mil iwu J I\<L (Jiuigh ex Oudrra) —Litho cat pus senti^cia OiicJcm[f] vooiloop mededd Jav m (upul p 4 Specimen eomm ill Bl taiiquam 0 costata, quod c\ Iructu mclius cum \ai P convf nit, et c(|uid(m spcciom diuisim di\cnm proptei annulos cupulae in a giossos luc minimus (ut in IU uc t 14) In fiuctu nostio maturo stipes cra,ssus, 6 lm lougus, denud itus, cupul i ovoide I, supeme truncat i glandc lbi pi in i ldevi clausa, 1 i lin longi 12 lm hut, tentutci velutim zoius pLiuiu euuueuUbus duabus paitim oblumisputim houzontahbus in IdUn fiuctus distmtibus, lamcllisquo 4 [r]> undiiUtis pioximis conccntiicis veitieun cuj^iitibus, %\ ins cuui cuj)iiU nisi piopc lamellas aicte conQata, \cilJce libeia niudx Lx liuctibus a cl Oudem comm maigo cupulte per spalium *I* lin latum KI mJtin tciuns scd ib (i libei, \erticc glandis piiUiea . Niliilominus ad tfenus Litbocupus mamfeste transit I i[n]'num glandis validum. Semen pendens, obovoideum, inJerne obtuse lobilum (v s)

220 0 CONCENTMCA (Lour fl Coch p 701, non Bhnco) folus lanceolatoovitis acumin iti** mtpgommis incurvis utnnnue ghbns petiolatis, spicis andiogynis linomlms congestis orectis tecmin ihljus} fl misc ,1cm stipititis, cupuJi 1 ix L bnvissimi extus eiiculis qiiinquo puillehs exeavati, ghnde olm iif^i-o\ ita ddjnuinu ghbra J In alus sylvis (ochinchind l>cilia (pie ic Rurnpli 1 4, t [r]>0, ex cl auctoie, sed curvata, U cu])uli divpisissima Floies J< m m infcnoie parte rachis, spiea, idoo bisexuales nee unisexuales ut in Q conccntricâ Dlancoi, quae nostra est Q Llanosn

221 0 riiAMriONi (Bpnth m Hook jnurn 18")4, n 1H), ramis junionbus fur Jui iceo-tomontosis folus p IJISJ leuti obovatis oblongisve ol>tusis nunc mucro n itis couaepis inUgpiiimis, junniibus sunciiK lam luifuiaccâ vestitis, adultis supra glibtinmis mlidis subtus inc mis tt k|)id< to tompntosis dmentis IcrrugiiKO tonunlosis dr nsiflons, peng ni » s(mi [r]> fido lobis ovatis dorso bispidis, sUiniriibus (> 8, hlimcntis bisi pili sis, anthem hispidis, spicis fem dissitifloiis cupul i eoncu • me in » liinrntosi concuilnce i-innulati, glmdc blobosi r\s(it^ [r]) In IIISUIJ MiinJ3 Hong-Kong —Seem bot Hti ild', p 41 >, t [0])0 Jknth fl Hongk p 321 Uimiili suhinguliti Slipula subuhtffi holii 2 *I* poll long] ciiutpr poll hta, bisi plus minus icuti, neivis latPi ilibus iilimrjup 4-0, tPitiuns *xn* eonspicuis, pptiolo J5 lin lon[n]'o Amont i 1J--2 *H* II longi subl isciuul ita Pilamentd pcngonium viv aequ mtia Aytheix oftip soided., pihs stelldtis hispidae Flores lem in ibbrcvi iti spied, b-10 Styli J obtubissirm Cupula (ev ic) 7-9 lin lata

222 0 EWYCKII (Korth in Verh Nat Gesch Bot p 212, t 46), ramis junio-fc nbus snbhpidotis folus P basi acutl oblongo hnceolatis acuminatis intpgiis eonicns supi i ^lihus adullis subtus glibnuseulis palhdis, imentis *o*\ spicis km folio subc([uililms, lachi tpnuitei eano velutinA, fl masc sohUius vel spusim glonipruhtis pengonio obsolete 6-lobo puboscente tl fpm soJitirns brictfi tiiangulan acuti slip itjs, liuctibus birvitor sfjj)itititis, cupul i pehiiormi /oms8 [0])concentncis lineanbus undulatis subdenticulatiboiniti ghnde dppipsso-ovoidol semiexsertd $ In humitia — Blump'Mus ludg bat 1, p MX) Fob H-(, i, poll longa/l-1-21 poll hta, petiolo > 7 Im longo, subtus pubpscditii (LX Korth) nervishtej ilibus utiinqur 10-1 J leummp longo obtusiusculo P< illinium nnsc cupulilnniL, on (hntitum Stamm 112, longo exscita Stipos cupula. 2 i lm bngus eii])iila t basi supia stipitem tuibmiti lutvi lite pitons, 12 14 lm lata euuleo-subvelutini,/onis ut vulgocoloratis Glansaltitudme sui litioi (v s comm a Mus JL bat)

223 0 BEHHFTTII (Miq fl Ind bot l,p 8[r]i7) ramubsgl ibns folus c bisisul)cuncato alUiiuiti oblongisvel sublanceolato oblongis acunimatis lnte^ommis glibns subtus feic subargenfatis, fl masc cupuli bievitei stipitati accta-

buliibrmi integprnmA luscule pubprf^squamulisconcretisconcpntncisremotis annulato-sUiaU, dpiculis s(|udmularum hbens, glandp ovoideo-globosâ exsertâ. *fl* In Bdiika (Horsl.) Petioli 3-4 lm. longi. Limbi 3-.') J-]ir•] 1 longi, pcrgamaceo-conacei, nervo cpntrali subtus et nervis latcralibus ulnnque 8-10 in sicco fusculis. Cupula 5 lm. lata. Glans 5 lm. alta, apice pubeia. Foliis 0- mtidae Bl. adeo similis ut nisi cupula! obstaret discninen camdom dixent cl. auctor; h<lc notâ Q. Ewyckn simiborem ait.

224. Q. RASSA (Mia fl Ind. bat. suppl. 1, p. 350), ramulis glabris, foliis longiter petioldtis e basi kievi-dculâ elliptico-lanceolatis longiusculc acuminatis crasse conaceis intrgpn lmis sublus pallidioribus costis utnnquc 10-14 teneris, spicis fern, simplicibus vel subpaniiulalis stnctis, fl. lorn involucio puberulo e 4 circiter seiicbuscirculdiibus biactoolarum conu'Ptaium eflbrmato. — In Sumatrâ occidental!. Petioli 4-6 lm. longi. Limbi 2 j - 4 poll, longi, 4- 1 \ poll. lati. Spicx[1] puberulifi. Stigmata 3, brevi-comca, obtusiuscula.

-9S5. Q. OOGYNE (Miq. fl. Ind. bat. suppl. 1, p. 351), ramulis petiobsque glabris, loins e basi anguste acutâ elliptico vel sublanceolato-oblongis subabrupte angusto acuminalis subcouaceis, supia glabris (novelhs tenernme squamellosis) subtus mdumento tenuissimo stellato densissimo argentato-gnseis, costis utnnque 10-12, cupubs solitarns sessilibus olxnoidpis subturbmatis biactpolis (squamis[1]?) crassiusciilis]>PI series 6-7 circularcs dispositis. — In Sumatiâ occid Petioli 1-2 lm. longi. Limbi 3-5 poll, longi, 1j-1^poll. lati. Cupula; nonduni mature 1 \ -2 lin. altae. Q. neurophyllse proxinia, ex cl. auctore.

226. 0- NITIDA (Blume. I Miis. Lugd. bat. l, p. 294), ramulis novplbs glabris vel sublepulotis, folus 0 basi acutâ vel angustatA. plbptins oblongis lancoolatisvc acuminatis mtpgerriniis conaceis glabris luculis, ampntis simplicibus clongatis rectis cinerco-velutinis, flonbus mascubs interrupto glomerulatis, fpniinpis solitarns, bracteis cu)usve fl. masc. 3 ovato-lancoolatis externâ majore floie breviore, ..., fructibus in rachi spicatis subsessihhus, cupulâ turbinaUl squamuloso-tuberculatA. Tn Sumatrâ. Folia *',!]-()* poll longa, 1 |-2j poll la la, peliolo 4-6 lin. longo, net vis latoralibus utnnque 7-9 'iircuato-patcnlibus Amenta 2-5 poll, longa, fasciculis floruin per tolam loiitfiL sparsis. Porigonmm 6-fid'im, cxtu-. pubpscens. Puhmus centrahs peitpicuus, albus. — Cl. Miqucl (Ann. Mus. Lu^d bat. 1, p. 112) hanc sppc. in scctione Cyclobalanus enumciat et fiuclum (equidem \alde linmatuium) sic describit: cupula lurbinato-stipitata, supoinc ovoideo-globosa, orp mtegernmo aculo levitcr contracta, p\tus squanus sibi adiidtis subcnculanter dispositis gilvo-gnscis subverruciformibiib obtecta, mferne et in stipitc bquamis oblongalis mstructa. (v. s. flonf. a Mus. L. B. comm.)

227. 0- LAMPONGA (Miq. fl. Ind. bat. suppl. 1 p. 348), foliis brevi-petiolalis e basi latâ ad petiolum brevissimeacute protractâ oblongo-ellipticis vel obvprst[1] elbpticis abruptp acute \elobtuse apiculatis conaceis subtus cinerascenti-pallidis costis utnnque 8-9, spicis androgynis nunc pamculato-ramosis, flonbus masc. approximate, fcmmeis in inf paite spies remotis basibiactrâ l.ui iimplpxis, cupulâ e basi stipitatd. biannulatâ subturbin.itâ aceUbulifurnu albidotomentellâS-zonatâzonissupei valdp approximatis — In Sumatije prov. Lampong, lnnovationes tenernme subpuivcruleiiUe. Petioli 2 lin. longi. Limbi 6-7ipoll, longi, 2^-3 J poll, supra.medium lati. Cupulae fere maturaB, 6-6lin. latae.

228. Q. CELEBICA. (Miq Ann. Mus Lugd bat. 1 p 110), novellisdense ocbraceotomontosis cito ghibratis, folns brevissime pctiol.itis e basi acutiusculAlciriceolato vel olliptico-oblongis acuminalis mtegprnmisconaceis supra lucidis subtus glabrads glaucescontibus costis utnnque 8-10, cupuhs sessilibus acetdbuhCormibus s([iiamis lato-doltoideis acutiusculis, subadprcssis fusco-tomentpllis per zonas circul.irGs lOplurrsve dispositis glandpm ovoideam acutara basi amplcctpntibus — In CrlcVs bor. distr. Mpnad< (Toysmann).PPtioli 1-6) lm. longi. Folia 2'$_r$4 poll longa, in ramis'2-3 annorum pprsistentia. Cupula 3 lin. circ. alta, 5 lm. lata. Glans fere poll, longa, 6 lm. lata.

229. Q DIKPENHORSTII (Miq H Ind bat. suppl. 1 p 349), foliis brevitcr pctiolatis

e basi brevi-acuULellipticis vel elliptico-oblongis breviuscule obtuse acuminatis Lonaccis subtus jun minulissimp subsqu mn Mosis dom palhdu. costis utnn- quo 12 14, cupiilA. srssili biovitPi itetabulifoimi tflibicscento zonis cncitei 7 stiiis similibus, glando abbicviato semiglobosa basi inclusA —In Sumatia" occul Petioh 2-4 lin longi Limbi J-7 J poll longi, 2-Ji poll lati Cupulae 2 7 lin latae, 2 2 } lin «iltae

230 o DAPHNOIDIA (illume fl J,iv Cujjul p 28, t JO), folns e basi acutaoblon- fjo lancpolatis acuminatis mtpgnrnmis glabimmis subtus levitpr glauccscenti- bus COM iceis, fl inasc , spicis fpm folio vix bip\ionbus dissiliflons, cupulA luihui ito honusplitcncA sessih, squamis in /onas b-7 concpntucas litpialitei unman*, ci.issisoxti^ mfldtis cdiiesccnti-tomcntosis, glande ovoidoo acutâ ni- tnlA teitia parto lusi immoisA ^InJav.nepiov BdiiUm (Hasselt) Kamuh]U- moips temussimPsLMd.ti, nitidiuscub, SPIHIS Insi ot id puioloMim oitum hvissimo inuassati. ppidpimuie cano-fususcento pajjillis n_n'(tiUis ohsit.l l-olia4 6 poll loiigd,l \ poll lati, in peliolum 4 C lin longum ^lddatim dn- gustata. atuminp obtusiusuilo ^{s}pita' ^{t}> 6 poll lon^de, (iect*e \ol ceMiuae, to- mento luc'vissimo vdutina[1] \J^o lorsm misLiilae) Ppiigomurn fern lobis 6 ovatis Stigmata J, glabra Fiuctusaltcini, solitaru VPI gomini Gupulasqua- misdoiscj inllatis quasi tcsselldta, zonis mdrgme undulato-dentdtis

231 0 HANCH(lJenth fl Hongk p)22)} glabia,ramisfloriftiisbiovibusrobustis, loins longe potiolatis obovatis \cl oblongis acuinmahs intcgns utnuqut niti- dis, spicis pmiculatis puctis ngidis tnnipulusis, masuilis Icminpis \ol dndio gynis, slciminibus 10-12, fiuctibus spssihbusmimmis, cupulA SUIHMOSO lignosll lionusphaeiicA cxtus gusco lopidoU concpiitnce annulatd, annulis marginc apimlatoippandis, glande $_4$' cxserlci $_t$^ In ins chinensi Hong-Kong, ubi laid Hancp in Ann sc nat SPI 4v 18 p 230 (unde desuiptio fiucl) Foil i {ox Jidith) \-*k* poll longa, nitida utin seq sedmagis conacca, nenis piimains minus piominentibus ultinus magis ntitulatis SpiCcfi nunc omncs masc et 2 *I* poll longae, nunc teiminalis et pluies feminpae vel dndrogynae 3 fa-poll btyhvulgoj, iigi(li,divprgentes Fructus (ex Hdiice) bieimes Glans71in longa, b cupulae bilinean inseita

-232 0 HARI ANDI (Hancp in Walp "Ann J p 382), folns P basi longe angustat«1 oblongo-lanceolatis acuminatis a rnpdio undulato-senatis \el mtogiis coiia CPIS, ampntis folio brovionbus spaisiflons, bi ictcis , pcngonii mdsc (>])ailiti lobis ellipticis rxlus pilosis, fiuctjhiis in spica plunbus sessihbus, tupulA ho- mispliajncA squamis guscis subvPitiLilhitis lrnbritatisp bisi lalissimamuuo- ndtis, glandp obovoideft vane exseita gl ibia *n* In insula Hong Kong (Hance, Seom) — Spem bot Horald p 414, t 89, Bentb fl Hongk p 321 Aibus uil.1 ramis lolusqiip glabns Folia \ 8 poll longi, 1 { poll Ui, in pctiolum G-12lm longum mgustita AmpnUi 3poll longi, flonlmssolitaius(CVICOIIP) St\h ((x lie utli) \ », iigido siibulJti di\(i_n'(iitps (upuldP 4 > lin longae, 7-«J lin latx» Squam<fi iitmO indwta, lUtidliUruHinitB,/onas 5-6 subcon centntas formantes, ad sect Lcpidobalanum transcuntes Glaus \auabilis, crasseobo^oidea vel elongata, mucionulata

!»3 0 INDUTA (Blume! in Batav Verh 9 p 220), ramis junionbus glabns, fo- lns e basi acutAovato vol elliptico-oblongis abni|>tf Pt obtuse acummatisinte- gpmmis coiidceis glibris subtus allude sublopulotis, spitis masculis vel andiogyms simpliubus \P1 ramosis, fl masc glomprulatis, bracteis IMSI glo moiuli lancfolatis, pcngonii 5-bpaititi tomentosi lobis ovaio-acutis, fmdibus in lacln piucis spicatis, cupuld hemisphaencA basi m stipitem bievem an- gustatâ cinereo suJrselutinazonis piucis linpaiibus obhqms vel concentncis m.irgine sparsim denticulatis, glande subulutinA cupulam dimidio super- rantp ,1 In Java occid —Blume' fl jav Cupul p 2Jt 12, Mus Lugd bat 1 p 294 I oli.i 4-9 poll longd, 2 3 poll lata, JiPtiolu 5 9 lin longo, nciws later utiinquo 9 11, tcrtiaius vix distmctis pagmA mf pallida nei\o pixcipuo nunc sulnelutino Spicae 1 {poll longae, erecUe Moies fom sjppius in basi spica? andiogyiae, alteinantes (upula cum stipitc 9 12 lin longi 1') lin. lata, oro constucta, /onis basi pt medio nuuipio 4 5 distantibus partim obhquis, apici piopionbus minus distmctis denticulis ians adprcssis minimis Glaus ovoideo-liemisphaenca (v s comm a Mus I])

Q,microcaipQj huctu minore, glande apice non depiessa^ In Ja\â ocud Q induta (5, Blume' 1 c t 12 f 3 Ex specimine zneo a Mus Lugd bdt comm ramuh sublepidoti, folia sublus minus pallida Vix vanetas videtui (v s)

"2 i4- 0 CYRTOPODA (Miq fl Ind liat 1 p 869), l.imuhs petiolis fohisque junionbus utnnque in neivis subfuifiirdcoo-tomontpllis subflavu mtibus, folns e basi sub.icutd elliptico-oblon^is dbriiptc angustc acumm itis lnevissime petioUus subtu> ai^cnutis fl niasc , 11 fem glomuulatis, uipulA. (submatuid) dcetahulifoimi cupuhtâ explanatA. mfeine cupulis stenlibus tuboiculatà gnseo puherd zonis obscuns dcntu uhfeiis, ghnde depiessà senceâ cupulâ tuplo longiore $ In bumatiâ(Uippenhoist) Potioh 1-2 hn tdntum longi Limbi 8 9 poll longi pugnmiLPi ncivis litoiabbus utnnque 15 19, tpitiarns tiansveisis (npul i in Lin nut hiiulrn^i (*A* HIS indumenta detPisibili sp ricea

2Vt Q LLANOSH, I uuuiis ^HJIIU, loins (lliptiuo ldnceolatis basi longe angustatis apice dbrupte ticumindtis interns coridcois junionbus pubeiulis adultis glabiPscentibus^amentis masc in dulhs sohtdins aut gemims ercctis tenuiter cinereo-velutiius gracilibus folio bieMonbus, flonbus secus lachim sparse solitains gemims tprnatjsvc, Inacteis fdsciculi vcl flons soli tarn ovato acutis evtus pubesccntibus suba3qudhbiibfloie multo bievioiibus, pcngonio piofundc 0-fido c\tus pubpscpnte, spicis fpm , cupuU Integrà conccntnce zonatà, glandesemio\cndPd gldbrAcupulamdimidiosupprante *fi* In Plulippmis 0 concentncd Blinto pilip cd 2 p ^02 Llmos[1] in h DC (non Lour) Ramuh luniores foism puberuh ; cito gldbnli Toha 4-8 poll longa, 1 2 poll lata, bdsi longius quam apice dngustata, petiolo 4 8 lin longo, ticumine obtusiusculo, nen is ldteidhbus utnnque 9-11, tertianis vix perspiouis, pube tenuissima evanescentc, pagin\inf pallida Amonta 3-5 poll longa FIOIPS masc saepius sohtaiu junioies globosi dui ovati Bracteae \ lin longae Stamina circitei 12 Flores fem (ex Blanco) spicdti 1 luttus ox lilanco descnpii (^ s comm a cl Llanos)

236 0 OVALIS (Blanco fl de Filip ed 2 p 502), fohis o\ahbus abiupte acumi natis et apice emaiginatis mtegris glabns petiolo brcvissimo, fl masc , spicis fem spaisiflons, cupulâ Integrà /onis concentncis ornatâ, glande ovoi deâ superne exspitâ ,5 In Philippinis Folia * un palmo» longa Nomen e foimi glandis An (ex cl auct) ^allctas pi ions'* Si sppnps scnanda nomen 0 ovalis Goepp pi foss mutandum esset

237 0 BLANCOI, folns o^alibus abrupte acuimnaiis uit (marginatis integiis glabns petiolo bievissimo, II masc , fem in spied sparsis cupulAlineis concentncis oinatA, glande oNOide.! ^5 ^n Phihnpmis *Q* glabra Blanco fl dc tilip [p]d l p 727, in ed 2 omissa (non lliunb) Folia longitudine « dc uno palmo » Manifeste sect Cyclobalani, sed feie ignota Cl Llanos hanc sp agnoscere credit et figuiam fructus mecum communica\it ubi cupula 4-5 lin alta, 6-7 lin lata, hemisphaenca, oie subconslncta, hneis concenti 6 7, apice approximate, dentibus minimis, glande semi exsertà ovoidei

238 0 PHILIPPINENSIS, ramuhs glabns, folns e basi acutA. o\ato-lanceolatis acuminatis junionbus subtus tenuiter puberuhs adultis glabns subtus palhdis integr.is \el ranus ad apicem repando dentatis, fl misc secus spicas graciles erectas pubescentes sparsis solitains, pedunculis fiuctifens folio subaequalibus tenuiter puherulento-puberulis, fructibus alteinis brevissime stipitatis, cupuld hemisphcenco-turDinat^ basi abrupte angustatà tenuiter cmereovplutina7onisconcentricis 6 7 passim breviter dentrUis rugosa, glande o\oideft tinerea seucpà cupulam dimidio superantp $ In Philippine (Cumin}?[1] 809, lèrrottet'; Rami in sicco nigncantes Folia 2 3 poll longa, 7 15 lin lata, petiolo *3* lin lon^o, conacea, basi acuta "\el longius an;?ustata, saepius Integra, acumine tenui, obtusiusculo, 5-6 lin longo, mine abbreviato, nei vis lateralibus utnnqup 7-8, tpitiarns transversis minimis, loho luniore (ex spec PPII) >" nervis passim pih, adpressis longiusculis donato, in parenchymate punctato subpubescente, adulto (2 anm) glabiato subtus inter nei\os palhdo Pedun-

culi bipollicares. erecti, crassi, 1'ructus 3-6 gerentes. Fructus (ex spec. Cum.) junioresobovuidei, stipite j-l lin. longOj squarnoso, bracleaianceolatfi 4 lin.-longa, squamis lanceolatis depressis subveriiciJkns/lobis perigonii ovato-acutis, stylis rectis obtusis. Cupula luatura supra stipttem lurbinata, t> lin. longa, 6-9 tola, margins integra attenuata. (v. s.)

** Folia serrata vel subserrata (lj.

^jR3§. *Q.* LINEATA (Blume! Bijdr. p. 523, non Hook, et Th.), ramis junionbus I fulvo-tomentosis, foliis ovato-elliotico-vel oi> -iiJongis basi saepius acutis apice acutis vei .if.iiminatis fa^flT[18] Y^ [a]P'fP [s]~rrulatis, juiiiurilms oCrinque pi I is se rice is adpressi3 fuIvTs^Vestitig, adultis supra cito SUIJIUS tarde glabratis, fl. masc..., peduncolia Jem. l-3-floris, cupula hemispheric;! lamelJis 4-5 concentricis crenatis sericci.s ornata, glande ovoideo-%lobosa cupula diniidin longi ore. 5 Iri Java — BlunjG! fl. *Sav.* Cupul. p. 32. t. 19. MUM. Ludg. bat. 1, p. .102- Q. poiyneura Miq. plant. Jungh. 1, p. II (ex Miq. II. Iud. b.). Folia 2-4 poll, longa, 6-20 lin longa, tetiolo 4-6 IUL. in arbore junii.r« 4-7 poll, longa, nervis! ateralibus eminentibus utri iqne 13-18, pagi nlinC secundo anno glabrata pallid i!se Lrnoares, sxtus sericeæ ;; |j[t1]. longae. PeduiiL:u]i fructiferi tmiflori petiolo asquales, •plurirtori longiores. Cupu taju-oior obovoidsa, subclaowi, lam tilts' super. fulvi«. Fructns e Blume Mus. Lugd bat.]). 303 desoriptus , nam in ic. at speciniinibua a Mus. L. b. comm. ndndum matums. (v. s.)

"••7^0. *Q-* TH^MSONUNA, rafflts junioribus..., foliisNsblongia basi subaculla apice acuminatijj a in«dio vtil apioG Unluiu serruhnis ;nii aristaio-serratis, himoribiid,.., adultis supra glabris j>ulT[Tnrftcauo-i> mentosis demum pilis adpressis breviln^ aelilariis vestitis, fl. m <..., spicis fem-• plurifloris petiolo bi evioribus velutiuis demum; glabratis, ci][mla (juntorej aemisphaerica lamellis 5 cfimcentricis laxiuscnii-; crenatis sericeis ornata. glande.... (In sikkim Indite li[1]ir. I alt. &-8000 ped. [Hook. I[1], oi Th. in li, Di et h. Boiss.). Q. linoata Hook. f. et Th. in berb, DC. (non Bl.J Folia *'i-k* p<dl. *[onnn,* 12-18 lin. lata, petiolo 6-12 lin.loago, nermlatar eminentibus utr inqti« LU-^i, pagind inf. in specim. meo fniciiljui j . . . i ipa Eollis adultioribus) pnrao attspecta jlabra, pilis sub lent e adpres»y drsti • ;i Q. li H. natura pilorum et iti'iiiit>us*(ol.* majoribus. {•

*^|41. p. OXYODON (Mifj. Ann. Mus. Lu<lg. bat. **p.** 114), **ramolu petiolisqae glabris, toliisgraciliterpetiolatig cutiuscula leviter inaequali lanceolato-oblongis** anguste acutequo acuminatis præter basi***m* acuminisque** superir.nem part**em** dense spinoso-serratis **adultis supra glabris nfttus indu**mento st**ellato Bocposo Cttsio cinerascentibus, cupulis in spied, sparsis bast** bracteis 5-6 ovatis amplexis **subanthesi pubesceutibusannuiatis? —** in **mont. Kbasifi Indie or. ah. &000** [irid. **(Hoot. f.** ci Th.). A 0. lineal;! BJ., **qua cum** in ••chedulâ adjectâ comparatur, differt foliis longius petiolatis, præter basim tous spinoso-serratis, costulis multo crebrioribus, indumento. Petioli 1½-1½ lin. longi. Stipulæ lineares, basi dorso pilosæ. Limbi 5½-6 poll. longi, 1½-2 lin. lati, costis subtus prominentibus utrinque circiter 25. [illegible] misernnt cl. Hook. f. et Th. sub nomine *Q,* iineatas, quod praesenti melius quam ad liiisataiij et *ml* Thoinso-•• nianam **raspoadet.**

242. 0. MfiiKtisa (fCndl. yen. suppl. 4, part. 2, *p.* 2«), ramis jimioribus fulvotODQentf>sis, foliis *o* Nasi acuW ofilongo Lai ceolatis acuminatis a medio aerratis, juniojrifeas utrinque adpresse pilosis, ;idultis supra praesertiin glabralis, amends filiformilnis [axis pendulis, pedunculis fe m. brevioribus paucifloris, cupuM juniore turbinata (ei ic.J hemiapbaerici (ex spectcimine meo autbent) lapeUii 5-6i concentricis crenatis ocbraceo-sericeis ornat;i, glande.... [f] In Java occid. *Q.* turbinata Blumel bijdr. p. 623, fl. Jay. Cupul. p. 31, I. 18, Mus. Lfugd. bat. 1, p. 302 (non Roxb., de quo conf. Q. apicata[n:]). Q. Horsfleldii Miq. & lnd. bat. 1,

(1) In 0- Harlandi, n. 232. folia integra vel subserrata.

p. 856, ex se ipso Aun. Mus. L. B. I. p. 114. Nomen Bluoiei vetustius, sed characteri coniranuiu videtur. Kami secundi ;uuii leuticellis crrbris punctati, glabrati. Folia2-7 pull. long;!. (HiJlii). lata. petialo 3-7 lin. longo, nervissecundariis utrimjue 13-18 eminentibus, dentibus brevibus subcallosis. Gemmae nvoidrae, pilosse, BUJ iforjnibus 2 li». longis extus auctse. Amenta (ex Bl.) pterumque fasciculate < longit. aliquot poUicum, perigouiis toraentosis. Pedunculi 2-9 lin, lOQgj, fruclibua 1-3. Cupula in speciaune aostoo hemisphsriea, potius (]ii;i!ii li.isi angustata lit in Leone, immatura 4 lin. longa, 5 un. lata. Glanis cupulam tune paolo superaas, A Q. Thpmsonian^ differt foliis adulti^ subtus glabris, aervis lateralibusmiaiis validis et cupula ochracea. (v. s. coium a Ifua. Lugd. b a.)

243. p. HoRSfiELDii (Mi<|. (I. Ind, bat. 1, p. 856), tauiulis junioi-ibus petiolis et foliis jua. subtaspube QoccosS pubescentiius, foliis e.basi acuta yel attenuate . etlipticis vel oblottgisacutis vel apic^laUs a medio circiter serratis supta oftidis. Q, masc...,spieis fem. folio brevioribus e-lff-fioris griseo-ochraeeo-tomenlelhs, cupula zonis 4-5 crenalatis ornatfl turbinai iceo-birtulA, glande eUiptico-ob cupula triplo lojlgiore. $ In Baaka. Petioli 3-4 lin. longi. I.imlii H-;] poll, longi, coriacco-pergamacei, ab^vellsupra baaim *aer*<-ati, nervis literalibus utrinque 7-!). S%li 3-5 (t), inferne vjllost, superne glabri, stign ate convex u-dimidiato, subcapifata, estrorsum subreruforjaai ternunali. Cupula 6 lin. alta. Glans U poll, tonga, apice pubescens.

P, *longifolia* (Miq. il. hid. bat. 1, p. 869), foliis obverse ubl.m^is elongatis. — Jn Sunjatra. Pcflia usque ad 5 poll, longa.

-*•' 5^4. Q. VBLDTINA (LinJl. LnWallJ pi. as. rar. 2, p. il, i. I5O)J ramifl jwojpribos.,,, foliis e basi acuta ovatolanceolatis acutis vel acuminatis aoaedio r •• serratodentatis, jutiioribus.... aduJtis utrinque glabris, amentis..., pedu oculis petioJo brevioribus fructu unico lermin iti s, cupulâ depresso-c upaliformi fulvoserice^ lamellis 6-6 concenLricis iategris ornatâ, glande vix exs•t;i. ,5 tc orâ Tenasserim ad Tavoy •• Wall.I list D. 276R. Rami secundi anni glabri, lenticellis rotundisalbidis asperati. Folia 3-4 poll. longa, 12-16 lin- lata, petto! o 3-5 Jin. longo, mini ta glabe i inaa, ooria cea, a me uo undul ato-serrata, rtentibus plerumque obtuais y unioribas forsan aoatis), aervis IttteruUbu s utrinque 12-13 tenuibu| eminenttbus. tertiariiswx djstinctis. Fructus secund o anno cum foliis persistentes. Pedunculus 1-3lin.longus. Guptda 'i liB. longa, lin. tata, lamellis inferioribus propioribus, ore sub clauso. Glans (forsan imperfecta i i spicimiaibt s obs. et &g.) Bericea , umbone solo exserta. (v. s.)

245.Q-ssMisERRATA (Roxbil. iini.ciJ. 1832, v.;t. p. i32), ra misjunioribui s ferrugineo-bomeatosis, foliise basi acuta lanceolatis acu tis a medio serratis, junioribus..,,adullis glabris?, ;nn uiti».M, fructibus in axillis saepius gemifiis sessilibua vel breviter ped inculatis, cupula abbrcviaii late subhemisphaerl â tomentosâ himellis 'i 'i concentricis iutegris oraata, glande ovoidea cupula gua Iruplo I m gio re. ;, In Siliiet lndiaj or. — Wight ic. 1, L ill (ex ic. Rojb. lig,). Kami adulti glabr• ridsntur. Folia 4-8 poll. longL, 1-3 poll, tata, petiolo 9-12 lin. I'^ngo Ji ^metro majore ultra r aedjam limb i parten]. ueri i s lateralibo a uti in que l(H2 emiaeniibus, pigin â utrâque in ic. glabrâ, forsan subtus adpresse pil osâ? ut i •' affinibuB. Gupui a pollicem lata, 4 lin. long , fundo planiusculo, gtandem 15- 16 Hn. Longam basi solutn retine is. — Synonymon Q. ;mrml;ita; ej cl. Book. !• iij lin. An specimin a authentic i \iilit ? Niimc-rus lamellarum cupulae In !cone diveraii mus.

Vn-

446- 0-OioocARPA fKorth. in Verh. Nat. Gesch. Bot. p. 2H&, t. 47, f. I8)tr, amis junionbus..., foliis e basi aculiuscula ei obtu sâ ibfongia vel ellipticia abrupte •'"'• minatis apicem; versus remote serrulati s, junioribus..,, adultis -upra giaons subtus stellato-puberulis, il. masc..., pedanculis petiolo brei ioribus fructu u • j;,,,;;i I, emisphaerica ,n| subuirbiuaii I ma ellis 5-7 ionceatricis |>ubesoenlibus inilio cwnalu deind< integris ornata • glande oToidea cupulam <j\a nnio superante. In Sumatra — Bluine Mus. Li IM Ra • 3- anni glabri, lenticellis nga, 1 ½ - rotundis aon tniuimi longo, nun; 'ere I S poll. (<j . • :;' poll. La i pilis in pagin mis. vis laten g |(,.li;,,, ,, [\iU ,,, iof. mini

Gemmae elhpsoidede vcl obo\oidea2 squamis rotuudatis, extua pubescentibus et cito glabratis Cupuli (e\ ic) polhcem latd 7 lin longa, ideo longiorquam in Q semiserratâ Roxb cui alfims (A sine fl et fr a Mus I udg bat)

7547 Q GLALCAHhunb 11 Jap p 17 >), nmis junionbus sparsim pilosis loins P basi acutâ vel obtusiusculâ o\dto ldnccolatis oblongisve acummatis d medio senatis \ol unrliilato-senatis |iinioiibus supi I spirsim pilosis subtus ddpressp SPHCPIS idultis supi i glabratis, amontis lixiflons diflusis, lachi tomentosi bractol flor sublongion cxtus praescYtim pilosl perigonn proiunde 6-7-fidi ldcinns oblongis anthens $_n$'lobosis glaljns lructibus soli tarns geramisve pc dunculo brevissimo insertis, cupulâ lie misphdenca senccâ kmellis 5 7 concen tnus infcnr nbus crendtis sup integns ornatâ, glandc ovoidpo aculi cupulam flimidio circiter superint(-5 In Japoml — Bdnks ic t 17 Bhime Mus Lud^ bit 1 n J02 Folia juniori bisi \ildpanffiistitI pilis subtus in parenthvmaU ircbns luridislongiusruhs adulti2' 1t> 11 Jon^ i <) 24 lm lati petiolo 4 10 lm lonjo sciratuns acutis \P1 contunddtis IK r\is hu ialibus utiinque 9 10 teitianis crobns paginA ml pallidâ nunc glaucâ pilis dissitis ddpressis ad len torn vidondis Siipuli mgustc lmodios, 2 3hn long* pihsa taduta Anwnti smguld vel Idsciculdta subbipollicana, llcxiha Bi ittti cujusvo flons elliptico dtutai concavcK 1 *1* lin longae cxtus adprcsso pilosj, intus pilis brevionbus idiionbus pubciultt IauniL perigomi in rodem flore vaiunus, oblongae vel lmpan oblonga, \el elliptica[1] in spccim observitis snf»pp issc r\ itde extus pilo sulae SUram i 7 9 glabia filamontis in spccimme pengomo subajqudlibus Cu pulae 4 5 lin longae,2 3 1in ldtap, cinprea[1] Glinsinic cllipsoidea vald(ex serta, in spec nostroovoulco-acuta minus P W I U (v s comm n Mus Lugd bat)

p, *stenophylla* (Blumc' 1 c) foil is an^ustionbus subtus glaucionbus — In Japoml (\ s ab eod Mus comm)

Y, *fasciata* (Blume[f] 1 c), fohisalbide fasciatis (ohtui in Japoml turn \d nctdtibus mm momcnii (\ s ab eod Mus comm)

248 0 SALICINA (Blume Mus Lugd bat p 30[r]j), ramulis novelhs pubescentibus folus brevitci petiolalis basi dcutiusculi \cl obtusi linoin linceoldtis icumiru tis intLgeinmis vol rpmoto scnato donticulaLis unucis supi i glabns subtus lunionbus ddprpssp pilosis adullis ^libns $_n$'l IULPSU ntibus stipulis angustp lincinbus pilosis nctiol) aquahbus —In I lpoma I orsan \ an etas 0 glauctH fhunb mirabili solprti r Tipononsium inaiboubus cullismonstrosis tnbucndd ' Foil L 1 i poll longa J G fin lata, pptiolo 2 3 lin longo nei\is lupiahbus> utnnque 7 14 tcrtiains MX conspuuis denticulis ubi adsunt minimis extrp- mitate ipsâ obtusl vcl submucronati (\ lamum d Mus Lugd bit comm) —- Ad nine speciem cl Sum inn rdcit aiborcm simnspm Q bambustefoln Hancc niss (I nidi mOnd tin 1800 p 4(> c i he ki mg) p\ ins H)n^K.on$_{h)}$ quani in Bot Henld J> il > sub nomim 0 silicnu (t *m* t jl sub nom Q bdmbusapfolide dpscupsit ct hgui ivit \n \PIC < idem sppups[fc]> L\ iconcfolu satis similia basi tamen magis acuta Cl Bonth (ft Hongk p 321) sontcntnni Seem mm secutus est arborem japonic am non magis cognoscons Amenti(m phntafipon iffnoti) folio brovion, fl on 1ms soli t mis subcondonsatis, pengo mo 6 fido, lobis o\atis cxtus pubcscpiilibns stiminibus 0 (m enoic pictons) iobis oppositis lihmpiitis ^ldbus Jniirfitudinc 1 boium, antluns cllipticis ^,ld bns I lores fpm (inpldntdjap ign) pmn in spied biovissimi stvli J oblusis simi Fructus (in pi jap ign jsohtain pedunrulo 2 lin longo insciti, cupula bieviterhemisphaencd, 9 lin lat\ zonis concentncis > o oindtd gkndeellip soulea, valde exseita

W) Q ANNULATA(bm in Rets cycl) lamis junior ibus ^hbnusculis, folus e basi icut i ^f 1 obtusiuscull o\ no lanccolatis obl-»n$_0$risv(icunnn itis i mpdio spmtis lunionbus supn spnsim pilosis. subtus adpressf senccis idultis supra gla- ln itis amcntis JaxiMons ptnduhs raclu tom°ntosd, bi icteis (lore longioubu line n i-lanceolatis c\tus pilosis p(ngonn G 7 pn titi ldcinns lineai ibus antliPi is ^lobosisgbbns, spicis fern puiolo bicvionbus piucillons cupul i hemisph c nca sencea lampllis 7 9 conuntucis mffrioribus tienatis orem\eisus mtpgiis oinatd glandp o\oidpr lent i uipuhm siipciaiiro) In Nepalia (Wall ' list

2767), Kumdon (id » Hook f et Th.') et Khasia (Hook f ct 'lh ') Indiae boi — Loud enc ol trees, p 888 (p\cl IC et plensq sjn) Q Phullata Don prodI fl. nepal p 57 Folia, jumoid et ddultd in omnibus 0 glautae simillima Dpntes saepius acuti, sed in eo \dnat Q. glauca Cupulie et glandps similes videntui An eadem species ut suspicatur LI. Loudon* E\ speciminibus meis (numerosionbus et peifectioubus quam U glaiiLa,) dneit solum dentibus fol plerumque anstatis, id rst longionbus (iaio , sed in eod spccimine con tundatis), stipuhs longionhus^h 8 hn) brdctcis fl masc longionbus (2-4 lin longis), minus pilosis, interne glabiiusuihs, launns pengonn angustionbus, ab ipsd leie bdsi distmclis, fildmentis longionbus s>ed cbaiactei pro actatc variables, pedunculis nunc longionbus ct Iruotus 3-4 gerentibus, sed quercus ieic omncs in eo \anant. (v J») #

-350 Q. LAMELLOSA (Siu in Rees cjcl n 23, mm Hook 1), lanus]unionbus , folns e basi obtusd elhpticis acutis vel acummdtis dmplis soiratis, junionbus. adultissupiaglabrissubtusglducis passim stellato-lanu^inosis demum glabns, amentis iiuitibus soli tarns pedunuilo pptiolis bit\ioip insertis, cupuld ma^na globoso tuibindUi lamellis 8 12 concentncis undulatis ldxius culis junionbus lul\o-\elutnns demum subglal)iis supremis mflp\is, glando depressd Lupulam non superante *fy* In Nepalid (Buch "Wall ') ot ins Penang (Roxb Wall 2777 ex speum ubi numerus loisin tianspositus) - Lmdl in "Wall pi <s rai 2, p 41, 1.140, Hook i et Cathc ill Him t 20 0 mi bncata Don prodi fl. nep p 57 Q lamellata Roxb fl md ed. 1832, v. 3, p 641 0 Wallichiana Lindl m Wall list n 2778 (e Penang, et cujus folium vidi) Folia 4 6 poll longi, 2 4 poll ldta, petiolo b-18 lin longo, conacea, e\ic subtus roseo ^ldiicescpntia dentibus acutis plus minus longis, neivis latera libus utrinque l> 20 pmiiicntibus, lertiarns disiinctis transversis Fructus secundo anno matun Cupuld polluem longa, 1 *[* poll laid, lamellis medns sub patentibus Semen (ex it Cdtht) obovoideum, longit sulcdtum, non VPIO lobatum, cotyled tarnosis repletum (\ ft e Ncpalid, ioha p Nepalraot Penang)

251. Q PAUCII AMEiiosA, i am is junionbus , folus e basi oblusd vel subacuU oblongis acutis vel acuminatis soiidtis,]unionbus , adultis supra glabn^ subtus glducis pi passim stclldto kuu^inosis, dmtntis , liuctibus solitarus pedunculo petiohsbicvioio ins(itis, cui)ul i subglobosa Idmdhs 4-5 concentncis integns fulvo velutinis supumis infl(\is, glande cupulam non superante ^ In Sikkim Indiae bor alt V8000 ped Q Uniellosa Hook i etTh ixs' (non Sm) Folio 0 ldmellosae, sed pro longitudine dngustiora, 6-12 poll longa, 2-3 poll lata Pplioh 6-1 Min longi Podumuli iruttilpu utinQ lamellosd, saepius 3 lin longi Fructus (mitio secundi anni'') 5 6 lin longi et lati, lamellis non patentibus, numeio dneisissimo a Q ldmellosd Cupula matuia foisan nmplioi, sed numeius lamellarum non mutat in spec, vicinis (v s)

252 Q HELFERIANA, lamis petiolisque rubigmoso tomentosis, folns ovato-lanceolatis ellipticisve acutis obtusisvp basi exccptd bre\Mer serratis conaceis, junionbus utnnquc feirugineo tomentosis, ddultis supra glabrescentibus, amentis , pedunculis fern petiolum a3quantibus pauciflons lulvo \elutmis, tupuli^ junioi hemisphaenco turbmatis sessilibus lulvo volulims limellis 5-6 contentncis denticulatis supremis appiovmidtis subintegiis infl(\is, glande non exjrfrtd 45 In raontibus ditionis Moalmyne India[3] or altitudine 2400 ped (Heller' 122) Q Ilex Loui fl Coch p 700? (non L) Rami etiam secundo anno tomentosi, teitio glabie&centes Folia secundo anno M\ peisi&tentia? 3-5 poll longa, 15-24 lin ldta, petiolo 0 lm longo, nerus ldtciahbus utimqUP 12-14 eminpritibus, tortiarns paium distmctis, tompnlo subtus p(istantc, apicp et scrratuns brevissimc mucionatis Pedunculus axillans 8 lin longus, insm-Limine3-flouib Cupuld hne 2[1] anni 3 lin longa, 4 lm superne l.itj, Idinelli* medus lationbus superpositis (v s lomin <b uifehcp cl Heifer)

>'S3 0 MLSPILIFOUV (Wall ' list u 2766), ramis junionbus pctiolisqup fuhotomentosis, loins, p })dS1 a c u t d Ovato - lanceolatis oblongisve obtusiusculis basi rxcepta serratis, junionbus , adultjstid neivos praespitim subtus tomento caduco fulvo donatis, amentis , uipuli hemisphaBiitd nunc depiessa velutmn l«*mpllis 8-10 tnnionfiuis plriisqn* i]pnt till ifis <ur»irm^ ->nl mtp [1]n^ «t ap

proximatis, glande globoso-depressa cupulam non superante ^ In montibus rcgni A\a dd Piome d Taong Dong Rami tomento copioso cdduco vestiti, secundo anno glabiescpntes et autumno defoliati Folia 6-8 poll longd, 2-2} poll ldU, pciiolo 4-6 liii longo, apice obtusiusculo mucronuldta, dentibus similitor mucrone brevi stipatis, nei\is laterabbus utnnque 17-18 emi npntibus, tPitiams mediocnbus tianswisis juniora vpnsimibfer tomentosa tomento in nervis pra?cipws folu adulti smnid ad basin et suhtus piaesertim perstanic stipulac, lineaics, 3 lm longae, (f t o hispiddp Fructussolitam? SPSsiles? (in sppcimmp obs segregati) Cupuld peilecta 7 lm longd, pollicem lata, cinereo-fulva, lamellis superpositis, impeifectamagis depress a et supernc constncta (v s)

*** Ff>ba ignota

254 Q CYCIOPIIORA (Lndl gpn suppl 4, p 2, p 28), loin, , < u| i.l |i,j margiup mflata tdllosa subtus lamcllisqumqup imbncatis concentnusomata 5 In sylvis msiilae Pulo Pcnang 0 dppirssa Roxb fl md pd 1832, v 3, p 640 Q PpnangcnsisMi j 11 Ind l»ot I,p 859

Sectio v Cm AMvnoBAi \NUS *lndl qm suppl k^art* 2, p }H, *Alph DC Note nouv car.fr (hmc,p* 'i. — Soclm l isi mpopsis *Hlume, Mu\ Ludq bat* I *p* 228 (HOTI *Castawpws Don)* — SctUo Lnclcibocaipon *Miq Ann Mus Lugd bat I, p* IK)

(upuldglaudcm undiqiiP t' gens HOC Umrntumoj concicU(jj,istnjul ongparte inlPi.i uinbilitali),saepiusripice irrogulanter fissa, mine (in eodem ldino) clausa. vcl lissd, concpiitncp P\ squamis (orinatis vciUcilldtis /onita Pistillum rudimen-Uniiin lihfium, Klobosum, hispidum m centio flons mastuli — Omms ex Asia, mendionali Folia pupiinwi AmdiU e ret Id, nunt pdmculata Bractcde sub smgulo floic masc dut Inscitulo tlorum lernae Pengomum masc regulare Staranid nunirio loboruni])lPiumque duplici Spicae lcmmpae (vpl andiogjnae, basi feminra[1]) floubus (tm soli tarns, nunc stipiUtis Ovuld dboitiva superd (1) Mat ura I in post pnmum dnnum

255 0 LANCEAFOLIA (Roxb fl ind cd 1832, v 3, p 034), ldniisjunionbus gla bus, loins P bisiacuta VPI subdcuu lanuolatis oblongisvc dcumindtis uilegns coriduis glabus, amentis Piectis clongdtis simphcibus \P1 idmosis, fl masc Scfpius solilai us, brdctcis 3 o\dti«- p\tus pubosccnlibus l.ttci llibus minimis, pcrigonn 0 paitili lobis ovatis pxtus pubeiulis, fl 1(m dissitp spicatis, Iructibus dltprnis Mibscssilibus, cupiill ovoidca bdsi angustaU dnicp clans i vol uiegulantei fissa extus If nuitpr vplutiiid zonis 4-6 obhquis pt hon/ontdlibus Iinediibus obsciiFf cniialo elf nlilis, glandp ovoidpi siilisontPd > In Indicp boi piov Ganows (Ro\l) Hook 1 (t Ih '), Silk I et Sikkim (Hook pt Ib '), Bengalidor (Gufl » u 4477 db h Kew comm), insuh PCIWIIK (Wall i list 2791, SHIP fi idpo non ceita), loisan in Sumatr.i[9] (Castanpa glomeraU Bl) — Wight it t 212 U Tema Hdra Q lucida Roxb fl Ind 3, p 6[r])? (PX Hook f in litt) 0 ^VflfMa.JJYriJt,' hsT579l, a (P SillPt) b(oPPiidng)[1]? non R_0\b UsUnca glonieYaTaBliirnpi Mus Jugd bat l,p 28 J? (utarboi Walliduana SJIIPIIULUI, uleo non ceita) Toll i 16 poll loimd, *)-24 l'» '•!>«>, poliolo 4-6 lm long(», neivisldln uinnqiiP[1]) 13, fituminc sappiusduitissimo Anidiu 2 J poll hnga, piamis aphjllis glibeinmis ubi inscita toimnlo albido distmcta, apice densifloia Bracted major \ lm longa, latPialps saepp vix perspicu* Stamin.i longe pxserU, sjppius 12 Spictf lem 3-S poll longcp, rpctd?, flonbus plunbus dltpr nis bratlPd unit A mdto-acuta lincam longa stipatis Squ miae li |un sub\pi dcillJLae, maiginp (onnatsp, doiso con\P\a^, spntPd[1] lYuttus nidtun pollitun Ion??] 8 9 lm liti, in eadem spica apice clausi vel hssi glande inclusi \rl paulo exserta, ranus tamen ut in icone cit (v s)

•256 Q ACUMINATISS MA, iamulis junionbus pilis rans obsius, loins e basi acuti vel oMusiusculi lanceolaiis \el osato-lanreolatis longp acuminatis integernmis

(1) Vidi in Q cuspidaln, et ovuld]umoia pcndpnlia in 0 lance<efolia

vel ultra medium obtuse denticulatis supra glabns subtus ad nervos hirtellis demum glabns, spicis masc. (ex Miq.) erectis, flonbus glomerulatis bracteis orbiculanbus, fructibus in spicà sessihbus solitarns, cupulà irregulanter turbmatàvel ovoideà tenuiter\elutmà demum fissà squamisjuninnbus lanceolatis adpressis matuns longionbus secus zonas obliquas distantibus dispositis et reflexis. ^ In Javà. Castanoa acuminatissima Blume' Mus. Lugd. bat. l,p. 282 Castanea sessilifoha ejusd (quoad spec Javan) e\ Miq.. Ann Mus. L. B. 1, p. 117. Q. lineata Miq. pi Jungh*l, p. 10 (non Bl) 0 Junghunn Miq. fl. Ind. bat. 1, p. 853(ipso monente in Ann Mus. Lugd. bat 1, p. in). Q. fagiformis Jungh. in Bonpl. 1858, p. 82 (fide Oudem. voorl medel. Cupul. Jav. p. 4) Petioli 2-4 lm. longi. Limbi 2-4 poll longi, 7-15 lm lali, nervis later, utnnquo 7-11. Fructus (a cl. Oudem. comm.) formà et magn. maequales, perfecti, nempeaperti, 4-7 lm. longi, 3-5 lm. lati, cmciascentcs, zonis squamarum obliqms 3-4, squamis acutis, diu erectis, demum excunatis }-l) lin. longis. Glans ovoideo-tngona, vix apice exserta. (v. s.)

vi57. 0- CUSPIDATA (Thunb. fl. jap. p. 176), ramis junioribus pubescentibus, folns e basi acutà vel obtusà ovato-lanceolatis oblongisve acuminatis integris vel undulato-scrratis conaceis junioribus pilosis adultis supra glabratis subtus adpresso pilosjs tandem glabratis, amentis gracilibus simplicibus vel ramosis, bracteis ternatis rotundatisc]hatis,pengonii6-partiti loins obovatis ciliatis, fructibus in spicà altenus ovouleo-acutis fulvo-vefutinis, squamis subverticillatis superpositis apice cvcepto connatis glandem mcludentibus, cupulà demum fissà ₍5 In Japonià—Thunb. ic. pi Jap dec. 5, Sieb etZucC fl. jap 1, p. 8, t. 2 (opt.). Blume Mus. I^ugd. bat. 1, p 288. Ramuli passim pilosi. Folia 1'j-3j poll longa, 7-15 hn. lata, petiolo 3-6 lin longo, in eodem ramo acute vel obtuse dentata vel intogernma, nervis lateral)bus utnnque 7-15 parum emmenlibus, pilis sunplu ibus in paginà sup ab imtio raris Stipulae anguste lmeares, 3 lin longai, pilosae. Amenta folio subaequalia, erectiuscula, rachi lepidoto-puborulA. BractoiE 3 sub singulo llore, exlenid paulo majore *j* lin longà. Pengonium utnnque pubescens. Stamina sajpius 10, exserta, glabra Fructus secundo anno matun, ssepius 8 lin. longi, 4 lm. lati, nunc subglobosi, squamis oblongis mucrone glabro brevi termmatis, infenonbus tandem muticis, fissuns cupula[1] irregularibus 1-4. (v. s.)

(•i, *pusilla* (Blume! 1 c), folns brevissime petiolatis lanceolatis obtuse acuminatis — In hortis Japonensium.

Y, *SinensiSy* loins minus coriaceis, bracteis fl. masc. minoiibus — In Chinà boreali (Fortune! anno 1846, n. 40). Folia a medio serrulata, ut saepe in a. Bracteae pcngonio raulto brcviores, \ix ciliatae. Vanetas tantum videtur, sed fructus ignotus. (v. s.)

^258. Q. BLUMEANA (Korth. in Verh. nat. Gesch. Bot. p. 208, t 44), ramis junioribus pulverulento-vclutinis fulvis, folus e basi acutà vel obtusà ellipticis vel elliptico-oblongis acummalis aul longe cuspidatis supra glabns subtus in nervo centrah tenuissirae vclulinis, spicis androgynis, bracteis sub smgulo flore 3 lanceolatis, pengoniimasc. 6-partiti lobis ovato-acutis velutinis, iruclibus in infer, parte spicae altenus stipitatis, eupul/t c basi latissimn subconcavà abrupte angustatd ^landrm includente \elutinà, squamis lanceolatis mmimis adpressis e zenis 4-6 surgentibus. ₍5 In Borneo — Bluinc' Mus. Lugd. bat. 1, p. 288 Rami secundo anno glabn. Folia 3-6 poll, longa, 15-30 lin. lata, petiolo 5-6 lm. longo, subconacca, acumme saepius anguste elongato, nervis later, utnnque 8-11 , tertianis mmimis, pube *nei*\orum cilo evanesccnte tenuissimà Spica? nunc androgynae, folio circitpr aequales, mine masculde, breviores, simplies aut ramosae, croctae. Flores masc sparsi. Bracteaj velutmae, externà (majore) pengonio breMore. Stamina e\serta. Fructus junior ovoideo-acutus, maigine cupulae inflexo, matuius pollicem basi latus, 6 lm. longus, stipite 3-4 lin longo, zonis distantibus. (v. s.)

259 Q. ENCLEISOCARPA (Korth. in verh. nat Gesth Bot p 208, t 45), rami* junioribus tenuiter vclutmis, folns e basi aculd vel subacutà rllipticis vrl clliptico-oblongis acuminatis utnnque sublcpwlotis, amenlis suhramosis, flonbus masc glomerulatis, bracteis 3 (rlr»niornli-lanrpni.nis i^nrim.nn ^ p^rtiti loms

ovato subacutis, fructibus in spiui fem elongatâ altcrnis stipitatis cupuli ovoideo-fflobosa cinerto \elutina zonis 4 o lmeanbus squamis mdistinctis apice tandem fissâ, glande mclusa ovoidea seucca <5 In Sumatra — Blume • Mus Lugd bat 1 p 288 Tolia)7 poll longa 12 30 lin lata, petiole 5 6 lin longo, subconacea, acuta vel lonpc icumuidtd neivis later utnnque 7-9, ju niora tenuitoi velutjna luh i, ldulta in eodem lamo nunc plabra laevia, nunc spaisim discis mminus albidis rotundis aut maigme dentatjs punctata (an causa ddvena >) Spica, foisan interdum androgynae > Amenta masc 1 *I* polhc , rachi subvelutina lliactru! minimae, centi ill mdjoie puberulre Stamina6-12 oxseita Stipes ljuctus i lin longus, supernc latioi (upula poll lata, 9 lm longd, squamis non distinctly Glaus pjlis ictioveisis dense seucea Semen (ex Korth) cxcavato pelvilo me, sulcatuni, bisi cienatum (v s)

•260 0 HSSA (Champ etBenth in Hook journ 1854, p 114), Iamis jumonbus tomentosis, fohis e basi cuneatâ elliptico lanceolatis acutis vel acummatis callose pauci-seiratis vel mtegris supia gldbns subtus indumento tenuissi mo argenteo-lepidotis, amentis ercctis subnmosis glabns, fl masc sohta rus vel J 4 glorueiatis, peiiKomi r> *h* partiti lobis ellipticis ciliolatis spicâ fem bieviore, flonbus sohtarus lructibus plui IIHIS ovoidtis, cupuli extus zonis den tdtis J 4 subconccntncis oinatidtnium intgulariterj 5 fissa ^ In msul'achi nensi Hong-Kong —Seem hot Htnld p -*1 j I 02, Bonth fl Hongk p J20 Cabtanei regia Hantp in Ann sc nat sei 4, v 18,)) 2J0, tt m seem lourn ol bot 1863 p 175 Joha 4 8 poll longa (interdum 14 poll e\ Hance 1 c), 1 3 poll lata, in petiolum r) 6 lm Ionium angustiti, nems secunda ins utnnqup circitei 15 tertiains transveisis Amenta 6-8 poll longa, e ra-mulo dphyllo plui i, bisi bi icte i lanceohtd 3 lin longl stipiti Biacted3 cuJus^e iascicuti floruni ignotr Spici Uimindlis (ev Benth) dndiogynd, spicisque femineis ex lxillis inienoi lbus Styli 3, obtusi, lineaiPs Spicae fructiieia; se cundo anno nidluiescentos, J 5-pollicares, iructibus, altemis onustae Fiuctus 8 9 lm longi, fupull subcancsLente, intcinp sencco villosi, glandem semi pollicarem glabtam dm tegente, demum apeitâ (otylcdones intiicato nmosse, ut in ultimis sp sectioms PdSdm L ct m quihusdam aniciicdins sect. Lepido-balani

bectio vi LiniocARPis *Miq Ann Mas lugd bat* I, p 108etll6 — Genus **Lithocarpus *Blume Biylr p* -)26, *II Jav Cupul p* 34 r 20, *Endl aen p.* 275, *Miq fl Ind bat* 1, p 864 (1)**

Glandis pars involucio idnata multo majoi quam supera bben mde fructus pencaipium Jughndis (vertice tamen oculato) lefert Imolucrum conaceum, externe pauu-zonatum Nux ossea Flores masc et iem ut in praecedentibus sectiombus

461. 0 JAVENSIS (Miq Ann Mus lugd bat 1, p 171), ramis ctiam |umonbus glabns, tolus e basi acutLvel subacutd hnceolatis \el elliptico-oblongis acu-minatis integernmis conaceis supra ghbeninns junioiibus subtus lepidotubs cito glabratis spicis saepius unisexualibus, tl masc Stf pius tcinatis, bi ictei externâ lanceolatd hteralibus 2 o\itis duplo longioio Jiuctibus pedicclhtis pynformi tuibinatis/onis cnculdiibus 4 D (Ionium obsolctis ^ In Ja\d I itho-carpus lavensis Blume' 1 c t 20 Quercus Adiingaelohd Miq in pi Jungh 1, p 12 (ox jpso met *mil* Ind bat I p 86)) Folw 2 4 poll longa, 918 lm lata petiolo 3 4 lin longo neiwslitei ilibus circitei 12 paiurn subtus cnunen tibus tertianis et quatciniiiis leliculatis Jnflotoscf nti i subpaiiiculita, lamos teimmans Spicaj tiectd? sdipiiis ^ poll lon^c interdum andro^jnae (Mjq), saepius mdsculde lemmeis infenores iachi fionbusquc cinoreo subvelutinis Bractea inienoi lcrr lmeam longa, acumindta, caduca, lateiales obtuse, sub ppr^istcntes Fist iculi fl masc bisi dissiti ipice approximati flore uno (ubi 3 **adsunt) supenoie praecouore Pengonium subglobosum, 6 fidum, lobis ovatis**

(I) Lithocarpus ingUotifoluis Miq ohm pst species prorsus obscura, delenda monente ipso dutt in Ann Mus LB 1 p 118

milexis stamina sdepius 12, lobis altenid et opposita, e\ Blume 12 20 An thei* ellipticae, rnucronulataj, glabrae, iilamento subaequales, taide exsertae Pistilh momentum globosum, albido-tomentosum FJores lem solitarn, in pedunculo sparsi, sessiles, brattea knceoldta mienoie lineam Jere longd, alns adpressis. Stjh 3, eietti, lineaies, adpressi glabri Fiuctus junioi elongatus, linean obovoiideus, /onis 5 maigine subdontatis ut in queitubus chlamydo lams, exteine subwlulinus, matin us (m Blumo it cit modiocnter fig) ex specimimbus a tl Oudem comm ellipsoideus, 1-1 J poll longus, stipite *2* 4 Iin longo insidens ipu p umbilico depiesso 2 lm lato ubi glans libera notatus mvolucio coiidteo passim exsiccatione fisso, oblique lineis 2 '* perunso, mix ossea, rugosa, omnino luglandis, demum ut in ill.i libciata Semen (ex Blume) pcndens, cotyledonibusuassis inaequalibus obo\atis (\. s comm iMus Lugd bat ilonf. et iructus a cl Oudcm)

•f *Species sectioms dubi%. — Omnes ex Asia meiidtonali.*

262 Q cooptRTA (Blanco fl Filip ed 2, p 503), loins o\at»s oblongis mtegns glabns, imoluciodtuleis bievibus lobustis undique echinato glandemconico-depressaru omnino tegentc. In Philippine Vensimiliter Cdstanopsis, sed qu<enam species[4]

263 0 c\RTonnYNCHA (Miq fl Ind bat suppl l, p 350), innovationibus subti-Jissimo squamollosis, raniulis noveilis petiolis et lol neivis sublus pube stellata miniitissima .ulspcisis, loins bic\ipetiolat]t> e basi lotundataad petiolumpro-tracta ellipticis \el supenonbus oblongo-ellipticis abiupte bievitei anguste acuminatis firmilei cliaitateis nci\i*>lateialibus utiinquo 10-11, flor , lr In bumatia occid **Petinh** 1 J- 2 lm longi I imlu 4-7 poll longi , 2 '- J poll IdU, subtus pallidioies, *en**-> seniomin tdiituin dislinctis blipulaj a n gusto-hnedies, petiolo bievioies, tiduur Hdbitu (). cjitopodai aflini^ vidctui

264. 0 ' DiVARiCAfA (Lindl in Wdll? list n. 2790), ramiN junioiibus spaisim pi-losulis, folns obovato-oblongis ^cl ovatis atutis basi acutis *a*\ aLuminatis membranaceis mtegns, juiuonbus supra spiisim pilosuhs sublus in neivo passim pilosis imendiunaU glabio, adultis gLibuitis, spicis cineieo-\elutmis, masculis P lamulo iphvllo 2 I, mdioftynis supienns solitains, 11 masc soli-tanis ternatis\e, biacteis o\alis, pengonn 6-paititi tomentosi lobis ellipticis, ft fem solitains sparsis, fiuttu *K)* in Maitabaiua ad lavoy Quercus aut Castanea* (GasUnopsis Nob) ait tl au(toi I c , sed absque liuttu J'grc di|u didandum spicae subiamosaa, nunc androgjnde, flblonbus fem basi spiCcT plu nbus distinctis, stylis .i divergentibus in Queicu poll us adsunt Pih lamulo-rum et foln junions supra ran, bieussimi, mine stellati, in nenolol subtus solitarn et longioies Rami giaciles, setundo anno glabu, albidi If olid 3-4 poll, longa, 12-15 Iin. lata, netiolo 3-4 Iin longo, neivis lattralibus utnnque 9-10, tertiams et quaternarns leticulatis, atumine saepe rnutionulato, nunc obtuso et mutionulato Pedunculi bie\es, lateiales, amenta 1-2 poll longa geientes Flores masc. apice dmenh appioximati basi distincti Antberae ex-sertcP minimal Floiesfem ovoidei, nitdin **Styli** ,1, divergentes, hnedies, basi puberuh. (v. s)

265-Q EYRFI (Benth [7]et Cbamp. inHook.journ 1854, p. 114), glabemma, foUis brevitei petiolatis o\atis \el o\ato-lanceolatis longe atummatis pauci-serratis conaceis toncolonbus nitidis, amentis panitulato lamosis glabnsdissitiflons folio siibaequalihus, peiigomo masc. sajpius G-paitito lobis petaloidcis maigine ciliolatis, btaminibus 10-12 longc exseitis [4]) In insuli sinensi Hong-Kong-Bentb. fl Hongk p 320 Foli.i 2-3 poll longa |J poll hu, basi tuneita, petiolo 1-3 lm longo, sdiatuns subtuspule pauus oblusis lii^qualilms, ner vislateialibus uiiinque 7 11 tenuibus, teitiains viv conspituis Pamtula radsc ramosissima amentis vugatis 1J-2 poll, longis Discus 11 masc villosus Spicae fem simphces, bie\es, ut mast glabrae Styli2-3, obtusi, patuli Ven-simihtei (e\ Benth) Q hssae alfinis, sed friittu«? lpn DifTeit (e\ eod) i Ta>>taneS rhmensi quacum junxerat cl Seemann

266 Q OILVA (Blume Mus Lugd bat 1 p. 106), ramuli-. ful\o aut rubipno-o

tomentosis iamis teitu anni glabratis, folns e basi acutȧ vel obtusȧ ellipticis \el obo\ato oblongis lam tolati \e acurairidtis vel acutis vel ranus obtusiusculis a rued 10 id apicem acute seiratis cornceis jumoribus stellato-tomentosis lulvis, adultis supra ghbratis — In Japonid Iuha 1-3 poll longa, 7 16 lin ldta. petiolo 2 3 lin longo, nervis lateralibus utm que 7-1 J subtus eminentibus ad denies tendentibus teitiarns transversis parum distmctis quaternanis mi nirnis opacjs Stipulae anguste lineans peliolo pquales, pilose Ex loins a 0 incdiii Roxb non ^aide diversa, sed fl etli lgnoti (v ram a Mus Lugd bat comm)

p, *procera* (Bl lb), folus plerumquc longionbus (2-4] poll longis, petiolo 2-3 lin longo) - I n Jjponn (\ s comni abtrd Mus)

W2fa7 0 OLOMFRAiv(Rj\b fl lncl ed 1832 p. 640, non Wall), Joins ellipticis in tegnsutiiiKjut Uvibus fl inisc , spicis feni elongatis termindhbus glome ntis, glande ovoidei glibi 1 nitia cupulam tuberculitam seraiimmersȧ ^ In ins Pulo Pomng Conlei ad Q lanceaeiolnm

268 Q GLuriNOsA (Blume Miib Lugd bat I p 304) 1 imulis glahns folus elliptico-oblon$_n$'is vtl oblongo-1 mceolatis utiinque an^ustatis integernmis co-ridccii) glabns supra luudis subtus pillidis — In syhis Inaj ocud Accedit loinsadO Moluixam Jolid 5 8 poll *on*^\, |$_4$ JJ poll htd,]>etiolo4-b lin longo, Insi dcuta vel subdcuti apice obtusiusculd \el obtuse icuminita nervis lUeralibus utnnqut 7 0, terUarns vix distmctis, pdgirid infer ddultd passim pilosd, urulc jiinioi certe pubescens (v nmum a Mus Lugd bat coram) — Ex tl Miq Ann Mus L B 1, p 118 loisan solum folia sunt Q mdutae, quod ex comparatione folioium autbent nondlfirraaio ausus sum

169 Q KAMROOPII (Don prodi fl Nepal p 57), folns lanceolatis longe cuspi-datis spinuloso stmtis utnnque ghbns vindibus basi lolundatis In INepaliA dd Suinagui An 0 dnnulatcL junguidi'

270 Q OBLONGATA (Don piodi fl Nepal p ')7), loins nhlongis mucronatis spi nuloso dentatis basi corditis sii|>ri gldbns subtus fldvcsconti tomentosis J In Sirmdgur Kimroop

271 0 LACFRA (Blunu Mus Lugd bat I, p JOG) rainuhs novollis fusco veluti nis, loins e bisi (uncdti jntegpiinnd oblongis dciinnridtis inciso kcentis (laci nns selicco icuminitis vulgo iniqualitd sen jtis) Umtdcpissupi *1* glabiius-uilissubruspubescenlibus — In Japoni 1 <*J* Catoslai Mich dlfinis, e\ cl auct P**b** ı ı**t**2 \\ poll longi, 0 18 lin ldU, petiolo 2 4 lin. loiijo

272 0 LitviGATAfBlurneMus Lugd bat l, p J04), ramulisglabns loins e basi acuti oblongo-linccoldtis longe acuminatis mtegcmmis vel id apicem ple-rumquc ropando-crcnul Uis subconaccis ghbns — In Jjponid ubi Ookisi vo-catur Toha 5-7 poll lon^dj \\ *1* poll hta, petiolo 6 12 lin longo, nervis lalerahbus utnnque 11-1J, terhuns distmclis, paienchymdte opaco (v fol d Mus Lugd bdt comm)

273 Q nnoR\Lis (Blurae Mus Lugd Jut 1, p 30J), ranuihs glabus, iolus oblongis vel oblongo linceohtis utnnque mgusUtis intcgeinmis chartaceis glabns - in niiritnnis JavdL lustjalis Iolia 4]-G] poll longa, li-2poll hti peliolo 2 J lin lnngo. siccatd palhde lusca, n^ivis lateiahbus utnnque !) 12 ireuato patuhs reticulo denso conne\is \n forma Q spicatae^ex Miq Ann Mus Lugd bat I, p 118

lU 0 MARGINVTA (Blume Mus Iuf,(l bit I p iO 1) idtniilis novellisangu ldtis tomento cojioso fulvo deleisibih vcstilis, nuns ^libus, loins e basi dcutdelliptico oblongis vel oblongo-lanceoldtis obtuse uuiuinius integnsmn gine subunlulatis ^ddulliis) glabns subconaceis — In Japoni 1 Q glabra heib Bur^ei (non 111) Folid J-7 poll longa, 1 '-2| poll lau petiolo 6-18 lin lon^o nenis lateiahbus utnnque 8 1J, teiliains el quaternarns pellucidisve-nisqup ultimis praeterea roticuhtis opacis SUpulde circa gernmam angusto lincaies, pubtsccnles, 3 liu lon^ae (v ramum d Mus Lu#l bat eomm)

275. Q MURICATA (Roxb fl Ind ed 1832, v 3, p 63o), novellis \ubèseentibus

Joins subsessilibus oblongis angustis subacutis integns, amentis , spicis temmeis axillanbus lolia aequantibus cupulâ turbinatl aculeis bre\ibus non rigidis concentncis muncali gldnde tertiri pane uipulam supeiaute 3 In msuU Pulo Penang Folia 4- > poll longa, I'j poll laid Vei ticilli aculeorum (squamae?) plimnn —An sectionis Cyclobalani an Pasaniae, veisus Q Sundaicam, Koilhalsii, etc '

27b Q MYRSiNtFOLU (Blume Mus 1 ugd. bat 1, p H)o), ramulis glabnusculis, folns e basi acuti lanceolatis longe acuminatis mlia medium usque ad apicera glanduloso-seiiuldtis glabns — In Japoruà Folia 2-4 poll longa, 7-12 lin lata, petiolo4-6 lm longo, neivis lateralibus ulnnque 9-12, tertianis etquateinanis reticulatis opacis, venis praeterea ptlluudis ieticulatis, denticulis gracilibus brevibus, pagina infei pallidiore (v foi comm a Mus Lugd bat)

$77 0 NEUROPHYILA (Miq fl Ind bat suppl 1, p 351), glabra, folns bievi pctiolatis L bisi obtusa vel rolundali o\ato ^el oJwerso-oblongis acumme latiusculo muuomildto lenninitis vel supromis oblusiusculis integmimis subpergamaceis coslis utnnqui 14-13, fl et ir ign —In Sunntra occid Petioli 2 lin longi Limbi 4-10 \ poll longi, 2-4 poll lati Stipul* 3 lin long«t lineari-lanceohtcT Species aifinitalis dubicC, quam cl auctor nuper in Ann Mus Lugd. bat 1, p 104, non memoravit

278 Q OXYRHYNCIIA (Miq fl Ind. bat suppl 1, p 347), innovationibus seriteo villosis, folns ad apices ramuloium subverlitillato-confertis potiolatis e basi itLenuata decui rente lanteolato-oblongis vel elliptico-lanceolalis longe acute 'saepe sublaloatim acuminaiis uiLcgeriimis adultis glabratis, supra lucidis subhneatis, subtus caesio-glauus, costis 13-16, fl ir In Suruatiâ occid Habitus Q lineatae, probab ex cl auct ad sect Cjclobalam refeienda Petioh 4-12 lin Longi 1 IUIM i-7' poll longi, 8 lm-2 poll litiyfiiiniter chaitatei.

~270 Q PJNANCV (Bliimc Mus Lugd bat 1, p 303), ramuhs glabn», loins elliptico-obli)iinpis lanceolatisve basi acutis apice obLusp acuminatis mtegenimis membrariictis glabns — In sylus lavae occul. tolia4j-8j poll lonrM, 1J - -11 poll lata, pctiolo 6-12 lin longo ncivis lateralibus utiiiiqiu {M2 teitiams tiansversis et quateinains in paierichymate tenui opacis *C*\ Miquel Ann Mus Lugd bit l,p 107 lunc suspicatui Q glabrae specimen cultum esse, quod ex loins i lUume olim comm non admittendurn pr ptn 1 iiuim nervos latcialcs paucioies et consistenliuii (\ folia)

"580 0 9 POLYSTACIHA (Wall ' list n 2780), umis ju/noi I J \ *i* beiuhs cito glabialis, iolus e basi longe an^u 'ati\el acuti oblongis vel obovato-oblonerris acumindtis imegns adultis glabiis sublus pillidis amentis plunmis erectis parncul im prebentibus cmereo-velutmist fl masc sparsnn 1 isciculatis, hscicuhs i-1-flons, bractei praccipùa fasciculi *o*\ ilo-acuti flore l)ie\iore, pengonn rj-6-paititi lobis cllipticis c\tcine velutmis, 11 iem r) In laong Dong ieorni Avde Castanc.ij ox Wall , id cst rastinopsis nobis, sed loli i el lnlloresc masc icquo]uic Qucicus piope Q sj)icatam ant Q Lwyckn ^inc fl Iem etliictu genus dubium remanet Pubes lamuloium rainutissima lol*i \ Spoil longa, *l-S*\ poll lita petiolo r>-7 lin longo chartacea, nerMS htei ilibus 11-13, tertiains tians\ei^is parallels, acumme acuto \el contundato, jumora \eii-) subtus tcnuitei \elutina .iduli i iineidum subtus in nei\o centi ili sub\elutim, pjicnchyniile intei nenos libido Amenta 3-0 poll lonhn BuLteaehtei ile^fasciciiloiuniMX TKispicuap SiammilO 12,longe cxorli anthoiis minnrns, sub^Ifibo s Pulmnus rfl ibosus albus pilosiis in centio flons (\ s)

281 0 s ssiLiPoiiA (Bliinie in Mus Lu^d Jiat 1 p Kb), iaimihs novellis sub toninitosis foliis subscssihbus *e* ba«»i angustal.l lanceolatis acuminatis mteg(uurns subcoi uiceis glabiib crebio ieticulatis — Vonsinnliter e Sun in Japomim introdiuti Folia 2 • - ^ poll 8 U lin hli neivis hroialilms utriiique 7-11 paiurn piomiiiulis icrtiaius citbiis et quateinaijis reiiculatis distinctly (v loli urn a Mus Liud bat comm)

ff *Species nomine tantvm cognitx, aut floribus et fructibus ignotis admodum dubiae. Fere omnes gcrontogcx aut in hortis cultx* (1).

0- AQUIFOLIA Kotschy! it. cilic. n. 402. Rami foiiaque non differunt a Q. cocciferA foliis maioribus quam vulgo, vel a quibusdam speciminibus Q. calliprinos, sed f lores et fructus ign. (v. s.)

Q. CANDIDA horl. (ex Steud. nom.). — America sept.

Q. CARPINEA Kotschy! it. syr. 1855, n. 98. — In montibus prope Damascum. Ramuli puberuli. Folia caduca. Petioli 1-3 lin. longi, pubescentes. Limbi oblongi, 12-20 lin. longi, 5-10 lin. lati, utrinque obtusi vel acuti, nervis lateralibus utrinque 9-10, crenati, crenis calloso-mucronulatis, superne glabrati, subtus parce stellato-pilosi. (v. s. in h. Boiss.)

CAUDATA Lindl. ex Wall, list, n. 2787. Hab. in Sillet. Eprsan Castaneu' ex Wall., idest Caslanopsis? ? C. *Ic/uk**

Q. COOKII hort. (ex Steud. nora.). — Hispania.

nfe CUNEATA Roxb. ex Wall, list, n. 3732. — Patria ignota.

nQ, DENTOSA Lindl. in Wall list, n. 2775. — E. Sillet. — Synonynion Q. annulatae Sm. (quacum jungit 0. semiserratam Roxb.) ex cl. Hook. f. in liti.

Q. EXONIANA Poir. diet, suppl. 2, p. 225. Chenc d'Exester Bo.sc mém. p. 28 — Culta olim Parisiis.

Q. FALKENUERGENSIS Booth (ex Steud. nom.). — Hannov.

^. LAXIFLORA Lindl. ex Wall, list, n. 2774. — Jn Nepalia et Kamaon. - Ex cl. Hook, f.in litt. synonymon esset Q. annulatic, quacum jungit Q. semiserratam.'

0- LEZERMIANA Poir. diet. 2, p. 226. ChGne Lezermien Bosc. m6m. p. 24. Olim culta Parisiis.

4). LINDLEYANA Wall, list, n. 2782. In montibus Avie.

Q. LOBULATA Sm. in Abbot (ex Steud. nom.)

0- MITIS Banks herb. Lowe (ex Steud. noin.)- K Mader;i, sed deest in calalogis meis niss. plant, madcr. cl. Leraann ct Heer.

Q. PHELLODRYS Link (ex Steud. nom.)

0. RICHARDII Bosc mem. p. 22. Ex Hispania attulil Ricliard; colebalur in liorto pan's.

0. SQUARBOSA Kotschy! it. 1855, n. 100. In jugis infer. Antilibani. Ramiili puberuli. Folia annua. Petioli 2 lin. longi, puberuli. Limlii oblougi, 1-') i,,ll longi, 6-10 lin. lati, basi obtusi vel subcordati, pinnatifidi, lobis utrinque circiter 7 ovatis acutis vel acuminatis subulatis, utrinque sparsim stellato-pubescentibus. (v. s. in h. Boiss.)

0- SUBEROIDES Rafin. (ex Steud. nom.). Sicilia.

Species exclusx.

Q. ABELICEA Lam. diet. 1, p. 725 (pluribus div. in synonyniamixtis) = Ccltis ? ex Poir. diet, suppl. 1, p. 756.

0* ARGYROPHYLLA Wall. = Castanopsis argentea.

Q. ARMATA Roxb. = Castanopsis tribuloides.

0. CRETENSIS Lam. = (ex Steud. nom.) Planera Abelicea.

Q. DUBIA Lindl. = Castanopsis Indica.

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(1) Nomina quædam hortulanorum, vel pauca manifeste synonyma specierum supra descriptarum in Steudel nomencl. enumerata consulto omisi, ut et recentiora inedita cum fructibus, saltem cum glandibus, e Cypro vel Kurdistan a Kotschy communicaia, quae omnia synonyma videntur. — Numeri sequentes px imperf. statu specirainum in herb, meo non definiendi : Wall, list 9091); Griff, in herb. East. Ind. comp. Vi4(;, 445!), 4485.

Q RHAMNIFOLIA Miq = Castanopsis ihamnjfoha

Q SPHACLLATA Blume Mus L B 1, p 304 = Euphorbiacea * (II et li ign) exMiq Ann. Mus Lugd bat. 1, p 118

II CASTANOPSIS *Spach hist veq. phan* 11, *v* 18>. *Alph DC in Seem, joum ofboUjun* 1801,]). 182 *(\), Miq inn Mus luqd bat* 1 (1863), p 103,118 — Quercus subcli\ Castanopsis *Don prodr fl. nep.* p 6b *{non iectio Casta nopsis Bl)* — CastanecE sp JRoxb., *lindl , Blume, etc* — Callaeocaipus *Miq fl Ind. bat* 1, *p.* 868

Flores mascuh inamento fasciculati,bracteis cincti.Pengoniumregulariter 5-6-lobum. Stamina numero loborum saepius duphci; filamenu gracilia, elongata, anthers minimae, biloculares. Pistilli rudimentum glot)osum, liberum, hirsutum. Flores feminei intra mvolucrum squamosum 3-1 Pengonium 6-partitum, lobis obtusis, bisenahs. Styh 3, ranus 3-5, lincarcs, lobis cxteinis pengonn oppositi. Ovarium 3-loculare, loculis biovulatis OvaLi ex ingulo infenore hemianatropa (e\ G tnbuloide et G. chrysophylljl obs.) (2). Fructus e\ involucro et nuculis 3-1 inclusis constans. Involucrum sub-ilobosum, aculeis saepius ramosis extra squamas tardc ortis undique echinatum, ranus tuborculis subconicis custatum, diu clausum, tandem irregulanter fissiim vol indehiscens. Nuculas cartilagineae, hbera3. Semen singulae nuculae aborlu unicum. Cotyledones crassde, f.innosae, plano-con\e\ae. Radicula supera Ovula abortiva.... Arboros Asiaticap vel Galifornicde, habitu et mfloiescentn Quercuum sect. Pasanide, Ghlamydobcilani, Lithocarpi, fructu Castaneae, sed ovano 3-loculari. Maturatio biennis.

Sectio i. ELC\STANOPSIS *Alph. DC I c* — **Involucrum fructus dense aculeis echinatum, dehiscens vel indehiscens**

*** Folns acute serratis**

C INDICA(Alph.DC 1 c), ramisjunionbus et infloiescontia fulw)-\plutims, fo Ins ellipticis oblongis\e basi srvpms obtusis apicc» .itutis lemote senatis adultis supra glabiatis subtus fulvo-pubescentilMis, 11 masr *m* amento elongato erecto sa?piusternalis, brutea extern » < ujus\e fasciculi ovatoacuta, ldteralibus brevionbus oblongis, porigonn bpailiti lobis ellipticis utrinque pubescentibus, spicis femineis amenta subdcquantihus, fl fom in involucro sj^pius solilams, liuctibus spaisis othmatis, aculeis subul.ilis pisLipms difTusis aul lecuivis pilosis nunonbus acu'sioiiis glibus icctis *Jj* In Nepalia (Wall); Sillet (Roxb Wall'), Klwsi.1 (Huok 1 ' et Ih) ot Chiltagonp; (Lindl. in Wall nl as rai), Benga ia oi (Griff 4'+41, 4446) (astanea Indita Roxb 11 Ind ed 1832, \ 3, p. 643, Wall ' list 2761, Wight IC I 417 Queicus rlubia Lindl. in Wall, list n 278b (fide Hook 1 in litt) Folia 4-6 poll longa, 2 J poll lata, petiolo 4-7 lin longo \chitinu, IIPIMS lateralibus utiinqne 14-16 terliamsque subtus eminentibus Stipula[1] ovato acutap, doisosencea* 2 Jlin longaj Spicj[1] masc et lem iolns nunc j[j]quales, leminea? e\ axillis supuiIOI ibus Floies heiniaphroditi sappo adsunt, ev Roxburgh, staniinibus lunc inclusis Stamina 12 in >nasc et heim. Ovana inteidum 2 intia involiuium, ex auct Aculei e trunco bie\i communi di\eigentes pube adpiessa. Frutlus malm us c istaneae \nlgan minoi (v. s.)

**** Folus integns \el (in eodem lamo) paucidentatis**

2 C CHnvsopiiYLLA (Alph. DC in Seem.jouin. 1863, p 182), arboi, folns late lanceolatis atuminatis basi acutis integns conaceis subtus jumonbus pix[1]-

(1) In manuscr jam anno 1860 scnplum et in div herb adnotatum

(2) Ovula pendontia in C Tunguirut, e\ Blume fl Jav Guptil r '21 an eiloie pictons * Flores lem. jumoies in herbams non frequentes

sertim —aureis lepidolis culultis lurde rusceseimtibus. stipulU uvatu-lanceutatis, amentisfolio dj. . . . lio brevioribus densifloris, fructibus condensaLis dense echinaiis. $ In Oregon, Castanea chrysophylla Hook, journ. 1843, p. 496, Bol. m;ig. t. 4953. Folia perennaiHia, 4-."J poll, longa, supra dense viriilu, subius (ul rami juniores) aurea. Stipula caducaa, Spicae nunc (ex. ic.) androgynae. Styli 3, erecti, subdivergentes, glabri. lineares. Fructus secundo mnn maturesccntes.

p, *riinor* (Benth.l pi. Hartw. a. 1S67), frutex, Follfes miDoribas basi mentis v«l obtusis. ,1 In California mont. Santa Cruz. Folia 1-2 poll, ioaga 4-8 tin. Ut;i, petiolo l-:i lin. longo, juniom utrinque lepidota* aquainuiis deinde caaentfbua sed)>areucbyma »ubtus adhuc aureum, aerius Fuscescens.Slipul* diu persistentes, linaana loiigae. Lmenta]>abscentia. Bract-ea; minorus, lanceolaue, imerducQ intra Fasclculum Lateotes. Spicse androgynffi. Flores Fem. fascipulat! , bracteis et s[uamia late ovatis cincti. PerTgonium basi except.! pubescens, lobia 6 ovatis biaerratia. Stamina sæ|iius abortiva. OvnLi in singrulo loculo f Imsi adscendentia. Invulitcra plura in mansam echinatam concreta. iculei e trmico rumniuni lenifluto-puberulodiverKenles. Nuees (ex Denth.j parvæ, tmft fere maturfl ^nmiemtsrsii, subgloboao-triqui etrá; ex apeetmioe h. Boss. 2 ½ Lin. longa -Jim. latæ, pallidffi, glabræ, spiiiis involucri palentis lupemtss [v i' ic). **D(. el Boiae.j**

3, C. oouCnou (Alph. DC. 1. c), ramulU mflorescentftcpie Incano-tomeiitosia Fotlia B bui acutfl oblongo-laneeol i h acuminatis integerrimis coriaceis supra glabris subtusuicauo-toaiento»is,amfinli8 densiQDris folio sab»qualibus. bracte.»elliptiowflore masc. duplo brevioribus, perigonii 5 6 partiti Lobis eUipticis'pilosw fern. brevioribus,fructibusgl(»bo iculeis e trtmco coiih

I f.tia. k, ou. ruim.i *ymi*. IUJI^.K y nil. laia, pOLIDJO *2-6* Ull., nems S(jfUii'l;i utriiiifUG 12-15, venitlia incoaispicuis. Stipulaa subula mUi plura, I •; 2 poll, longa. Sptcse Fem.paui i. Styli 3, lineares, obtuuii Fructus demura v.ilvjinrn biana; puce glanitiformi, depresso-glo- .i, unicA, pilis adpressU caducia conapersa, iijvolucrura non superante.

4. C. COSTATA (Alph. DC. l. c.), ramulis junioribus et inflorescentiâ furfuraceo-tomentosis, foliis e basi acutâ vel obtusâ ellipticis vel elliptico-oblongis vel ovato-ellipticisacaminatia \A contundatis coriaaeis supra glabrescentibus subins Bordide ochracfiis Btellulato-tomento spicis femineis subajquiililms, fasciciilis llonim sparais JM-<floris, bractea inf acutissima, Enictu.... /> In Sumatri. Castanea cosiaia 1, p. 284. ijntamia l)fcv^»i|>it Alia- (1. i"d. tot. 1, p. K(l V, sp"ecta, bilis id. itrTnionenie *M* I»SM I, MUS. L. B. I. p, 120. Kami validt, Polia :)-?> poll, longa, 1-4 poll, lala, petfolo :i-ii lin. longo velntind, nervis latRralibiis utrinque 11—17 valtdis, LertiariTs proptet ioduin 3-5 poll. Ion tffl. Flon tinereo-tomentosi. Styli :] lineares. involucrum paulo Bupemnlw, iv. s.a Mus. Lugd. bat. coiam.)[1]

—o. C. TUNGUHBUT (Al|i|i. DC; 1. CI.TMUS JumortbtMtenutter lulvo-velatinis foliis *a* basi rotundata vel acutiusculft ellipticjfi vel elliplico-oblongia acutis ibris siil'• • rulia demum gkbrai is, spicis pubescentibua, BoribiM masc. solitanis ternatisi i, h, acteis ovato-acutis, perigoni i 6-partiti lulus •vato-e Uiptieis pubesceatibus, tl. fem. •olitariis sparsis, fructibufl echinatis globtais tnonospermis, aculeis extremitate i exceptâ adpresse serii fltibusaitupltctbus aut a basi divisis. flnJava (Blu Zoll. n. 780). Ca .,.,.,• ulume! Kjdr. p. 525 H Viv CUDUJ *o* V t. 22. non Wall. Folia 2J-5 poll. \-*[poft. la . ,, hn'. I.,' -us fiaveacenti-ciiierea, in nervisprjesertim juniorapiibei Sjticafoliisswpius*r[ua]"s aul lt»gior€». Floras Fem. saepius ribus **efuetis induiis (B.I.). Fructus omnino C. argenLeae, nuce famen u • miico. Castanea Tungurmt Wall, lisl 2763 , e Penang, div. Bp. videtur es specimine mi!n propter Eolia min,ora. petiolam breviorem et paginate inf lolii**

k

magis tomentobam, bed mi hi repugn species ex iniperfectis specim condere (v s)

b C BURUANA (Miq Mus Lugd bat l, p 120) ramulis petuhs folnsque subtus praeseitim in neivis pubens, tolns e bisi acutà elliptico \el sublanceolato oblongis latiuscule acuminitis mte^ernmis neivis later ilibus utnnque 10-12 spicis fern folio subbrevionbus, fructibus ovoideis squimis conicis acutispi tcntibus spinisjue mteijectis glabns ^ In Moluccaium insuli Boeroe (Te>s mann) Petioh circiter 6 lin longi Limbi J i-6 poll longi, 1J-21 poll lati Affims G. Tungurrut

Tt C JAVANICA (Alph DC I c), lamuhs junuiibus subtomentosis, folns e basi acuta vel angustata oblongis \el oblong)-lancejlatis acuminatis integris co naceis, junionbiis utnnjue pilosis, adults supn glabns subtus ochraceo sublepidotis demum ^labratis, spicis ochiaco-cancscentibus, fl masc solitaius buns tunisve, buUus late suni-o\Uis obtusis pengonu 6 partiti lobis ovahbus extus cantscentilj^, fl fern spaisis s lilanis, fiuctibus echinatis globosis raonospeimis, iculws txiremilite except! alpresse sencus subul His fasticulato-iamosisi 5 I" $J^{n\#E}$ occid sjlus altionbus Castanei ji\inica Blume[f] bijdi p [r]>2), fl Ja\ Gupul p Vi, t 23 F)lia 2-4 poll longa, I 1 J poll lati, petiolo }-4 lin longo, saepe 1 ilcato-recuna et conduplicíti, pilis lon^uisculis solitams in folio adulto iaro et non nisi in ner\o centi ill vidtridis Stipulde petiolo subbieuoits, o\ ilcs, obtusae e\tus senude Sp (» foliis circitti «equales m&siul'e, bisexmles vel femincfi f<iu(tus pollittni latus (v s co mm a Mus I ugd bat)

fi, *montana* (Blumc' 1 c t >4), folns PI^I lon^itu lineni paulo lationbus In Java — Castann raontana Bl bijdi 10, p S26 (v s)

8 (CASTANICARPA (Spach hist veg. phan 11 p 185), lamis junionbus pu bescentibus loins raa\imis» e basi subacuta oblongis vel (bovato-oblongis acu inmatis interns junionbus , adultis supia. glabns su))tu«, neivo pilosulo cPteium ,,libiis fl misc , spiois fern pubescentibus, flonlms teinis vd ran us sol mis altunis dissitis bractel inlcnoie lmctolati acuminild ptn gonium tejuante, involuoio maturo globose d(IISL *t* hinito ikmiim fiss) ^ In Chittagong (Ko\b Hook f et lh) yueicus caslinioupi H)\b pi Corom 3, p 2)6, Wi^hl IC t 769 Cistanei Koxbui^hu Lmdl in Wall pi as rai 2, p 0, HJJIC 1 ct Hi' exs Folia nunc ped ilia, sajpius 8-10 poll longa, 3-5 pill lati petiolo 4-5 1 in lon_n^r) pdosul> membrnicea, nervis se Liindmis utrinqiK 10 1 l,tortianisleticu iti«» polluc nils pilis in nei\o nnniauo paucis solitams bpica lem ex specirn mo 4 poll 1 u^i IVn^onmru lobis ob tusis G(an sempei) Stamini stenlia lobis iltein i ctopposita Styli3-4,eieoti, lineares, bisi pilosuh, ovario deqiidleb Quietus (ex ic) ruh, cum involucro 12-lilm lati, aculeis $lon_0$is (\ s acl Hook f comm.)

•9 C HYSTIUA (Alph DC 1 i), ram s jumonbus adpicsse pilosis, loins e bisi obluscMel acutius ul L elliptins oblm^svt acuminitis mtCtjiis apicem \eisus interdumundulato lcntatiscon iceisjunionbussubtus fulvo toraentosis,adultis ulvlabiitis; uncnlis ,liuctibus id lpiccm pcduncnli ngidi pduus ^lobosis involucio spinoso dense echinatis aculeis i bisi ramosis hnean-icuminitis tiLumine excepto sniceis 5 1» mini Indiepun Musia, alt 2 iCCO ped Miq Ann Mus L B I, p.l19 (astinca Hys»ln\ Hook 1 et Ih » (non Quercus Hystnx Koith) *h* ilia in specmiine urnco 3-4 poll lon^a, 10-11 lin lata, j)t tw)lo 3 lin longo, acumine sTpius ybtuso, nerus lateralibus utnnque 10-11, tertiarns vi\ distinctis idulti sukus quasi fo>tolata ex liidumenti flaves oentis $vesti_n$iis Fructus pjllucm lati, cliusi, aculeis unlique tecti Aculei >-6 lm longi (v s in h. Boisb)

•10 C. TRIBULOIDES (Alph DC 1 c;, ramis junionbus et inflorescentià fulvo velutinis, foliis e baM saepius acutl lanceolatis \el oblongo-lanceolatis acunii natis pilosis, ddultis glabialis spicis elonguis eiectis uniscxuahbus, fl *masc* integns, jumonbus supra glabns subtus passim pilis adpiessis sohtmis **leinitisve, bracleis fasciculi ovato-acutis mlenore majore, tl fem ternatis** intia biacteas obtusissimas, fructibus ovito-globosis involucro spinoso echi nitis aculPis ebasi liliuscuh injustatis acutis letlis uit subicuurxis ap^

e\cepto \elutinis siniplicibus aut d basi divisis demuni distantibus et saepe \adentibus. *5* In Nepaha (Wall ' Buchan), Sikkim et Khasia (Hook, t ' et Th)> Chittagong (Ro\b) Qucrcus tnbuloides Sm in Rees Cycl n 13, Wall» exs ohm Caslanej tnbuloides Lmdl in Wdll pi As iai 2, p. fa, Wdll' list 276ri, Hook 1 lexs Quercus armata Roxb pi Corom 3,t 2%, Don piodr fl nep p %, Wight ic 770 Quercus ferox Roxb fl md ed 1832, p 640. Wight ic t 218 (Roxburghiana) C aimata Spach hist pi phan 11, p 185 C sphaiocarpain Wall pi As iai 2, p 5 Castanopsis aimata Miq Ann Mus L B l , p 119, sine descr Harm cito gkbiati Tolia Upon longi, 0-18 hn lata, peliolo 3-4 lm longo, chaitacca, neivo subtus tarde glabiato, acumine (in eod ramo) acutissimo vel obtusato Gomraae sencpae Spicae folio longiores, iasciculis florum disntn Bracteas 11 masc pongomo 6-partito bieviores Fructus 8-10 lin latus In%olucrum pnmi anni merrao, senus valde echinatura, aculpis tandem lere dehcienlibus (luptis), nregulantei dehiscens, scPnius monocaipurn Aculei in iructu matuio ma^is distantps, ex ic Roxb et WiRhtn ot uno c specimine Khasyas a cl $ook^omm. 2-3 lm longi, m alns 2-4 lin (v s.)

Ml C ARGENTEA (Aluh DC 1 c), iamis junionbus glabnus(ulis, folns e basi acuta vel obtusa oblongo-lanceolatis acutissimp'acuminalis miogns glabns subtus pallidionbus, spicis 1U1VO-\P1IUIIIIS crpUis umsixualibus, glomerulis masc sparsis 3-1 flons, biactcis ovato-acutis pubuulis, pengonn 6-5 partiti lobis ovah-oblonKi** lasciciilis l(in spaisis J-l-floiis, bracteis ovato-acutis, pubeiuhs, pengonu b-jpuMti lobis ovah-oblongiSj Iasciculis lem spaisis \ flons squanus ovato-iotundalis, Iructibus cchinilis globosis i-1-spermis aculeis eurpmitatp PxcpplA ad|)ipssp sencpis longituduip vananlibus simphcibusautalnsi divisis *$* In Ia\.\pt ad Rangoon ipgm Pegu (Wall ') Oastanea digprirpaBlume' bi|dr 10, p r)25, fl Jav Cupul p 40, t 21 Montzi'pi jav c\s 807 OUPICUS (CasLmea^) .ugyrophvlla Wall « list n° 2788 (ubi gall* globosjj sjepp adsunt) Folia 3-7 poll longa, \-*l* ' poll lata, petiolo 4 10 lin longo, subconacea, subtus Iprc aigcntaU, nprvis sccundams subtus \alidis, Uitunis lpliculatis Stipulae linpan-lanceolatae, J-r) lm longae Spica» lon^H vinibilps, saepius iolio sublongiorps, nunc breviores Fructus secundo anno tchmalus, pollicem Pt ultra latus, spmis dense acenatis, majonbus 5 lin longis, \ n IP flpxis (v. s)

fl *Marlabanica* petiohs brcvionbus — Ad Amherst Indiae or Cistanea ' 'banicn Wall ' list 2764 J nidus sirnilhrai Flores ignoti *olia simillima, pctioli piulo bicMoris, 3-4 lm longi (v s)

10 C. *CHID\OC\RPA (Alph DC 1 c), rarnis)unionbus glabns, loins P baM aouO \ol subauiti oblongo-1 mceolatis aciimmatis intpgns \pl apicera \eisu'» l-3-dent«itis junionbus subtus ipnuitei pubciulis adultis cito glabiatis,anientis spuis íPinincis Iolio sequilibus, tlonbus solitams, bracteis lotundatis iructibus L'lobosis cinprpo-volutmis monocaipis, aculpis tonicis acutis subsoarsis bievibus simplicihus cxticmilitp glabns ochinatis *fr* In montibus Khasia- alt i-o0OO ped (astanea echidnocaipa Hook, f » et Th incd in \\ Bmss (!stanoPs.s p[h,nocaTi MKI Ann Mus L B 1 p 119 Folia pleiaque \ poll longa, 8-12 lin lata, potinlo 4 lin lonpn, subtonacea, nervis laiprahbus utnnqup8-IO tertiAiiw minimis idiculatis atumine auiHssimo vel (m eod ramo) obtusiusculo denticulis (ubi adsunl) ultia medium sub acumino sitis. bpica> lem iecta», spcundo anno ngidae gl ibiae ITUCUIS alleim, plurimi, in spocirame nondum matun, 6 lm. lati, aculpis >-l hn longis, leotis autsubiecurvis, subvprticilbtis, basi piaecipm mtei \eititillos segrpg^itis Styh 3, bre\es, mvolucrum vi\ supnrantps I*x aculeis conicis brevibus acepdpre \idetur ad sectionem (allaeocarpum et tamen specirs (tnbuloidi proYinia (\ s)

Section CALL/EOCVUPUS *Alph DC in Seem, journ* 186J, p. 182. — Genui CaUaeocupus *Mtq plant Jungh* l, p U, *fl Tnd ha t* 1, p. 868 *{ercl* vyn) ***Ann.Mu* I B . \ , p* 118.**

Involucrum fructus globosum, indehiscens[9], nuces conaceas 3 continens, tubeicuhs subconicis cnstato-aggregatis per tres aipas nunc dispositis oxterne

iDstruttuni (Miq fl. Ind bat), sue iaciebus tubus prommenlioiibub cnstifens, cnstis haud dltis oblique* hon/ontalitei pei series dispositis, earum tubeiculib ovab-conius bicvibusobtusis (ex Miq pi. Jungh) lubeicula imolucii proxmid dculeis pnesentis generis Mdentur, nee squauns Queicuum

V\. C. SUMATRANA (Alph DC. 1 c), lamulis junionbus glabns vel slellato-pubpiis cilo gldbioscoutibus, loins o bdsi acutà (Uipticis vel elhptico oblongi acutis \el obtusatis liitcgeiinnis conaceis adultis oiinuno ^labi is supi.i nitidis, flonbus masculis . , iemmeis in alus spicis tematis, fiuclibus subglolx)-sis 3-spernns evtus tubncubs subconicis cristato-dggiegdUs instiuctis *$* In Sumitia (allapocdipus Sunidtidiid Miq. fl I c Folia (ex Miq pi Jungh.) 4-6 poll longa, 1 J-2 \ vulgo 2 poll, ldtd bpictf iemiricC 4-j-poll , floiuin lasciciilis lcmolis. Bractea sub fasticulo o\atd, conacea Biacleolde lasciculum cucuniddiitcs, co bievioics, alias pluiis, anpisiioics lin(.iios, pilosulas 111-cludunt Floies sinpruli biacleobs exilibus slipati. Pcii^Miiuin pubcium, oie denticulaluni. Owiium Moculaie StignidUi 3-2, teietid, obtusa hructus **fiolli**-cem cia^sus Nuculas uisUnciloimes, ovoideo-compiessae, unA \ulgo ni.ijoie, peiicaipio pilosulo, Ijasi deiaso PI Miquol, SPIO (fl Ind. 1, p 868), (astaneam glomudUm BluniP, nrc non Omicuin glonieratain I\o\b. et Q glomciatam Will i.uiquani synoiiyiiia hie addimt, sod lllde, quaruni iiuctus non vidit, vtusiniilius «id Qucicuin ldnccdLlolidni et Q. glomeiatam Roxb relerendae vidcutui

14 C HHAMMFOLIA (Miq fl Ind. bat suppl 1, p 353), novellis et folns nascen-tibus sul)tus fuiline slell.ito puborubs dcniuni glabrescentibus, fob is *o* IMSI secus potiolum bi(v(piotiauU (lli]>ticis bicve .icummatis acumuic mucionalo supia nitidis siihtus pallidis, ulioqiic laterp 7-8-costatis, liuctibus |un niii[1]-quilaloio-obovoulcis uiuiiquo ,niucossibus biovibus bievi-piisnialicis albido-tomentpllib niuncatis nassis duns, glande uincA. *(y* In Sumatrà austiah ot occid. nee non Banca (Miq. 1 c et Ann Mus. I, B. 1, p. 118). Qncicus rhamnifolia Mw[fl Ind bat. l,p 8VJ. Potiob 2 3 lin longi. Limbi J '-4 poll, longi bpicaj icm floienlcs 2-i ' poll I<»ngae, tprininalos, ni.isc giaiilos, siiiota?, paiiiculalo-idinosae. Pciigoiiiuin nidsc 6-pdititiun, 12-aiidiuin * disci) **lalo lonientoso.**

Species dubia.

QUFRCUS COOPEIU v Bldiico, sub Qucicu, in sp. dubns rohcta

III. PASIAISKV *Tnurn wit p* 584, *t* 352,*Malpighi anat t.* 'H, *Gxrln fruct* 1, *1. tf(inlam ill t IKXituata), Turpin m Cnaum fl mid 1. t* 112 *et \V2 bi6 (in Diet sc nat ilerata),hees jun in Gen fl. germ fnsc* 1 *cum ic opt, lemaout atlas clem, p* 201, *Aqardh f. thioi t* Id, *f.* 10 *et* 11 *[dcoiulo)* — lagi sp. *Linn, gen ed* 1, n. 728

Flores mascuh in amentis fasciculati, saepius ternali, bracteis cincti. Pengonium saspius 6-partitum, regulare. Stamina 10-20 (s<Epius? 15), fil imentis exsertis ^racilibus, anthens minimis subglobosis biloculanbus. Pistilh rudimentum nullum. Flores feminei intra involucrum plures, saepivs 3, nunc sohtaru. Ovanum lageniforme, inferum, saepius 6-loculare, extus intusque senctum, lobis sdepius 6 bisenatis ptngonu coronatum Ovula 2 in smgulo loculo ab angulo supenore pendentia sursum anatropa btyli totquol loculi et lobi pengoniales, pnonbus superpositi, postenonbus oppositi, lineares, acuminati, exscrti, ngidi, basi pubescentes. Fijuctus e\ involucro accreto, globoso, aculeis prater squamas donato, demum 2-4-partito, et nuculis (vel nucula) CdUilagineis inclusis hbeiis constans Semen intra singulam nuculam abortu unicum, ovula aboitiva prope verticem gerens, ianus semina 2-3, panetibus membranaceis tune segregata Cotyledones crassae, fannosce, extus undulato-ruminatae, intus undulate, adpressde. Radiculd supera, intra cotyledones

inclusa — Ai bores in hemisphdeno boreali crescentes, folns hieme orbatae, stipuhs fugacibus, folns s<epius d.spositione £, nunc distichis (conf. Doll fl Bid. 2, p 5^2), dentitis, in vernatione secus nervum centialem plicatis et sccus nervos lateiales subplicatis (conf. ad Henry in nov act. nat. cur. 22, pars 1, t. 28, et Doll zur Erkhr. Laubkn Ament p. 25, t. 21), dmentis masc. ex axillis folidrum lnfenorum, clongatis, fugacibus; andro$_n$'ynis *ex* axillis fol. supenoium, ilonbus inferioribus femmeis, supenonbus in parte c iducâ s »icao masoulis vel sterilibus. Flores f< minei frequcntei stamina 5-10 praebent quorum majora lobis pengonnopposita, omnia inclusa, anthens vacuis Involucrum junius (ex G. vul^an) secus lineas 4 nudas squamiferjm, per floritionem fascicuhs aculeorum extra series s lUcimarum (nee squamae in aculeos mutatcje ut dixcrunt auctorcs) auctum, tandem echinatum Fasciculi aculeorum ideo genesi squamis postenons, singuli junioies brevitei stipitati, lacima mfenore longioie folium[9]), laterahbus et intenoribus bieuonbus.

1 C VULGARIS **(ram diet. 1, p 708), ramis junionbiis puboiulis cito clabratis folus e basi obtusâ vel subcordatft vel minis acutâ oblongis \el ovato-ohlontris** acummatis vel acutis saepms giosso legulantci et acute stiratis nunc dentibus buuonbus smnlilu setâ teiminatib, |iimoiilius supra lcpidoto-nubeiulis subtus extra neivos mcaiiis stellato -pukseenlibus, aduhis supia iHabn subtus in noivis .idpicsse ox longo pilosis aut claims inloi ncnos uicanotoincntosis \d ^labialis, dñionlis ioho bipvioulms clcnsifluiis lmboscPiMibus ilonbus pleusqup fasciculdtis, biiLtpft picEcipuâ ovato-lancoolaU, snicis lem'])aiici[lons, imolucio iiuctus aculeis lon^is ochinato globoso nuccb])auc,is • ndudcnlp ^ Hdb I[1] m hmopA mend et Asia contcimina, nempe a monti-Lus LusiLanidC (Iliol fl.), Gianatae alt 2">00->000 p (Boiss voy), baidinia3 (Moris e 1) Sicili«p, (ictje (Fiaas sjn), I jdiap (Jduhat As rain 2, p 481), Kaidba$_o$'h (b/o\ ') (in lauio uia et culta solum, fide Balans.i n 1000 in h Boiss), ImnetiaBi, usque «id fl lerok ct Tauuaiu (Ledcb fl) Albaniam (Gnseb spic), Styuain (Maly fl), Alsatiam (KnscliI fl), udice, montiiim Hardt (Doll ihein Fl) et Belgium (L(sLib bol bclp), (\Ha *luinc* lineani iaia sparsiin mtioducta <iut olini ficqupiilmi et spuiiiaiica (Alpb. DC geoifi. Ixil' p 687 ct 996), cis lineani pl(iiiiuqiir sjhas constituens, 2° in Alncde'boi' mont Idouyli mtei Bone et Philippevillc, uln nupei detocta, noc alibi in Al gem cognitd (Gosson, Lh Mai tins, \crb et in *lit)* m I dl)i]^li svhas UOIT constituens, ideo loisan olim intmducti'3 m Chin I Jimoali IiccTueiis otsnnrii (BunKeien pi Chin n 349 et sub n. 347), et Japon.a (B. [illegible] 347), et Japon.a (B. [illegible] en))-Norn Duhain, a.b 3 ,p 66, I 19 1<ww rtistanea Lmn sn", 4 6 Eiiffl bot t. 88b (satnaMill diet C \esc,i Gctiln ImcL I 3 Haitiir foisl' 7 p fl. t 19, N<os Ken. 1 c. Koich. ic t 640 Bu.^e • en. 1 <f V BunJema Blume Mus Lugd bot 1, p 284 (specimen VPIO Bimgeanum floui MIIITUI nostiae simillinium, iructus o\ Bunge simillimi) *L* Japomra Blume' Mus Lugd. bat 1, p 285, vai Siba-Kun et canescens (ubi pc LioLi non Jueumes quani in \ar. europaeis) Folia pleiumquc tlongata, 6-S poll IOIILM et 2 poll' lata, nuiif brevioia ct tune jjotius o\ata aut cllinlu i, p< tiolo 3-9 lin In eodeni niiio specuninis lmnetid lolia siipcnoia. Mdi subtus dense (ut \uliro) incario-tomentosa, inierioia glabemma. Vdiu laUs tiillaB, msdtiont IHOIW-gatae, numprosissimae (do quibus conter ad Duliun. 1 c Loudon ub IJ 912 Alirian bon jaid, etc) Mag.s notandae sunt *aiplenufolxa* Lodd ! iol.is dissectisaut liiinan-lancpoldtis, *vanegata,* fol alb,, ^l \$_{at00}$ maculatis et sequens, qu«c etiam spontanea et hciedilana videtui.

fosatua (Lini 1 c), nucuU s«ppius unicâ m.iturescenlo couledonibus valde fannace.s maxirnis - In Cebennis et unde ad ugd dunun dun Z T IIUCr lS niltlUr 1 PL SUb n o m *marrons* [illegible] (Min (in lion jaidin IHfaU) in involucro, Galloprovincia de Lyon ven-

TJ *Americana* **(Mich fl bo,, an.. 2, p 192), folus has, acutis (an semper*), jiinioiibiis utuiiquP lepidoto-puberuliB, adult.s utiinqoe in parenchyma^ glabiib t> In Ammo* sppt. a mont. Carolinje mend. (Frasoi *) art Ohio**

(h Boiss ') et Manic Michigan (A Giav Man , p. 407) G \esca (spec aut ^a^) dineiicini Mich ub 2, p 1 jb t b C amencana Raf new sylv p 82 VaneUis dicitui ab omnibus, et equidem characteres bpecifici me fugiunt Pih longi saepe adsunt in veiso pinnae inf ut in europaeâ Folia latiora divit Mich scd *in* herb m^o non vidptur ISuces dulciores ct minores qu im in vai europeis dicuntur, sed cl Uromheld (in Hook journ 1849 p 2M, T^{U1} 'ibores piopt \iagira observawt, unim et camdem sneciein alhimat, \anetatibus euiopaeis fructibus pan is in involucrn pluiibus simileni (\ s)

ô, *elongata,* folus mediocnbus, amentis elongate folio longioubus — In Japoniâ C Japonica vai elongata Blume' 1 c Folia 3- > poll longa, 1-2 poll hta, petiolo (in eod ramo) 6-12 Im longo, dentibus ut in plensque var japonicis bievibus setâ long I tciminatis Amenta 8-9 poll, longa Ex longit petioli ad vulgarem tiansit (v s)

E, *Japonica,* loins vulgan mirtoiibus, petiolis brevioubus ,5 In Japoniâ tagus Cistanca rhunb fl) ip p. 195 C vesca Blume Mus Lugd bat 1, p 28>, wi quercina', cieniU' ct stucta' G Chinensis Hassk hoit Bog p 73 (fide Bl) G crenata Sieb et Zucc fl jap fam pars alt , n 189 C vesca huctibus maxunis h Sieb (fide Blum) C pumil i Hassk lb (fide Bl) G strict i Sieb et Zucc ib n 710 (vesca Zoll • pi jav sine num Petioli sjepius 3-4 nun., 3-b Im longi limbi saepius 3-5 poll hnffi, iaio 5-6-pollicues Denies pleruinque breves ut vulgo setifen sod in eodcm nmo adsunt uiteidiim loba giosse serrata, et siniilitcr vanat aiboi vulgans ubi liitciduin (in spocmi Imnotne praesPrtim)dentesadsetam lere leducti Anomnes loi ni33 Japomcae spontane3? ° **(v s)**

C, *subdtntala,* folus vulgan. mi non bus, petiohs brevionbus subdentatis nempe marginc sptifcns ct \ix sub setl cronatis aut duitatis — In Japonia C Japoiuoae\auetatesobtccta \ulgaris,lon^ispiniet OokasiBluino ' 1 c C ve->ca Zoll' pi Japon n 170, Sieb hcib (ev Bl) 1 olia margine nunc undulata potiusjudin dentata, setis ut \ulgo dispositis nunc subdentata aut subseriatd dontilius setifens, sed in hisoe transitus ad»»unt ad vai Japonicatn et vulgaiem europaso-japonicam. An omncs spontaneaa ? an cultas[9] (\ s)

ri, *Kusakun,* loins minonbus, })etiolis bievissimis -5 In Japonil G Japonica vai Kusakun Blume' 1 c *bolu* 1 \-*i* j poll longis, C-12 lin latis, petiolo 1-1 ' lin 1(n_n^ro, neivis subtuspilosis, parenchymate glabio, dentibus nunc e seta constitutes nunc (in cod lamo) inagis distinctis cl setifens An aiboi cultuiA conliacta[9] (v. s)

4 G PUMILA (Mill diet n 2), frutex aut aibuscula, ramis. junionbus tenuitcr cmeieo-velutinis, loins c basi acutâ vel obtusâ obovatis vel obovalo-oblongis hlongisve obtusis crenalis a medio cienaiuin icutc cuspidato spiratis junio nbus supia lcpuloto-pubtiulis subtus incanis stf Hato-pubLsLentibus, adultis supra ^labiatis, a mentis lolio subteqiubbus densiflons pub°scentibus, flonbus plensquc fasciculatis bracteâ praL^ipul ovito acutâ, spicis femincis niultiflo-MS, liuctus paivi nivoliicio aculeis niodiocnbus cclnnato globoso nuculas paucas vel' unicim includcnle) vol , in Am(iic\ sept i Hondl (Mitchell'), Gefligii (A Gidy') d levis (Smiths I p 18J8, p *lob)* al P(nnsjlvaniam (A Guj mm p 408) et Ohio (id) —Mich arb Amer 2 p 166 t 7 Wangenh Nordam Hoi/ t 47 (fructus pessime del) Loud aib i 1707, 1708 ridttin \ich t 107 Cistlnea pumila ViIoniani Lilesb Carol 1,1 9 Fagus pumili Linn SP p 1416 Folu 1«-» ranus 4 poll longa, 7-12 Im , ranus 181m lata, nervis sublus stellato j)if JSUIIS demum glabns pannclumate nunquam glabio, petiolo 1-4 lin , scriatuns mm JMIJUS quam in (Mil^in tt polius acuholis(cunis constautibus Fiuctus Cistanpa Mil^au dnplo nunoros, aculns biPMoiibus Squ mi p oblongae Pitentes, ranoies quam in (vulgan frascicuh icuiooiiiin p\tra squamas c vóluti, ipice piassertun fiuctus approximati, basi dissiti CoUledonos duUes (\ s)

P, *nnna,* bumilioi, **folus** fructibusqup m tjonhns ; In SJKJS ‹ICCIS Cnioiinu

mend. C. nana Muhlenb. cat. p. 8G (sine descr.), Kll. sketch Georg. ct Car. 2, p. 614. C. dlniloha Nutt. gen. 2, p. 217. C. pumilae forma Chapman fl. south. U. St. p. 424. SufTiutev 1-2-pedalis, e\ Nutt. et Ell.

Species dubix.

3. C[9] MOLLISSIMA (Blume? Mus. Lugd. bat. 1, p. 286), ramis junionbus hirsutis pihs])alentil)us, folns e basi obtusâ vel subcoidatA oblongis acutis vel bievitpi acuminatis ippunde mucronato-serratis chartacois supid -glabnusculis sublus molliter pubescpntibus, slipulis e basi obliquà lanccolatis acuminatis])etiolo sublongioiibus p\tus adpressc pilosis, floiilms et Ir. .. ^ In Chinâ, undo in laponiam intioducU. Folia 2]-G poll longa, 0-27 lin. "laU, potiolo 2-4 lm. Jongo, dentibus indcqiialibus, IIPIVO contrail supi.i piloso, lateidlibus utnn-quo 12-16 subtus cniinentibus, tcMtiarns crebip leticulatis, pubc subtus m lirrvis longjusculâ simphci, in paienchymalc stellulald. (v. s. a Mus. Lugd. bat. comrn.)

4. C. CHINENSIS (Spreng. syst. 3, p. 8*>6, non Hassk.), folus lanceoiatis denticu- - latis acuminatis senatis piopc basini integcrrimis glabns petiolatis, amentis *1$* filif'ormibus, flonbus femuiPis infenoribus .nongomo 4-dentato, fructu eclnnato plerumquc bivalvi. /> In Cocbinchina[1] sylvis (Lour.) et culta in Chinâ (id.). Fagus Castanea Loui. fl. Coch. pil 8°, v. 2, p. 699 (non L.). C. Chinensis Seem. hot. Her. p. 413, quo ad plantam Louieiri (coni. Benth. 11. Hongk. p. 320), Dlurae Mus. Lugd. bat. \t p. 286? Istms iolium vidi a cl. Bl. coinm. quodpetiolo4 lm. longo, limbo 28 lin. longo, lOlin. lato,elliptico, acuminato, basi integro, ca3terum setaceo-serrato, et inde a Castanopsi tnbuloide (sive feroce) quâ cum jim\it cl. Miq. Ann. Mus. L. D. 1, p. 118, ommno differt.

%. C. INRKMIS (Liridl. in Wall, plant, as. rar. 2, p. 6), folns oblongo-lanceolatis undulatis acutis integeinmis glabns, fructibus subdidymi*> mermibus lasciatim interrupte tubprculatis. — In Singapore? (Wall.) tvt Malacca (Hook. 1. in litt.). — Ex hisce paucis ommno ignota, nee genesis no^tri Castanopsis vi^letur; nisi forsan sectionis Callaeocari)i. *y*

6. C? LATIFOLIA (Blume bijdr. p. .")20), fouis ovalibus acuminatis subtus albido-glaucescentibus in costis nilra ramulisque tomentosis. 5 I[J1] Ja\A. Quercus pruinosii* synonymon ex Blume fl. Jav. Cupul. p. 9, sed postea (Mus. Lugd. bat. 1, p. 292) ab eodeiu exclusa, nee alibi memorata. An Castanopsis? an .uercus

Species non descripta.

C. MICROCARPA Lindl. ex Wall, list n. 3735. Quercim «iciita Ham hoib. — E Goalpara Indiae oi. Vensimiliter Castanopsis.

Species exclusae.

C. ACUMINATISSIMA Bl. *zz* Quercus acummatissima.

C. ARGENTEA Bl. = Custanopsis argentea.

C. DREVICUSPIS Miq. = Castanopsis costaU.

C. CHRYSOPHYLLA Hook. = Castanopsis chrysophylla.

C. CONCINNA Champ, et Benth. = CasUnopsis concinna.

C. COSTATA Bl. = Castanopsis costala.

C. ECHIDNOCARPA Hook, et Th. = Castanoj)Sis ochidnocaip.1.

C? FURFURELLA Miq. = Quercus hystnx.

C. FAGOS Scop. = Fagus sylvatica.

(1. GLOMERATA Bl. = Quercus lanceaelbha.

C HYSTRIX Hook, ot Th. — Castanopsis Hystnx.

C JAVANICA Bl = Castanopsis Javanica

C ROXBURGHII Lindl z= Castanopsis castanicarpa

(INDICA Roxb = Castanopsis Indica

C MARTADANICA Wall = Castanopsis argentea p

C MONTANA Bl = Caslanopsis Ja\anica (J

C SFSSILIFOLTA Bl = Queicus acutissima

C SPFCTABILIS Miq = (astanopss costata

C sPHiERO CARPA Lindl = Castanopsis tnbuloides

C TRIBULOIDES Lindl = Castanopsis tributaries

(IUNGURRUT Bl. = Castanopsis Tungunut

IV FAGUS *Tourn inst p* 584, *t* 351, *Linn gen od* 1. n 728 *(evd Castancd) Gxrtn fruct* l, p 182, *t* n, *Nees jun gen pi fl qerm \c fasc* 1, *Hook jouin of hot* 2, *p* 147, *I ndl qtn n* 1847 *et &uppl* 4 p a n 2, *p* 20, *Schacht der Baum, ed* 2, *t* J, *f* 20 40 *(opt anal), Mph DC in Act we hrlv sc nal]HGk(drnenationefol)* — Fa#us ot Nothofi^us *Blume MM lnqd bnt* 1 *p* H)b—Cdluc(clnnusetCiiusj)ii issus*HombronetJacquwot,'toy aupolesud*

Flores masc solitarn aut capitellati Pengonium subcampanulatuni, 5-7-lobum Stamina 8-16, fundo pengonn acervata, ex&erti, filamenti giacilia, antherae oblonpae, connectivo apice obtuso \el mucroniformi Pistilh rudimentum nullum Florcs feminei 3-2-1 intra involucium 4-lobum Ovinum tngonum$_7$ clongatum, inferum, 3-loculare, apice 6-lobum, lobis feaspius lanceolatis acummatis persistcntibus Ovula 2, in quovis loculo ex angulo supenore pr ndentia, sursum inatiopa St^h 3$_?$ line ues, loculis superpositi, ^ecus umam intorno stigmatosi Fructus exinvolucro accrtto,ovoideo, 4-pditito, basi bracteito, etnucuhs libens constans, lobis involucri dorso squimis aut fimbnis vestitis Nuculan abortu monospermas, sub styhs 3-2-al itae, pencarpio conaceo Albumen nullum Semen apice dissepimenti evanescentis pendens, o\uhs abortivis vertice cinctum Gotyledones crassiusculae$_1$ intus mutuo plicatae et adpressas (1) Radicula supera, subexerta.— Arbores, lanus frutices, in ttmpeiatis utnusque hemisphaBrn (Africa e\cepta) crescentes, cotyledonibus in germinatione extra teiram expansis semicirculanbus foliaccis (ex F syhatica obs) folns alternis, pcnninervns, ca3pius dcnlatis, in vernatione convexis et secus neivos laterales interdum plicatis (conf Henry m ^ov act nat cui 22, pars 1, t 29), nervis lateralibus sajpius ad sinus foln tendentibi^s, stipulis fugacibus, flonbus mas cuhs e\ axillis foliorum infeiiorum, femineis supenorum — Nervatio toliorum in genere et interdum in speciebus proximis diversa, hue usque neglecta, characteres optimos piaebet Nervi laterales quarumdam spe^ierum ad sinus marginis tendentes non nisi in paucis plantis adsirtit, de quibus confer ad notulam meam in Prodr JX, p 558 et Act soc helv 186^ —Flos hermaphioditus (monstiosus) a cl Schinzlem del in Bot Zeit 1850 p 745, t 8, f 1, stamina sdepms 3, epig3na, st}lis oppositi, lobis praecipuis alterna praebuit — Alfinitas Fagi et Qu^rcus adeo naturalis ut semel coadunatio spontanea trunci Figus sylvaticas cum Quercu Robore visa fuisset (Flor serr. etjaid 1851, p 316)

(I) 1 \ > svhatica et F obliquA, sed in F antarctica foisan diversae ex.it Hook ! 11 mt 2 t 12^ In hac specie, ut in speciebus sect 2«, senuna fic- (luentoi iboitiunt m lioibanis Boiss et DC caient, mde et ex silentioauttoruni (hdidctei ddhuc inquiienriug

Sectio I. EUFAGUS. — Genus Fagus, Blumc, Mus. Lugd. bdt 1, p. .106.

Folia cadiva, in vernatione secus nervos laterales phcata.

Involucrura tardo 4-paitituin Styh clongati, doiso pilosi. Antherae glabrae. — Species hemisphaTii borealis.

J. F. tERRUGiNEA (Ait.hort Kew 3, p 362), loins elhpticis vel obovatis basi oh tusis \el subcoiddtis apice acuminatis \el acutis margine (basi exceptâ) grosse vel breviter dcntatis nervis lateralibusm.inifestead dontes tendentibus, ramulis petiolisnerviset marginc loliorum sericeo pilosis tandem glabiescentibus, fructu parvo fulvo subsenceo-tomentoso lacinns lineanlms lonuibus mferiorinus reflcxis medus patentibus vel ioflexis supiemis orectis vd pdtcntihus /) In Amencd sept d Novo Brunswick or Ucuin Winipep (foopoi in Smiths rep 1858, p 256) per Nov. Eboincum (Gray'), Ohio (Mathes' n. 7, in h Boiss), Tennessee (h Boiss »)> usque ad Carolmam mend. (Frascri b. DC), et Flondam ((hapm H s st p. 4^5), MX ultra fl Mississipi progrediens (Brendel trees Him p 11) — Michx ail) Am 2, p 174, 1 9, loud enc trees, p 909, 1.1697-1099 *V* sylvatica Linn sp (quoad spec Amer) F. Americana latifolid Wangonh Forstw p. 80, 1 65 (folium). F. sylvestns Michx arb. Amer 2,]) 170, t 8 F sylvatica Amencana, loud enc trees, p 907, f 1695 F iolundifolin Rifin herl) p. 22* F. alba Raf new sylva p 80 F heUroplulla id. ib * F mgid id. ib '> hmeisun iep trees Mass. p 158 Dimensiones foliorum, pedunmlorum flui unique ut in F sjhatica, sed liuctus minor (4-8 lin. longus) An a nostra sylvatica sails diversa, ut pluies censuciunt nonnndtim vir in hiscc ingemosus Bromfield (in Hook joiun ui hot. 18^9, p 112)[9] Folid dibons amcricana* saopius majoid et magis acumiridta, saepms grosse et semper acute dentaU, nunqu.im obtusa,nec conacea. geiontogeae interdum grosse dentata, interdumque non ngida, quoad foimam in duabus nonnunquam simillima sed nenatione divcrsa (quod nnndum obs.), in praesenti ad dentes clare et recto exlensa, in sylvatica ad dentes obscuie vel oblique et fioquonter ad sinus tendente Lignum peilectumin amencand, e\ Lmerson 1. c , ab alburno diversissimum (dn constans^), in eutopasa lignum ct alburnum subsimilia Color ligni vanat m Amencana *ex* Micbaux, quod negat Emerson Fiuctus in speciminibus meis el h Boiss., ul ex IC., minoi in amencana, num vero characteres e lacinns seoun non allumare audco (v. s.)

2 F. SYLVATICA (Linn, sp p. 1416, excl. loc nat. Amer.), loins elhpticis vel obova tisbasi saepius obtusis apice pleiumque acutis maigine undulalo-dentatis, nei vis hleialibus ob»s< *me* et oblique voisus dentes summos extensis vel ad sinus margins UiideiUibus, ramulis petiohs ner\is et margine fohorum senceonilosis tandem glabioscentibus, fiuctu fulvo subsenceo-tomentoso lacimis Iine.nil)us eiectis \cl pateniibus paucis basi reflexis. /) In IHinopA, a monl Hispanidj sept , Corsica? (Sails in Floii, 1834), Sicilia\ Caucasi et Talysch (C. A Mey Voi/ 44) usque ad 54^ grad in Scotia, 60°20' in Noiwegia et inde sc cus lincam obliquam\ersus Bessarabiam et lauiicaui, de quibuset de bistona sp. iuse disserui in Gcogr. hot. vol. 1, pk 1, et in fitud sui l'esp. in Bibl iiinv. no\ 1862 et Ann sc nat. ser 4, v 18. — sebk. Handb. t.303,]]n«l bot. t. 184G, Fl. Dan 8 t. 1283, Swensk hot. t. 361, Hartig loistl t 20 et id I 25, f. 56 (de ovulis), 103 (geirnin.)* N[f]>"v Duham 2, p 80, t. 24, London emycl p 908, f 1696, Dieti. H. boruss t. 819, Necsjun. gen fl germ, lasc 1 (tab opt), Roich IL. fl. f^enn 12, t 6*9. Castanea Fagus Scop, fl Cam Faj-us s>lvcstiis(,d»itn. ii. |, t 37. Petioli 2 6 hn longi 1 inibi 1-2 • poll, lon^i, <)-l8lin.lati,ncivislateial<bus ulmi(|ue5 '), piope cMiemii item fcllu ad dentes sct'pius lcndcntibus, alibi vel ad dentes obscure et oblique vel ad sinus claie *vt* rccte extensis[1] Pcduncuh folio breviores. Fructus 9-12 lin. longi. (v. v.)

fi, *macrophylla* (Hohen. on pi. Talysch, p 29, sine desci), folns 6 poll longis, 4 poll latis — Lodob fl ross. 3, p. 593 Specimma mea Caucasica folns solum donata, limbum amplum, 3-4 poll longum, tenuem nervislateialibus utnnque 9-14 praebent An lormae caucasicse europaei^ unquam similes"> An ad \ar. Asiaticam refciendae >

Y, *Abiatica,* lacinns infriioifbus et mcdns fructus hneanbus \el ligulatis et obovato oblongis, supreniis (ut vulgo) anguste lineanbus — In Asiâ minore (Tchihatth » 781 in h BOJSS), mont Phrygiae (Balansa') 1857, n. 130, ib et 1858, n. 1141 in h DC), Ghilan (Auchcr' 5325 in h Boiss) et in Japoniâ ad Hakodaki gMlford' in Loudon enc. 1. 1692, 1693).

ð, *quercoides* (Pers. in Trans, linn soc 5, p 233, t. 11), cortice tessellato-sulcato. Aibor unica piope Gottingen, progenies hybrid* supposita Quercus pt Fagi.

c, *colorata,* ligno et loins coloratis Subvanctatcs pluies hortenses adsunl nempe *purpurea, cuprea, vanegata,* et una spontanca, prope Roveredo (Facchini' 2J27 in h Boiss.) Prdecocior c\ horto meo.

£, *heterophylla* (Loud, enc t 1692,1693), folns vane incisis vel laciniatis Formap omnes hortenses vulgo F. *heterophylla complonuvfoha, laciniata, aipUm folia, incua, salicifoha* dictaj.

Y), *enstata* (Lomℓ. enc. 1 lfa(')4), folus cnstatis cnspis fasciculatis parvis Vai. hoitensisnunc F *enstata* vocata.

0, *pendula* (Lodd. cat. 1836), iamis pendulis. In hortis culta. Ff pendula hortul.

3. F. SIEBOLDII (Cndl gen. suppl. 4, pait. 2, anno 1847, p .20), loins e basi subiolundfild \el subcoidatâ o\atis apico dcutis vcl obtuse angustatis obtuse crenatis ncivis lateralibus ad sinus tendentious, lamulis petiolis et margine loliorum senceo-pilosis tandem glabrescentibus, flore et fr .. J In Japoniâ. F. ienugmca Sieb in Bat. Verh 12, p. 25 (non Ait) F.crenata Blume ' Mus L. B. 1, n 18 (anno 1850), p 307. Vidi sppcimina loluicia «i cl Blume comm quae crcnis re gulanbus i specimine poilecto Iructifeio japonico supra ad K sylvaticam iclato diffcrunt. Folia petiolo brevi (1-2 lin) ut interdum Fagi nostra, nervis later utnnque 9-10. (v. s incompl.)

p, *procera* (Bl.' 1. c), folns majonbus ^2 J -4] poll, longis, 1 ^-2} latis) ob tuse crenatis ^el lepandis, petiolo 2-5 lin. (v. s. iolnf.)

Y, *undulata* (IUJ I. c), folns mmonbus (J-2 poll, longis, 1?-2^ poll, latis), petiolo 1-1 \ lin. (v. s. folnf.)

** Stjh brevioies, glabn. Antheras m quibusdam pilosae. — Species in hemisphaeno austiah omnes crescentes, sectioni 2 affines.

\ F. OBLIQUA (Mub. m Mem. Mus. 14, p. 465, t. 23), folus ellipticis vel ovat^ obtusis irregularitor duplicato-serratis nervis later, ad dentes praecipuos tendcntibus basi Integrâ acutis vcl obtusis utnnque in nervis pilosiuscuhs, pengomo masc late campanulato sinuato-lobato, anthens obtusis filamento longioiibus versus jpicem pilosis, iiuctu o\oideo squamis ovato-lanceolatis non patenlibus apice subexcuivis et integns vel denticul«atis, nuculis inclusis ^ In Chili (Dombey' 932 et 934, h. Mus. par), mont. piov. Valdiuas (Philippi' 68, [ptblcr 548 in h Boiss), mont. Antuto (Poepp ' in h Boiss), San Fernando (Bert.'2(>7), ad (alchagua (Philippi')pt iorsan usque ad Jioluin Magellanicum (King in Hook. t. fl. antaict. 2, p. 347). —Hook, journ J>ot. 2, p 155, Gay fl. CJnl 5,p 388, Pa3pp ct Lndl nov gen 2, p 68, t. 1<J8, B (anal) Vulgo Roblc. Rdinuli puboscentcb Petioli 1-3 lm. longi, puboiuh Limln9-18 hn. longi, 4-9 lin. hti, junioics sul)tus *m* paionchymatc pubescontes aut glabn, dentibus in (od lolio \aiiantibus, nunc simplicibus, sscpius 2-3-den!icnhtis, minonbus acutis, majonbus olUusis, ncnis lateralilius uh mquo 8-ᶜ) lecte ad dentes prjrcipuos tcndontibus Podunculi 1 flon, 2-3 lin longi, pul)oscentes Cupula masc 2-2] lm lata, lobis obliisis vcl -uulis puboiulis SMmina 30-40, fill HKMitis subpilosis, anthens *I* lin longis Fiuctus 3-4 lin longus, 4-parlitus Stigmata 3, patcniia, bie\ia Antheide in h?onp nimis pilosae (v s)

p, *Valdmana,* loins mmonbus crrnato-dentatis — In prov. Valdiviae, ad foridl (PlnlippiT) K Valdiviana Plnl ' mod. 1862 Incolis Roble Aibuscula[9] ex ramo obs tolia poll longa, cienis simplicibus obtusis, ut in foln*[5] quibusdam F oblique in h Boiss vidi (v s)

8, *vnacrocarpa,* nuculisvalvas superantilms - In mont Aculco F procera Philippi' in h Noiss (non Poepp et Endl) Folia (ut sa?pe in a) lo)>ulis ro tundatis m.ijoiibus undulato cionata ticnis hisce niegulanter J-4-denticulatis ISuculap \ahis inteidum dimidio lon^iores, nee aequales vel sublongiores An ex matuntate peifectA? (v s)

e, *macranthera,* folns siibtus in paienchymate magis pubescentibus, anthens longionbus — Prope Chilian. F obliqua Germain' exs Antheiae lincam longa?, nee *I* lin ut in alns Fructus ign (v s)

f> F ANTARCTICA (Forster in Comm Gott 9, p 24, et ic ined in Mus Banks), folns ovatis vel ellipticis oblusis basi subobliquo tiuncatisul mgustdtis^ me dupliciter dentatis vel crenatis nervis lateiiilibus ad sinus tmdoniibus, supia glaWscentibus, subtus margine et petiolo\anepuhcscentibus, pengoniomasc infundihuliiornu ol)tuse lobdto, anthens elongatis mucronulatis iructu ovoideo tquamis dorso \alvftruni unisc rMtis adpressis io(und«itis cilntis, nuculis puberulis -5 A Chili mend montibus usque .id input Horn — Hook louin bot 2, p 140, t 6, Hook 1 fl antarct 2, p 148, t 12*, C Gay n" Chil 5, p 392 Cdlucechinus anUrctica Hombion et Jdcquin in Voy Pole sud Dicot t 14 et CalucPchmus Montagni ib.,Monoc t (> (fido Hook f) F MonUgnei Plulippi in linn 29, t 4i Potioli]-J lin. longi,r)91m liti Rami in hubarusaut masculi (iiit lominoi pPMKoniiim »>i< J-Jjlin longum, siib-"i fidum, margme pidfspitim Inbomm pilosiusculum Anthri.p plus minus exseiU , ^labia , fila mentis longiores Fruttus mitio9 socundi anm maturescons, solit.iims, 'sini. longus, 4 p.utitus, pedicollo minimo Pubes fol e\ ic Hook non cognitd duplex ost Inde et ex foiina limbi \aiiet«itos aut wmationes soquentes

a, *sublobata,* folns uiidulato-paiiti-lobiitis pidPtoioa crebie dentatocienulatis, petiolo et p«»ginà sup ^«il>ipsuentiliiis, p.nenchymdte subtus glalno, nei\is veio pdis adpiessis longiusculis vestitis, marine pubeiulo — In Hermito ins dd caput Hoin (Hook i.I in h DC ct Boiss.) Lx icon cit Hookenanis transiie vulctur ad sequentem (v s)

P, *bicrenata,* folIis ro^uldntoi bic irn ilis, pilis (lebnoiibus similil)us. — Piopp Sand\ point (I c chloi' pi Migcll 1060, (\(1 specim in mont Chilian) (F" mimdio Poepp e\ Phil in h Boiss '), ibid (Germain'), m (ditionbus f lull dusti (Ponpp ic) F pimiilio Pcr]>p el l.ndl nov K^n. 2, P G8, t ()o> (iibi floies et fr ign , pubes ign , et Jolw ustn. plicatd e\ descr , non plicata in icone) F alpina Pospp ' n g(H m li DC (mdinfeste ad sudin F pumiliomm, nee ac alpmam relcionda) 1 olia piiTcodonti niinora, neivis latei llibus iitnnqup 4-b (nee 3-S) ad sinus bieves tendentibus lohulis enwirKin His Inlei pilos adpressos latent pili pauci breviores, unde liansitus dd *sn*\ AibusdiU delormata, frutescons, in cdilionlms, et tune F pumilio Pnnpp vocata (v s)

Y, *uliqinosa,* folns margme undulatis ciebic cienuldto dentatis iitnnquc piaesertim in nervis subtus petioloque tenuiter pihserectis minimispubescentibus —In mont de Ranco (Lechler' pi Chil 2%4 et Huite n 757), Chilian (Germain'), pmv Valdi\ia3 (Phil f) F dntirctica Lechl et Geiiiiain exs F uliginosa Phil ' olim in hcib In uli^mosis et turlosis, ubi saepe.idest, arbuscula, loins parvis Neivi utroquc latcre 4-5, ad sinus M\ distinctos tendentes (v s)

6 F GUNNII (Hook fin Hook ic t 881), fiuticosa folns lite o^ato elliptius ol>tusis crenitis s(tus nenos literales sul)tus costitis neivis ad sinus manileste ttMidcntibus, jnhs adpnssis supiaspusis evdiiescentibus subtus m nervis peisistentibus alibi nulhs, fl misc , lructibus sohtaius ovoidois, lobis doiso sim phci sene lamellatis, lamelhs imbncatis late ovatis obiuMiiscuhs maequahtei sinuitn-Linulls :> In editionbus montium Tasmdnia- (Hook 1 Muellei') — Hook 1 n l.isin 1, p 346 Fiulc\ habitu F antarcticas, lamis tortuosis in tricatis, lamuhs pubescentibus StipuKr lanceolate, ^labirf[1], bdsi gihhososicc.ittT Petioh i 1 lin lon^i Limbi "> b hn lonpi, 4-S lm lati, nervi Literales utnnque s«ppius 6, ad sinus Uare et constantci tendentes, plicatura secus nervos post >einatiorjem persistens. Nucula3 3-alatas, glabra3 (v s sine fl nec lr)

7 F. \iPiNA(Poepp etlndl no\ gen 2, j) 69, t 196,198,A), ramulis petiolisaue iuho-pubescentihus, loins o\ato oblongis obtusis vel acutis basi lotundatis irregulcinter serrulatis utnnque pilosuisculis, ncnis crebiis initio et prope extremitdtem loin recte, dein et in majore paite loin ad sinus tendentibus, fl masc iiuctibus aullanbus subsessilibus biacteis amplis 4 basi amplexis, squamis dorso vahaium riehns superpositis oblongis pubescentibus maigme glanduloso-hmbnatis, nm ulis luitis ; In montibus elevatis Chili australis fid Antuco — Pcppp ' exs 711 Folia appioximata, pctiolo hneani longo, limbo 7-12 lin longo, 3-6 lin lato, nems utioque latere H 14, pigina sup glu tinosa (Poepp), denticulis mine alieinatim mmonbiis Pedunculi fructus \i\ lineam longi Bractereveiticillatd, elliptic* ut pedunuilus vclutinae, \±, 2 lin long«e, uhato denticulate Fiuctus o\o\deus, /i[r]> lin longus, \alvis 4 bracteis oppositis Squanur ciebnus quain brae tea glandulis stipitatis nunc ramosis ciliatde Species raagmt biactcaium liuctus insigms (\ s)

8 F PROCPRA (Pnppp. et Endl gen. 2, p 69, t. 197, non Philippi), folns oblongis basi magis quam apice rotundatis petiolo bievissimohnto duplicato-serratis crcnis majonbus { ^ donticuUtis supia glalniusculis siibius puboscentibus marginc cihatis fl *ot* ii *J)* In (lull uistiahs montibus ad Vnluu) Aiboi excelsa, vulgo Hauli Dcsciiptio et icon supenacua* quoniam sine tl et lr spetios non distinguondcE. Bolia majora qu.un in all is, usque ad 4 poll longa — Nil m herb Uoiss ct moo iepen ad iconem appiopinqmndum nisi spoil mi na Jochlci 29bS o Raiuo Pi huiluuum, ubi folia itom simillima, ni.i]oi.i quam in I dlniiia scd nonatione, dontirulis et pubo similibus, liuttibus))lens([uc ii acinus punttis et deloirnatis iinico (b Boiss) huctu F alpina[1] simili Indc F. pioteia loisan Aanelas macioplijlla alpnue essct[2] aut alfinis sp [9]

section NojuotAGUs — Genus Nothoragus *Blume Mus Iugd bat*]ip J07

FOIL.L peisistcnti i, in \cinatione secus nervos literales non plicata — L \ hemisph IM IO austi ill.

9 1 DoMBrvi (Mnh in Mem Mus 14, p 4(>7, t 2M, folns elhptius ovatis vel oblongis ulnnqiio acutis \el obtusis conaceis seridtis glabns bievi-netiolatis nems hteialibus ad dentes purcipuos lendentibus, cymulis mast loiio multo bievionbus, pengonio late infundibulifoimi obtuse 4'> lobo, anthens apice calloso mucronulfitis, fruttibus solitams a\illa.nbus, involucn 4-paititi lobis oblongis 2 3 ljcimalis nuculis angustioiibus et brevionbus J In ^[m]^ [dlls] tiall, cnui (onception (beimain'), in prov Valdi\ia ad ni\es perj) idscendens (Philippi[1] pi Hohen. (>()') ct j)iope maie (Iechlei' ''>82 in h Boiss) Vulgo Coygue — Hook |ourn bot 2. p lYi, Pcepp et Endl no\ gon 2, J> (>9. Scm])eniions, folns tamen initio sccundi anni cadivis Kaini)unioics. petioh nervique)unioies tenuissime \elutini et MSCOSI Folia (» r> lin longa, *A* 6 lm lata, j)etjolo 1-2 lin , subtus passim gJanduloso-punctdti, nonis socundanis])iucis p ii nm dislinctis, \enis tichns icticulitis, in sicco ominentibus, dentibus obtusiustulis J loies lucvissime pedicellaii Masculi pengonio lincim longo glabiiusculo, antheiis 10-12 exsertis glabnusculis hructus nuculcL 3, angulis hntclla', 2 lin. longcC. Lobi imolucri ab initio sogiogati, biacteolis ovatis basi stipati. (v. s)

10 f BEIULOIDFS (Miib 1 c p 400, t 25), folns ovatis \c\ ollipticis obtusis ^el subacutis basi ina^qualitoi acutis vel obtusis conaceis crenato-sonatis glibus Inevipctiolatis subtus glanduloso nunctatis, flonbus masc solitams bievissimc ptdiLellatis, pcngonio late iniunubiililoimi obi use V7 lobalo, anthens apice calloso mucionulitis, Iiuctibus solituus axilhiibus, mvolucii 4 partili lobis oblongis dot so et a])ico liciniis (ilifoimibiis metis cipitell itis pluribus onustis nuculas annianiilms > 1 lequens in eUnmitate austialioie Amenca (Hook 1 ' Lochlei' pi Magi II HM>1, Kin^,' in h Bf iss), usque ad alt 1400 p in ten \ ignei (Hook i),nonduin in flnli loperta — Hook jomn of bot 2, P l[r]>5, Hook f 11 inlaid 2, p M[> t 124 Betula .intaichta toist.l Corara. dolt 9, p 4'> F dubn Mnb I c. t 2b F Vision Hook 1 c. t 8. Uiluspaiassus ljeliiloidrs (t (I oisLou Honibion ct Jacquin voy Pole sud, I h et 7 *bnln* scdindo aniio i inle cadiva PetioJi 1 1 ' lin longi, cum iamulis vHutim. Limlii

5 9 lin longi, 3 7 lin Idti, noivis et textuia F Dombeyi sed dentibus obtusio nbus punctis ST pius mimleshs, et nervis lateialibus nunc ad dentes mine ad smm obtuse tendcntibus Mores raasc similes, bcepius (seinpei') solitam Frutlus migrut similis, licinns vero crcbiionbus longionbus ipice obtusis (in Hook 1 bone, in Mubel male iigiuatis) L 4 lobis duo (an seinpei *>) basi connati (v s)

11 [9] I MEN/fESii (Hook f in Hook it t G i2) IV Ins ovalis \cl 1 itc ollipticis obtusis basi subtoidihs \el in cqii ilitor CIIIIG itis coi I iceis duj>lic ilo cienatis petiolo excepto ^labus, fl , Iructibus v lit mis bievissime pedicr Ihtis, lobispu beiulis dorso hmbnato squimosis fimbms lineanbus capitelldtis erectis secus series circiUi 5 supeipositasdispositis 5 Inmonlr SISNO\TD /olandidp mutraquo msuH — Hook 1 fl Nov Zel 1 p i29 Aiboi excekd nmulis fulvo pubc scenlibim 1 ln'i^lm 1 *m^i* litiquc IK tiolo lincam longo pubescente veins inconspicuis i iu< Ins] i lin 1 MJ,I loins i basi distinctis litmus doi^libus 5-6 m sinful! stuc, dpicc inllito evcuivis NuculdL pubeiul t, 3 dldtx ills apice promincntibus acutis, smubus ex Idcmns (lobis peii^onn ?) fimbnatis Vernatio ifcuot a

J2 t. FU«:cA(Hook f ' in Hork ic t (>J0 c t (j31)} filiis(vdlis vclcllipiiGih obtusis basi cumdla inU^iis u U m m grossc scn itis, ntnis ldtoidlibus ad dentes tendtntibus, pcdunculis m«isc. potiolo sublon^ionbus nutantibus J flons, pen gomo hti inluiidibiiliiormi pubdulo ol tuso 0 6-1 bo iiithons apicc callosis obtusis fiuttibus ixilldiibus solilmis srssilibus, lohis o\itis dorso squamis lmbritdlis pubr mils o\dtis ct supenonbiis ovito Idiiccoldtis tcctis J In mon-tosis utnusque insuU \o\-c Zelandia? — Hook f fl Nov Zcl 1 p 229 Ramuli urn petioli et pedunculi tenuiter jmbcsconUs Folia 9-1) lin longd, 6 9 1m ldti novella pul)osccntia, cito ghbnti. potiolo 1 2 lin longo, \enis nirum poispicms Prrif?onium radsc vix 2 lin Ionium Anthortp ^labra., lin longdL FIULUIS 4 lm longus, ovoidoo globosus, biactcis late (\dtis squamis \anis toloi itis ISuculr 3 gonT, rutidr pubnulr, 4 lin longd. ldcinns dn-gustis soncois pen^onii fcimmatd? Hoicb ex vai p, fmctus ex a desenpti (\ s ad Hook 1 com in)

a, *Hookeii,* folns membramccis siccitato cnspiLis dc ntibus imj >nbus acu tis, nervis latciahbus utrinque *>b* Hook u Oil *(*\ s)

P, *Colensoi,* folns conaceis, dcntibus minoubus obtusis, nervis littidhbus utrinque 3 4 —Hook ic GJO (v s)

13 F SOLANDRI (Hook f ' in Hook it t 0)9), loins oblongis ollipticisve parvis margnip unduldto simtdtp recuivo interns obtusis bisi < btusis vd dcutis subtus tomutei llbo torncntosis fl mdsc subsossilibus, p(n_0'onio cupuliformi obtuse 5 lobo anthens oblusis liuclil us axilhnbus solituus subsossilibus Aalvis ovito-oblongis doiso squirms imiscmtii nnbiicdtis obtusissimis tectis nuculisbifvnnbus > In montjsis iitniisquo ins INov *t* Zelandia3 — Hook 1 fl Nov Zcl 1 p 2 JO Rimuli vc lutini I (h I 4-(> lin lon_n'a 2-3 lm lata petiolo *I* lin lon^o, noivis liloi ilibus utiin jnc 4- > vonis ciobie roticuhtis* maiginc subcdlloso Hoios misc ox Hook 1 dppiouuidli, iiithons octo ' lm' longis glibus NuculdJ 3 lin longcp, pubciulcT, 3 gome, acutdj, \dWds' supc-rdntcs (v s)

14 F GutFORTioiDis (Hook 1 in Hook *ic* I 673) folns o\alis parvis icutis in tegris subtus dlbido toraentosis, fl. masc subsessilibus, peu^onio cupulifoimi obtuse 5 lobo anthens subobtusis, VIIMS liuclus puboscentibus lamollatis, 1 unollis dent itis $r_{t\ vo}$i 5 j_n (dmonbus monlmni utnusjuo insuli NOVT Alindiap —Hook f fl i\ov /el *2* p 2 JO Aril inn ilpm, hunulior F So lindn ? Bimuli puboscontcs l^oln J * lm $lon_{\&}$n 2 U111 1 ltd, potiolo • lin longo puboscenU, basi ohtusi ipice e\ ic acutd \ol subdcuta, ex Hook f (an kpsu penne) obtusd, neivdtionccv ic ut in *h* SoUndn Fiuctus non figurati NuculdL alatde

15 F CriNNiNGHAMi (Hook journ of bnt *1* p I i2 t 7) folns o\ato-deltoideis obtusis vel subacutis maequabtei cronato dcnl itis basi Integra oblusis vel truncatis conaceis glabns vel cuncitis ntrv s litonlil us ad deotcs tondontibu«5

evenns, flonbus masc solitarns bre\ltei pedicellatis, peiigonio campanulato 6-7-hdo, loùis lanceolatis acutis patentibus, dnthens apice obtuso çalloso, tmctibus solitarus bievitcr pedicellatis o\oideis,lobis dorsos'judmisplunmis verticillatis ore(tis giadatim angustionbus capjtellatis veshtis ,f In Tasmannià fiequens (Labiil.[1] Cunningh '), in Austialiae mend colomà Victoria ranor (F Mueller') — Hook. f.[!] fl Idsin 1, p J46 Ramuli teniiitor pubescentes. Petioh }-l lin longi, pubescenlos I imbi ">[l]) lin longi, 'i 7 lin lali, jurnores vi\ ac ne \i\ pilosuh, neivis htei paium distinctis Pedicelli petiolo sublongiores. Fl masc. ex IC. descnpti. Fiuctus ')-:j \ lin. longi. Biacted3 basilaies o\atae obtuiie Laciniap in. smgulo verticillo paitiali 2-4, infeiiorum \erticilloium lanceolatae, sup linean-lancpolatre, extrenutdle excurvae et cipitellatae Nuçulae \ 2-alatae, pubenilde. (\. s.)

(3, *microphylla,* folus minonbus basi non cuneatis magis conaceis a medio oxcurvatis — In 'lismanilid (Hook. F. Mueller'). Foima depauperata, niyitacea, folus 2 3 lin. longis, 1J-3 lin. latis. (v. s.)

Species dubia.

16 F COCHINCHINENSIS (Lour fl f och. ed 8° 2, j) 690), dibusculd 5 peddlis, loins congestis*ovatis obsolete serratis glabus petiolatis, amentis masc terminalibus, fl masc Cdl^ce 5-fido, corollA 5-fidà, sldminiDus 12, fl. fem in eod ramo mienore, calyto 5 fido, coiollà 0, tdpsulà muncdlà 3-lotulan tnvahi 1-spcimà, seminibus castancoj ioimA et tolore. ,J In sylvis Cochinchmae Flons nidsc coiolla pst valde tonuis et membranacea, ideo si ncctanum vocare magis placeat non reniidin An F sylvdtica L > - Hanc e Loureno Foisan (astanea"[?] aut Castanopsis > aut aiboi diveisissinu[9]

Synonyma? dnbẇ

F. GLMC\ F NERVOSA *o*\ F MTIDA, Pbilippi in Linn 2[(], p \ J, *'t*\, d Germain in piov. chilonsi Linaies sine fl. nee hiiclu loctae. hx dosciiptionious loliorum vix species \idontin f>ntius synonyma specierum in Chili cognitamm

Species cxclmx.

F CASTANET L. = Castanea vulgans.

F. Castanea Lour. = Gastanea Chinensis.

F. OLUTINOSA Poepp. et Endl. = Euuyphue sp (Mieis m Hook f 11 ant 2, P J46).

k. LUTFA Molina. =r Zanthoxylum Mdgu Beileio.

F. COCHINCHINFNSIS Lour. =r CasUnea CluncMisis

F. JAVANK v Ulumc (ex stcud nom), in Bl. fl. Ja\. non tit. =. ? Castanopsis Jit\dllltd.

Ordo CXGI. CORYLACEiE. — Castanearum (sect. 1.) pars *Aclans. fam. uqt..2, p.* **375.— Amentacearum pars** *Juss. gen. p.* **410.— Cupuliferurum pars** *Rich. anal. fr. p.* **33, 92,** *EndL gen. p.* **273. — Gorylacearurn pars** *Mirb. elcm.* **2,** *p.* **906 (1815),** *Lindl. veg. Kingd. p.* **290. — Quercinearum pars** *Juss. in Diet. sc. nat.* **2,** *suppl. p.* **12. — Corylaceoc** *Hartig forstl. Cullurpjlanz. p.* **77/(1840). — Cupuli ferae,'trib. Coryleae** *Meissn. gen. p.* **346** *et* **257. — Garpinese** *Doll zur Erklar. der Laubknospen der Amentac. p.* **15 (1848),** *fl. Bad.* **2,** *p.* **356.— Cupulifcrae falsae** *Schacht Handb.* **2,** *p.* **44J.**

Flores monoid, spicali, spicis unisexnalibus. MASCULI **in amento solitarii, bracteâ interne nudâ vel lobulis 2 adpressis juxtapositis duplicate stipati, perigonio proprio millo. Slamina plura, basi vel medio bracteae inserta, inclusa; filamenlis saepc partitis vel apice bifidis, loculis idco discretis^ erectis, apicc saipius pilosis. Grana pollinis lacvia, poris paucis dchisccntia. Rudimcntum ovarii nullum.** FL. FEMINEI **duo intra singulnm bractcam spicsebrevis dispqsiti, bracteolispost florationem valdc accretis basi cincti. Perigonium apice irregularitcr lobatum. Ovarium inferum, mcdullfl quadam infernc farctum, placentis 2 pqomincnlibus subbiloculare, placenta, unft sterili, altcrd apice ovula 2 gerente. Ovula pendentia, analropa, integumento** *simplicl* **tecla. Stylus brcvissimus, in stigmata 2 elongaU linearia divisus. Fructus ex bractcis amplis foliaceis (bracteolis accretis) et nuce intra bracteas occultalft constans. Nux aut nucula basi Jate umbilicata. Semen abortu unicum. Albumen nullum. Embryo radiculd superft, parv&; cotjledonibus carnosis, facie internA adpressis, radiculd, longioribus. — Frutices vel arbusculae in hemisphærio boreali vigentes; foliis alternis (sæpius in evolutione ramorum a $\frac{2}{5}$ ad $\frac{1}{2}$ transeuntibus, ex Döll fl. Bad. 2, p. 537), penninerviis, duplicato-dentatis, stipulaceis, in vernatione secus nervos latcrales oblique plicatis, erga nervum centralein aut planis aut longitudinaliter plicatis, et ideo faciem superiorem concavam aut inferioris latus unum erga axim proebentibus; amentis lateralibus, caducis.**

Gharacteres anatomici proprii adsunt in caule, ex cl. Harlig, de quibus confer ad ejus praeclarum opus : Forstl. Gulturpl. p. 218.

Tribus I. *CARP1NE/E.*

Folia in vernatione erga axim concava, nee longiludinaliter secus neryam centralem plicata. Garpella erga axira et peripheriam ramuli fructiferi parallela (ex Döll I.e.)

I. OSTRYA *Micheli gen. p.* **223,** *t.* **104,** *Nees jun. gen. pi. /I. germ. ic. fasc.* **1** *1.* **13,** *Spach in Ann. sc. nat. ser.* **2,** *v.* **16,** *p.* **243,** *Enal. gen. suppl.* **4,** *part* **2,** *p.* **22. — Carpirn sp.** *Linn.*

FLORES MASC. e staminibus 3-14 in axillâ bracleae late ovato-acuU**

acervatis constantes Filamenta graciha, non exserta, loculos 2 discretos erectos apice pilosos gerentia Pollen cyhndncum saepius 4-lobum (Hassall in Ann and mag ofnat hist 9, p 556). FLORrs FLM in axilla biacteae caducae gemini, quisque intta bracteam secundanam lateralem tubulosam per anthesin apice apertam, deinde cito accrescentem fusiformem et apice fere occlusam complexus Ovanum vertice breviter lobatum, interne medulla dm farctum, subbiloculare, ovuhs 2 pendcntibus Stylus brevis, e parte liberâ ovani. Stigmata 2 elongata, hneana Nuculae testace<£, laevigatae, 1-loculares. Semen abortu unicum Gotyledonescarnosae^lano-convexae, obovatae, radiculam superam non tegentes —Arbores mediocres, etempeiatis hemisphaerii borealis, stipulaium fohorumque formfi et \einatione Garpini (Doll Laubkn Ament. p. 19) — De floribus et monstns notandis confei ad Mccklin in Bull. soc. nat Mosc. 1850, \ l, p. 586, t. 15

1 0 CARPINIFOLIA (Scop (am cd 1772, v 2, p 244), ncivis laterahbus folio rum utioque lateie IS 17 5 5" In Lmopa mend et \si i contermuic\, nempc ab Aidgoni i sept (Asso in Lange piôdr cit sed *LX* silentio ahoi non \eiisim), potius a Galloprovmciâ (Mut , Gren et Godi fl fi , Requien' in li DC), Sardiml (Mons fl), liuno Helv (h Boiss '), Tyioh ital (h Boiss <), Gannthiâ (Gnf) pei Italiam' Gi rerun' Rumeliam (h Boiss ') ad Tauium Cihcio. (Kotsehy' 18oJ n 279,91 Balansa' I8S1, n 774), Libanum (Kotschj ' 185^, n [r]>84 Boiss ») et Sber Vrmuiu (G Koch in Linn *22,* p 331) 0 ltd lica, Gdrpim folio, etc , Mich gen p 223 t 104 Carpinus Ostrya L sp **p** 1417 (exel s\n dmer) Nou\ Duham 2> p 200 t 59, Nees jun 1 c, Michx aih Amei 3, t 7 (non te\t) 0 vulgans Wilkl sp 4, pais l, p 469, Hartig foist t *21* Rciclib ic t 63^ 0 lialica Spicli 1 c Join]iinioia utrinque puliescenti 1, ululta 111 pucnch^matL gldbiescentid, pilis nenoium longiusculis adpiess s Petioli 26I111 longi Lmibi ovdto vel elliptico acumi nati, basi obtusi, duplicato-serrati, 1 J-4 poll longi, \-*1* poll ldti Strobih matun \ 1 \ poll lon^i, ovoideo cylindnci Bractese lite ovato acutar, iugaces, 1-1J lin Ionga3 Biactea, iructum involventes o\ato-acuta?, compressa?, **pal** lidae basi hirsutt caeterum glal)nusculcE, mediae lon^ioies 6 lm longae Nucula 1 \ 2 lin lon[r]a, ovoideo icuti, IPVIS ^,1 **il*ia,** piucintrvia, vertice colonâ minimâ caducâ sublobatâ longe ciliata teinniidta. (v s')

2 0 VIRGINICA (Willd sp 4, p 409), nervis laterahbus fohorum utroque lateie 11 1[r]> ,^ J In Americ̈a sept a Novo Brunswick (Michx) et lacum Winipeg (Uichircls in Hook fl boi un) usque id 1 londarn (Rugel) et etiam montem On/aba Mexiu (Botten 1 977) provinc JdlaptL (Linden[1] 2b, in h Boiss) (aipinus ViLginiam florescens Pluk aim t l)G,f 1 CaipinusOstiya Linn sp P 1417 (quoad sjn amci) Garpinus Virginlana Lam diet J, p 700 Abbot mseet 2 p 151 t 75 (fide auct) O *\lrginici Willd Baum 2, p 260 Loud enc tiees, p 921 c ic , Spach 1 c , Emeison lep trees Alassach p 177 O amencana Miclu arb 3, p 54 (non ic) O vulgans Wats dendr t 14i Caipinustufloi'i Mrrnch meth p ^94 Auctoies noimulb plunmos chaiacteres ab O caipmilolia differentiates indicant, sed e\ specimmibus h mei et Boiss nihil mihi certum nisi neni laterales pauciores in arbuio imencanâ, quod etiam in loins longe acuminatis (Linden' *2b)*]>aulo dubium evenit Strobili nunquam cernui e\ Pursh fl am 2, p 624, quod ne^at cl Spach, erecti et (ltimim cernui ev Lintrson 1 c In heibarns erectos plerumque vidi in ame ncaiul, cernuos in geionto^LA}sed inteidiim lami tlaccidi exsiccantur et inde char in sicco dubius P1I1 fol et lamorum breviores 111 amencani, sed in ipso ramo variaie semel vidi L\ Willd novella pilis apice glandulosis gau dent, quod vauat ev Spach Bracteie liuct interne magis pubescentes (an semper*>) Lunbus j>eng ex Spach major in amencanâ, sed ex obs (non satis nunieiosis) nihil certum \idi landem aut species ux diffeiunt aut aibores cultae confusa; \el male obs in errores traxerunt (\ s)

I CARPIMJS *Tourn mst* 1, ***p*** S82, *t* 348, *linn gen ed* 1, **p** 729 *{exd* ***Oshya), G<ntn fr.* 2, *t* 89, *Spath* m *Ann* 4c *nat ser* 2, *v* 16, p 24B,**

Kndl. gen. suppl. 'i, *pars* 2, *p.* 23, *Dull zur Erkl. Laubkn. p.* 15, *f.* 13, 14, *Schacht Lehrb.* 2, *p.* 440, /. 9, *id. der Baum, 1.* 4, *f.* 1-9.

FLORES MASC. e staminibus 6-12 in axillâ bracteae ovato-acutae acervatis constantes. Filamenta gracilia, non exserta, loculos 2 discretes erectos apice pilosos gerentia. FLORES FMI. in axillâ bractca caduca; gemini, quisque intra bracteam secundariam accrescentem occultatus. Ovarium plurinervium, apice breviter et insequaliter lobatum, interne medullâ diu farctum, sursum subbiloculare, placentis 2, quarum una apice ovula 2 pendentia prasbet, altera sterilis (Schacht 1. c). Stylus brevis e parte liberâ ovarii. Stigmata 2 elongata, lincaria. Nuculse sublignosa3, plunnerviae, uniloculares. Semen abortu unicum. Gotyledones carnosae, plano-convexae, obovatac, radiculam superam tegentes. — Arbores mediocres vel rarius frutices, hemispha)ni borealis; foliis altcrnis, penninerviis, duplicato-serratis, secus nervos laterales in vernatione plicatis (npn yero secus nervum centralem), parcnchymate pellucide punctulato; stipulis caducis-, amentis lateralibus;spicis feminois terminalibus. Bracteaa secundariae sive later.ilcs basi utrinquo lobataj (folium et prophylla). evolutione insigncs nam sub anthesi cito crescunt, prae^ertim e parte centrali, et brdcteâ externâ dclapsâ involucrum simulant. Germinatio cpigaea (Hartig, t. lO^t, f. 8). — De vernatione confer ad Zucc. char. , Holzgew. t 2; Henry Knospenbild. in Act. nat. cur. 22, part. 1, t. 29 ; Dɒll 1. c

1. C. BETULUS (Linn. sp. p. 1416), folns ovato-elliptius acuminatis \el ranus obtusis hasi obtusis vel cordatis crebre duplicato-serrritis neivis])rffisertim pa^inap inienoiis adprcsse et longe pilosis, bracteis liucturn mvoUentibub 3-nervns tnlobis margine sparsim dentatis vel integns, lobo centrali oblonpo obtuso, lateralibus ovatis 2" 4°l»rovionbu<, nucuhs 7-11-nervns. .'7-5 In temperatis Europa; et Asiae, nempe n Pyrenaiis hisnanicis (Colm. cat."p. 145) ubi vix indigena? nam m-Pyienacis Gallias non adost (Zetteist. pi. P^r. p. 237), certius a collibus Gallue mcii'l. prope Tolosain (Noulot fl. sous-pjr. p 581) et Telonem (Rob. cat.), Italia[1] cenliahs (Bertol. fl. 10, p *2X1)*, Peloponosi (E\ped. Moi. p. 273), Iiithyni«B (h. Boiss.), Georf<iae ciucas. (HohenJ), Ghilan (Audi.! 5329), Asteidbad (Boiss. et Bulise Aul/.) usque ad Aiitflhim mend. (Wats. Cyb. 2, p. 378), Sueciam mend. (H.u-tm. fl. p. 201), Curoniam (Fleisch. fl. Kurl. p. 338) et Kossiam mend. (Ledeb. 11. :j, p. 586). — Lngl. hot. t. 2032, Schk. Hanlb. t. 304, Nouy. Dulum 2, t. 58, Hartig l'oist. p. 229, t. 21, Nees jun. gen. IC. fasc. 2, Heicbb. IC. I. 032, Doll et Schacht 1. c. C. edentula Rochel Banat. (sine descr.)? C. intermedia Wierb. med. Reichb. ic. t. 633. C. Carpiniz/a Kit. in Host fl. austr. 2, p. 626 (de hisce syn. conf. Neilr. Nachti. /. Maly, p. 76). Gemma accessona frequens sub vultfari adest (Viaud Bull, soc. hot. Fi. 1860, p. 840). Folia 1-3 poll, longa, petiolo 3-6 hn., in parenchychyniate glabniU. Lobus niedius bractede involventis 9*>4 1m. longus, sa3pe lime dentatus lllinc integei. Nuculae 2-4 hn. loii^au, ovoideo-compressae, inter nervos laeves aul depresste, glabrae, lobis inaGqiiahhus, nunc lanceolatis, nunc ovatis, eiecto-conniventibus, nunc (in cultis) erectis. (v. v.)

   p, *quemfolia* (Desf. hort. par.), folns inaequaliter lobatis, nunc pmnatilidis, lobis acute dentatis Var. hortensis. Folia Irequenter formâ vulgan e\ eodem ramo quam pinnatifida. (\. *?•)

2. C. CAROLINIANA (Walt. fl. Gar., 1788, p. 236), folns elhpticis ovatisve acuminatis raro obtuais basi obtums laro subcordatis crebre duplicato-serratis nervis prdesertim paginae inf. adpiesse et longmscule pilosis, Iji-acteis fructum involventibus 5-7-nerviis o basi latâ indivisâ tnlobis raargine sparsim dentatis, lobo cenlrah ovato-lanceolato lunc saepe integro, lateralibus ovatis multoties brevionbus, omnibus acutis vel obtusiuscuhs mucroQulatis, nuculis 7-11-nerviis. t5-.; In Arrienca bor. a Florida (Cliapm. fl.) et Louisiana (Tainlurier!) ad Terrain novain (La Pjl.') *o*\ Can,jd;nn (Hook, fl.), a marc \tlantico ad Saint-Louii

(RiehP 218 in h Boiss) C amencana Michx 11 bor am. 2, p 201, Mich 1 nb 3, t 8, Wats dendi. t 1 J7 (ubi lobi perig mald*fiff) Guimpel et Hajne IIol/ t 84, Loud enc tiees, f 1714 Spach in Ann sc nat sei 2, \ 16, p 2")3 Omnia ieie C Betuli, nunquam \ero aiboi elata, bractede imolucii basi ampliore et inde plunnerviae, lobis tatciahbus minonbus Cseten char auctoruin non ^alidi (v s)

3 C VIMINEA (Wall herb anni 1824, Lindl in Will pi as rar 2, p 4,. t 106), folus ovatis longo acuminatis bisi obtusis vel subacutis duplicato-senatis glabratis, biacteis iructimi iiHolventibus o\ato lanceolatis basi M-nenid giosse paucidentalis, a medio mtegiis ^el subdentatis uno lateie angustiore saepius interns, nutulis ovoideo icutis 7 8neniis lesinoso punctatis £ In Nepalia (Wall i), Kaniaon (Wall r list n 2800, Hook i. et 1 horns) alt 6 7000 ped ot ad Mussooiee (Royle ill) —Loud cnt tiecs i 1716 Petioli graciles, J 6 lin lon$_{ft}$i, junioies duplici modo pubescentes,])ilis longionbus inter minimos spaisis, deindt glabn Limbi 2-4 poll longi, 9 18 lin hti, acumme an gusto, nervis subtus sparsim p I »sis, pilis longiusiulis obliquis, dentibus l-.J intei dentes majoies Slrobili 1 IM Bratlea liuct 9 lin lon^ae, lateie uno lecto subinte$_0$rro rsuculde 2 lin longae, lobis lanceolatis paucis erectis (\ s)

4 C. FAGINEA (Lmdl in Wall pi as. rai 2, p 5), folus ov«ito-oblonffis acutis aiguio senatis glabus petiolis lamulisque pubescentibus, lnacteis Inictifens subihombeis giosse dtntatis atuhs lttitulatis — In Emodo ad OuiwaL « I uiientdli actedil Diffeit lol lonni et maigine, neo non biacteis di\eibissinns » — Cl. Hartig ad C Dumeiisein refert (Foist p. 232). An vidit specimen?

5 C DuivrNsis (Scop Cain cd 1772, n 1190, t 60), folus o\atis \el elliptic^ dculis vel nuns obtusis basi obtusis \el siibcordilis duplicito seiidlis nei\is pia»seitini subtus pilis lon^iusculis adpitssis pubLsctntibus, strobilis densiilons, bracteis liuUilens amj)le subdinudiato o\atis acutis 6 8nnwis uno lateie giosse et plun-dentaLis Uteio subintcgiis ul pauudentatis, nuculis 10 13-neivns -y In EuropA uistio onentdli el Asii occid d Banatu (Heuff '), Forojuho et Istna (piope Duino lrecjuens Stop , Boiss '), pei Italiun centraleni (SaM') usque ul Siciliam (Gusb syn) peF Giajciam (Heidi ' 2007 Oiph ' 10J) ct Rumeliam (Fnwald ') ad Liliuam (Bahnsa' 773), launcdin (h *DC* '), Caucasuni mend ' el Glulan (Audi ' >J28 in h Roiss.) C onentabs Lim diet 1, p 707, Wats duidi 2, t 98, Keichb ic 12 t 634 C Duineensis Bei tol fl.it 10, p. 23J Bami]un senceo-pilosi Petioli 2 4 lin longi, pubescentes Liinbi 9 24 lin. longi, b 1^ lin lati Biacteae liuct supeiposita?, 7 9 lin lontfdj, 4 6 lin basi latae et lbi maigine inflexae Nuculee ovoideodcutdL, 2 lin longap, glabue, lobis conni\entibus mminiis lanceolatis pilosis (v s)

Species exclusx.

C LROSA Bl , C J\PONICA Bl Ct C LAXirLO*RA Bl Slint DistOgOCIl pi Sp

"I DISTEGOCARPUS *Siebold it Aicc pi Jap. fam vat sett* 2, *p* 102, fJ *(ubi* erro). i»i *fig* 5 *et b)* — Caipini sp *Blumc Mus luqd bat* l, p. 108 ***(ubi error m oOi. de miol)***

FAORIS MASC. e staminibus 6-8 in axillA. geniculatâ bracteas substipitatap ovato-acutaB inseitis constantes Filamenta graciha, non exserta, vane bifida, loculis terminahbus discretis erectis apicc pilosis. FLORFS IFM in axilla bracteae persisLcntis gemini, quistjue intra bracteam sccundanam accrescentem liguld rotundatâ minimâ basi intus auctam occultatus Ovanum stnatum, apice sublobatum SUlus brevissimus. btigmata elongata, lineana. Nuculaa et semen ut in Garpino (ex Zucc) — Arbores Japonicae, folus, vernatione et stipuhs Garpmi An genus J an potius sectio Garpini ? Diversitas ex infloiescentifi solum dicitur, sed char omnes non satis cogniti, et bracteae m Ordino majons momenti quam n alus videntui — Enavit pictoi in Sieb et *Z* quando iructum

inter bracteam et ligulam suam figuravit (f 6)et bracteas externas omisit (f. *k).* Cl. Blume 1. c.*Ssenus ahtei erravit, lobum internum (Zucc.) sive ligulam pro margine bractea* accretae sumens Hunc lobum internum optimo in D. Gaipino fiuctifeio vidi, sed in flonbus D laxiflorse, ante evolutionem brdUeaiura literalmm (lustra, qudesivi. De ejus natuiâ mhil cognitum an hmbus? bracteà tune e stipulis 2 connatis, an appendix e duphcatione foln?

1 D. f ARPINUS (Siebold et Zucc. 1 c p. 102, t. 3, 1 3), lamulis petiolis pedunculisijue Icirugineo-Lomentosis, folns e basi inaequali subcoiddta vel obtusi o\dto-vel tllmtico dcununatis duplitdto-seiidtis)uiuoiibiis in nervis (subtus pi tsertim) pilis ddpiessis Jeiniginrisdoindo tflabicsconlibus, stiobilis ovoideis densillons, lMdctcis o\ato-lanceoldlis dcntdlis, bidctcohs secundams in liuctu amplidtis bi acted multoties longionbus elli]>ticis passim dpntitis ,) In Japom J 1) cdipmoides Sieb. et Zucc 1 c m e\plic tab Caipinus Japonica 111 • Mils Lugd bit 1, p H)8, Mont/i' pi exs jdp 167 Petioli 4-b lm longi. Luubi 2-4 poll longi, 9 18 lin ldti, IHIVJS utioqiic lAterc 22 24, denubus e basi oviild suliiildiis Slipulifi ol)longdi, 7 lm luiitfce Amenta nollic , scpidmis ovatis, 2 lin longis]lractf\c prunaiidL 1 J lm long*, secund.iiidi 7-(J lin longae, *']* 5 lm. latoj, 5-7-noi vidi, aunculi mtein i *hn* fon$_0$'d. (v. s)

2. D. LAXIHORA (Sieb. et Zucc. 1 c. p. 103), rdmulis petiohs pedunculisqup subpubesceutibus, loins e J)asi sappe nwquali obtusi ovato vel elliptico-<icuiniiidlis du])licato senatis junionbus m nnvis (subtus pr^esertnn) adpicsse pilosis denulp gldbidtis, stiobilis clon^itis lavis, bidclois longc liincc(jldtoacuirunitis, sccunddrns (in lructu?o\ IJl) subtii(ulis lulio medio Unceolato clon^cUo (icunnndto IIKI (|ua!itoi senato vel uno Idteie subintegto ^ In Jaj)oni i (,upiiius I.LMIIOI i Ml.' Mus Lu$_M$d bat 1, p. ,i0(') IIA speLiinine lion! d Bluino connu.])ili in novcllis adpipssi S]),LISI; pelioli .{ 6 1m. lon^i, lnnlti 1 *2*\ poll lon^i, 8 1^ lin lali, TIPI\IS utioquo latere cue 20 (IIPC 8 *l*\ ut dixit IM), dcntibus ut in D Gaipino SLijiula' oblongo o]jo\dtd3, subdcul.L', dorso ut m *1).* (dipino adpiesse pilosuliB Fl. nidsc ign Hacenii leni *V)* lin. longi, spdisifion 13iacte<i}2 } lm loiigdL[1], apice jdlosaj, flonliiis duplo lon^io i(>s Bidcted sccunddiiJ} tune bidctcd multo niinures, an^ustc ldnceoldldi, IMSI pilost Sliobih (PV Bl) 2 J-poll (v s)

3 D 'EHOSA, rdmulis novellis pctiobs et strobiloium pedunculis gldbnusculis, loins e bdsi lrhequdli subcoiddtd vel rotuiiddtd ovato oblongis acuiiiiiidtis eiososenuldtjs gldbnusculis \el in nervo medio el ldteralibus subtus pube raid obsilis, stiobilis cylmdnois, squamis ovatis acutis seiruldtis vel.ilteio ldteip siibmlcgns in baM jn.ivjinldtpi i convolutd nuculam occiiltaritibus — In J iponid. Cdipinuseiosd Bl Mus Lu^l. bdt l,p J08 1 olid 2 J J • poll longd, l'J-2 poll laid, petiolo 5 7 lm , sunui)ellucidd; nervis ldteidhbus uliirique 15-20 Stiobih 2 J-J poll lon^i

4. 1) *f* C0RD\fA, ldinulis novellis petiolis et stiobiloium pedunculis subpubescentibus, foliis e basi profunde coidatd ovatis \e\ ovdlo oblongis acumuidtis inu[1]qualitor muciondto seridtis in neivo medio iitnnque el m ldteidhbus sublus sub|)ubescenti])us, strobilis clli])soideis sqiidims ovatis dcutis mucionato seii.itis in bdsi maquildteid tonvolutd nuculdin dinpleck ntibus — In Jdponi i (a i pin us corddta Bl 1 c p 309 Folia 2 1 4 poll longa, 1 • 2 poll ldta, petiolo 3 8 lm , pellucida, neivis lateiabbus utioque htPie centidlis 16 20, m paguid sup pube brevissima scabndis Stiobih *I* poll longi. — Praesentem et D erosam mtei D (npiiiumetD lixifloiam collocivitcl Blume, sed bidcteds et liguldui intia bidcteds secunddiias non descnpsit

Tnbus II. *CORYLEJE.*

Folia in verDatione secus nervum centralem loogitudmaliter plicata, inde uno latere axim ramuli spectantia. Garpella erga axim antice el postice sita (Dull 1. c).

IV. CORYLUS *Tourn. inst. p.* **581,** *t.* **347,** *Linn. gen. n.* **730,** *Spach m Ann. *<* **nor.** *ser.* **2,** *v.* **16, p. 98,** *Nees jun. gen. ft. germ. ic. fasc.* **1,** *Hartig fort>ll. Cult. P(lanz. Deutschl.p.* **217, f. 15-17,** *DCBII Jikcm. Fl. p.* **273,** *ejusd. zur Erklar. Laubkn. Ament. p.* **19,** *f.* **16,** *Henry Knospenbild.* **m** *Act nai. cur.* **22,** *part.* **1, f. 28,** *Schacht Lehrb. p* **441, /. 9** *(dcr Baum, t.* **4),** *Dochmahl Fuhrn in d. Obttkunde* **4,** *p.* **29 (ubi 7** *spec, et* **108 var. cautc** *distmguuntur).*

FLORES MASC. **Bracteae amenti cuneiformes, bracteolas 2 juxtipositas interne supra basim foventes. Stamina 4-8, in medio squamae secus lineas 2 in^erta; filamentis brevibus, gracilibus, apice loculum vel 2 loculos discretos gerentibus; potius (theoretice) stamina 4, nunc anthens, «unc antberis et filamentis partitione divisis. Pollinis grana sphaBrica, poris 3 dehiscentia (Hass. in Ann. and mag. nat. hist. 9, p. 556).** FLORES FEM. **in axillâ bracteae gemini; quisque intra bracteam secundariam lateralem et 2 bracteolas interiores, quae omnes post florationem evolutae et dein accrescentes. Ovarium apice breviter et irregularityr lobatum, interne medullat, farctum, versus apicem subbiloculare, placentis 2, quarum una apice ovula 2 pendentia praebet, altera stenlis (Schacht, J. c. f. 19, 23). Stylus breyis e parte liberà ovarii. Stigmata 2, elongata, linearia. Nuces plus minus lignosae, uniloculares. Semen abortu unicum. Gotyledones carnosae, piano-convexaB, obovatae, radiculam superam tegentcs. — Frutices vel arbusculas, hemisphaerii borealis extratropicalis; folns alternis, pennineryiis, duplicato-serratis; stipulis caducis; amtntis praecocibus; spicis femineis gemmiformibus; bracteis secundariis et bracteolis accretis nucem mvolventibus. Germinatio epigaea (Schacht d. Baum). — Bracteae interiores flons masc. et feminei prophylla sunt, ex Döll 1. c, nee equidem stipulae mihi videntur quum erga folium internae sint.**

Vernatio foliorum optnne in tabulis Henry et Döll figurata, in Zuccarini Gharact. Holzgew. t. 3, quo casu nescio, erronea.

Sectio i. ACANTHOCHLAMYS **Spach 1. c. p. 108 (mutato char, praecipuo).**

Filamenta staminum saepius 4, Integra, loculos 2 discretos ercctos gerentia. Lobi et lacunae bractearuin iiuctus extiemitate rigidi. — EY stannnibus accedit ad genera Ostrya, Garpmus et Distegocarpus. Veinatio tamen Coryh'

1. C. FEROX **(Wall.' list n. 2797), loins e basi obtusà ovato-oblongis acuminatis duplicato-serratis nervis ldteralibus utnnque 10-12, supra sparsnn pilosis, subtus nervis pilosis parenchymate glabro, petiohs pubescentibus, fructibus in capitulum glomoiatis, bracteis nucem involventibus eà duplo majonbus multifidis, lobis ramoso-pmnatis, lacinns linean-acuminatis divancato-patentibus extremitahbus pr.-esertini loborum pungentibus. 5 In Nepaliâ ad cacumen montis Sheopore. — Wall, plant, as. rar. 1, p. 77, t. 87, Loudoii enc. tiees, p. 925, f. 1729. Genimaj ovoideae, senceas. Petioli 6 lin longi. Limbi 3-4 poll, longi, 15-20 lm. lati, dentibus crebns majonbus ab alns paruin diveisis et minime lobos dicendis, pihs subadpressis. Amenta gracilia, cinereo-pubescentia. Brae teas ovatae, obtusae, vix-lineani longae; bracteolae internae gemmae, vix breviores. Stamina 4-6, filamentis mininns, anthens bipartitis, loculis elhpsoideis apice pubescentibus. Fructus (ex ic. *et* descr. Wall) in capitulum 2-3 poll, latum, nutans glomerati. Bracteae unolucn 2, amplae, cano-villosae, medium usque divisae. Nux ovoidea (ex descr.), globosa 6-7 lm. lata (ex ic). Semen Avellanae. (v. s.)**

Sectio ii. AVELLANA. **— Sections Avellana et Tubo-Avellana** *Spach, I. c.*

Filamenta sa3pius 8 (ex partitione potius rami filamentorum dicenda ?), locu - lum smguluui geientid — Cl. Schacht (Handb. t. 9, i'. 24) en-ore aut ex ob*. monsln, filamenta bifida apice ramorum loculos gerentia ostendit, alii (Nees, l-e Maout, Hartig 11. cc.), filamenta, ut ipse vidi, a basi distincta viderunt

§ 1. *Braclex fructum mvolventes dislmcU, mvolucrum campanulatum vel subcyhndncum pnebentes, denhbus et exlremitate non ngidis*

I C. HFITROPHYLL\ (Fmrh » herb , a BPSSCI in Flori 1834 BPIM p 24, cit), tolas e basi cordata late obovaUMruntdlis meguldnter sei rato dentatis late* ralitor passim sublobaiis facie pxtremA o 7 lobato denUtis lobo centrali ab breviato lanceolalo extra nervos domum glabiatis pctiohs pubescentibus, fruc tibus 1 3 pedunculo brpvi msertis subglobosis, biacteis2 araplis nucem'paulo superantibus inaequaliter 6 7-fidis lobis acutis patentibus passim dentatis, dorso bracteanim intcgro convcxo nervis stnato pubcrulo setisquc rufis plus minus hispido. > In Dahuna ad fl' Aigun (Pall. Fisch '), ad fl Amui (Maxirnow ') Ucsunt Coryli omnes m Uial et Sibina occid — Trautv imag ross \, p JO, t 4, Turcz fl Baik. 2, p 134 G. Avcllana Pall fl ioss. 2, p 22 (quoad plant, sibrr) C letraphylld (en typ) Ledeb comm in Gmel p rj8. G Avellana var Daliunca Lcdeb fl ioss. 3, p 688 Petioh 5 12 lin loflgi Limbi 1 } 2 i poll longi *ol* extiemitite lati, neivis lateiilibus utnnque 6 6 obliquis ad dentes majores SPU lobulos Lcndentibus, neivo medio apice attenuato lobiilum m in'is dislmotuni ibbicviatum prdPbcnte Fructus fere pol hcans Bract(B 2 inavim.fi, basi bracteis cvteirus minonbus htis laciniato dentdtis vane flexis cinctdi, lobis bupremjs J r> lin longis vane patentibus vtl reflexis parte integrA brevionbus nervosis. Nux globosa (v. s)

p, *Thunberyu* (Bluim,' Mus LunM bit 1, p. J10), dentibus folioium mi nonbus, pub? pcLioli setis glanduliltus saepius mixta — In Japonia C Avellana rhunb fl Jap p 160 C Hasibami Sipb Kiuidk Naaml p. 27 G amtneana bieb syn pi oecon in Bat. Veil) 12, p 26 Pili glanduliicri petiolorum non omnino desunt in a (v s flonf)

Y, *Sicboldiandj* folns amplionbus quam p simihter dentatis, setis glandulifens petiqh lrequentionbus, biactois majonbus fructus nuce duplo rnajonbus — In Japonic montibus Nikoo G Siebolduna Blunu i in Mus *Lugd bat 1; p 110 I x sptciininc meo (floi et h oibito) folia C bete rophyllae sibnicae subsimiiia, in podem ramo 1^-3^ poll, longa lataque et truncata vcl lobo mcdio lon^iorc (v. s)

3 C AVELLANA (Linn sp p 14-17), folns late ovalibus vel obovatis cuspidatis \el ranus acutis cordatis irrpgulaiiter duplicato dentatis extra nervos deraum glabntis, petiobs pubescentibus ct pis^im sptis gl indulifens obsitis, frm libus plciumque gemirus teinisvc ovoideo campanulatis, bractcis fiuctus pilmifidis, lobis acute laciniato dentatis ipico eiectis ant pitulis tomento brevi nonnunquim setis paucis spaisis mixto 5 In montibus Hispaniae ccntr (Isem m Cutandafl Madi) et Al^enae (Alunby cif) ubi i i n et piaesu tun Sai china, (Moris fl), Sicihde (Guss syn), Eleloponcsi (Fxppd Moi6e, p 352) Ponti (C Koch in Linn 22, p 330), Kalahari (S/ow •) et Talusf h (G A M(y Verz) usque ad finCT mend prov. Vutka cL Vologdi (Iimiv pf br00 Vern ^ p 4{x, Fenniam (Ledeb fl ross),03 Ut in Succn (Wihl fl) 6> in Noiwe'ffia (id) et Orcadcs (Wats Cyb but 2, p 379), ohm in Shetland (A DC ceo bot p 99o) - Lam ill t 780, f 5, Sohk Handb t J05, Haitig forst t 15, Dietr fl bor t 842, Ntes jun gen fl germ ic fasc 1, Reichb IC t *bib* C Avellana et C Pontica Doehmahl Fuln Ob«>tkunde 4, p 38 (non G Koch ?) C Serenyana Plusk (Esti bot (fide ipsius ex Neih Naehti z Maly p 77) C intermedia Fingerh m Linn 1829, p 38 J Petioh m eod ramo 2 6 lm lon^i, hmbi l^J poll longi Stipulcfi oblongB, obtusae, 2 4 lm longa; pilosae Fiuctus interdum 4 D glomeiati Biaeteae snepius nuce subbieviores vel aequales, ranus longiores Nux ol>ovoidei, elhpsoidei, ranus ovoidea aut sub^lobosa — Gl Uochmihl (fuliiei in d Obstkimde 4 p *13)* sedulo varvetates 89 distuuit quamm pars mao'na spontane* stfipissime hereditaiiae videntui, quamvis charactenbus in eodem ramo interdum vanantibus constitutae, ex gi magnitudo et forma nucis, elon^atio bracteanim erga nucem etc Distinctio specifiea (A\plhnae et G Pontic P HI Doehm 1 c ex characteu-

bus lelativis sumitui, ut fructus major, lnlo carpico amplioie, pencaipio duro, etc. Sequentes var. ex div. auctonbus et herb, praesertim nqfcandae :

§, *urticifolia* (hort.), folns plus minus lobatis incisisve. In hortis. C. heterophylia, laciniata, quercifolia, hortul. *

Y, *vanrgata* (hort.), folns albo, aureo vel rubro vanegatis. —*In hortis. Ex cl. Doclmialil 1. c. coryh folns purpureis ad G. tubulosam pertinent, vanegatde ad praisentem.

8, *latifolia* (hort.), foliis amphonbus. — Culta. C. latifoha, filicifolia, hoitul*

e, *glomerata* (Doclnn. 1. c), fructibub 7-10 in gloinerulo. — Spontanea.

rj, *xstivahs* (Doclnn. 1. c. p. 36), fructu prascociore. — Spontanea.

C, *crispa* (hort.), bracteis nucein superantibus lobis cnspato-deutatis. — In hortis. Loudon enc. f. 1722.

6, *grandis*, iructu majore. — In Italia mend. (Ten. fl. nap. 5. p. 263) et alibi in Europa mer. vel onente, sed ah auct. omissa et saepflis in hortis visa. C. Avellana sphaerocarpa Reichb. ic. fl. germ. t. 638, n. 1303 (fig. supenores in pag.). Vanat ut a mice globosa ve*l ellipsoidea, bracteis nuce supenonbus \e\ longionbu>, et inde ^ubvanetates plus minus definitae : G. Avellana Pedemontana (Dochm), Hispanica (id.) sive Barcelonensis aliorum. Vavictates 38-89 in opere cl. Dochmahl hie omnes referendae vidonlur et formas nunc sponuneas nunc cultas divcrsas constituunt. Quando nuces oblongje et brdcteaj lnavunae lobis acutis transit ad c. tubulosam. (v. s.)

4. C. COLURNA (Linn. sp.p. 1417, pro parte), loins e basi cordata late ovafcis o\ahbus obovatisve acutis vel acuminatis duplicato-dentatis supr.i pubc dcmuni evanescentpsubtiKinnorvis petiohsquo tomulci veluLmis, 1'iuctibus glonieratis, biacteis volutinis, mfononbus e basi o\aU lanceoLitis nunc divisis, intenonbus majonbus mullifidis iacinns longe acuminntis integiis VP! passim dontatis erecto-divergentibus nucem multo superantibus. j In Bjinatus mendionahs sylvis montanis (Heuffel'1, m Thiaci.'i et Macedonui (Gnseb. spicil. p. 341), agro By/antino (Sibth. in Sm. prodr.), Ponto (si C. Ponticn Koch cadem). — Wats, dendr. bnt t. 99 (optima), London enc. trees; p. 923, f. 924, 925, 926, Nouv. Duhain. 4, p. 20, Spach in Ann. sc. 1. c. (non Hartig, aliorumque), Dochmahl Obstkundc 4, p 52 (ubi \<*LV.* plur cultte optime cnumeratae). G. arborescens hortul. (non omnium). G. Bi/dntina Glus. hist. p. 11 (excl. fig supenorc sinisd.). A^ellana Byzantina J. Bauh. hist. 1, p. 270. C. InditP oiiL'iildlis Seba Mus. (. 27, f. 2 (a Linn. cit. sed pessuna et defoctu fructus omnino dubia). G. slipulis linoriribus acutis Linn. hort. Cliff, p 448. C Pontica G. Koch in Linnoja 22, p. 22(')) (ubi Tiutex dicitur, ut ohm d Glusio, sed arborescit monente Linn.). Specimen mpum optimum Heuffelu cum ic. Watson, et fig. supenore dextra Glusn quadrat. Ex co petioli 3-9 lin. longi; limbi late oblique conlati, 3-3 1 poll, longi, 3-3 \ poll, lati, nervis laterahbus utnnque 7-8 ad dentes sive lobulos prrpcipuos tendentious, stipulis delaj)sis; amenta 3-4 poll, longa, 3 lin. lala, braoteis ovato-acutis velutinis lmeam longis, antheitp paucae, glabra? (ut in ic. Wats, sed in specimino Wierbi/ki m h. Boiss., e Banatu, pilos 1-2 dpice vidi); nux globosa, matuid (in Wals.) pattern mtegram bractcarum non superans; lacunae bracteaium valde acuminatae, falcatae. (v. s.)

P, *lacera*, pube brevi petiolorum lamulorum bracteammque setis glandubfens mixtA. — In Kamaou Indiae borealis. G. lacei.i Wall.' list n. 2798. Folia speciei. Flores masc. juniores bracteis ovato-acummatis, anthens apice pilosis. Fructus (ex involucro, nux onim deest *m* specimme meo) figurae citatae Wdtsoni t. 99 onmino simihs, lacmns ideo longe acuminatis paucidenutis vane lalcato-fleus parte Integra saepe longionbu-.. (v. s.)

Y, *Jacquemontn*, lacmns bractearum fructileium paite uiteprrd subbrovionbus. 5 In Indias bor. occid. a Vernague ad jugum Banhatt^ alt. 2950 nictr. C. Jacquemontn Decaisne in ^oy lacq. part. bol. p. JbO. I iw» Vi\ dh

aiboie Banatus var adiffert Pubes eadem, sed de mvolucro ait cl auctor a mferne gland ulosum pilisque brevibus rans inspersum, » unde set<e paucae vensinjihter ibi adsunt Lacunae biactearum fiuct acuminatae patenti falcatse, paucident itae Nux globosa

6, *glandulifera,* pube brevi ppiiolorum puluncuh brdctearumque setis glan duhfcns mixtd, lacinns bractcaium lrurtiierum minus acutis saepius • dentito lobatis In Banatu montoso sylvas cflorm ins et aihores didmetio bjpcdalj (Roohel in Reichb), m Ponto (si C *Vontita* ead) et *m* Piny gia(Bdlansa' 132 in h Boiss) C Colurna Reichb IC t 638 C Pontica glandulifera C Koch 1 c ? Setae glanduhferae m affin speciebus variant ddmodum tx Reichb. antheia, glabiae

5 C TUBULOSA (Willd sp 4, p 470), folns e basi cordata.ovahbus abrupte dcumuidtis irregulanter duplicato-dentatis supra demum glabnuscuhs subtus in nerviset venis pubescentibus, petiohs pubescentibus setis glandulifens cum pube nmrtis, amentis crassis, biacteis late ovatis acutis, huctibus 1 3 apice peduncuh, bracteis 2 maximis nucem subglobosam inferne arete involventi bus ibique velutinis cum setis glandulilens pube mixtis medio supra nucem plus minus coaictatjs inde expausis eiectis vcl eiecto divergentibus dentato lobatis lobis ovato vel lanceolato icutis dentatis ^ ^n Istna (romnnsini' 1638 in h Boiss) et Banatu (Wierb f in h Boiss) — Lam ill t 780, fig q? Poir suppl 4 p 100, Koch syn ed 2, p 738, Roichb ic t 637 C Colurna Hartig forst t 179 Tommas f exs 1638 ^in Reich cit), non Linn Cor Avellana pumila Byzantnu Clus hist p II fig sup sinistra (non aliae) C tubulosa Dochraahl Obstkunde 4, p 38 (ubi vu plunmae sedulo disting), Hartig lorst t 16 (mediocr) Forma et magnitudo foliorum et fructus omnino C Amencdnae, cui propioi quam ulla *L*\ speciminibus fiuctif milii cognitis non diversas, imo vix vanetates dixtnm, sed biacteas juniores flons masculi non vidi quae in Ameiicant subuhtae Amenta ciassiora m praesenti, squamis magis tomentosis /lores mfeiiores subsessiles, supei stipitati Di\eisitas physiologica a Jest nam dmencaiu Ingus in (amda mend et Massachusetts patitur et euiop<ea in pute calidiorc tanluni adest Anthoiae in duibus ipice pilosae Vdiidnt speuiuini h Boiss fructu 9 24 lin longo, bracteis pia?cipuis plus minus connnentibus, plus minus dentalis et acummatis vel acutis Nux ellipsoidea (an sempei 9) (v s)

p, *atropurpurea* (Doclim Fuhi Obstk p 49), loins intense puipuieis — In hortis irequens C puipurea, atropurpuiea, etc , hoilul C A\ellana puipurea Loudon enc trees, p 922 (v v sine h)

6 C AMERICANA (Walt fl Car p 236), iolus e basi cordata vel obtusa ovatrs vel ovahbus vel obovitis acutis vel acuminatis irre^ulanter duplicato dentatis extia nervos demum erlabiatis, petiolis pubescentibus setis felandulifens cum pube mixtis, amentis giacilibus, bracteis ante flojationem mucionato subu fatis lructibus 1 4 pedunculo brevi insertis, bracteis 2 maximis nucem sub globosam interne arete mvohentibus ibique velutinis cum setis glandulifens pube intermixtis a medio ultrd nucem expansis erectis vel patentibus dentato lobatis lobis ovato-acutis dentatis 5 A fanadi et Illinois (Biendel trees 111 p 12) ad Carolinam (Rugel' *rasei ') et Fluiidam (Michx) — Michx fl boi am 2, p 201, Willd sp 4, p 471, Emeison tiees Mass p 171, Diet sc nat t 102 (mediocris) C Avellanae pirs Spach 1 c. C Americana numihs Wangenh arb p 88, t 29, fr 63 (mail) C humihs Willd Biumz p 108 Petioh 4-b lin longi Limbi *S-S* \ poll longi, 2 3 poll hti, nervis lateialibus utnnque 7 8 ad dentes passim majores tendentibus Scjuaniae fl m isc cinereo tomentosae juniores subulatee adultee muticde Fiuctus perfecti pollicares et ultia, bractea basilan ampU rotundatd dentatd 4-6 lin latd bracteis m«njonbus cinereo pubescentibus setis biunneis m paite externi mfeiioie numero \anabihbus limbo ultra nucem \ane flexo \ersus apicem solum lobato Nu\ tecta, subglobosa, demum laevis (v s)

P, *Mnsourensis* limbo bracteirum ultia nucem abbreviato, setis in petiolo idiis in biacteis liuctus nullis — In Missoim pi ope Saint-Louis C Amencana Riehl 91 in h Boiss '

§ 2. *Biactex fructum imolventes ultra nucem in tubum angustum elonqatum apice lobatumplus minus coahu* — Sectio 2. Tubo-Avellana *Spacfi I c. (excl C tubulosa)*

7 C ROSTRATA (Ait hort Kew 3, p 364), folns e basi cordate \el obtusà late ovatis vel ovahbus acutis vel acuminatis nrpguLinter duphcato dentatis sub tus in nerus petiohsque pubescentibus fiuctimis apice peduncuh solitarns paucis\e divergentibus, bricteis fructum invoKentibiis hispidis in tubum urea nucem ovoideum dein angustatum suluecurvum apice vane lobatum subcoahtis parte angustioie altei i duplo leie longioie ^ 5 *n America bo reah versus Siskitchawin (Richaids m Hook fl) Wisconsin (Brindel trees Him p 12), No\d Anglu et secus Alleglimies (h Boiss ') meridiem usque (Emeison) — Michx fl bor am 2, p 201, Willd Baumz p 108, Loudon enc trees p 92S, f 1727 (sine fr), Emerson trees Mass p 173 C cornuta Duroi harbk (fide-met) Stipuldp linceoht*, icuminata3, *i* lin longT, den tatae, subpubescentes Petioli 2 6 lm longi, pilis longis subadpie^sis Limbi 1 3 poll longi, 4*-J poll hti, nervis lateralibus utnnque 7 8 ad dentes ma jores (raro lobulos) tendentibus Bracteae fl masc o^ato-mucronatae hispidae fructus 1] 2 poll longi, flonbus abort] vis et bracteis eorum pan is basi cincti, externe pilis ngidis rufis basi dense obsiti, bracteis interne basi gla bns, lacinns apicc 1 3 lm longis lanceolatis Nu\ ellipsoidea, 5-6 lin longa (v s)

P, *Cahfornica*, collo fructus sublatiore quam infera pars non longiore — In California *C* rostrata Benth pi Hartw ' (n 1960 in h DC et Boiss)

y, *Mandschunca* (Regel Veget Skiz? Amur p 489), pettolo longiore (4 0 lin), limbo lobato paulo amphore acumine abbreviato — Ad fl asiaticum Amur C Mandschunca Maxim ' herb Ex forim fohorum accedit ad C heterophyllam, sed fl et fr praesentis Transitus adsunt ad folia amencanae ex Regel 1 c (v s)

Species exclusa,

C TURTSCHANINOVII Besser m Steud nom = Corydahs Turtschaninovn Bess (ex transpositions m Steud)

Ordo CXCII. JUGLANDACEJE (1). — Terebintaceis affin. *Juss. gen. p.* 375. — Amentacearum gen. *Giseke, prelect. Linn, p.* 583. — Juglandcae *DC. The'or. Mem. p.* 215; *Kunth ann. sc nat.* 1824, *p.* 343; *Bl. ft. Jav. fasc. VIII; Dartlimj ord. nat.* 397. Terebinth, trib.? 1, Jiiglandcrc, *Meissncr gen. p.* 74. — Juglandineae *Dumort. anal. p.* 11. — Juglandeae *Endl. gen. p.* 1125. — Juglandaceae *Lindl. nat. syst. ed.* 2, *p.* 180, *veget. Kingd. ed.* 3, *p.* 292; *A. Gray man. of hot. p.* 401; *Cas. DC. in Ann. sc. nat. ser.* 4, *v.* 18, *p.* 5, *t.* 1-6.

Flores unisexuales. Inflorescentia indefinita, modo unisexualis et tune masculina amentacea axillaris, feminea spicata terminalis axillarisve; modo bisexualis el tune amenti pars masculina tmninalis. Floris inas«. minuti pcrigoniurn simplex, bractese intus adnalum, modo 6-lobum (lobo antico, bracteae opposite exteriorc), modo 2-3-lobum (lobo antico et lobis dttubus lateralibus abortivis), modo nullum. Stamina 3-36, perigonio intus vel bractca) basi inscrta, 2-multiseriata; iilamenla brevissima vel subnulla, libera vel imd basi coalita. Anlherae biloculares, glabra vel pubescentes, longitudinaliter dehiscentes, conncolivo saspissime supra loculos producto. Pollen globosum, poris seplem in circulo aGqualoriali dispositis dohiscens (Hassall in Ann. of nat. hist. 9, t. 16, f. 99). Ovarii rudimentum rarum. Floris feminci bractca cum flore plus minusve coalita vel libera. Perigoniuin modo duplex; extmus (in auct. calyx) cum ovario plus minusve connatum, cupulilbrme, apicc tri-mulli-denU'tum vel bractcale involucrum formans; intcrius (in auct. corolla) cum ovario connatum, apice 4-dmtatum (dentibus2 rachi opposilis in acslivat. ext(Tioribus); modo simplex, cum ovario connatum, mine basi cupuliforme, apice 4-denlalurn (denle anteriore rachi opposilq, bracteali, caeteris longiore exleriore), nunc e dentibus latoralibus duohus cum ovario connatisconstans. Ovarium unicum, primum uniloculare, poslca e disscp. 2-4 (quorum duo sligmatibus opposita *dorsalia,* duo cum stigmatibus alterna *ventralia* dicta) incomplete basi et apice 2-4-loculare. Stylus brevis. Stigmata plerumque duorachi opposita vel lalenilia, raro qualuor. Placentariuni centrale, columnil'orme, primum liberuin, postea cum dissepirnenlis plus minusve connafum, apice ovulum unicuin orthotropum errclum sessile gerens. Fruclus e flore incrassato conslans. Pericarpium a perigonio format urn, carnosum vel membranaceum, malurilate indebiscens vel irregulariter fissum vel valvis quatuor dehiscens. Nux ab ovario indurato formata, cum pericarpio concreta, vel saipius libera, intus a

(1) Auctore Casimir Pyramo de Candolle.

dissepimentis osseis basi et apice incomplete 2-4-locularis. Cocca el dissepimenta lacunis amplitudine variantibus intus perforata, in sectione transversali formà et crassitudine variantia. Semen exalbuminosum, ex ovulo inflalo npcis loculos omnino implenle formatum. Testa membranacea, tracheispercursa, stomatiis et interdum pilis discifonnibus instrucla.[1] Endoplevra tenuissime membranacea, interdum rubra. Radicula supera, brevissimei. Cotyledones carnosae, nucem implentes, apice plerumque bilohae, basi nltenmitaj cordataeve. Plumula jnira cotyledones abdila, squamis distichis vel apice imbricatis plerumque inslructa. — Arbores in temperalis hemisphaerii borealis', Java? et Boliviae crescenles, succo aqueo vel resinoso. Folia alterna, secuudum ordinem 2 disposita, exstipulata, composita, impari-pinnata, vel rarissime abortu abruptc pinnata, 3-15-, juga, glabra vel pubescentia vel tomentosa vel pilis discifonni-" bus conspersa. Foliola formS. variantia, membranacea vel coriacea, epunctata, margine integerrima serratave. Gemmee in axilla 2-3 superpositai, modo squamosae (squamis petiolaceis vernatione decussatim yalvaribus, vel equilantibus), modo foliaceae, modo in axilla sessiles^ modo ante evolutionem stipitatae.— Ordo Terebintbaceis, per Anacardiaceas, et Myricaceis, per Myricam Gale affinis.

I. JUGLANS L. — Nux *Tournef. inst. p.* 581, *t.* 346- — Juglans *L. gen. ed.* 1, 997; *Watson Dendrol. t.* 158, 192; *Nutt. gen.* 2, *p.* 220; *Kuntk in Ann. sc. nat.* 1824, *p.* !JVi; *Meissner fjen. p.* 74; *Endlich. gen.* 5890; *A. Gray man. of hot. p.* 401; *Cas. DC. mem. in Ann. sc.* 18> *p.* 34, *f.* \, 11, 12, 22, 38, 43. — Walfia *Alefeld in Bonpland.* 1861, p. 334:

Amenta solitaria, a priori innovatione nascentia. Floris masc. perigonium 5-6-lobum, bracteae intus adnatum (lobo antico bractese opposito, in aestivatione exteriore, lobis % lateralibus). Stamina intra pcri^onium toro inserta, 2-multi-seriata. Filamenta brevissima, libera. AntheraB crassae, biloculares. Ovarii rudimcntum rarissinium. SpicaB bi[illegible] pauciflorae, terminales. Floris femin. perigonium duplex, c[illegible] usque ad stylum connatum; exterius cupuliforme, villosum, ap[illegible] irregulariter multi-dentatum; intorius 4-dentatum (dentibus ra[illegible] positis in aestivatione exterionbus). Stylus brevis. Stigmata 2, rachi opposita, decidua, linearia vel clclviformia^ Pcricafpium carnosura, indehiscens, cum nuce concretuni, vel maturitate liberum, irregulariter rumpens Nux globosa, extus lonpitudinaliter vel irregulariter rugosa, intfls basi et apice 2-d-locularis, in germinatione bivalvis; valvae cum stigmatibus alternas, ad commissuram et dor^o costatae. Lacunae coccae ct dissepimentorum aniplae. —Folia impari-jjinnata. Gemmae squamo&ae, squamis paucis, 4-6 decussatim valvaribus. — In temperatis Americaj boreali#, Mexici, Bolivias, Jamaicae et AsiaB.

§ *I. Dissepimenta* 4, *quorum* 2 *dofsalia,* 2 *ventralia. Squama* embryonis nunc distichs, nunc apice cauliculi imbricate.*

1. J. REGIA (L. sp. p. 1415), fohis 5-6-juRis glabns, foliolis ovatis apice atten^a-tis vel ovato-lanceolatis margine integris membranaceis subcoriaceis subtus

adaxillasnervorumsecundanum cum pnmanopilosis, floribusmasc sessilibus, bracteâ lanceolata, pengonio elongato 6-lobo, staminibus plerumque 12 pen Ronn lobos aequantibus, spicis 2-5 flons, flonhus femm sessilibus pengonio pxteriore MIIOSO apicp 3 dentato dentibus minutis penponii inteiioiis dentibus 4 glabns, stylo brevissimo, pencaipio gldbro maturiute irregulariter rumpente, nuce ovato acummatâ basi subcordati reticulato rugosa lugis obtusis intus basi et apice incomplete 41oculan, dissepim tenuibus lacunis inconspi cms, srjuamis embiyonis distichis *j Spontanea in prov tianscaucasicis (herb Mus pai ', Ledeb floi ross p 507), id est in Imiretil (rithw casp tiiu p 21), Georgi L (Hohen cnura Klisab p 2 >0) lalysch prope Lenkoran et Astaim (/lohon enum prov Talysch, p 103); in Ponto alt 410-1800 m subspontanea, et in Armonu inter Avzapert ot Uumbazar copiosissima et verosimiliter spontanea* alt 1800 m (Ichihalcheff Asie mineuip 1, p 172), in Be ludchistan (herb Boiss , ubi fob urn linicum cum commentano not above ten trees in all Beludshistan J stocks), in Indiâ prope Kamaon et Sikhim, iegno Biimanico prope Toong Dong' (J villosa Wallich, n 4945), prov boi imp sinensis(Lom 11 (och p 702) Alihi frequenter colitur, in Luropâ usque d<l 56 lat ad occ et 52° ad or (Alpb DC geopi bot 1 p TO) \lgenâ' Chih (Gay fl du Chili) — Woodw med bot 2, p 347, Diet SL nat t 268 et 269, Npes IC orfic , Hayne H t 17, Neesjun gen fl germ fasc 3, Cas. Df mem in Ann \c nat 1 c fig 12,22 Wallia regia Akf DP \anetatibus cultis confer ad Dochmal Beschieib ex Bonpl 1861, p 387 (v v)

p; *macrocarpa.*, folus 4 jugis, nucp maxim» 6-7 c longa rugosissima Begia maxima Loud encycl Noix bijou, noix de jauge (Bon jardmier)

Y, *venosa*, folus 5-jugis, foholis margin serratis, nuce parvi o\atâ 4 c vix longa subrugosa — In horto par (v s)

0, *Barthcnana*, foholis margine remote serratis, nuce elongatâ basi apiceque attenuatâ longitudinahtei stnatâ — In horto par (v s)

£, *rugosa*, foholis conaceis, nuce maximâ 6-7 c longa o\ato-oblonga apice basique globosa lugosissinià, cocca 2 3 nun crassa, dissepimentis ciassis osseis — In hort par (v s)

5, *monophylla*, folus 01-jugis, foholis margine integris, impari raajore 14 c longo ovato (v s)

YJ, *seroUna*, folus 4jugis, foholis margine lntegernmis, fructu sero ma turescente

6, *prxpartunpni:*, folus 4jugis, foholis sessihhus o\ato-acuminatis basi obtusis margme integerrimis conaceis (v v)

1, *lacmiata*, folus 5 6 jugis, foholis lanceolatis dissectis vel laciniosis, nuce ovato-oblongi apice attenuate! Nu\ luglans folus laciniatis Nouv Duh 4, p 734 T heterophylla Loudon encycl p 732 J fihcifoha I odd catted 1836 Fein leaved walnut Loudon encycl p 732 J dissecta hort Taur 910 (\ s)

x *tenera* (Loud encycl p 732), coccâ fragih I Iructii tenero, fragili puta mine Bauh pin 417, Nouv Duham v 4, p 174 Psoyer à coque tendre, noyer mťsange — Bon jardinier, 1861, p 3%

>, *Beloudchistana*, folus 2]ug^s, foholis o\ato lanceolatis margine integm conacpis apice acummatis, toholo impari 25 c longo Jn Beloudchistan, spontanea, hoib Boiss (v s)

fi *racemosa*, spicis elongatis multiflons — Nouv Duham 4, p i74 Noyer tgrappe Bon jardinier ed JfhO, p i%

J, bifera — Nux Juglans bifera, Nouv Duh 4, p. 174

\, *Kamaoma* (fas DC in Ann sc nat ser 4, v 18, p 33), petiolo 6 7 c longo et rachi rulo-pubescentibus, folus 3 jugis, foholis lanceolatis integris subtus ad nervos rufo-pubescentibus, flonbus masc pedicellatis fructu rufo villoso, nuce ovoideo l>bosi bicostatR apice attenuate COCL?

e\tus reticulato-rugosd rugis contaminatis dunssimd elacunosd, dissepimentis crassis lacunosis — In Indii bor pi ope Kamaon (h soc Ind or 4943')

o, *Sinensis* (Cas DC mém 1 c p 33, f. 38, 39), nuce globosà bicostatà subobovatd, cocci extus reticulato-stnaU dunssimâ lacunis conjunctis duphcaU paite mteina sinuosd, dissepimentis elacunosis osseis — In China (li D(')

7c, *intermedia (Li** DC mem 1 c p 281 42), folns 4 5 jugis, petiolo et rachi gldbns, foliolis margine lemote serratis membranaceis, nuce oblongo nloDOSd basi angulosA et mucronati apice attenuatd mucionulatd, cocca et dissepinientis OSSPIS £ J m crassis, squamis embryonis distichis Hy bnda inter J nigiani et regiam, in hoi Us laid, in horto rrnnon nata

2 J NIGRV (L sp p 1415), folns 7-9-jugis, petiolo et lachi pubescentibus^ foliolis ovato lanctoldtis basi \anantibus apice icuminitis margine serratis membranaceis supra glabns subtus pdllldionbus pubescentibus, gemAis albo-pilosis, floi inasc 'macteA hastati \el apicc tridtntata, pengonio lotundo b lobo e\tus pubt scent* , stamuubus 2U 3b multi senatis filimentis bievissimis connecU\o supra loculos producto dcuto \c\ obtuso spicis *1* o flons, floruni lenun sessilium pengonio extenoie pul>esc^pto apice nrogulantei multi dentato pengonio intpriore 4-dentato (lentil)us extus glabns, fructu stride sphrfjiico, pencarpio lml^hiscentp carnoso \indi, nuce globosi extus rugosissinii rugis lon^'is pu illolis lineanbus intus basi pt apice 4 loculan cocc i et dissep crassissinus duussinns Id(unosis, lacunis magnis, endoplevn rubid, smidniis lpice cauliculi nnbncatis ^ In Amcnc i boreali a Massachussetts (Emeis 1 c) ubi forsan intiod (Coopei m Smiths rep 185&, p 254) et Big sioux n\ei Iowa ((uop ibid) dd Flondam (Beck bot p *M* >) et Texas in Payette countiy (Mittlies' n 376 in h Boiss) — Viv luglans vnginiana nigra Herm Hoit Lu^d. p 4>2,t 4)3 Julians ioliolis lancoolatis etc Linn Hort Cliff p 449 Nux luglans nigra viiginiensis Paik tlieat 1414 Catesb Car l_t p 67, t 67 lu^lans nigra Linn p 1415, Wangenh Amei t 8, i 20, Jacq IC lar 1, t 191, Wich\ arb t H8 Loudon encycl trees, p 734, 1 1417, Luieison leport trees Massach p 18o, Duham arb 4, t 4, n 48, Schni/1 icon iim lasc H, t i44, i I, Tas DC mem 1 c fig 8 10,46 Wallia nigri Alel Arbor excelsa, lamis diffusis, junionbus pubescentibus, lolia aromatica 4o 50 c longa, pill glandulosi numerosi (v v)

P, *Boliviano,* (Cas DC m6m 1 c), loins 70 c longis 11-jugis glabns, petiolo 6 longo et rachi glabns, foliolis 12-15 c clongis 5 6c latis, nucis lugis crassionbus. In temperatis Bolivia unde'a Weddel. allata (v in herb Mus. par)

§ 2. *Dissepwunta dorsaha nulla. Squamx embryonis nullx*

3 J CINERIA (L sp p 1415), folns 8 10 jugis, petiolo et rachi pubescentibus Ioliolis sessilibus vel iaro biewssime petiolulatis ovato-lanceolatis margine serratis cilialisque supra puberulis subtus pubescentibus, gemmis albido pubescentibus floi masc bracteâ lanceolata, pengonio elongato plerumque bjobo, staminibus pleiumque 12, filamentis hrewssimis connectivo non supra loculos producto, loculis apice lostratis, spicis 6 8 flons, flonbus fem sessi libus et rachi mlo Inrsutis, pengonio exter) raio obscure 4 dentato dente anter longiore extenoro, pengonn interioris dentibus pengon extenons sub longionbus extus pubescentibus, fructu cylindnco pencarpio indehiscente ruto-hirsuto, nuce cylindnco acuminat\ e^tus rugosissimc\ rugis asperatis crassis quarum 8 magis distinctis longitudinalibus, mtus basi biloculan apice uniloculan, coccA et dissepimentis crassis^imis dunssimis lacunosis, lacunis maximis loculos fingentibus 3 In Ameiica boreali a Canada (Michx flor bor amer 2, p 143) et Bigsioux mer Iowa (Cooper m Smiths rep J858, p 2o4) ad Tenessee (herb Boiss '), Saint Louis Missouri (Riehl herb Boiss ') et Georgiam (Beck bot p 333) _ j_{ac}q ic rar 1, t 192, Wangenh. amer 21, t 9 f 21, Pursh fl am sept 2, p 636, Loudon enc trees, p 735, f 1418, Bigel

med bot, t 32, Emers rep trees Massach p 882 J oblonga Mill diet n 3 J cathartica Mich arb am 1 p 166, t 2 Wallia cmerea Alef 1 c Oil nut, white nut Walnut et Butter nut anglo-am (v s)

4 J MANDCHOURICA (Maxim '), folns 7 9jugis, petiolo et rachi rufo pubescen tibuSj foliolis sessilibus basi vanantibus apice attenuatis margine remote sei ratis supra puberulis subtus pubescentibus ad axillas rufo pubescentibus, flo nbus mast spssihbus, pengonio ulobo elongato, staminibus circ 8, iructu ut in J *entered* rugis nucis ciassionbus ^ In regionc fluminis Amooi (Maxim coll i) Fohd6d longa, petiolo 9 c longo (v s)

5 J RUPESTRIS (Fngelm), folns 6 10iugis, petiolo et rachi pubescentibus, foliolis sessilibus lanceolato acuminatis sublalcdtis basi inaequalibus margine serratis supra glabus suhliis pubeiulis gemmis albido pul)escentibus, flonbus masc brevissmip stipitalis biactej lanceolata extus pubescente pengonio elongato vel subrotundo 3 5 lobo extus pubescente, staminibus circ 20, fila fenentis subnullis anthens subpubescentibus loculis ipicc rostratis connectivo non ultia IOLUIOS producto, spius 3 4 flons rachi et flonbus albido hnsutis, pengonio exter apice 4 multi dentato dentihus peng intenons extus pube rubs linean lanceolatis, Iructu globoso pencarpio glibrato indehiscente, nuce sphdinta e\tu*longitudinalitej stnata COLL i et dissepim trassis lacunis amplis numerosis in spctione transversali IOLUIOS hngentibus ^ In Amei boi a Californià ad no Grande N M. (Cooper jn Smiths rep 18i8, p 260), New Mexico (Sitgreaves rep p 171, t 15 et 16) — Cas DC mem 1 c f 11 de fl nusc Folia 2 5 d longa (v s)

p, *ma]or* (Sitgreaves rep p 171, t 16), fructibus subovalo globosis apiculatis leviter sulcatis

Species non satis notae

6 J ARGIIIA (Wall) iolns 3 jugis, petiolo et rachi rulo pubescentibus, foliolis subsessilibus sessilibusve basi attenuitis maiginc serratis Ad Toong Dong in legno Bumdn (Wallicb'list 4944) Folia fcie 20 c longa Porsan Engelhardtiis addenda (v s)

7 J PYRIFORMIS (Iiobm), loins 9 15 |ugis loholis altcrnis suboppositisve leviter falcitis basi rotunddtis margine sf iruhtis subtus fustis ad nenos pubescentibus (gemmis iusco MIIOSIS^ Walp ami) flonb misc pengonio rotundo 5 6m lito 6 lobo, staminibus CA> In Mevico ad Cosmatepec (ex collec Bottcii, n 579, Siimichi ist' n 870 in h DC ct Boiss) Wallia pynlormis Aler Amenti 20 *L* LUG lon^i I rucLus scssilis, globoso p^nformis, pyipna basi depress^ longitudin acute et piofunde sulcati, crassissimà, dunssimA, mesocarpium exsuccum conaceum (ex Walp dim v J, p 844) (v s)

8 J IAMAICLNCIS iolns9jugis loholis plerumque dlteims serrato lanceolatis, basi lnaequilibus margme senatis glim is supra nitentibus subtus pallidionbus, gemnns teirugineis, nuce globoso attenuate, coccà et dissepimentis crassissinns ^ in Jamaica Noyer de la Jamuque et noyer a feuilles äe frfine. Descourt fl mod des Ant v 7, p 5, t 453, non J fiaxinifolid lam

Species ewclwx.

J ALBA 1 = Cai y i toraentosd Nutt

J ALBA Michx = Carya alba

J ALBA MINIMA Marsh = Carya amaia

J ALBO OVATA Marsh = Cdrya sulcata

J A MARA Michx = Carya amara

J ANGUSTIFOLIA Lam = ? Carya dmara

J BACCATAlinn sp. p 1416 =[9]

J GAMIRIUM Lour = Ign. — NOD Juglandacea
J CATAPPA Lour == Termmaha Cat^ppa
J COMPRESSA Willd = Carya sulcata
J COMPRESSA Gaertn = Caryd alba
J CYLINDRICA Lam = Carya olivaeformis
J FRAXINII-OLIA Lam = Pttrocarya fraxinifolid
J GLABRA Willd = Cdrya porcina
J MUCRONATA Michx = Caiyd sulcata
J. LACINIOSA Michx = Carya sulcata.
J MYRISTIC/FFORMIS Michx = Carya mynsticaformis
J oLiViEFORMis Michx = Carya olivaeformis
J OBCORDATA Willd = Caryd porcina.
J OVATA Mill = Carya alba
T PORCINA Michx = Carya porcina.
J PTEBOCARPA Michx. = Pterocarya Caucasica
J. PTEROCOCCA Colebr. = Engelhardtia Colebrookeana
J RUBRA Gaertn = Caryd sulcata
J TOMENTOSA Michx = Cdrya tomentosa

II PTEROCARYA *Kunlh Terebvnthac gen in Ann sc nat* 1824, *p* 13, *Endl gen n* 5891, *Cas DC mem I c p* 35, *fig* 7, 1% 20, 47 49

Amenta solitana, a pnore innovatione nascentia Flons masc. minuti peiigonium bracteae adnatum 5-6-lobum, lobo anteriore bracteae opposito in aestiv. extenore, quatuor htcralibus, posterior^ iachi opposito saepe aboitiente. Stamina 9-18,2-senald, antheide biloculares Spicde axillares multiflorae. Flons fern sessihs bractca lanccolata, pnmum hbera, posted cum lobis 2 lateialibus connata. PdMgonium duplex, extenus c biacteâ et lobis 2 laterahbus foimatum, basi cupulifoime cum ovano connalim, supernc hbcrum, lateiahtei dipteium, mteuus mferne cum ovauo connatura, tubiforme, apice o\aui d-dentdtum, dentibus rachi oppositis 2 in sestiv. extenonbus Stylus dentibus peng inter subbrevior Stigmata duo rachi opposita, decidua tiuctus lakialitei dipterus, pcncaipium indehiscens, scarioso-memLidndccum Nux ossea, cocca lacunis duabus sti$_o$matibus oppositis matenc medullan implUis perfo rata, dissepimenta dorsalia cum disscp. venlrahbus connata, unde nux basi intus 4-loculans — Aiboies e prov rossicis transciuiasicis, China, Japoniâ, ranns diffusis, folns sub-12-jugis.

1 P iBAxiNiFOiiA (Spath lust \e£ 2, p 180), Joins sub \Z jugis, petiolo et rachi glibns, foliolis sessilibus \e\ bieviss petiolulitis ovato attenuatis basi ^arlarUlblls uidigme senatis subtus ad axillas nerv secund cum piimario pilosis, gemmis ante p\olut slipitatis lohaocis flnnbus masc subpedicellatis extus gldnduloso puljesccntibus, bi ictcà o\dlo lmueoldti])ciiffonio 3-6 lobo plcrumquo J lobo lobis c msnicuo 2 J ncivus sUmimbus 9 18 bisenatis, bpicis multiflons, flonbus s» ssilihus bractt i lumut i linceoliti alls semi oim culanbus glabris nniltinoivii>, neivis paidlldis inconspicuis porigonu intc nons dentibus bneanbub gldbiis 5 ^{in} t*$^{r()}$i rossitis transcaucasiois disti Schckensis (Bieb 1 c), circa lankoran (Hohtn) et in provinc Idlush (Hohen) in locis tcmpeidl I mop culta — Cds 1)(m6m 1 c fig 7, 19,20, 47 49 Juglans fnuiulblid lam diet 4,p 502 JuglIDS pteiocaipa Willd sp 4,p 455, Bieb fl fauiocauc suppl p 624 Rhus obscurum Bicb fl Tauiocduc n 606 Juglans pterocarpa Michx fl bor am 2, p 192 P Caucasica C A

Mey Verz pfl. Cauc p 134, Hohen. en. Tal p 103, Ledeb fl ross 1, p 507 Folia circ [r]) d longa, petiolo 4 c longo Stipes gemmarum 2 c longus Bractea vix millim longa (v v)

2 P STENOPTERA (Cas DC m6m cit p 35), loins ≠ jugis, impari rudimentano, petiolo et nchi glibns foliolis sessilibus elliptico lanceolatis basi pleiumqup »attenuatis apice obtusis bievissimc denticuUus maigme seiratis subtus ad axillds nervoram sccund cum pnmaiio pilosis, gemmis stipitatis,flonb iemin sessilibus, biactea minutá acuta, alis linean-oblongis apice attenuatis, J In China, exCalleiy, 1844, n 169 in hoib Mus pai.t (v s)

Species ignotx

3 P SORBIFOLIA (Sicb pt Zucc fam. nat fasc l, p 33), folns 4-8 jugis, foliolis suboppositis subsessilibus lanccolatis longe acuminatis donse at arguto semi latis aequc ac potioli et pedunculi molliter pubesccntibus, imentis misculis simplicibus intraioliaceis \el in axillis loliorum mfonoium, lemineo elongato loins breviore laxo subterminali, bracteis dense hirsutis In Japonia

4 P RHOIFOLIA (Sieb et 7ucc fam nat fasc l, p 33), folns 8 9-iugis, foliolis sessilibus e basi rotundatà in«equali oblongo-lanceolatis acuminatis argute et dense serrulatis supeine ghbus subtus ad veins ?pque ac petioli mollitei pu bescentibus, amentis lemineis subtciminahbus laxiflons lolia ffquantilms VPI superantibus, bracteis glabns In Japoniâ.

Ill ENGELHARDTIA (I)/ *eschen in Blume Bifd* (1825)2, p 528, *Blume fl* jai *Jugland , Wall lu>t n* 4940 42, *Wall pi a* rai* 2, *p* 85, 3, *p* 4, *Endhch gen n* S892 *(excl Dammara Rumph) Cai DC mem I c p* 3J, *f* 21 *{fl fern)* — Ptenlema *Reinw tyll pi nov in I lord,* 1828, p 13 — Oreo-munnea *Orsted Oreomvnnea not Jugland genus,* 8 (sine *anno dwulg sed* 1859 *comm)*

Inflorescentia modo paniculato-ramosa, ramis laterahbus masc amentiformibus, terminah femineo spiciformi, modo pars masc. amentis axillanbus 2-4 rachi communi nascentibus constans, pars feminea spiciformis, termmahs axillansve Flons masc parvi sessilis vel subsessilis pengonium bracteae plerumque tu-dentatae vel tn-lobatas flore minore intus adnatum, plerumque 3-6-lobum elongatum 2-3 m. longum, lobo antenorp bracteae opposite 4 laterálibus, uno postenore rachi opposito saepe abortivo. Stamina 5-13, nlamenta brevissima, lobos pen^onu asquantia vel paulo superantia. Flores femm numerosissimi, sessiles vel brevjssime pedicellati, bractea pengonium extenus formans, inferne cupuhformis cum flore basi connata, superne quadn-lobata floio multo longior, extus basi villosa, lobis *6* antenonbus lincan-lanceolatis pinnatìnervns, lobo postenore rachi opposito margine 2-multi-crenato aunculaeformi. Gotyledones contortuplicatae — Arbores asiaticae lanus amencanas.

Sectio i. PTERILEMA *Cas. DC in Ann. sc nat.* 18, p 35

Dissepimenta in nuce 2 vel imâ basi 4, in sectione transversali non septulitPia — Engelhardtia sive Ptenlema *auctorum* — Omnes asiaticae.

1 E SPICATA (Bl bijdr p 528, fl Ja\ t 1 et 5), folus circiter 5 jugis plerumque abrupte pmnasectis, petiolo et rachi glabns ioliolis petiolulatis rigidly cona ceisve ovato lanceolatis basi inaequalitei attpnuatis apice acuminatis acuti^ margine integemmis glabns ad axillas nervorum secund cum pnraano pilosis

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fl) Errore bngplhardu sciiptum

amentis a priore innovatione et dliquando basi spicaiura nascentibus 3 4 ldchi communi inseitis flonbus masc sessihbus pechcelldtisvê extus puberuhs, bracteâ plerumque minutâ tnlobat\ pengonio elongato plerumque 5 lobo, lobo postenoie abortivo stamimbus 8H filamentis brevissimis, inthens pubescentibus spicis *i* pnore inno\ Uiono nas(entibus flouhus itm sessilibus lobo pcngonu extoiioiis inteimnlio laterihlms duplo lon^ioie ^ In J iv i Occident in piov 1 jmjor a Buiten/oig (Bl 11 Jav) in NdpaliA j(herb c«)iup md oi 1832,n 4940') Mkhim Khisia et (hittagong, alt 1 SOCOpd (Hook 1 etfhoms » h Ind oi)E Ro\bmghi iniLindl inWill list n 4940' Wall pi is iar 2, p 85, t 199 Juglans pterococci Roxb h beng Arboi 50-200 pd alta monoica Folia sub-40 c longa, iohola consistentia niaxime vanabiha (v s)

2 E PHILIPPINENSIS (Cas DC 1 c), folns 4 5 jugis impan pinnitis, petiolo et lachi pubeiuhs, loliohs membranaceis petiolulatis elliptico lanceolatis basi pie mmque maequalibus apice obtusiuscuhs margine lntegernmis, amentis a pnore innovitione nascentibus 4 T lachi communi approximate, flonbus masc albo husutis stamimbus I I I ilbo husiitis ludimento o^ lni filiformi spicis d recenti innovatione nisccnlibus, flonbus lemmeis pengonu extenons lobo inteimedio laterahbus dimidio longioie stigmatibus plorumque 4 — In Phi lippinis (Cunnng' n 1120 in h DC et Boiss) loin 16 20 c longa, petiolus 5 b c. longus (v s)

3 1* PARVIFOLIA (Cas DC 1 c), loins J-4-jugis pitIumque abiupte pinndtis discis flavis conspeisis foliohs ovato lance olatis basi attenuatis marline ser ratis ngidis id ixillas neivoium secund cum primano subtus pilosis gemmis flavis, spicis a lecenti mnov itiont nascentibus, flonbus lem pciigonn exteno- ns lobo mtermulio 1 itei ilibus dimidio longioie stigmatibus plerumquo 4 — In Philippims (Cuuun^ i n 1J29) t o l i a 3 j c longa (\ s)

4 L ACERULORA (Bl pi JdV t 2 et 5, B), folns 2 4 jugis abrupte pinnatis, ioliolis sessilibus vel bievissime petiolulatis ovdtis vel o^ato oblongis apice in acumen obtusum brcvitei attinuatis margine lntegemmis gldbns subtus ad axillas nei voium secund cum pnmino pilosis, spicis a lecenti innovatione nascentibus, flonbus fern sessilibus peiigonn cxtenoiis lobo intermedio lateralibus duplo longiore, ^ in Javae sylvis Pagaianghu, in saltihus piov intci Bantam' (Bl fl Ja\ ) Ptonlemi acenfloium Reinw syllo^e plant \ 2, p 13, in Floidl82> E dccnloha Steud nom (eir. tjp) Dioica (v s)

5 E SCRRATA (Bl fl Tav t 4 et r>, C), folns circ 6]ugis, petiolo et rachi puberuhs, foliohs subsessilibus ohlongis vel oblongo-hnceolatis obtusis acu- mnidtis\e basi inajquihbus ct obtusiuscuhs lanus semicoid ltis mirgine spi ratis conaceis supia ghbus (ntr\is exceptis) subtus pubescentibus spicis recenti innovdtione ndstentibus flonbus lem sessilibus lobo pengonu exte nous inteimedio ldteiahbus duplo lon$_n$iore postenore o\ato lanceolato -$ In sylvis Jivde occid (Bl fl Jav) d in Suinati I or (Miquel) Vrboi festuosa 60 100 pd altd Dioici l^olnllc longa F Palembanica Miquel fl Ind bit suppl 1, p 346 (v s)

6 E CoLEBROOKbANA (Lindl. in Wall pi as ni Jp 4 t 208) iolns 4 5-jugis imparipinnatis, petiolo et rachi cano tomentosi* foliohs petiolulatis elliptico lanceoldtis bdsi subdttenualis dpice obtusis conaceis maigme lntegernmis ju moribus tomentosis flonbus misc pedicellatis pengonio 3 lobo stamimbus plerumque 10 inthens pubescentibus spicis a recenti innovatione niscentibus, huctu hispidissimo ^ In montibus N ipah fi (Wall) pi ope Kamaon alt 4 >00 pd (Himalaydn herb Stiacheyinh Kew') Juglans pteiococcdColebiooke IC pict Petiolus 6 6c longus bpicae iolus bie\iorps vel eis vix longiores (\ s)

7 L WALLIGHIANA (Lmdl in Will list) folns 2 4 |ugis abiupte pmnilis pc tiolo et iichi gldbidtis loliohs petiolulatis elliptico lanceolatis bdsi attenuatis apice obtusis mugine lnte^cminis ^labns conaceis, spicis drecpnti innoMtione nascentibus flonbus fein pedicellilis pengonu extenoris lobo inteimedio Htei ihbus duplo 1 ngioie, pengonio intenoit bdsi villoso stiginatibiis 2 d(ci duis huctu petiolulito mice dpice dentibus pengonu intenoiis jnriui ill*

coronatA In Pcnang ot Singapore (Wall » list n 4942) Folia 6 10 c longa (v s)

p, *chrysolepix,* foliolis marline n»cmvulis, sti^m ltibus '» f deciduis,pen^ i mo uitonorp imluntale aureo In sylvis m>ul<e Hong Kong (Hantehn li Kew) —E chrysolepsu Hanca in Ann sc nat SPI 4, v 15, p 227 (v s)

E RIGIDA-(B1 bijdr p r>28, fl Jiv t 3), folns pleruraque 4-jugi^abrupU pirmalis, poliolo glabro; foliolis biovilu pttioluliti-> ovatis basi inupque attc minis mirginPintegmimK coiiacnsglibns, arm ntis soliLims \el rachi com muni i jcccnti innmitionp nascentilnis, flonbut mist pims constantibu>> PX s(nnm\ Hoid.li unit *i]* 5 fid\ pubpscenlp pi$_n^r$nn stippnorc versus medium sUnunilirl laciniis 2 urns oppositis duitilnimibus \tl sa.])t vix distinguendis sluuiimbus *'i* ,5 In Javi, alt 2500 p'i , nionte bilak piuv. Buitenzorg Foliola 2 6c longa Dioica (\ s)

Section UHEOMUNNFA *Can DC* m *inn sc nat* 18, p.)f>, *et fig* ">0, *sechoms ruel a cl OErst. comm* Genus Oieomunnea *Oh rsled I c*

Disstipimenta in nuce 4, inargine intra loculos septulifera eL sinuos-i

9 L OHE-OMLNNLV diupi exsucca mignitudinc fuie nucis Coryli Avellana[1] ^ In AmetiL^ ccntiali (f^rsted) — Oiuomunnei pterocarj)i CEisted 1 c — E medio circitPi cujusve dissppiniPiiti piotniduul soptul i in smgulo loculo *2*

Species exclusa

F Si LANICA Bl = Ign

IV (ARYA *Nutt qcn* ? 2, p 2M), *Kunth in Ann \c nil.* 2, *p* 1V», *tieissn yen JftjEniU gen* ^88^, J *Cray man of bot p* 402, Tav *DC in Ann v* 18 *l> 6 b, I* 2*>, IS, 14, 18, 24,51 i9 — HILOMUS /la/ *fl lud. p W){sinrchar <l(n)* — Scouas *cjusd in New * York med rtp I, her*)f p J>O(/idr *Endl)*

Am(nLi a rcccnti vel pnoie innovdtionp nasc ntia, ipic rirhis com mumsLornAtiquoiurn 1 it' i alia duo opposjla v» 1 alt* rrubisi bracts a fulta Florum n»ds(. pengonium '2-3 lobum, biacU.p intus idnatuin, lobi duo latdciles, lertius postnioi pltiumquc .UJOIIIVUS Stamina 1-10, mtia pcngonium toro niseita, 2-mulLi srnata filamcnta bnvisbimi, lib ia$_7$ anth la, pilosjc, connoctivum supid lo» ulos non prodiiotum. Spicai bic-v<s, pduciflord, teimmal(s Floium fcimneorum ppn$_r$onium simplex, cum ovano us((ue ad stylum connatum, cupuliforme, cxtus villosum, apice 4-dont«ituin, duito illdo antcnoie in *«stivationr« extpnore ple-rumqup longiore \ensimilit»»p bractraii, drnLibus duobus I itcialibus, postpnoip rlcntp in istiv itionc inU note Stylus subnullus Stig-rn ita duo, i ichi O[)|)osiln, basi (irnosb-papillosa fliscum papillosum fingenti connata, persistentia I'encarpmm ^-valvum, dr hiscens, cainosum vel membraiid(Pum Nux v ilvis 2 stigm itibus *d* nchi oppusitis, foima maximp vauibili, pl< nimqno angiilosa, supufi u» 1 j vis, intus IPCOIII plptf 2-^-loculans LiGuiu cocca[1] (t dissepimentoium plerumque punc tiformes SquamaB embryonis ipice ciuliculi —Arbores in temperatis Americ* borealis crLScent(b, folns impari-pinnalis

seclio i EUCAHYA

Squamae *m* gemmi])lijiirnep, vernatione ffiquitantes — (aiya sect J *tas DC Ann sc I c*

1 C ALBA (Nutt gen 2, p 221), folii> l>i|ugis, petiolo et i icln puberulis, foliolis sessilibus lancpolato acuminatis bisi alU nuatis apice acummatis mar-

gine serratis ciliatisque supra glabns sui>tus pubescentibus, inferiorib& minonbus, gemmae squamis 10, amentis abasi teceritioris nmovationis nasSntibus, bracteis diuentorUm lateral, hlilormibus yubesctntibus, flonbus radsc pubfrulis, bractei linedii-lanceoldt i, pen^onii lobo postenore abortive, sta minibus pleiurnque4, spicis 3 1-flons, flonbus *essihhiis liiutu tfloboso, pen caipio crassissimo, nuce parva dlbi 4 6.an$_{o}^{r}$ulaU leMter stiidta apice bre\it(i attenuate mucronatA bisi ohtusA mtus basi 4-loculm, cocci et d is sop cidbsi et durissiniis, lacunis punctiformibus {> In Amencd bor a New Hdinpshin ad Caroluidin mei (Miclix aib am l,p 190), a Pennsylvdiiid dd Geoigiam et Louisianam (Coopei in Ninths np lk">8). - ' is l)(1 L f U, I'J, 18,24 Juglans o\aid Mill Julians albo o\atd Maishal, p 105 J squdmobd Lam diet v 4, p J04, Michx. aib am 1, p 190, f 7 Juglans coinpiossd Gaertn fr 2 p 31, t 8*), I 1. J alba Michx ll boi dm. \ 2, p 193, Puish ft Am sept v 2, p 637. G dlba Nutt , Ell sket Georg p 624, Emeis, rep Massach p 191. Coitex squdmosus Petioli 0-9 c lougi (v s)

2 C SULCATA (Nutt gen 2? p 221), folns J4jugis, yetiolo et rdchi tomen* tosis, foliohs ovdlu dcuminatis bdsi dttenudtis sessihbus mdigine serratis supra glabns subtus tomentosis, gemma[1] scjuamis 10, nmentis longissiinp pedunculate glahns, flonbus masc biactci icuminiti, pcrigonn postonoio lobo aboili\o, st imnnbus 4-0, •inthens sessilil)iis, fuictu ovdto, pcncAipio crassissimo, nine elon^iti apicn basiquc muuonitf 4 an^ulatd lo\iter stnati, mtus liisi 4 loculdn, coccl ct disscpimontis crassis dunssinus lac urns puncti formibus ,5 In America sept i PennsyUanid ad Illinois et Kentucky (di >> man of bot p 402). — Us DC meni 1. c f 5 et 52 (de friictu) lu^ldiis dlboovdta milt ioniU Michx JugLins compressa Willd sp 4, p 'r>8 JUKUIIS rubia Gdiitn fi 2 p,)1, t 89, 1 J? J sulcili Dull Jiighns laciniosa Mich nb Am. sept 1, p J9%1 8, Toiret suppl 4, p 112 Vul$_{ft}$'o Shell baik Inckoi j Shdg-bdik hickory Corlev Mjuamosus Pctioh G 8 c longi (v s)

3. C MicnocAnPV (Nutt gen 2, p 221), folus [4]2-3-juyis, foliohs oblongu Jaiiceoutis acumiiiitis inar^ine senatis supra glabns siihlus ^landulosis, anieiitis longissimis {jlibns, llonbus masc pengumi lobo posteriore ahoitmi, staminibus pleiumque 4, spicis 2-3 lions, sli^niilr ihoniboidali, fruuu subgloboso, pencdipio tenui, nuce 4-mgulatà mucioiidU superficie lavi mtus Insi 4-locul in, coccA et dissepimnntis crassissimis dunssimis, laciinis puiiLtiionnibus. t> In AnieucA boi. in Pennsylvania et versus regioneui dd occid merit 1. (Giay man. of bot p 40.J). Coilev lasvis (v s.)

k C TOMhNToSA (iNutt. gen 2, p 22!), fohis ',) 4-jugis, petiolo et uchi cano villosis, foliohs stssihlius o\dlis \el obuvalo lmcooldlis vel elliptic o 1 mceol itis apico ficumuidtis marginu seirads basi pleiumqin' liiTqualihus siijti i ^lahns subtus tomCnlosts evsic(itione purpm isccntilms, gemni i[1] sqriirnis (t H ami n tis i recenti innovatioiu nascenlihus lomenlosis, i ichi Minimum i folio scinoso squamoso niscunte, bidcteis .imentonnu l.iteial involuciuni fmgentihiis hnedii-lanceoldtis villosis, flonbus maj»c. lomentosis, pengonii lobo postenoic iboitivo, slaniiuibus 3-C, milieus subscssilihus, spicis 3-"i flons, fruclu s|)hjento vel ovdlo, pencupio u isso, nuce ovata megul inter 4-mgulitJ levitei sliifilil apice dLiimiiuU miicionali, mtus hasi 4-loculdn, cocta (I dibsip ci ississiinis, lacunis puncliformnbiis r t In Amencl hoiodh i New jldinpshnu dd Geoi^i.un ((ooper in Smiths np 1858) in Alh^hany (Puish '1 2, p 037) Jugldiisdlh.iL (non Michx) Juglans toinentosa J am diet 4, p f>04, Mich\. floi boi. am 2, p. 192, Midi\ aib Am p. 184 C tomentosL Nutt Puish, Emeis Oi ly mm of bot. p 402 Vulgo Mockei nut, white heirt luckoiy Pctioh 0 8c lun^i. l^oha >0 c longa (v. s)

p, *maxima* (Nutt. I c), fructu duplo crassiore.

5. C PORCINA (Nutt. gen 2, p 222), fohis t-.l jugis, petiolo et radii gldbiis, foliohs sessihhus ovato ldiicoolitis basi attenuatis apice dcuminatis margme seiratis, subtus subpubescentibus, gernnhp squamis oiiutei 11, amontis i M[1] cente innovatione Fidscentihus, flonhiis misc pubescentihiis, pen^onii pu i« IIOIP lobo Sdepe non ahortivo stiminilnis'i mtiiens SCSSIIIIJIIS, liuctu ovoi l» >

vfcl obovoideo vel sphaenco, pencarpio crasso, nuce ovoideâ vel obovoideâ vel sphaencâ 4 6 antfufatà apice dcuinmati mucronaO, superficie leMter stnatâ mtus basi 4 loculaii, cocci et dissepimentis crassis duns $ In America boleali i INew Himpshue id Arkmsas et Piankhn (Coopei in Smiths lep 18S8) in Mondi unti ill (hub Chapp) Jugl ins porciin Mn hx nb Am l,p 206 t 9 C porciru \ntt, Watson dendi 2 i 167 Lmcis rep trees Massach p 1<)7. Gas DC mtm 1 c *i* o, i4 Juglans glibii Willd luglaus obcordata Willd C glabra Oiay man ofbot p 40J Vulgo Pig nut, Ho$_0$* nut Folia 50 c. longa, petioli ~j 20 c longi (v v)

SeCtlO II APOCARYA

Squamae in gemmâ paucae, plerumque 6, veinatione decussatim valvares — Carya sect 2 Cas DC 1 c — Pauio a Caiyà verà discedit, unde nomen

* *Dissepimenta quatuor*

6 C AMARA (Nutt 2, p 222), folns } 4jugis, petiolo et richi pubescentibus, foholis sessilibus vel brevissime petiolulatis o\ato-lanceolatis basi attenuatis interdum ialcatis apice acuminatis mirgine serratis supia glabns siihtus sub pubescentibus discis flavis numerosisiconspersis, gemmis fl ivis, amentis a recentiore innovatione msLenlibus, raclu communi pubescente bracteis amen toium lateralium iugacibus, flunuus masc extus pubescentibus, pengonn lobo postenoic aboitivo, stamimbus 4 loins oppositis mthens sessilibus con nectivo supra loculos non pioducto, lion bus lern discis flavis conspeisis, pengomo 4costato, costis apicem \eisus toiulosis, liuctu globoso, peucarpio tenuissimo 4 costato, costis apicem \eisus aloiormibus, nuce subglobosi txtus levissime slnata apice mucronati lutus bisi 4 loculari, cocci et disse pimcntis ttnuissimis, lacums lineaubus teuuissimis ^ ⊱ In Amencâ boreali a Georgil (111 sket v 2 p 626) ct I(\as ((oopei in Smiths rep 18)8) ad Massach (Linus lep tree**, p 199) Wmdsoi Pensyhani* (Michx) et Mis soun (Cooper Smiths rep 18>8) Juglans anguslilolia, Lam diet 4, p 504[9] J alba minima Maish p 104 J amaia Michx arb am v 1, t 4 G amara Nutt gtn 2, p 222 Oray man ol hot p 403 Cas DC m6m 1 c f 2, >5 Vulgo Bittei nut, white hickory, Swamp hickory *oha 34 d longa (v s)

7 C AQUAHCA (Nutt gen 2, p *2Zi)*} loins 4 6 jugis, petiolo et rachi pubescentibus, ioliolis sessilibus lanceolato acuminatis basi ittcnuatis lnterdum lalcitis anicc acuminatis marline seiratis supia Rlabnssul)tus pubescentibus, gemmis fn\ is squnnis 2 exlei 101 ibus laterahbus b ISI in tubiim (o ilitis amen tis arecenlnnnov itioiiPii isccntibus, bracteis amcntoiuin lateralium lugicibus llonbus masc txtus pubescenlibus, pengonn loho postei sajpissimc non lboitivo staminibus") 7,anthenssubscssilibusconnectivosupialoculosnonproducto flonbus lem discis llavis conspeisis pengonio 4 costato costis non torulosis, liuctu ovato acumin lto compiesso, pencirpio tenui 4 costito, nuce compress,! extus 4-costat\ stnata intus basi imi 4 1oculin, cocca et dissepimentis te nuibus mtus sinuosis, lacums .iraphs ') In paluslnbus Caiolinai et Georgia? (Puish fl) —Cas DC m£m 1 c 1 4 et oG, ⊱7 Juglans aquatica Michx aib 1, p 182, t o, Pursh v 2, p 6J8 Vulgo Watei hickoiy toha 20 24 c longa (v s j

** *Dissepimenta duo*

8 C OLIV^FORMIS (Nutt gen 2, p 221), loins SU1J-8 jugis, petiolo et rachi pubescentibus Ioliolis bievissime subpetiolulatis ovato lanceolatis basi falca Us apice acuminatis maigine seiratis ciliatis pubescentibus, gemmis olivaceis, squamis 2 exterionbus litei ilibus basi in tubum connatis, amentis a pnoie innovatione niscentibus pubescentibus, llonbus masc subsessihbus bracteâ convoluLd, pengonn lobo postico sa3pissime non aboiti\o stinnnibus 4 0 bi senatis, anthens substssiiibus (onnectivo supia loculos non pioducto, Iructu oblongo-cylmdnco, peucarpio 4 costato cainoso, nuce cylindncâ apice mu cronulatà sub 4-angulatà extus l«t\i intus basi 2 loculan, cocca crassâ duns simà diss»epimentis ventiahbus nulhs vel im i tantuni basi conspicuis, dorsah

bus lamelhforznibus tenuibus supra insertionem seminis evanescentibus, lacunis coccae subnullis dissepimentorum magnis sectione transversali lineanbus *f* In Louisiana, Arkansis, Missouri (Michx arb Am), in lexas usque ad S Pedro ((ooper in Smiths iep I808) — CLS DC mem I t f 4 et 9 Juglans cyhndnca Lam diet 4, p 50) J oh vcformis Marsh p 106, Michx fl bor am v 2, p 192, Michx dib Am v l, p 17^, t 3 Vulgo Pacane nut Folia 30 45 c ionga Nux 3 4 c Ionga (v s)

9 C MYRSTICIFORMIS (Nutt gen 2, p 222), foil is 3 4]ugis, petiolo et rachi glabns, ioliolis sessihlnis ovato hnceolatis ipice icummitis basi atlenuatis margiiiL sen itis gldbns nuce cylindiici apict mucronuldtd txtus levi longi tudinihtei lcvissimc substiidld intus basi *1* loculan, dissepimentis ventrah bus nulhs, dorsalibus supi'i mscitionem seminis evantscentibus cum cocci crass is dunssimis, lacunis punctifoimibus J In Amend boreali in Carolina mend (Pursh fl), a Massach ad Opelousas (Coopei in Smiths rep 1858) — Lll sk Gcorg p 628, Cas DC mem 1 c i J8 (de nuct) Jugl ins mynsticde formis Michx dib am v 1, t 10 Puish *i)* «im sept p 638, Poiret diet suppl 4, p 112 Vulgo Nutmeg frolia 1620 c Ionga Nux 3-4 c Ionga (v k)

Species non satis nolx

10 C TFTRAPTFRV (I itbm Mdtnsk meddd Kiopen 1 8"JO, p 80, ex Waip ann 3 p 844), loins 5 8 jugis Joliohs alternis petiolulatis basi falcatis apica acurumatis margino duphtato senitis impan majort longius petiolulato, supra glabns, subtus pubtscentibus ad IIPI\OS paice pubciulis spicis 5 j 6 flons, fructu ovali stsbih teliaptero ^ In convalle Oajaccnci dd vicum Quilapa et alibi 111 Mexico Rarauli pubciuli Folia 8 J2 poll Ionga foliolo teiminali 4 5 poll longo 1 J 2 poll *hto ldttidlibus *1* 4 poll longis, 1 1 \ latis pttiolulis 1 2 hn longis terminah subpollicdn hiuctus 1 J poll longus, ahs 4 acutis, putamine lae\ 1 ovali Stigmata 4, crassa, reflexa

11 C IEXANA (Cas DC in Ann sc nat ser *k*, v 18, p 34), ramis junionbus, petiolo et idchi tomentosis folns 7 8jugis, fohohs subsessilibus ovato acuminatis margine sen at is pubtscentibus, amen tis c iecenti innovatione nascentibus flonbus masc subpedicellatis, pengonu lobo postico abortivo, stamimbus plerumque4, anthens sessilibus pubescentibus connectivo supia loculos non producto In Texas oncntah (Ch Wright, collect du lexas or 1848 49) Petiolus 3-4 c longus (v s) »

V PIATYCARYA *Sieb it/ucc Ablwndl der* muiic/i *Acad v* 3, p 743, *t* 5, *Cas DC I c p* 24, *f* 6, 16, 17, 25, 26, 27, 33-37, 60-62 — Fortunea ***Jtndl Journ horl soc I, p* 150**

Amenta modo unisexuaha masculma, modo bisexuaha inferne ferninea superne mascuhna, axillana vel terminalia, mascuhna decidua Flons masc peng-onium nullum. Stamina basi bractede uniflorae intus adnata Flons feminei ovanum ovoideum in axilla bractea3 hberaB uni ilorae rachi insertum, cum dentibus duobus laterahbus postea alaeformi bus basi connatum Stigmata duo, lateralia, decidua Fructus dipterus Pencarpium indetyscens Nux ossea, cum pencarpio concreta, intus basi 2-loculans Dissepimenta dorsalia nulla, ventraha rachi opposita supra insertionem seminis evanescentia. Lacunae nullaB. Semen inferne bilobum. — Arbores Asiae onentahs, folns imparipinnatis — De vanationibus et monstns florum conf ad fig meas supra cit.

P STROBILACEA (Sieb et Zucc 1 c t 5), folns 5-8 jugis aromaticis, petiolo et lachi subpuberubs, foliohs ovato-laiiLtolatis acummatis margine serratis sessihbus oppositis, subtus ad axillas nervorum secund cum nervo pnmano P»1O SIS, gemmis squamosis squamis plerumque 11 \einatione equitantibus, lions

masc. bracte& lanceolatâ medio constrictâ pubosconte intus basi elabrâ, $ta-minibus 8-10 uniseriatis, 3 anterioribus, 3 posticis, 2-4 lateralibus, antheris glabris, filamentis brevibus basi imâ in discum coalitis, floris femin. ovario alisque glabris, amentorum parte femineâ maturitate strobilum formante. ♄ ? In Japoniâ (Sieb. et Zucc.) et Chinæ collibus prov. Chusan et Ningpo (Fortune ex Lmdley). Fortunea Chiuensis Lmdl. 1. c. Folia 25-30 c. longa; petiolus 4-5 c. Jou^'us; gemmae ante cvolutionem stipitatae. Florcs hermanhro'diti in modni j>arte amentorum bisexualium nonnulli. Flos feminous in Jouni. boil. soc. male pictus. (v. v.)

Ordo **CXCIII,** MYRICACEJE (*).—Pistaciearum genus *Adam. fam. nat.* 2, *p.* 338. — Amentacearum pars *Juss. gen. p.* 408, *DC. ft. fr.* 3, *p.* 300. — Myriceae *L. C. Rich, anal.* /)*., *germanice versa cum addit. axictoris, a Voigt* (1811), *p.* 193, *et mglice* (1819) *a LlndL p.* 33, 36; *Ach. Rich. did. Class, sc. nat.* 11, *p.* **3'82** *(excl. plur. gen.); Dlume ft. Jav. fasc.* 17 (1819); *Endl. gen. p.* 270. — Myricaceae *Lindl. nal. syst. ed.* 2 (1836), *p.* 179.

Amenta axillaria, plerumque e rccenti innovatione nascentia, simplicia vel composite, et tune amentula modo dense approximata spicam, modo distantia paniculam formantia. Apud monoicas species amenta androgyna, basi masculos apice femineos flores gerentia. Flos masculus staminibus 2-16 in axillil bractcae scssilibns spicatisve, nudis vel bracteolis 2 latcralibus aut pluribus sterilibus fultis. Filamcnta basi plus ininusvc coalita; antberac biloculares, rimis longitudinabbus debi6ccntes. Flos femineus ovario in axillA bractoai sessili, basi bracteolis 2-4 sterilibus, in unicd specie (M. Comptonia Banks.) icrtilibus fulto, et cum eis plus minusve basi connato sistens. Ovarium apice stigmata duo, latcralia, tiliformia, sessilia gerens. Ovulum unicum, unilocularc, ortbotropum aut amphitropum, basi imA loculi sessile. Fructus drupaceus; pcricarpium c papillis seu rugis maleriain ccreani exsudantibus, pilis intermixtis tormatum, nucem osseam plus miuusve duram tegens. Semen loculum implens. Albumen nullum. Cqtyledoncs carnosac, convexae. — Suffrutices, frutices v. arborcs, in Amcricii borcali et merid., Afrioi et Asia mcrid., specie unicA, M. Gale L. (et forsan M.Fayn Ait.) in EuropA spontancA. Gemmai in axillis solitariae, squamosaQ. Folia simplicia, exstipulata (M. GomptoniA excepta), margine sa3pe scrrulala y. serrata*, in unica specie (M. GomploniA) pinnatifida, sicca rigida coriaccavc, sicpissimc pilis discifonnibus cereis fragrantibus conspersa, uninervia, nervo ccntrali utrinque nervulos inter se anastomosantes emitlens.

1. **MYRICA** *Linn. gen. ed. I, n.* 746, *Nee* jun. gen. fl. germ. fate.* 3 *c. ic, Endl. gen. p.* 272. — Gale *J. Baun. hist.* 2, *p.* 223. — Nagela *Gærtn. fruct.* 1, *p.* 191, *t.* 39, *f.* 8. — Comptonia *Banks in Gærtn. fr.* 2, *p.* 58, *t.* 90. — Faya *Webb phyt. canar.* 3, *p.* 272. — Gale, Myrica et Comptonia *Spach hist. veg. phan.* 11, *p.* 258.

Ovulura orthotropum; caetera ut in char, ordinis.

Sectio i. GALE *Endl. gen. p.* 272 *[mutatis char.).*

Amenta mascula simplicia.

S !• *Stamina nuda. Ovarium basi cum bracteolis* 2 *lateralibus connutum uncle fructus diplerus.*

1. **M.** GALE **(I,. sp. p. 1/453), foliis cuneato-lanceolatis vel cuneato-obovatis siccis membranaceis vel rigidulis margine apicein versus serrulatiu supra subtusque**

(*) Auctore Cas. Pyr. do Candolle.

pubescentibus, amentis masc. circiter 20-floris, floribus masc. sessilibus, bracteâ haslatâ scariosâ margine pellucidft, staminibus 4 antheris glabris, loculis connectivo'longioribus, filamentis brevissimis, amentis femineis circ. 20-floris, bracteà ovato-lanceolatâ acutâ dcciduA, bracteolis 2 lateralibus dentiformibus basi imâ cum ovario connatis, ovario ovato attenuato apice stigmata 2 filiformia lateralia gerente, fructu lateraliter diptero granulis cereis aureis consperso, coccâ tenui. £ Socialis in palustribus et humidis Europae occid., in insulis britann. usque ad Sutherland sub 59° lat. (Wats. Cyb. 2, p. 408), secus occidentem continentis a Biaritz et Bayonne (Mut. fl. fr. 3, p. 208) usque ad Laponiam merid. (Fries surara«a veg. Scand. p. 50), Fenniam, inde versus Rossiam mediam ad Pensa (Ledeb. fl. ross. 3, p. 6G1); in Sibiria (h. DC.!); in Americâ boreali a montibus Virginian (A. Gray man. bot. p. 410) usque ad fort Norpeo Mackensie river (Hook. fl. bor. am. 2, p. 160) et per Novam Angliam (Gray) et Canada (h. Kew.!) usque ad Labrador (id.!). — Fl. Dan. 2, t. 827, Sv. Bot. t. 70, Engl. Bot. t. 5G2, Nouv. Duham. 2, t. 57, Schk. Handb. 3, t. 322, Reichb. ic. fl. germ. 11, t. G20, Nees ic. gen. fl. germ. fasc. 3, Spach hist. veg. phan. t. 97, Cas. DC. in Ann. sc. nat. ser. 4, v. 18, p. 20, t. 3, *t* 30. Ramuli pubesccntes. Folia >5 c. longa, 12-14 mm. lata. (v. s.)

p, *tomentosa,* foliis et ramulis tomentosis. In Kamtschatka (Fischer! exsicc), ad flumen Amur (Maximov.! in h. Kew.), et in insulâ Sitcha (Bongard in Ledeb. fl. ross.).

Y, *Portugalensis,* stigmalibus pilosis. In l'ortugaliâ (Mirbel m<*ra. Mus. l'» , p. 477, t. 28).

§ 2. *Stamina nuda. Ovarium bracteolis* 3-4 *fultum.*

2. M. CORDIFOLIA *(L.* sp. p. 1453), foliis parvis e basi cordatâ ovato-acutis margine undulato-uentatis supra puberulis siccis coriaceis, flor. masc. bracteâ ovatâ margine ciliatâ, staminibus 2 bractei duplo longioribus glabris, filamentis brevissimis, amentis femin. solitariis, flor. fern. bracte& lanceolatâ glabrâ, bracteolis 4 pilosis 2 rachi opposilis minoribus, ovario imâ basi cum bracteolis connato, fructu unico sphaurico albo-cereo. *$* In promont. Bonae spei (Thunb. flor. cap. ed. Schult. p. 158). — Nouv. Duham. 2, p. 193. Cas. DC. in Ann. sc. nat. ser. 4, v. 18, p. 21, t. 3, f. 31. Ramuli pubescentes. Folia vix centim. longa. Rami us^ue ad 1 \ c. crassi. (v. s.)

3. M.QUKHC1 FOLIA (L. sp. p. 1453), foliis oblongis basi cuneiformibus apiceni versus margine opposite sinuatis subpinnatisve siccis rigidis coriaceisve adultis utriuque glabris subtus granulis cereis conspersis, amentis masc. maturitate quam folia brevioribus solitariis, floris masc. bracteâ cuneato-obovatâ glabrâ, staminibus 2 maturitate subspicatis, floris fern, bracteolis 4, fructu sphaerico albo-granuloso. ^ In promont. Bonae spei (Thunb. fl. cap. p. 159). — Lam. encycl. 2, p. 593, Nouv. Duham. 2, p. 193, Jacq. fragm. p. 2, t. 1. M. laciniata Willd. en. p. 1042. Folia magnitudine et formâ variantia plerumque 3 i c. longa. (v. s.)

4. M. NATALKNSIS, foliis oblongo-lanceolatis ulrinque acutis glabris siccis rigiduJis marline serratis serraturis obtusiusculis, amentis masc. 3-4 approximatis, floris masc. bracteâ ovatâ basi cordatâ extus glabrâ, staminibus 4 biactea brevioribus. In promont. Bonae spei prope Natal (GuenziusJ! n. 55, in herb. Boiss.). Ramuli glabri. Folia 8 c. circ. longa, 1 i c. circ. lata. (v. s.)

5. M. CERIFERA (L. sp. p. 1453), foliis cuneato-obovatis utrinque acutis apiceni versus margine denticulatis siccis firme membrunaceis supra subtusque puberulis margine ciliolatis, amentis masc. solitariis quam folia parum minoribus, floris masc. bracteâ cuneato-obovatâ glabrâ raargine ciliatâ, bracteolis inturdum 2 filiformibus, staminibus 4-8 (plerumque 4) maturitate spicatis, amentis femin. solitariis, floris femin. bracteâ ovatâ glabrâ, bracteolis 4 glabris, ovario puberulo, fructu spha^rico albo cereo-granuloso nuce osseà. *$* vel J. In Americâ boreali a lucu Erie (Gray wan. of bot. p, 410) ad Floridaiu (Cbapm.

fl South p 426), in montibus Alabama? (h Boiss '), in Louisiana (herb fand ') — Bigelow med bot t. 43, Michx. fl bor am 2, p 227, Elliot sketch Georg 2, p 678, Pursh fl. north am. 2, p 620, Sclik Handb t 322, (DC in Ann sc nat. ser 4, v 18, p 21, t 3, f 32, Nouv Duham. 2, p 190 M Carolmiensis Mill Willd. sp 4, p 746, Ell 1 c , Pursh I c M Pennsylvanica horti par (ex Lam), Nou\ Duham 2, p 190, t 55 Altitudo et folia maxime \anabilia. Ramuli pubescentes Folia circitei 8 c longa, 2 c lata (v s)

p, *angustifoha,* folns angustionbus glabns margine integerrimis \el \ersus apicem uenticulatis, bracteolis flons rnasc 2 filiformibus cihatis. Prope New Orleans (Drummond in h Kew). (v s)

(> M SPATHULATA (Mirb m6m Mus 14, p 474, t 28, f 1), folns obovato-spathulatis apice obtusis subc«nlatis>e marginc integerrimis utnnque glabns, amentis masc solitams, flons masc bifictei tuneato-obtusâ, staminibus 4 bracteâ sublongioiibus, amentis femm solitams, flons feqyn bracteolis 4 *t)* In insulâ Madagascar (h Cand ' a Perrottet missa et h Kew ') Ramuli glabn Folia fere 7 c longa, mediâ parte 2 c lata, petioli glabu 1-1 7 c longi (v s)

7 M MICROCARPA (Bentli pi Hartw p 2b6), folns obovato elhpticis apice ohtusis vel obtusiusculis margine IMSI integenimis apicem \ersus denticulatis glabns ad neivos puberulis subtus discis aurcis conspeisis siccis npidulis, amentis masc solitams, flons masc bractea cuneato-lanccolatâ, staminibus 4, amentis fern solitams, flons Jem biacteà o\atoacu(a glandulis conspeisY, bra(teohs 4 acutis glandulosis, ovano glabro J In Jamaicâ (Hartw n 1563 in h Kew), super Grtruleos montes (Linden exsit n 1671 in h Cand), Cubâ prope Habanam (R dc la Sagr.i ibid) et in Guadeloupe (Balb ib) Rami lenticelhs conspersi, ramuli pubescentts Folia *> t longa, 2 c lata, petioli 3 mm longi, pubescentes (v. s)

p, *angustifoha,* ramulis aurcis, folns e basi cuneatâ hnean-oblongis subtus aureis supra (Iiscis auieis conspersis. In Jamaicâ (h Kew[1]) (v s)

8 M PUNCTATA (Guseb pi Wright p 177), folns breviter petiolatis lanceolatis integerrimis vel pauci-crenulatis glabns subtus dense disc is aureis conspersis siccis conaceis, amentis masc gracilibus solitams, femineis solitams siccis flavis, flons fern bracteolis 4 In insulâ Cubensi prope monte de Verde (Wright! n 1460 in h Kew) Ramuli teretes glabn Folioium limbi 4-5 c , petioli 3-4 mm longi (v s)

9 M ZEYHERI , folns cuneato-lanceolatis apice obtusiusculis margine basi mtegeinmis apicem versus serratis serratuns obtusiusculis supra tenuissime pubescentibus subtus glabns siccis ngidc conaceis, amentis rmsc solitams, flons masc bractea cuneato-Ianceolatâ vel cuncato-obovatâ glabrA margine ciliatA, staminibus plerumque 4 bracteA minonbus, filamentis subnullis, antluns puberulis In prom Bon<e spei (Zeyher' n J878 in h Kew.). Ramuli pulipstontps Folia circiter 4 c longa, ramulorum folia inferiors minora, inlogcmma. (v. s)

10 M< BURMANI (E Mey med), folns elliptico lanceolatis basi attenuatis apice acutis margine integerrimis subtus recuivulis utnnque glabns siccis ngidis conaceis, araentis masc «-olitams, staminibus 4, amentis lemin solitams, lions fem bractea ovati glabrâ, biacteobs 4 glabns erectis aculis^ovano basi puberulo In promont Bonae spei (Zeyhei, 11. 3875, et E Mey in h Kew) Rami et ramuli glabi 1 Folia 4? c longd, l ‡ c lata (v s in h Kew)

11 M KRAUSSIANA (Buching in Flora 1845, p 89), dioica? folns subsessihlnu ovahbus obtusissimis integernmis vel apire paucidentatis dense glanduloso-punctatis subtus reiiculato venosis, amentis masc solitams oblongis lolio duplo tnplove brevionbus, squamis late tnangulanbus stipitatis patulis gla bns cibolatis, anthens 4 subsessilibus, amentis fem . In promont Bona spei mtei rupes montis Steenbergc (Krauss) Rami vahdi, apice .corymboso

ramosi, dense foliosi. Cortex griseo-fuscus, longitudinaliter rugulosus. Folia coriacea, 12-16 lin. longa, 6-9 lin. lata, venis supra obsolete immersis subtus prominulis. Accedit ad M. Burmani, glabritie diversa.

12. M. OBOVATA (Cham. rass. in h. Kew.), foliis elliptico-oblongis vol oblongo-obovalis sessilibus basi in petiolum decurrentibus apice obtusiusculis glabris siccis coriaceis, amcntis masc. solitariis simplicibus, floris masc. bracteolis nullis vel 2, staminibus 6-10 spicatis. In Floridâ (Drummond in h. Kew.). Fructus spbaericus, albo-cereus, rugosissimus. (v. s.)

13. M. BREVIFOLIA (E. Mey. in herb. Zeyher), foliia elliptico-lanceolatis brevissime petiolatis basi margine integerrimis apicem versus irregulariter serratis integrisve supra subtusque glabris siccis rigide coriaceis, amentis fem. solitariis rachi glabrâ bracteolis 4 ovato-acutis margine ciliatis ovario glabro. In Proraont. Bona; spei (Zeyherin h. Kew.). Ramuli pubescentes. Folia3c.circ. longa, 1 c. circ. lata. (v. s.)

14. M. HUMILIS (Cham, et Schlecht. in Linn. 6, p. 535), foliis brevissime petiolatis ovatis et ovato-lanceolatis antico profundius obsoletiusve rariter inaequaliter crenatis scrratis nee non subintegerrimis acutis mucronulatis coriaceis margine recurvulis, amentis raasc. solitariis densifloris crassiusculis, floris masc. bracte.1 ovato-acut.1 ciliolatA, amentis fem. laxifloris, rachi hirtellA, fructu sphajrico cereo. In Prom. Bonae spei (Cham, et Schlecht.l. c. et Villette in h. Kew.). 5 Ramuli pubescentes. A M. brevifolia E. Mey. amentis fem. laxifloris divcrsa. (v. s.)

§ 3. *Amenta masc. simplicia vet basi subcomposita. Stamina bracteolis* 2-6 *fulta. Ovarium bracteolis* 4 *fultum.*

15. **M. LINDENIANA, foliis oblongo-lanceolatis lanceolatisve utrinque acutis margine serratis supra subtusque glabris siccis rigidis, amentis masc. solitariis simplicibus, rachi pubescente, floris masc. bracteâ cuneato-obovatâ glabrâ margine ciliatâ, bracteolis 2 linearibus ciliatis, staminibus 6-8 spicatis, spicâ** bracteam aenuante vel paulum suncrante. In Mexici prov. Chiapas (Linden, n. 10), floret aprili. Folia circitcr decim. longa et 25 mm. lata; petioli 10 mm. longi/teretes, puboruli. Ramuli puljeruli, discis aurois conspersi. (v, s.)

Hi. M. XALAPENSIS (Kuntli in H. et B. noy. gen. 2, p. 10), foliis lanceolatis acuminalis basi cuncato-angustatis margine intcgcrrimis vel apice scrratis glabris siccis rigidiusculis ncrvo mcdio puboscente, amcntis masc. sessilibus rachi glabrâ, floris masc. bracteA cuneato-oliovatâ cxtus pubcruh^l, bracteolis 2 linearibus l)racleâ brovioribus ciliatis, staminibus 4. *6* In regno mcxicano prope Xalapa alt. 3-4000 pd. (H. B. in h. Mus. par.), (v. s.)

17. M. PAHVIFOLIA (Bcnth. pi. Hartw. p. 251), foliis anguste clliptico-lanccol;itis basi apicequo attenuatis margine integerrimis vel apicem versus remote denticulatis glabris siccis rigidis supra nitidis petiolo pubescente, amentis masc. solitariis simplicibus, floris masc. bracteolis 2 staminum spicâ insertis, staminibus 8 spicatis, floris fem. bracteolis 4 margine ciliatis. In regno Novo Granatensi (Herb. Mus. par. Goudot 1844 et herb. Kew.). Rami pubev.ili, ramuli pul)escentes. P'olia 20-25 mm. longa, 4-5 mm. lata, majora usque ad 7 c. longa, discis aurois cunspersa. (v. s.)

18. M. INTERRUPTA (Benth. pi. Hartw. P- 251), foliis oblongo-lanceolatis integerrimis scrrulalisve obscure venosis glabris, amcntis fem, solitariis geminisve interruptis, floris fem. bractoa. acuminata, bracteolis 4 discis aureis conspersis. Juxta cataractam Tiquidama prov. Bogota (Hartw. 1380 in h.Kevv.). **Folia 25 mm. circ. longa. Floras remoti. Fructus sphsricus, albo-granulosus. (v. s.)**

19. M. SALICIFOLIA (Hochst. in pi. Schimp. abyss, sect, n, n. 1093, 1135, 1327), cxcclsu, roliis ovato-lanceolatis basi attenuatis margine iiitegerrimis dcnticula-

tisve glabris ad nervos puberulis siccis tigiduhs, amontis masc. simplicibus, floris masc. bracteà lanceolate extus pflberifcente, bracteolis 2-4 extus pubescentibus, staminibiis 12 maturitate spicatis, amentis fejnineis simplicibus subcompositisve, floris femin. bracteà ciliatà, bracteolis 4-6 ciliatis, fructu spheerico albo-granuloso nuce durissimâ. ,5 In regno Cboa, in prov. simensi (A. Rich, tent fl. Abyss. 2, p. 277, et h. Cand.), prope Gcnansa in prov. simensi (Schimp. iter abyss, in herb. Kew.). Folia longitudine et format maxime variantia, plerumque 8-10 c. longa. (v. s.)

20. M. NAGI (Thunb. fl. Jap. p. 76), foliis e basi longe cuneato-lànceolatis apice obtusiusculis margine integcrrimis siccis corjacois, amentis masc. simplicibus, floris masc. bracteà ovato-acutà, bracteolis 2-3-4 ovatis staminibus interdum mixtis, staminibus 6, filamentis lobos aequantibus basi liberis, fructu globoso dense papilloso. 5 In Japoniâ (Ksempf. etc.), circa Nagasaki (h. Kew), in Chinâ propo Hongkong et Hongkong (Benth. fl. Hongk. p. 322). Na, vulgo Nagi Kaempf. amoen. p. 773, ic. ad. p. 874). Nageia Japonica Gaertn. fr. 1, p. 191, t. 39, f. 8. M. rubra Siebold et Zucc. fam. nat. fasc. 2, p. 106. (v. s.)

P, *acuminata,* foliis apico acuminatis mucronulatis yol broyiter emarginulatis siccis rigidis, amentis masc. basi subcompositis, spicis Fern, solitariis simplicibus floro unico fortili, fructu pyriformi valdc papilloso 8 m. longo. In Japoniâ (Zollinger! n. 164), Loochoo islands (Wright! n. 316 in h. Kew.). (v. s.)

Sectio n. COMPTONIA *Endl. gen. p.* 272. — Genus Comptonia *Banks in Gxrtn. fr.* 2, p. 68, *t.* 90 (ad *Myricam referendum, monente jam A. Rich, in Diet, class, sc.* 4, p. 362).

Amenta masc. simplicia. Stamina nuda. Ovarium hracteolis duabus lateralibus fultum, bractoolis in axillà squamulas4 gercntibus. —Foliapinnatifida,

21. M. COMPTONIA, foliis lincaribus margine pinnatifidis pinnis rcniformibus supra subtusquc pubescentibus, stipulis e basi semi-cordatà lineari-oblongis, amentis masc. solitariis cylindricis, floris masc. bracteâ hastatâ glabrâ ciliatâ, staminibus 4, spicis fern, globularibus, floris fcm. bracteâ obtusâ bracteolis 2 acuminatis fertilibus, ovario glabro. 5 I" Americà boreali a Caroling sept. (Cliapm. fl. South, st. p. 427) ad nov. Brunswick et Saskatchawan (Emerson lines Mass. p. 226) et Wisconsin (A. G^ay man. p. 410). Comptonia asplenifolia Banks apud Gaertn. 1. c, Nouv. Duh. 2, p. 46, t. 11, Watson dendrol. 2, p. 166, t. 156. Liquidambar asplenifolium Linn. sp. p. 1418. Liquidambar ncregrinum Reich, ex Steud. nom. Ramuli pubescentcs. Folia circiter 8 c. longa, 7-8 mm. lata. (v. s.)

Sectio III. FAYA. — Genus Faya *Webb phyt. cwna/r.* 3, p. 372.

Amenta masc. composita. Stamina nuda.

11. M. INTEGMPOLiA. (Roxb. fl. ind. cd. 1832, v. 3, p. 765), foliis e basi cunoatâ lanceolatis apicc acuminatis màTgine integerrimis ycl apicom versus serrulatis supra subLusque ad ncrvum primarium pubescentibus siccis rigidis, am^jitis masc. solitariis, amentulis dense approximatis brovissimis condensatis ná'ucifloris, floris masc. bracteâ ovatà margine ciliatà, staminibus 4 bracteam subtequantibus, floris fem. bracteolis 2 (Roxb. icon.). 5 In Indiae prov. Sillet (Roxb.), Kliasia (Griffith, n. 138, 139 in h. Kew), Bcngaliâ orientali (herb, cornp. Ind. or.! Griffith! n. 5009 in h. Kew). —Wight ic. 3, t. 764. Ramuli et, petioli tenuissime pubescentes. Folia circiter 16 c. longa, circiter 3 c. lata. (v. s.)

23. M. PAVONIS, foliis linearibus utrinque acutis joaargine serrulatis supra subtusque tenuissime pubenilis vel glabris siccis rigidulis memlnvmacelsve, amentis masc. solitariis, amentulis subglobosis 6-8-floris, floris raasc. bracte/i spathulatà, staminibus 3-4 maturitate subspicatis, spicis fem. solitariis simplicibus, floris fern, bracteà lanceolatfl extus pubescente, bracteolis 4 angaslo ovatis extus puberulis. In Peruviâ propc Huayaquil (herb. Pavon in h. Boiss.)

et Santa prope Lima (herb "Kew Sim n 88) Ramuli cinereo puberuli Folia 7 8 c longa, 4 mm lata (v s) •

24 M. JAVANICA (Bl Bijdr p 517, fl jav Mync p 1, t 7), folns obovatis basi attenuatis apice obtusis margine remote serratis glabns siccis conaceis, amentis masc solitarns, amentuhs cylindncis, flons masc bractea ovatâ extus pubescente staminibus 3 4 matuntafe spicatis bractei duplo longionbus, anthens extus glanduloso puberuhs, spicis fem simphubus, flons fem biactei acutiuscula, bracteohs 2 ova to lanceolatis fiuctu extus puniceo ovato lenticu Ian compresso ^ In Javâ, alt 10 000 pd (Bl fl j$_d$\ et herb. Kew) M macrophylla Mnb mem Mus par 14, p 472, t 27) Aliquando monoica Folia 10 c longa, 5 5 c Uta (v s)

25 M SAPIDA (Wall tent fl nep p ^9, t 45), folns e basi cuneatA lanceohtis apice acuminatis obtusisvc nnigine mtcgernmis glabus siccis conaceis ngi disve, amentuhs cyhndiaccis altcims lemotis rachi pubescente, flons masc bidcteA o\atd extus pubeiuld margine cihata, staminibus 3 5 plerumque 3 bracted longionbus, anthens glabns, floi fem fructu p>nfoimi gunuloso nuce dunssiind basi et apice attenuata $ In lndiae oi montosis prope Sin naggui et Kumaon alt 5000 pd et Napahd (Wall tent 1 c et herb 6811 in herb Kew) monte Khasia (heib md or Hook et Clump), m Peninsula bnmanicâ (herb comp md or coll Griffith, n 5008), Malacca et msuld Borneo ad mare et prope Banguarmassing (Motley, n 602 fn heib Kew) Arbor umbrosa Ramuh pubescentes tolia9 12c longa (v s)

26 M MISSIONIS (Wall ' list n 7297), folns obovatis basi attenuatis margine integernmis recuivuhs utnnque glabns junionbus ad nenum pnm pube ruhs, amentuhs cyhndncis flons masc hncteî lanceolati extus pubesrente, staminibus 4 matuntdte subspicatis In Asiâ mend ad Kamaon, alt 5000 p (h Kew), prope Malacca (Leman in h Cand), penins birman (h L Ind comp 5008, id h Kew) et Borneo (Moll n 502 in h Kew) Ramuli subpu bescentes Folia 3 7 c longa, 12 mm lata (v s)

27 M LONGIFOLIA (Teysm et Bmendjk mss), folus e basi cuneatâ lanceolatis apice acuminatis integernmis supra glabns subtus ad nervum pnm pubescen tibus-siccis ngidis subconaceisve, amcntis masc solitarns rachi \illosd amen tuhs sparsis, flons masc biacteà ovato acutâ extus villosA, staminibus 4 In nsulà Java (Zollinger[1] 3697, Miquel fl Psed Ind 1, p 872, Teysm ' exsic in herb Kew) Ramuli et petioli pubescentes Folia en citer 7 c longa, 2 c *i* lata (v s)

28 M FAYA (Ait Hort Kew 3, p 396), fohis ovato-lanceolatis basi et apice attenuatis petiolatis margine senatis vel submtegns gldbns siccis conaceis, amenti masr dmentulis multiflons, flons masc biacteđ ovatl extus gUndu loso puhescente, staminibus 4 bracteà duplo longionbus, filim infra medium codhtis, amentis fem compositis, amentuhs globosis 3 4 flons, flonbus fem coahtis, flons fem bracteà ovatà e\tus pubescente ovano extus papil loso, fructu ex amentuhs incrassatis glanduloso papillosis rubns composito simulatione multiloculan *5* Spontanea in Azoncis msiihs (Biot pi lusit p 211), in Maderâ et (ananis (Webb hist Can 3.. sect 3, p 372), 111 Tene TiffA (h Gaud a Brouss lecta et Bourgeau 111 hub Ktw), subspontanea in Pstrimadurâ et icgno portugalensi et ad nvulos in Siena de Picata *i* ṃ Rhodod pontito (Broteio fl lusit p 211, Bourgcau in htib Kew) ex Fayal advecta (Brot) >ayd fragifera (Webb hist Can 1 c) M taya Ait 1 c, Brot 1 c Nouv Duh Arbuscula 20 25 pd alta, rami stnati, glabn. nodosi (Webb 1 c) Anthcrae interdum cum florib fem mtermixtae Petioli glabn (v s)

29 M FARQUHARIANA (WaU tent fl ncp p 61), folus e basi cuneata lanceolatis integernmis vel acute serruldtis laevibus deorsum acuminatis basi sub obtusis, amentis masc solitarns dense ramoso-subpaniculatis sessihbus femineis solitarns elongatis erectis Tiope Singapore (Wall 1 c) *5* Petioli brevissiṃi, pubescentes

SeCtlO IV SUBFAYA.

Monoicae Amenta simplicia, androgyna

30 M CALIFORNIA (Cham et Schlecht in Linnaeâ 6, p 335), foliis e basi cuneatâ anguste lanceolatis margine lntegernmis vel irregulanter tpicem versus denticulatis utnnque glabns siccis ngidis subconaceis\e limbo ¨"in petiolum subcomplanatum decurrente, amentis subcompositis simphcibusve, bracteis ovato-acutis glabns maigme ciliatis, flons masc bracteolis 4 vel' plunbus lanceolatis glabns, staminibus 5 7 spicatis spicà bracteohs duplo longiore, flonbus fem 1 3 4concretis uno fertili, fructu sphaenco \el oblongo-sphaenco valde papilloso albo cereo, nuce ovatà dunssiml *s* In Gdlifonn\ (Hditweg, n 1959) Ramuh glabri Folia 6 c longa, 12 m lata M Fayae affinis

31 M iETHiopiCA (Linn mant p 298), folns breviter petiolatis linean lanceolatis lanceolatisve utnnque acutis maigine profunde duphcdto serratis vel remote dentatis laro integerrimis supia subtusque ad nenos hispido pilosis, amentis androgynis, rachi \illosà, flons masc bracteà o\ato acutA extus pubescente bracteis nullis, staminibus 4 hlamentis basi coalitis matur spicatis spicà bracteam superante, fl fem bracteà ovato acuti extus pubescente, bracteolis nullis, st\lo subnullo,ftuctu sphaenco paivo papilloso albo cereo *5* In piomont Bonae Spei (h Cand Boiss Kew et 7eyh in h Boiss) etad cataractam fl Zambese Victoria dictam (Livingston in h Kew) — Pluk t 48 58, Willd sp 4, p 476, Thunb fl cap p 153, Tausch in Fiord 1831, p 671 M senata Lam diet 2p 592, Norn Duham 2p 192 folia 5-11 c longa, 15 m 3 c ldta, in lamuhs mfenora minoia subintegemma (\ s).

32 M ARGUTA (Kunth in H et B nov gen 2, p 17, t 98), folns e basi cuneata oblongo lanceolatis ovato Idnceolatisve margme basi integerrimis apicem versus drgute serratis subtus pubescentibus siccis ngidiusculis, dmentis subteinis rachi villosà, flons masc brae tea lmean lanceoldtd extus \illosd, biacteohs 2hneanbus \illosis, stammibus 6 8 matuntate spicatis, flons fem bracteà subulatd extus pubescente, bracteolis 4 bracted duplo longionbus ovatis extus pubescentibus, fructu sphaenco papilloso pubescente *5* In regno No\o Granatensi (H B 1 c , Linden exsic n 1123 et 20 in h Kew Goudot in h Mus par), ad radices monlis Chimborazo (Spruce n 6191 in h Kew), propt Caracas (linden e\s),mPenivia (herb Pav) et Boliviae prov Larecaia, valle Tipuani (Weddel, 1851 in h Pai) Rami fusci, lenticelhs conspersi Ramuli pubescentes Folia 10 15 c longa, 27 3 c lata, petiol| pubescentes, 10-12 m longi (v s)

{B, *macrocarpa,* fohis e basi cuneatA ovato-lanceolatis subtus tenuissime pubescentibus In Peruvia prope Ajavaca (herb Mus par) M macrocdrpa (H. B 1 c) (v s)

y, *iincloria,* folns e bisi cune<itA o\dto lanceolatis maigme serratis serrulatisve integerrimisve glabns ad nervos tenuissime pubescentibus vel glahris, amentis mdsc sohtaim simplicibus lachi Mllosà, flons masc bracteà lanceolato acummata extus pubesccnto, bracteolis 2 hneanbus, staminibus 6 8 10 spicatis, dmentis Jcmin andiogynis, flons fem biacteA lanccolatd extus pubesceute, bracteolis 4 ovato acutis extus pubescenti bus, o\ano pubescente fructu sphaeuco In Pcruvia (Pav inn Boiss *tl* herb Mus p(ir) Rami pubeiuli, fusci, lenticdlis conspeisi, lamuli pu bescentes Jolia 6 12 c longd, 23 c lata, pctioli 6 mm longi Amtntd masc 2 c longd (v s)

0, *Peruviana,* folns e basi cuneaU ovato lanceolatis siccis subngidis mdigine senatis supia gldbns dd nervos pul)es(entibus poliolo pubpscenle, amcntis andiogynis masculis\e pubesceniibus, flor mdsc bidcttolis 2 Unceoldtis ciliatis, staminibus 8-14 16 plerumque 14 spicatis, spioa subglobosd, flor fem bracteà lanceolata extus pubescente sappissime foliacea et tune 9 mm circ longd, biacteohs 4 ovato acutis extus pubescentibus, ovano pubescente In Peruvid (Pav in h Boiss) Rami pubcruh, ramuli pubescentes Folia 7-10 c longa, 2-2 J c lata petioh centim. longi (^ s»)

33. M. POLYCARPA (Kuntlt in H. et B. nov. gen. 2, p 18), folns lanceolatis hasi integernmis et axigustatis glabns nenis subtus nuberulis, amcntis superionbus raascuhs mfeiloiilms androgynis terms, flons masc bracteft ovato-acutâ vel oyato lanccolatâ oxtus MIIOSO pilosl florom duplo superante, bracteolis 2 bralteâ brevioubus, stamimbus 6 spicatis. in rogni Novo Granatensis Parano de San Fortnnato, cum M. arpfutft (H B 1 c) Rami puheruh; ramuli piloso-pubescentes. Petioh l}c. longi, canaliculati, pubesccntcs. Folia 7*8 c longa. Forsan M. nrguta* vanetas?

Species non satis notx.

34. M. LAUREOIA (Trecul in herb. Mus. par.), foliis ovatisbasi cuneatis marginc integernmis recurvubs glabornmis, Tructu ovoidoo oxtushispido albo-cereo, nuce dunssimâ ciassissimâ. *J* In Americâ boieali piopo Mississipi (herb. Mus. par. a cl. Trecul missa). Ramuli glabn. Folia 7-8 c. long«i, rere 3 c. lata, sicca rigida subconacca, pclioh 12 mm. longi. Fructus 7 mm. circ. longus (v. s)

35. M. LINEARIS, folus linean-oblongis ulnnque attenuatis apice acutiusculis hrevitcr petiolatis glabns mccis subconaceja ngidis neivo contrail ad apicem ducto sublus prorainulo secundarns tenuissimis, amcntis femm solitaiiis rathi glabrfl, flons lorn, bractoolis 4 apice ciliatis ovalis *5* Patna ignota (111 herb. Cand. ct Kew.). Ramuli glabn. Folia 4-6 c. longa, 1-2 c. lata. (v. s.)

36. M. DOMINGANA. foliis cuncato-lanccolatis apico nhtusiusculis margine integernmis rccurvulis siccis riRidulis supra subtusmic glabns, amcntis femin tompositis, amentuhs cylinâncis, flons femm. Lractocl ol>tusiusculâ plabra margine ciliatâ, bractoolis 4 o\ato-aculis glabns margine ciliatis. In Santo Domingo (Bertero in herb. Cand.). Ramuli pubescontes. Pctioli glabn. Folia 6 1 c. longa, 6 mm. lata. (v. s.)

>7i M. GARAGASSANA (Kunth in H. B. nov. gen. 2, p. 18), Folns cllipticis utrinque acutis serratis SICCIS conacois gldbris ncrvo pubcrulo, amontis femin solitams flons fominci biactcâ o\«Uo lanccolatA piloso pul)csconto, o\ano villoso puboscccnte squamulis tecto. *5* In alsis Vcnozucltje ad Caracas alt. 1200 hexap. (H B. 1. c.) Rami angulati, tomenloso-pub^centes. Folia 13-16 lin, longa, 8-9 lin. lata. Vensimiliter M aigutae variolas.

{« M. PUDESCENS (Willd. sp. 4, p. 746), foliis lanceolatis utnnque attenuatis adprcsse senatis*ul>tus pubescentibus, squamis araenti hnoanbus. *5* In regni Novo Grcwatonsis montiims altissimis prope Parami do Chmgasa alt 1400-1500 hexdp. -T- Kunth 111 H. et B. nov. gen. 2. p. 19 (tbi nihil amphus, cum cl. auctor plantain non \idont). Foliarex "Willd. sosquipoll.

Species ccpclusx.

M. ARABICA Vahl. (Buxus dioica Forsk., Nageia arabica Willd), fide specimmis l^orsk. in h. Holm = Myrsmc Bottensis A. DC. prodr. 8, p. 93.

M. SEGREGATA Jacq. ic. — Olinacea3 sp.

M TRIFOLIATA L. = Asaphcs undulata. Rhus suaveolens (ex Steud. nom.)

II. LEITNERIA *Chapm. fl. south. U. si. p.* 426.

Flores unisexnales, amontdcei. Amenta masc. densiflora, cylindracea, Floris masc. bractea ovato-acuminata, br.icteolae nullde. Stamina 5-10. Anthcra3 bilocul.iros, mtrorseo; spicac fcm. pauciflorae, terotps. Flons fern, braclca ovata, bracteolaB d, ovato-acuta3. Ovanum unilocularo. Stigma nnicum, clongatum. Oyubim amphitropum. Semen exalbuminosum, loculum implens — Omnia ex cl. Chapman.

L FLOMDANA (Chapm. 1 c). *> In salsuginosis Flondae. — Folia longc pctio-

lata, oblonga, utnnquc acuta vel oblonga, margino integerrima, supra glabra, subtus tomentosa. Drupa oblonga. Epicarpium crassum, coriaceum. Nuz ossea*

Genus non satis noium.

III.? CLARISIA Aubji *et Pav. prodr. p.* 128 f. 28.

Stamina 2. Floris fern. bracteolaB **-6, orbiculares, subpeltataB. Pedicellus disco afflxus. (Pav. 1. c.)

Ordo CXGIV. PLATANACEJE. — Castaneae sect, m (pro parte) *Adans. fam.* 2, *p.* 377. — Amentacearum pars *Juss. gen. p.* 410. —Plataneae *Lestib. botan. elem.* (1826), *p.* 526; *Dumort. anal.* (1829), p. 11; *Lindl. introd.* (1830), *p.* 99. — Amentaceae Plataneae *Mart, consp.* (1828), *p-* 83. — Artocarpearum genus (1830), *Bartl. ord. p.* 105. — Platanaccae *Lindl. nat. syst. (ed.* 1836), *p.* 187; *veg. Kingd. p.* 272 *(embryone male fig.).*— Hamarnelidearum|ordo Plataneae *Brongn. enum.* (1843), *p.* 109. —Amentacearum ordo Plataneae*Adr. Juss. Taxon. p.* 53 (1848). Platanaceae *Ag. f. theor.* (1858), *p.* 155, *t.* 13, f. 1,2; *Schnizl. icon. t.* 97. — Plalaneae *Clarke in Ann. and mag. of nat. hist.* 1858, *p.* 102, *U* 6 *(ubi charact. omnino novati).*

Flores monoici, capitulis unisexualibus globosis secus ramulos distinctos. FI.MASC. bracleis 3-5, squumiformibus, minimis, apice pilosis cincti. Lobi (sepala ex Clarke, stamina abortiva aliorum) 3-5, bracteis longiores, absque symmetric erga bracteas (Clarke), lineari-clavilornies, sulcati, apice lobato-truncati, 1-2 saepe minoribus vel delicientibus. Stamina tot quot lobi, iis alterna, ideo 4-1; filamento brevissimo; anther^ elongate, clavatd, loculis 2 laleralibus, connective) ultra loculos capitato-truncato pubescente. Pollen (ex Sclinizl.)cllipticum, 3-rimosum. PI. FEMINEI bracteis 3-4-0 cincli. Lobi (sepala ex Clarke) 3-4, obovato-clavati, apice truncato intus cmarginato. Stamina sterilia (Clarke) lobis alterna, iis minora, nunc minima et passim deficientia, irregulariter obovato-acuta. Pistilla 5-8, nunc 4-2, subyerticillata, lobis opposita iisque basi adhaerentia, ovariis ovoideis in stylos lineares elongalos apice excurvos ibique intus papillosos desinentibus. Ovulum in singulo ovario unicum (raro 2, ex Ag. fil.). e latere ventrali pendens, alropum, tunicA manifeste duplici donatum. Nuculae monospermae, coriaceae, stylo persistente terminalae, pilis rigidis basi cinctae. Semen oblongo-elongatum, pendens; test^tenui,membranaced; albumine nullo (ex Gaertn. Nees jun.), tenuissimo (ex Schnizl.). Embryo rcctus; radiculil cylindrici, elongate, superd; cotyledonibus oblongis, radiculâ subbrevioribus. — Arbores, raro frutices, hemisphærii borealis; cortice squamis latis caducis [illegible] uuuuuuiu; loins aiierms, supuiis cauuui&, iiinuu [jriimaunervio lato paucilobato pilis evanescentibus stellatis donato; gcmmL iritra petioli basin diu occullatis, folio delapso apparentibus, limbo in vernalione marginibus lon^itudinaliler *externe* plicatis (in Doll z. Erkl. Laubkn. Ament. f. 4 oplime lig.).

Flores plerumque adeo in capitulis condensati ut difficile intclligantur, sed ex cl. Clarke in quibubdarn (mihi ignotis) oito cvolulis arboribus investigandi, et tune stamina vel pistilla plura cujusve floris apparent. Capitula interdum polygama, nullo tamen flore proprie hennapbrodito.

Habitus et fructus quodammodo Artocarpearum; affiftitates verae cum Aceraceis, Tiliaceis (medianle Ghristiania) nee non Phylolaccaceis ex cl. Clarke 1. c., sed ovulum unicum pendens atropum ab omnibus hisce ordinibus differt et Urticaceas potius memorat (1).

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(1) Liceat hie adjungere genus olim ad Amentaceas prope Platanos relatum, postea Ordo (Balsam ifluae) dictus, nunc omnium cunsensu Hamamelacea, sed ioco proprio supra in vol. IY omissum :

LIQUIDAMBAR *Linn. gen. ed.* 1742, n. 878; *Juss. gen. p.* 410; *G.vrtn. fruct.* 2, *t.* 90; *Lam. ill. t.* 783; *Blume fl. Jav. Balsamiflux,* p. 6, *t.*1 *et* 2; *Spach veg. phan.* 11, p. 82; *Hook. f. el Th. in Journ. Linn. soc.* 2, *p.* 85; *Clarke in Ann. and mag. nat. hist.* 1858, *p.* 104. — Altingia *Noronhatn Verh. Batav.* 5, *p. I.* — Sedgwickia *Griff, in As. res.* 19, *p.* 98, *t.* 15, 16.

Flores monoici, unisexuales, nunc subhermaphroditi, capitali. Capitula juniora bracteis *k* caducis cincta. *Fl.masculi* e staminibus approximates intra bracteas capituli acervatis constantes. Antherte obverse lineari-pyramidatae, 4-angulares, filamento brevi aut nullo. *Feminei :* Calyx infundibuliformis, cum proximis basi connatus, marline integer aut obscure glanduloso-lobatus. Petala nulla. Stamina sterilia saepe 4-9, circa verticem calycis inserta. Ovarium semi-inferum, 2-loculare, locuHs antice et postice sitis, ovulis cr^ in angulo interno cujusve loculi superpositis amphitropis. Styli 2, lineares, acuti, recurvi. Capsula cum proximis capituli margine concreta 7 superne septicide hians, loculis tune a calyce lateraliter disjunctis. Semina abortu paucavel solitaria, angulosa, nunc extremitatem versus breviter alata. Albumen tenue. Embryo axilis; radiculâ superâ; cotyledonibus planis, radiculâ multo majoribus. — Arbores hemisphaerii borealis; succo balsameo; foliis alternis, apice ramulorum approximatis, serratis (specie ult. dub. exceptâ), lobis in vernatione margine intus plicatis (Orst. Am. centr. t. 10, 11), stipulis fugacibus; pedunculis ex apice ramorum, masculis capitulis pluribus, femineis unico donatis. — Flores masculi (nondum satis cogniti), verisimiliter plures in singulo capitulo, ut in quibusdam capitulis laxioribus cl. Clarke obscure apparuit, bracteis mediis (ex eod. et plerisque auct.) destituti, ex Spach bracteati.

§ 1. *Folia palminervia, lobata. Semina prope radiculam in alam ovato-oblongam planam cornpressa.* — Liquidambar *Linn,*

1. L. STYBACIFLUA (Linn. sp. p. 1418), foliis palmati-5-fidis rarius 3 vel 7-fidis subtus in axillis nervorum barbatis basi truncatis yel cordatis lobis ovato-l^nceolatis lanceolatisve acutis serratis, passim lobatis. ^ In Americae boreaiis sylvis humidis a Connecticut et Troy Novo-Eboraci (A. Gray man. north. st. p. 148, Bromf. in Hook. journ. 1848, p. 144, Emerson trees Mass. p. 312), usque ad Missouri (Beck bot. p. 327), Floridam (Chapm. fl. South. st. p. 157), Mexico or. (Kunth in H. et B. uov. gen. 7, p. 273, Linden 1036) et occid. (Bot. Herald, p. 346), etiam American! centralem (Orst. Amer. centr. fasc. 1, t. 11). — Michx arb. Am. 3, p. 194 (ubi error in lim. bor.), t. 5, Schk. Handb. t. 301, Nouv. Duham. 2, t. 10, Nees pl. off. ic. sine num., Hayne arzney-. Gew. 11, t. 25 (opt.), Orst. l. c. Xochiocotzo Hern. thes. p. 56, ic. mala. Liquidambar arbor, etc. Cat. Car. 2, t. 65. L. macrophylla Orst. Am. centr. t. 10, sine descr. Folia apice ramorum conferta, stipulæ ovato-lanceolatæ, fugaces. Petioli 1-5 poll. longi, teretes. Limbi 1-6 poll. longi latique, dentibus parvis

vetugtionbus obtusis. Capitula masc. ovoidea, in racemo eiecta plura; fern, in pedunculo pendente uhica, gfobosa, fructif. pollicem lata Arbor balsamum praibcns, folus tntis suaveotentibus. (v. s. et v.)

2. L. ORIENTALIS (Mill. diet, n. 2), folns palmati-5-fidis raro 3 vel 7-fidis undique glabns basi truncdtis vel subcordatis lobis ovato-lanceolatis acutis obtusisve sonatis pleiunique lriegulanlcr lobidis lateialibus 1-3 auctis. t^ In httore mend. Asia) mi nous, propc Mclasso, Marmonzza, Mougla (Maltass in Bonnl. 1 infracil); jam anno 1759 cult — Spach hist veg. phan. 11, p. 80, Hanbuiy pharmac. journ. 16, in Seem Bonjjl. 6, p. 114, c. IC. p. 119. Platanus oncntahs Pococke trav. 2, t. 89 (fide auct.)- L imberbe Ait. hort. Kew 3, p. 365, Nouv. Dubcim. 2, p. 44, Loud. enc. trees, p. 933, f. 1739. Arboi succo balsameo Storax liquidum dicto. Non nisi glabntie diffemnt folia fiuctusque a plunbus amencanae sp. exemplanbus, seel flores non vidi. (v. s.)

§ 2. *Folia pcnninervia, non lobata. Scmina angulosa, non alato,.* — Allingia *Nor.*

3. L. ALTINGIA (Biume fl. Jav. fasc. 17, p. 6, t. 1 et 2), loins ṇenninerviis o basi obtusâ ovato-acuminatis .scrratis glabns acumme angusto obtuso, an then s filamento brevi suffultis. /> In Ass«im ct montibus Mishmee (Gnfl.l), Sumatrâ (Miq. fl Ind. bat. suppl. 1, p. 139), Javâ (Illume, /oil.' 3028) et Novâ Guineâ (Rumph.). —Miq. fl. Ind. bat. 1, p. 830. *Uenum* Papuanum Rumph. Amb 2, p. 57. Altingia excclsa Noronha in Bat. Vern. 5, p. 1, Hayne ai/neygow. XI, p. 26, t. 26. L. Rasamala Jllume cat. Buit. p. 6 L. Altingiana Blume bijdr. p. 527, Nees pi. offic suppl. (ic. Bl. mut.). Sedgwickia ceiasilolia Griff, in As. res. 1, p. 98, t. 15, 16 (fide Hook f. et Th. in Proceed Linn. soc. 2, p. 85). Pelioli gracilos, 1-2-poil. Limbi 2-3 J poll, longi, 12-20 lin. lati. Amenta secus pedunculum tcrminalem (ex ic. Hayne) alterna, capitata vel ovoidea, lnfcriora pedlcullata, involucio 4-pliyllo caduco cmcta. Stamina numeiosissima, e plur Honbus simplicissimis constantia. Fiuctus in caput 8-10 lm. latum condensati. Semina obverse ct urcgulariter pyi'dnudata, superpositu, pleraque abortientia. (v. s) •-

4. L. CHINENSIS (Champ, ox Bcntb. fl. Hongk. in Journ. of bot. 1852, p. 164), loins pemuncrwis e babi cuneatd bicvilei pctiolala ovah-obovatis obtusis vel obtusiusculis glabris .serratis, antjions sessilibus. *5* In msuU Hongkong. — Bcnth. fl. Hongk. n. 132, Seem. bot. Herald, p 380, t. 94. Folia 3-4 poll longa, petiolo 3-4 lin solum longo Litiusculo et ideo a L. Altingiâ diversis bimo. Inflorescentiii eadem. Pudunculi ct bractcas pilosa. Bracteae capituli masc. bracteis 3-4? caducis basi cincti, unâ mujore. Anlherto oblongo-quadratse. Flores fern, ssepius antheris effoetis paucis donati. Semina rara.

Species dubia.

5. L. TRICUSPIS (Miq. fl. Ind. bat 1, p. 10(')7, suppl p. 139), loins lalo-rotundalis conaceis apice lobato-tncuspidatis margme ltevi conaceo cinctis 3-vel sub-5-nervns. In Sumatrâ. L. Altmgiana Teysm. ined (non Bl.). Innovationes hirto-villosae. Stipulae diutius persi8tentes. Araenla fern, pedunculata, 12-\cl plun-?-flora; bracteae circa capsularum emergentium partem \ inf. in urcle lura obtuso-pluridentulum carnoso-conaceum ? connatae. Bucklandise foliorum margine laevi accedit, bed differt stipulis et probab. fructificatione. Capsulae efloeta? in spec, a cl. Miq. descr.

Species exclusx.

I. ASPLENIPOLIUM L. = Myrica Comptonia.

L. PEREGRINUM REICH. CX Steild. DO0. = Id-

PLATANUS ***Tourn. inst.p.*** **590,** ***1.*** **363;** ***Linn. gen. ed.*** **1, n. 896;** ***Gxrtn. fr.*** **2,** ***p.*** **57,** ***t.*** **90,** ***f.*** **5;** ***Lam. ill. U*** **783;** ***Nees jun. gen. pi. fl. germ. ic. fate.*** **1;** ***Spach note sur les Plat, in Ann. sc. nat. ser.*** **2,** ***v.*** **15,** ***p.*** **289.**

Characters ordinis.

1. P. ORIENTALIS (Linn. sp. p. 417), foliis 5-vel sub-:i-fidis 3-5-plinei'viis cito glabratis basi plcrumnue cuneatis, loljis lanceolatis irregulariter passim dentatis lobatisve. *$* In Affghanistania (Griff.! ab horto Kew. sub n. 4491 comm.), Persiâ sept. (Boiss.! herb.), Armeniâ (Szowitzl), Libano (GaillardoU 956 in h. Boiss.), Lyciâ (h. Boiss.!), Thraciâ, Macedoniâ (Griseb. Spicil. p. 331), Graeciâ (Theophr. Sibth. Boiss.! herb.) atquc a longo tempore in proximis aliisque terris culta et fore indigena t'aota. — Nouv. Duham. 2, p. 1, t. 1, Wats, dendr. t. 101, Sibth. fl. graec. t. 945, Pall. fl. ross. t. 51, Loud. enc. trees, p. 958, c. ic. P. palmata Moench meth. p. 358. P. hispanica Ten. cai. ort. nap. 1845, p. 91. P. vulgaris a et p Spach in Ann. sc. nat. ser. 2, v. 15, p. 292. Folia cito glabrata intordum basi non cuneata, etiam late cordata (in hortis frequens, in Oriente spont. h. Boiss.!), parenchymate tamen sub neryis inferioribus expanso; saepius folia basi prope petiolum cuneata, interdum in eodom ramo cuneata vel truncata. Ex Clarke 1. c. bractoae floris fern, desunt quae in P. occidentali adsunt. (v. v.)

   P, *insularis,* foliis ultra medium fissis lobis anguste lanceolatis. —In Cypro (Kotschy! a. 1840 in h. Boiss.) et Greta ad Plataaia et ubique (Raulin! 740 ibid.). Folia minora quaru in vulgari, basi late cordata sou more soli to prope peliolum plus minus cuneata. (v. s.)

   y, *cunoata* (Loud. enc. trees, p. 929, 1'. 1734), foliis profundc flssis basi manifest(3 cuneatis. *fi* In hortis. P. cuneata Willd. sp. 4, p. 473. P. orientalis undulata Ait. liorl. Kew. 3, p. 3G4. P. orientalis flabcllifolia Spach in Ann. sc. nat. ser. 2, v. 15, p. 292. Arbuscula vel frutex, foliis vulgari minoribus.

   8, *acerifolia* (Ait. hovt. Kew. 3, p. 364), foliis basi cordatis vel truncatis non cuneatis parenchymate sub nervis lateralibus non extenso. *$* In Oriente ex. gr. in Lyciâ (Bourgeau ! in h. Boiss.) et hortis. P. orientalis aceris folio Tourn. cor. p. 41. P. acerifolia 'Willd. sp. 4, p. 474. P. orientalis acerifolia Loudon enc. trees, p. 928, f. 1733 (non Spach). Sata in P. orientalem vulgarem mergit (Hook. f. in Gaudin contr. foss. mem. 6, p. 7), et cquidem in ipso vulgari folia in quibusdam rarais vidi non cuneata, basi truncata, prope cuneata. Accedit foliis non profundc fissis ad P. occidentalem, sed vulgari orientali propior et ab e;i ajgre interdum distinguenda. (v. v.)

2. P. OCCIDENTALIS (Linn. sp. p. 417), foliis basi plerumquc truncatis tarde glabratis amhitu passim et irregulariter lobato-dcntatis lobis plenimque 3 majoribus ovato-triangularibus acutis. ^ In Americâ boreali a Vermont (Michx arb.), forsan Montreal (id.), ad Floridam (Chapm. fl. S. St. p. 418), a mari Atlantico versus Montes Rocky dictos limite ibi nondum cognitâ; frequenter culta. — Catesby Car. 1 t. 56, Michx arb. 3, t. 3, Wats, dendr. t. 100, Schk. Handb. .X. 306 (mediocr.), Nouv. Duham. 2, t. 2, Hartig forst. p. 446, t. 54, Emerson trees Mass. p. 227. P. lobata Moench meth. p. 358. P. hybridus Brot. fl. lus. 2, p. 487. P. vulgaris 5 (pro parte) et e Spach 1. c. Folia nunc basi late cordata, saepius truncata. Differt a P. orientali praesertim limbo minus profunde lobato, et praeterea tomento densiore minus caduco, petiolis saepe purpureis, capitulis minoribus. (v. v.)

3. p. LINDENIANA (Martens et Gal. in Bull. Acad. Brux. 10, n?4, p. 2), foliis basi truncatis 3-5-sinuato-lobatis subsetaceo-denticulatis lobis ovatis acuminatissimis supra fflabris nitidis siibtus mollitor farriio'innn-tnmentosis, Detiolis ferrugineo-lanatis. ♂ In Mexico prope Xalapa alt. 4000 ped. (Linden n. 9). Stipulæ bifidæ, deciduæ. Capitula fructif. fulvo-villosissima. Affinis P. occi-

dentah, sed folns subtus dense tomentosis prdesertim di versa — Haec solura a cl auct dicta

4 P MEXICAN A (Monc ' in Hull Fen bot 1830, p 79, ubi tab ined cit, et Plant nouv dAm6i 18M, p 39, t 26), tolas tnphnerviis bre\iter et acute 3-lobis basi truncitis vel bievissime prope petiolum cuneatis tomento incano subtus peisistente ;) Circa mbtm Mexico (Berland i in h DC), inter Tampieo et Mexico (id 491 in h Boiss) Rimuli petiohque tomento demum oibati Petioli 1 2 poll longi Iimbi 3 5 poll lnngi latique, lobis e basi laH acumi natis interns sinubus undulilisd medio lolii distintibus Peduncub liuctil 5 6 poll longi, tomonto dcnudati, capituli 2 fferentes qua*, (matuid) 1-1 •} poll laU Fiuctus cliviloimes, 3 lin longi, stylo flexo teiminati, glabn, penicillo pilorum 2 lin Ion go rum a b<isi cmcti (v s)

5 P RACEMOSA (Nutt suppl to the North Amei sylval, p 47, t 15), folns saepius ib dpice petioli 3 ueivns ibi Ute coidatis vel truncatis quinqiiefidis vel ranus J fidis lobis ovato acutis, tomento subtus persistente incano ^ In fab ioima (Douglas < Haitw ' 1901) — Lmeison iep trees Mass p 237, Audubon birds of Amu t 302 P occidentals Hook et Am bot Beecbey's, voy p 160 . et W0 (non J) *P (* iliJuinici Benín bot Sulpbm p 54, quam in P racemosani rautdvit m PUnt Hutw n 1961 lx speumiiic Douglas i inn et fohd nascentia tomento duico ot liitino pannoso undique vestitd, pagin i buper folioium cito tflibi it\ stipul P dimididtijp, lomentosj ,) lm longp intcgiae **Iimbi sapiiis 3 lulu neiMs i non db ipso pctiolo sed supid divei^enlibus**' racomi lblio hievioics, eapitulal) 4,4fl6idntil2 4 lin ldta, squanidL ovatte, mi' nirax, margine tt basi intuspilosi, sqiumula glabra?, cainosj[1], minoies juxtd squamani et lnlenus sa^pe <idsLinlcs, anth(U3 line an clavdtd , squamis multo longioies, connectso apicc tiuncato I x specimimbus adultis Haitwegi petioli 1-2 poll longi, (Ionium lere glabn, Iimbi 4 6 poll longi latique, neivis constants I a petiolo divergcntibus, lobis 5, maigine m teg us vel undulatis forma vere ovato- nee tiidnguldu ldneeoldtis, ldcemi semipollicares, glabiati, capi tulis 6 9 lin latis, styhs rigid is Jcones cit non vidi (v s)

E typis C Lahuri, via dicU *d%* Fleurus, 9

Ordo CXCV. BETULACILE (1). — Amentacearum pars *Jass. gen.* p. 469.— Betulaceac *Barll. ord. pi. p.* 99; *Endl. gen. p.* 292; *Schnizl. ic. fain. nat. regni vcgcl. Heft* 8; *Regel, Monogr. Bet. p.* 5. — Betulin;u7?i'c/&. *in Kuntk nov. gen. el sp. pL v.* 2. *p.* 20; *A. Rich, e'lem. bot. cd.* 4. *p.* 362.

Flores monoici, in amenta terminalia v. axillaria collecLi, ia axillis bract'jarum bini ternive sessiles. FLORES MASCULI • **Squama peltah, utnnque bracteolis squamiforinibus stipata, tnflora v. rarius 1-2-flora. Perigonium nunc squamiforrne monophyllum, nunc calyciforme 4-5-fidum v. 10-12-phyllum. Slimina 2 vel 4 v. rarius 10-12, perigonii basi inserla, ejusque foliolis opposite. Filamcnta brevia, nunc simplicia antheris basilixis unilocularibuslongitudinalit^rdehisceniibiis, nunc apice bifida et antlierarum loculos uniloculares segregantia.** FLORES FEMINEI : **Squamae sessiles, 3-5-lobae v. inline, cum fructu increscentes, bi-Lriflonr, nunc simul cum fru·lu decidu<x[k], nunc demum lignesrentes pcrsistentes. Perigonium nulluin. Germina bilocularia, compressa, stylo nullo, sLii^matibus duobus (iliformibus terminalibus. Ovul.i in loculis solitaria, dissepimenlo paullo infra apicem aflixa. Fructus nucamenlaceus, an^ulatus v. alatus, stylo coronatus, abortu unilocularis, monospermus. Semen inxersuin exalbuminosum; testa tcnuissimd, cum endocarpio concrescens. Ernbrjo orlliolropus; radicula hilo proxima; cot)lcdones planic, gcrminatione foliacraj. — Arbores v. frutices, ramis Lerctibus, baud articulalis, sparsis. Folia alterna, simplicia, penninervia, dentata v. serratn, rarius incisa v. pinnatilido-laciniala. Stipulae libers v. caducac. Flores parvi, baud colorati. Amenta saepe in racemosfoliatos dispositn. — Betulacca^ in hemisptuurii borealis regionibus ternperatis' frigidieque abundant, nonnullae cxtremuin septentrioncm et summa montium cacumina petunt, paucae in Asi.T et America* tropica[1] jugis altioribus reperiunt'ir, unica Africam australem incolit.**

I. BETULA. *Tournef: inst.* (. 360; *Endl. gen. pi. p.* 272 *et suppl.* 4. p. 19; *Nees Qon. pi. fl. germ. fate. k.t.* 18; *Willd. spec. pi.* 4. 1. *p.* 4G2; *Koch syn. fl. germ. ed.* 2. p. 760; *Lcdeb. fl. ross.* 3. *p.* 649; *Regel, Monogr. Bet.* p. 9.

FLORKS MASC. : **Amcnti squama peltatae, utrinque squamula aucta[1], subtus triflorac. Perigonium monophyllum, squamilormc, integrum. Stamina 2, apice bilida ct antherarum loculos uniloculares segregantia.** FLORES VKM. : **Amenti squama3 (bracteas) trilobae v. rarius subintegr33, imbricatae, 2-3-florae, deinde membranaceas, saspissime cum fructu**

(I) Auctorc K. Hegel.

deciduae. Nuculae lcnticulares, samaroideai, compressac, ala membranacea cinctae, aborLu uniloculares, monospermaj, stigmatibus duobus patulis coronataj. — Arbores et frutices syhe^c^tres eL palndosi, foliis autumno deci&uis. Kioratio vcrnalis, foliorum cvolutio coaetanca. Amenta mascula o gemmis aphyllis lateralibus tcrminalibusquc solitaria v. gemina. Amenta feminca c gemmis lateralibus 3-5-phyllis solitaria v. rarius in pedunculo communi racemosa. Strobili oblongi v. ovoidei.

CONSPECTUS GENERIS.

A. Slrobilorum squamae samaras occultantos. Strolwli solitnrii.

Sectioi. EUDKTULA.

1. *Albx.* Arbores excelsijc v. rariushnmilos. Samararum alan nucula 2-3-plo laliores v. rarius earn juquantes. — Spec. 1-2.
.2. *Frutkosx.* Frutices. Samararum alac nucula 2-3-plo latiores v. earn acquantes. — Spec. 3-6.
3. *Nanx.* Frutices. Samararum alaeDuculasacpissime duplo-pluries v. rarius paullo angustiores. — Spec. 7-12.
4. *Dahuricx.* Arbores sajpissime excelsac. Samararum ala) nucula duplo-pluries augusliores. SLrobilorum squamae hieme deciduae, lobis plerunique abbreviatis. — Spec. 13-14.
5. *Costalx.* Arbores srcpissime excelsac. Samararum alue nucula duplo v. pluries angustiores. Strobilorum squam-tu hieme deciduae, lobis pleruinque linearibus elongatis. — Spec. 15-23.

G. *I ml a:.* Arbores excelsan. Saraararum al;r; nucula duplo v. pluries angustiores. Slrobilorurn squama; hieme persistentes.— Spec. 24.

H. Samanirum .siiuaiua: stnimii squim:is supcrantcs. Stiobili 2-4 in nctlunculo communi raccmosi.

Sectio ii. URTULASTER. — Spec. 25-29.

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^t'ciio I. EIBETLLA — Strobilorum squamae samaras occultantcs.Strobilisolitarii. Hctula *Spach, Rev. Belul. in Annul, des Sc. nat. sec.* 2. *v.* 15. *p.* 182.

§.1. *Albx.*

At bores cxcelsae v. rarius humiles. Samararum *n\m* uucula 2-.'J-])lo latiores v. rarius earn ajquantes.

1. B. ALBA (L. spec. pl. ed. 2. vol. 2. p. 1393), arborea, samaræ alis nucula sæpissime 2-3-plo latioribus v. rarius paullo tantum latioribus v. rarissime eam æquantibus. In Europa, in Asia media et boreali, in America boreali. — Spach. rev. Bet. in Ann. du Mus d'hist. nat. ser. 2 vol. 15 p. 186; [illegible] f?en. pi. suppl". 4. pars 2. p. 19; Lacst. in Botaniske Notiser 18:>(i. p. 103* Hegel, monoffr. Bet. p. 16. Merklin Bull. Acad. Petrop. torn. 8. p. 295. de lbrm. cort.; Bckotow Bull. d. 1. soc. b. a Mosc. i:j, .p. 75} ecorce du bouleau. — Arbor Lrunco erecto 50-60-pe«Jalis v. rarius humilis, corticc saepe papyraceo albiilo solubili v. deinde rimoso. Ramuli crecti v. penduli, speciminum juniorum in statu sterili pubescentes v. glandulosi, fructifen saenissime lasves, glabri, v. rarius glandulis raris adspcrsi, v. rarissimc dense glanduliferi, v.

pubcruli toha petiolati, e basi cuneala OM.to-ihonjboidci v ranus e basi tiuncatav subi oid ltd oviti v cordalo o\ ltd v coidato subiolunda acuta, v acuminata, v cuspid ltd v ranssime sububtusa snnplieiter \ du[licilo dentata,\ rdims smudto lol)dtd v mcisa, v pinnatihda, rainuloiuin stcn hum (prdecique sjeuminum juvenilium; saepe pubescentu, v subtus rcsinoso punclita, rdmuloruin leitilmm sdepissime ghbit, v subtus in \enuuin ixilhs 1 iibjLli Amenta masc eljn^ilo cylindi Cd nutmtid f,lilnv pubesccntia Amcntd fem strobihfornjia, eiccti v penduli, cyhndrica, glabrd v pubescentia, pcdunculata, squamae tnlobp lobi latei ilei>, eiecli v diveigentcs \ recurvati, szepissinie lobo inlermcdio nidjores

Subspecies I, *crru<?osa r imulis frnUiftris gl ibns v pirce glanduhfcns, folns ramulorumfeitihurn < basicuneitav dililato cuneifi ihomboidco ovatis acu muulis saman ahs nucula duplo lnplo\e ldtioubus , squimirum stiobili lobis divdiicdtis v Rcucvdtib) \el 5 In feuropa tt in Asid media Rc^el, Bemcrkungen ubu BMula u Vlnus in Bull de li sot d Most 18 p 397 B ilbiL 1 c (fohi'jovdtisacuniiridt s senate), Will 1 sp c pi 4 P 462, ejusd Beil Bdum/ 1 52, Iclib fl ross v 3 p 6JO, Ait hjrt K(W cd 2, vol ") p 29S Tiautv ctMcy in Midd 11 Odi p 8i kc^h syn fl g(im. cd 2p 7C0 Du Roi Ildrbk Bdumz v 1 p 82, Dietr fl bor vol 11 t 787 Hen/c in BoL Zcitung 18 48 p ?o, HirLu Lehrb t 27. B dlba (t alb *M* nucobd Wdlh *bchai* cnt p 494 et 4(')J B alb 11 alha a-d Laest 111 Net Not 18)G 1 101 B ill 1 a ct y Endl 1 c p 10 B albi a vulgirib el Y vciiucosa *Rcge*\ mono^r p *V* ct 19 t 4 fi_{ft}' 1 8 18 W 32 *B dlbd vul^ans Spdib 1. 0 p 18G B dlbi typicd liautv m Ma\im pnm fl amui p 2»9 B vtrrucj^a I lnh Btili 6 p i8, Puej> summi v^ 1 p 211, Bechst 1 irslb p 234 B gummifcid Beit fl it v 10 p 229 B odoidta Rcichcnb IC fl gciln t 62b fig 128S (n< c Bochst) B lhom bifoln laus h in Mori 1 itisb 18 8 p 7^2 Ramuh stcriles e basi trunci tgrpdicntcs v spcLitninuui ju\ciuli m sipisimc dense ^diiduhfen \ idnus egldnduhfen tolia ramulorum lei Liliuin $_n$'hbra, v subt is sip rcsmosj-puncUtd, e bdsi cunciUv dildtdtu cuneatd ihomboideo ovdti plus minus dc imindtd , simplicilei v. duplicdto d(ntatd, v rinus subsininto lobulatddcntatiquc \ rdiiss me pinnalifido hcinia a, folia ramorumslenlium p basi trunci *0*^ elicntiurn (tuiionum) spr ummum jue jincnilium stculium < basi truncat 1 v subcordata v lomnditi dcltoideo-o\ ita \ subcoidito ovdtd, plus minus acumnata, mdr^ ne dentatd ^ sa pius s nuit lobuhti, subtus plerumquc dense glaudulosa IVLiolus f ilium dimuliujn suba. juans v paullo lungior Vmcntorum fem masculorumquc squ inn gl ibra v lanus margine brcviicr piioso ciholata. btiob lus cylindncus Vanat

a, *vulgans,* tiunco e\celso, iohib lamuLoium fcrtihum e basi cunoata v rinuss cuntato dilatata lhomboiJeo ovatis — ^ In sylvis Europ 1 melic ct boieilis freque s, in Asia melia ran us occuint ut 111 montibus Alatau (^clnenl) al fluvium \n^uam (luic? imnow) *dd* Schilkam (Maximowic/) in montibus insul 1 \ipp n (Maurnowic/ , i" montibus Viraernc (Kotschj) tt in Cappiloc a B all 1 a vulginsHo$_0$cl monogr p 17 t 4 lig 1-7 10 13 14 10 18 Cii syn supra cit — Hdco ludit 1 *expansa* (Reg°l monogi p 18) ramis lamuhsjuc ercctis B alba a^thuea Wallr sched cnt p 494 B alba macro carpa Walh 1 c B alba a Ait hort Kew ed 2 vol 5, p 299 B alba 1 alba a b c La^st 1 c B odorata Bechst in Roichenb 1 c — 2 *pendula,* ramis dcfltxis vimincis pcndulis B alba pendula Willd s»pc c pi v 4 p 402 Walh sclicd cnt p 494 B albd 1 alba d pen dula Laest 1 c p 104 B media Lacst 1 c p 107 *b* pendula HofTin fl geim p 334 B dlbd a vulgms lus 2 penduld Regel tno 10^1 P 18 B alba var ppnlula Tausch herb bob —3 *microphylla,* fjli^ parvis Habitat in monlibus alnoiibus Gci manic et Italic cultaque 111 hoitis B alba micioplylla Walh ^ched 11 it p49> B ellnunssRif liihcib Cand etc B SjkobwuH Pcti B albia vuUans lus J micro phylli Re_n'd 1 c t(jha c basi cuneata deltOidio ovatd lamina 4 1 PJ}[11] lon_n'a tola ol ramuh ooinino glabn — 4 *lobulala* folns grosse sublo bulalodentati , dentibus acummatis dcntitis In buecia, cultajuc iu

hoilis B dlhi lobiildti Fr lnhoib Boiss B uiticifoli i lioit nonnull — 5° *lobala* iolus piniidlifnlo-lobitis lobis diltoidois uuminitis denlatisquc In Supciae pro\ Vemilmdia culta]ii< in hoitis B alba \ai lobulati Andeis in I r hcib norm B Ubi lobatact\cniiLOsa pinnatiú la in herb reg succ B all) i dalccarlica Re gel monogr evpnteett " fig 40 — (> *ilalfimhca* folns pinn itififlo-lai miitis 1 >bis in cuspidcm lon^am K II minitis dcntatisquo — In Sum<p prov Dilecirln cultiquc in hoitis B alld diltcarlict L suppl p 4J(>, Willd spec 4 p 402,SpaUi Rex Bel in Ann d sc n «-tr 2 \ 15]> 187, tndl gen pi suppl 4 p 10 B h>biid i Bloom in act Holm 1786 p 186 t 6 fig \A B^clist hoistlj] 237 B Jacinidti Walilcnb fl sutc p 104, Reichenb ic fl germ 12 t 627 B veirucosa launiala lr m bub noun B alba ^ dalc-carhça Regcl monogr. p 27 t 5 fig 41-49

[if slcnln, trunco humili pluumquo (juvenilj v iteiatim pecu depasto) ramulis omnibus stenhbus glandulileris folns e basi rotundata ^ trun catd ^ cordati dcltoidto o\atis \ subcordatis dcuminilis duphcato-dentatis v sinuito sublobulatis — In tuifosis pascuisque Jlclvcti i Gernmnae^Rossiae, tennitc, Suetijc ttc , in montibus *(*lhciae alt 5200 ped leg tl Kolscb} in Asia medid ad lluvium Amui (Radde) B alba ^ vcirucosd RLRLI, monogi p 19 exel syn B albd\ar \eirucosaTdusch herb boh In htrbdins sanpissime sub nomine B vcnucosae Lhrh vi-dimus

Y, *oy(ou unsn,* tnmco bumih fruU cnte ramulis ghndnhfc rii, folns idmuloiurn fcrtiluini c basi cuncati d< ltoideo-o\alis acuminatis dupli cato-denlatis, foln^ lamuloruni slenlium us \ar (3 similibus In Gahtiae ville Oycow B o^cowiensis Bess pnrn fl Gahc austi 2 p 289 (n^c lUicbcnb ic fl g(rm) B ilbi var veirucosi fiautv in Bull so(Nit Moscou Jan lK>7 Fn lex 4 ped ills (teste Bcsstro) Ramuh ghn duhftn l*olid]umord punctis resinosis adspeisa captcrum glibid, plus minusvc dcuminat L — Vidi spccimina a cl auctore missa aliaque in her-bdno Rciclicnb fil

c, ?rs7rn/Vra, idmulis fcrtilibus densissime ghndulosis, folns c basi cuneaU \ cuntdto-dil itatd rhomboidco ovatis acumindti^ — In Mbina onen-tdli pi opt Ldskoi (Midde'dc ifl), in TidnsbiiLdlia (Koptiefl), in Amenca boic ill orudent ill id Sa k«U<Ji ivan (1'allisei) Hpl Bun ubci Bet in Bull dc Mosc 18 p 3% B dlbi Trautv in IiduU ct Mey fl och in Midd Reis vol 1 2 p 83 Ilamuli biunnci, gldndulis cussis densissimc \csliti 1 olia sanpissimc subtus resinoso punctali cxterum ^ldbia v in venaium axillis obscuic baibita Amenta leminei longt pcduncul ita — In specimimbus omnibus obscivatis huctus desiderantui

e, *aibusiiila* ^lenlis nmulis vn_oilis pendulis ghbus subcglandulosis, loins lationbus quam longis rhomljoidco-fl ibelhformibus ex apice lotun-data v truncata abiuj te icuminatis -; In DUecaiha Rgl 1 c p 398 B dlbd \ar drLustula 1 iicssuninid veg 1 p 212, ft he ib noim,Reg<J monogi p 20 Aibor humilis Rami penduli Iolia paiva, J-J poll in diimitio

bubspecies II |i»|Milir«lln$_9$ tnmco nrboico el ito nmulis fiuctifens glabns v plus minusw $_r$liudul(ss loins I miuloium Icitihnm deltoidpo ovatis cuspi datis, samarj alls nucul i duplo tnplo\c ldtionbus sliobih squamarum loLi-» lateidlibus divancatis \ recurvatis *j* In America boieih, in Ohio, Massa chusctts, Ni^-Himpshire, a Pcnsylv ct Maine (Asa Ora>) B popuhloli i "Wllld spec 4 p 4CJ et ejusd Bcil Baum/ p ^{r}>j, Ait hort Kcw ed 2 v 5 p 290 Puish 11 am scpti 2 p 0>0, Hook 11 bor am 1 p 153, W.Us dcndi lul 2 t l&l, Mithaux ub forest 2 p \\<) t 20, Ion. New-Yoik p 199 t 112 B acunniidtd I bib Butr 6 p % B. luitdDuioi Harbk Biumz 1 02 B cuspi JaU bchiad bub B dlbj \di j opulifohd Spich Rev Bet p 187, Lndl gen pi suppl 2 p 19, Repel monogr Bet p 18 t 4 fig ly-29, Asa Gri^ Minuel ol hot p. 459 — Arboi muliocus, trunco gracili 1)-2i pedali cortice pdpjiacco albido solubili Ramuli plciumque dense glan-dulifcn, lanus totidem gldbn. Iolia ldmuloium fcrtilium e basi cum at t \

iarius dilatato-cuneata ihomboideo-ovata, longc cuspulata, aigulc duplicato-dcntata, junioia lesinoso-punctata, caHemm ^laberrimd Folia lamuloium stenhum (tunonum) e basi truncdtd v. rotundata v. subcoiddtd deltoideo-ovdti longeque cuspidata Squdmae stiobili dense imbiicatde, sub lento vi\ pubeiulae; lobus micrmedius saepissime dbbrevidtus.

Mibsprcies III, **mniid*taurleii,** trunco aiborco ol.ito, lamuhs fiuclifciisglabiis v paice glandulifeiis, folns lanuiloium fertiliurn e bisi dilatato cuneati delloideo-ovdtis fitumin «tis duphcato-dcntatis, glabns, sainaiae ahs nuculam m-(ltei dequantibus v ea paulo lationbus, stiobih squim.uum loins latoiahluis iectanguhs */)* Ad sinuni Olga in Maiidslim 1a au^tiali (Scbmidt). R^l$_a$ Hem Bet in Bull de Mosc. 18 p .199. t 7. h#. H. Ramuli in spcciminibus exaraindtis glandulis ians adspeisi. Folia subtus cximio letitulato \enosa, glabeinma Strobih squamarurn loin lateialcs reclanguli, bie\es, oblique tumcdti, lobo intermedio linean-oblongo.

subspecies IV, **lntirolln,** arboiea, lamuhs fiuctifens gl ibris \.paicc glandulifens, fohis rdmulorum fcililium c basi truntata ^. lotundala \ toulata sub-rotundis v. coidatis parce acummatis subtus m a\illis vMiaium barbatis, samar<p ahs iiucula duplo tnplovc ljtionbus, strobih squ imWum lobis *)* itcialibus divancatis et s.rpe icturvis. *y* In Asia media et boieali B. lalilolia lausch in lloid latibb 1838. p. 731. B alba £ papyifora Spach 1. c. p. 183 ox paite, Lndl. 1 c. p 19 ex parte, Hegel, monogi p *2'*\ ex paite et t '). fi«j 8 10 11 12. subspcciei pubesccnti m ixinf^ ¡i!fiins ^libntie laniuloimn junioium samaiarum jue al i lalioic dijnosc itui — Koln o\ato subiotunda plus minus actiminala, dupluato dentata, siiliLus ad nervos plus minus pilosi ct «id eorum axillas sa»|)ius insigmter,ianus vi\ baibita junioia subtus lesmoso puiutdta stiobili c^lindnci, nimc clongil' *c*\ saepc dpice .iltcnu.iti, nunt abbicviati, stjuamdc sub lonte pitucipue margine pilo^ul.r Haec \tuiat

a, *lauschiiy* btrobilis elongato i ylmdriccis — In Japoma, in m^ula Jrsso prope Si^inopi et circum montrm Kuin\ya-tika in plamlie (Maxim.), in M<indsbuiia,dd fluv Ussun (Ma\mi), pi ope Dmidisct Maj in Mandsli austro-onentali (Maxim.), m re/iorip amuiensi (Maxim et Kddde), in Mbun, prope ^d^lmo^o (Middcnd), ad litora paitis dustiahs lacus Baic.il (Rddde), rultaque in hoilis Rgl Bern, uber Bet. in Bull, de Mosc 18 p :i99. t 7. ?ntf 11-14 B alba Miq in Ann. bot. Mus lugd. bot. 2. p 136. — Folia crassiora subpcrgimacoa Stiobili apice attenuati v obtusi, erecti v nutantes, squamaium lobus inteimodius abbreviatus, lobis lateialibus bievior.

[i, kamtschatica, stiobibs cjlmlrdteis abbicviatis Cicscit m Kdmtscbatka (Ricdcr, Stewait) Kgl. 1 c. p 't()0 t. 7 fig 16 20 Folia lenuioia. Strobih circitcr J pol\. longi et 8 poll m diainotio, squamavvim lobus mteimedius brewssimus.

Subspecies V, **occldontnlls,** aib nea, Tamuhs fi uctifens plabns v. paico planduhlens v jumoribus laxe pilo^ulis etmov glabns, loins iamuloium feitilium P basi rotunddla o\ato oblongis v ovatis acuminatis subtus in axillis vonaium Jwrbatis, bamaiae abs nucul.i duplo tnplove 1 itionbus, stiobili squ«imarum lobis latoralibus divancatis v ICCUIVIS — In Amenci borcih B occidentalis Hook, f] hoi am 1 pi >'>, Regcl mono$_n$i)) 73 Ramuli biunnci, nunc totidem gl ibn, nunc glandulis adspersi, juniores pilosuli et mo\ glabrescontes Folia duphcato-dentata, subtus ad neivos plus minus pilosa et ad eoium axillas insignitpi baibata, junioia subtus resinoso punctata. Mrobili cylindnci, olongati, baepe apice attenuati ranus oblusi, eiecti v. penduli, squamaium sub lente pilosularum lobus inteimedius abbi(\iatus et lobos lateia IPS aequans v superans Vanat.

a, *typtca*$_j$ trunco humili, folus mciso-sublobatis tie iiUliscinc 7 In America boicali-occidentab, Sti ntsof ilic Fuca (Scoulei), Rocky mountains (Dougl. Pt Drummond) Rgl Bern, uber Bd in Bull ile Mow 18. p.'«00 t. 7. fig 1-5 B. occidentalis Hook. 1 $_c$, Rgl 1 c t IS fig «• ^{Ra}" mull glanduhfen. Stiobili squamaium lobus iniminoduiN lolm^ hteiales **.nquans v supcr.ui*..**

p. *cnmmiit/iUj,* trunco elato, foliis duplicato-dent;itis. In America bo-, 'rcali; Sumnrs Prairie (Lyall), Popsfield, Massachusetts (Asa Gray), Oregon (^'all)« *W-* 1- c,. p. 401. t. 7. fig. 0-10. U. papyracea et papyrifera auct ox parfe. Subspeciei subsequent^ proxima et solummodo strobili lobis lateralibus ructangiilis ^. recur.valis divorsa.

Subspecies VI, i>ii|iyrff<»r», arborra, ramulis [rnctiferis glnbris v. plus minus glandulilms v. junioribus laxe pilosulis, foliis ramulorum fertilium e basi rotundata v. rarius cordata ovato-oblongis v. subewatis v. rarius subcordatis acuminatis duplicaio-ricntatis snbtus in yenarum axillis saepissime barbatis. samara alis nucuia duplo triplove latioribus, strohiii squamarum lobis latenilibus erectis. — *in* America boroali ct rariśsime in hibiria orientali. Rf,'l. Bern, fiber Bet. in Dull. d. Mosc. 18. p. 401. Ab aflinibus subspeciebus antecedentibus 4 et 5 squnmarum lobis lateralibus ertsciis facile dignoscitur. — Arbor oxcrlsa v. humilis. Rumuli slerilcs turionum plus minus glanduliferi. initio pilosuli v. rarius dense pubescenlcs. Folia subtus ad ncrvos pilosal turionum pilosula v. rarius (lenso pubescentfa. Strobili cylindrici, elnngati, saepissimfl .ipice attenuati, erecti v. insigniter penduli; squamae pilosula v. ciliatae. Yari<it#

a, *commvnis',* ramulis fructiferis glabris v. laxe glanduliferis, foliis ramulorum fertiliiirn e basi rotundala ovato-oblongis. 3 In America boreali. New-York, Massachusetts, a Nova.Antfli.i « 1 Pensylvaniam et Wisconsin, ei in hortis europaeis culta. Rgi. 1. c. p. 401. B. papyrifera Mich. 11. bor. am. 2. p. 180. B; papyracea Willd. spec. pi. 4. p. 464. Ait. hort. Kew. ed.»2. v. 5. p. 300; "Mich. hist. d. arbr. Betula p. 133. t. 1; Wats, dendr. brit. 2. t. 152; Willd. Berl. Baumz. p. 58; Pursh 11. am. sept. '2. p. 621; Hook. fl. bor. am. 1, p. 15f>; Torr. New-York 2. p. 199; Asa .Gray Manuel of bot. p. 4f>9. B. nigra Dull. ed. nov. 2. t. 51. B. excels;i Duh. 1. c. t. 52. B. grandis Schrad.. in ind. sem. h. G6tt. 1833. p. 2 ct in herb. B. alba var. papyrifera Spach 1. c. p. 188; Endl. 1. c. p. 19; Regel raonogr. p. 23. Arbor ex<els;i, cortice albo insigniter papyracco. Ramuli et folia initio saepissimc laxe pilosula v. turionum folia densius pubescentia. tandem glabrcscentia et subtus tan turn ad nervos plus minusvo pilosa in axillisquc venarum barbata. Folia turionum sterilium ovata v. cordata. initio laxo pilosula doinde glabresceritia v. rarius pubescentia. Sijuamarum slrobili lobus intermcdius latcralibus angustior.

P, *cordi/olid,* ramulis Rlabris v. ?parse glanduliferis junioribus laxe pilosulis inox glabris, foliis ramulorum fertilium e basi cordata v. dilaiatorotundala cordato-ovatis. — Jn Terra nova (de la Pylaic in lib. DC), el in America boroali, Maine (lib. Asa Gray), Luke superior, Pic River (Loring, in lib. As;i Gray). Rgl. 1. c. p. 40(. B. cordiiblia Regcl, innnogr. p. 28. t. 12. *fig. 2(.)-3G.* Arbor verosimililer mediocris. Ramuli fusci, rigidi. Folia acuminata v. rarius acuta, subtus ad nervos pilosa el in venarum axillis plus minusve barbata. Strobili erecti v. penduli, elongato-cyliudracei v. rarius breviores; squamarum lobi ciliolati subaequilali, lobus inlermodius laterales superans.

Y, *humilis,* trunco humili sufTrutescentn, foliis ramulorum fertilium ovatosubiolundis acutis, squamarum strobili lobis porrectis v. rectangulis. 3 In America bore-ili-occidentali, Saskatchawan (Bourgenu), Rocky mountains (F^arry, E. Hall et P. Harbour), While mountains Tuckerm,)\ B. papyracea var. minor Tuck, tesle Asa Gray. Ramuli conferti, floxuosi, glanduliferi v. juniores pubrscentcs, dcin glabrati. Folia ovato-subrotunda, acuta, parva, 1 „• poll, longa, simplicitcr v. duplicato-dentata, juniora petiolique saepe'puboscentia, doin glibra v. subtus ad nervos tantum pilosula. Samaraium alae nucula usque triple latiorcs.

Subspecies VII, **pubescens,** ramulis plantarum juniorum sterilium turionumque dense pubescentibus, ramulis fertilibus initio puberulis deinde sæpissime glabrescentibus, foliis acutis (nec acuminatis), samaræ alis nucula sesquiduplo latioribus. — In Europa et Asia media et boreali, in America boreali. Rgl. Bern, über Bet. in Bull, de Mosc. 18. p. 402. B. pubescens Ehrh. Beitr. p.. 98; Willd. spec. pi. vol. 4. p. 462; Mossl. Handb. 2. AuA. 4.

p 176'J, Guimp et Hayne Abb d Holzg *2 t 1<*6, I/MIPIJ %fl ros« J p 041 Rcuhenh fl exc p 174, Hart Eehrb t 28 Hon/e in Hot /cil 1848 p "8₄B, ₙIauci Wonder in B t Zeit 1$'*6 p *m* B atnati Bork Foistb 1 n A98 B gluimosa Fr summi \eg p 212 B glutinosaetB *pu bescens "Wailr schêd cnt p 407 ét 409 B odoi in B * hi cccmhu^en^is et B lnbuda Brc list 1 orsth p 204,207,208 B ilbi ï puboscens fcpuh rev Bet p 187 Lndl gen suppl 4 p 19 B alba ŏ ₕlutinot.a d £ pulcscens Regel mono^r p 20 et 24 Arboi in neraonbus nostus cxcclsa in regio mbuh boie llibus alpestnbusque humilis Rimuli fructiiori mitio sub lcnle] lus minus duisc puhuMih glandulis JUL sni^uhs intPidtim adspersi, posua. saepissinu ^1 lbresLtntos ratuuli sU riles tunoiium spccinununique junioui n \ ^tctilium piaecipue in tuifosis trescentium sajpissime dense pulcscuiits I^OIH rimulorum fertihum srpe e basi cuneata lhomboidpo ovata v *) iio* ovata A mius c basi iotundjti lite o\ata simpliciter v duphcito dtntiti \ lanssimr s ihlohuliti dentatique, glibia \ sulitus in \enaium axiHis huh it i \ )uniori pul)£sccntia I ha rimulorum sleiihum s-tpc pubescent l tum-num v plantnurn lunioium stenhum ^»xf issimt mrlluci pubc-centi i (hisi lotund iti ovata \ late o\ Ui#/subcoi iati, acutd \ icuminlia, grossc dupli-Lilo-duilili Pui lus fclium dimidium aejums Amcntorum locminfoium mdstulorumque squimas plcrumque pubestenles Stiohilus cjhndncus elon-gdtus \ rnius ibl3re\Iitus, squamaium mirgme pleiumjue uhuarum lohi latei ih s rccti \ plus uuiiusvc rectanguli v iccur\ iti Sdinararum tlae nuculi saepc duplo, Ldiiua sesqui v paullo ldtiorts — Vdrnt

a, *stenhs.* saepissimc humilis, ram ul is foliis JUG junionbus (hnse)u bcsuntiDus *5* In pisuns et tuifosis uhi I imuh j mores itcratim ptiu pascunlui Dcmde ad fornas sbb^ujucntcs iruismutitur Rgl 1. c]) 4(M B lomcntosa Ret/ et Ab 1 Btscbr d Hoi/uten \ol 1 p 17 t IT B pumild biocLcmbeigensis Du Roy Hdibk Baum/ p 92 B]u besu ns heib Aiboi humilis v nudiocns stenhs ^pLtiminum illi mm ramuh jumorcs pubtsconte&, folia rhombto o\ ita v lite ovata junioi i])uJ)(sccntn dunde glibrcscentu, simphcitei v duphc ilo-dontiti Sj e uminum humilium v junioiumv tuiiomimiamiil lohaque miiio saLpis simc molliicr pubescrntia, ioha coiditi / c nlaloV late ovata, sa] giosse duphedto dentata acula v acumuidta \ lanus obtusa

p, *pan ifolia* foliis ramuloium fertihum stenhumque parvis ^ix 1 1 ' poll longis *)* B dba pontica Wats dendr bnt vol 2 t 94 B Cdrpitlnci P sudetica Reichenb it fl geim vol 12 t 624 fig 1285 B caipathin launch, heib boh B alba naivifoha Wimm hern \\ pubpsccn^ But fl it \ol 10 p 230 B iiha pubescens h pamloha Regel niono^r p 26 Aihoi pluum jiic humilis, in turfosis, regionibus bortilibns iljjjjs tnbusque < rcscens saep slcrihs, ranus fructilera ioha c hisi cuncata \ rotumUta rhomboideo-ovati, glahra \ glahrescc ntia, simpliciter v duphcato dentita Ramuli juniores puhes(ent(s, saepe mox glahiescentes Amenta t^lindnca, eretta squamarum lobi lateiales eieUi v rectanguli v recunali — Ludit foliis e hasi cuncita v subuoidata deltoideo o\ali^ duphcalo inciso-dentatis (olitur in hortis B isplcrnfoha et B ni$_o$i » hort B alba, pubesctns c asplcmfulia Regel, moncgi p 20

Y, *Homnnanni,* tiunco clito, folns ramuloium fertihum c basi cumd'a rhoin oidto ovdtis v lanus e basi rotundati o\Ui«- stiobih squamxrura lobis htci lhbus Liettis — n I urr pimedn U boioili R^l 1 t p 40 J B •'iwaHoinom fl dan t \W B ill)i Reichenb it 11 gum vol 12 t 023 B ilba \ ir ^lutinosa 11 iul\ in btib. Pcliop B nigri ct B ruhiihoit B albiŏ glutinosa a lhombifoha et b latifoha Rcgel mono$_{&}$i Bet (t\ paiU) fig ij-42, et e poiuluh 1 c p 23 Aihor pleiumque exulsi i imis ^l IJM$_{1S}$ ^ no\olhs plus minus pu*iesc(nlibus 1 olid atuti, pluum-3ue. lliomlirideo ovila, i mus (bisi irtunditi plus mum'"* lale o\ata uphcito dcntdti, glabia v subtusad nenos pilosa et subin 1c in \enmim axilla ohstuie barbata Strobih eiocti v nutantcs — Squimaium lob s laterihbus eieitis solummodo *i* \metile e dnersa Rauiuh et loin tune nmri ut in soquentibus *\di*

c, rriati, trunco humili, folus lamulorum fertilium saepis&ime e basi cunoàta ihomboideis, lanssime c basi dilatata late ovato rhomboideis, squamarum slrobili lobi^ semper eiectis — In Succiae mortanis alpestrjbusque, in H^IOIIU uralensi, in alpestnbus Bohemia?, Gcimaniac, Helvetiae et Scoluc, in insula Island. Rgl. 1 c p '(04 B glulmosa lorma pnma Fins surama vcg. 1849 p "J5G otejusd 1 crl> norm B glulinosa Yr summa vcg 184G p 212 ct c-jusil forma irulicosa B. sylvestns Laesl in Bot not 18'>G p 107 B ciyptocoipa Laest. 1. c p. 109 B subaequahs Laest 1 c p 109 B. subalpma I acst 1 c. p 110. B pubescens var Carpatica Haitig lehrb p. 29. B Lornfoha 'lausth in hub. Sihiad B alba o glutinosi c Laipatici Repel nionogi p. 21 t 4. fig 44->2 (excl. 47,49, '>1) t "> fig 28.10 t (). fig 10 11. \rlJOa liuinilis v sufliutescens. R.imuli glabri, (glandulosi v. novclh pubesmites Folia ramu¸orum feitilium glabia v. juniora subtus ad ncivos pilosiila v. tantum m venarum axillis pilosula, umpliciUr v duplic itodenlata, *Uiu* vnidia, saB^e sub(onacca Stiol)ili erocti v nulant* s, elongate* c\lmclr.icci v magis abbreviali Saniararuin ala nurula ses(jui-duplo latior \. lanus ca paullo tantuni latioi — Ludit fohis (luplicato-inciso-deiiUitis. B. Muntlm Gaud, in herb. Boiss

e, *ihomhifoha,* trunco elalo, Johih ramuloium lortilium ^anpissimo o ba«>i cuntata lhomboukis v ranus o basi dilatila late ov.ito lhomboideis, squamarnni strobih loins lain lhbns reclan^ulis \. lecuivatis —Jn huropa media el lioieali. *1\%* 1 c p /i04 B. iliombi'olia lauscb in Kloia ratisb 18J8 2 p 7'>2 B gluliiirjsi W.illr. sched. (rit. p. *k%,* lues summa veg 1849 p 5'j7 lonna setunda B. alba Guimp. d. Hol/g vol.2 t. 145, Engl BoL t 21\)8 B nigncans Wondoi Bot /eit 18'i6. p 291 B. odolata Hen/e Bol /eit 18'i8 p 75, Schrad heib. B. dahuricaWilld spec vol 4. p 4f>'l. Ait hoit. Krw cd 2 vol 'j. p 299, Scbiad herb B. pubescens Lcdeb. herb , lauscb hcib. bob et autt. div. B. lalifoha li IVtiop. B .imbigua ll.impc in Hnchenb. (1 germ exsicc. B maciostacbya Schrad. herb. B. o\ata C. Kodi in Iinnapa vol 22^p 3 3, et in hub. icg b(rol B niegalocaipa Iaf st 1 c. p 100. B rusticaLacst 1. c p 104. B. alba b glulinosa a ihoinbiloli i, b I.idfolia (ox pmte) et d pen* dnla Regcl monogr. p 20, 21, 2*, fitf Ji ct 40-43 Hamuli tindem glabn, novrlli saepe plus minus pubosionlcs 1 oha junioi.i sanpo pilosnl i, doinde glaba v pagina lnfcnoie m axillis \cnaium j>aice baibal.i, sinipliciterv. duplicato dentata. — ludit folus o lusi rrneati lbomboideoovatis (B. alba glutiuosa lhomboidea Hegel, 1 c p 20>, v. e basi dila«ata v rotund.ita lute rliomboidco ovatis (B alba glulinosa b latifolia Itegol, 1. c p. 21), nmis nectis \ pendulis (B «ilba glutinosa d pcnduli Regcl 1 c. p. 2J), stiobi'is ercctis v. pendulis, sijii.imannn loins 1 iteiahlms leclangulis v recumsv MUUS inuno codemque strobilo ma^isporrcclis, samaiarum ala nucula sesqui usque duplo v lanus paullo tantum latioie.

l$_y$ *caipatica,* tiunco humili sufTiutescente, cetera ut antecedents. Hab in S'ufcia, Noiwepia, in Sudetis, in montibLS Heicyniae. hgl. 1. $_c$. p 404 B. cari alica Waldst et Kit tpste Willd spec pi vol.4 p. 464, ct Willd. in hcib ug berol , Heichenb ic. (1 genn vol 12. t ()24 fij¸. J284, et ciusd. fl exc. p 174, Mossl. llandb 4 p *\Hñ* B carpalic.i p hercyruca Reichenh ic fl germ vol. 12 t 624 fig Ii8(> B ovata, ^yhatica, nistica, media et mcgalocarpa Laest. in Bot Not. p 106, etc B lihaefoha Iaest 1. c p 107 (forma folus lamulorum stenhum co'datis a utis). B pubescens Koch syn fl germ ed. 2 p 761 (forma samai *w* urn ala nucula paullo tantum latiore) B alba [4 puhesc* ns lausch hcib boh (ram.ilus stenlis) B. alba 0 glutino^a (c irpatic 1 Rpgel rnonogr p. 21 Ramuli, folia, squama* amentorum sam.uaeque vanant ommno ut in antecedente Folia subtus in venaium dxillis sdcpe baibata

Subspecies VIII, tortiioMa, uunco humili, ramuhs tortuosis, petiohs folium diuiidium cirtiter irquantibus, samairp alis nuculam circiter tPquaniibus. *r*$_j$ \\\ montanis Sibina?, I ui ipae et 111 Rossia boicali. Rj»l Anm *w* Bel 111 Bull. Mosr 18 p 404 B toiluosi. Ledeb fl. ioss vol 3 p b.V2. B. D.uuiu 1 ledeb 11 alt vol '1 p 2'u exel s\n B triluosd Rpgel monogi p ,J() p\cl

syn. p 31 ALbor huimlis, ramulis saepissime toiluosis, lunioiihus liunule pubescentibus, deindo glabiescentibus coitite bmnneo 1 olia lamuloium stenlium rhombco-o\ata v. subrolunda, glabrcscenlia, acuta, bimphcitei v. dupli tato-dentata, ramuloium novelloi urn stei ilium sa?pi<«sime cximic grosue v siibin isodentata Squ.im.imm amenti lobi lateiales ponecti. — A B alba pubescens Fnesii samaiaiiimalis angustioubussolummododiversa. Vanat

a, *y mil ma,* folns ramuloium fortilium o basi cum lla. v rotundala I nombco-ovatis. — In ^uecia ct Russia hoieah, Kue&uando, Kengis, frinnmarken, Iapoma, in Sibiua altaici, ct in alpinis iicrmanifE oncntalis B toituosa a gcnuina Repel monogi p 31 B hybnda v .ifhnis et j; cunoata Hegel memoir p. 39, 40 B pubescens)i M.ert B. raipatica Heichonb pi e\s. et beib div (Riesengebugp boim grossen leich.) lolia s.Tpe omnia acula, rauus singula obtusa, iamuloium stenlium latiora ct l)asi s epe lotundata

p, Kubmnsthcfjny folns ramuloium Icilihum a 1 ISI tiuncata ^ rotundato-dilalata o\ato-subiotundis J Ad maie illmm ct in Iappoma B toituos.1 (i Kusmisscbcffii Hegel monogi p 32 t. 7 iig 1-2, Regel Oaitenfl]8()0 p 311 t 303. B bvbuda 6 macroj lnl»a Hegel 1 c p. 39 (founa stei ills). B tilioefoha, ietir\ilata *et* glulinosa ciassitolia Laest. in beib ieg succ (form i stcnlis) 1). glulinoba lol cordatis in herb reg suec 'forma stcnlis) B ^lutinosa m herb, icq SUPC (loima feitihsj. Arboi bunnlis 1 (ilia ramuloium ieiiilium sappissinie omnia acuta, raiissime smgula obtusa, subconacea, leticulaLo \enoiia, simplicitei v duphrato-dentata, glabia, lamulorum stoiilium glabra snppissunc e basi coirlata late o\ali ot latiora quam longa Hamuli no\dli dense puDescenles, folns siepe snbuiLiso-duplic ito-dentitis ^trobili s»juamj; cuneattfi, bre wtei inlobcU, lobi lateralub poirctti

subspecies IX, OXCCIHH, arboiea, lamulis lunionbus dense pubescentibus, peiiohs lamina /j-plo l)re\ioiibus sainau[1] ahs nuculam circiicr aequaniibus r olitur in horlis cuiopacis Hgl Hem n Bet in Bull. Mosc 18 p *h(V)* B excelsa Vit boil Kcw ed 1 \ol :i \) 337, et ejusdom boit Kevv ed 2 \ol ft p. 2ᵛi9, Willd ^pec. pi vol 4. p. 463, Spach rev. 1 c. p. 188. Wals **dendr bnt \ol. 2. t (>5 , Willd Berl Baumz p 60. t. 1 hp. 2; Endl gen** pi. suppl. 4. 20 p. 19, Regel monogi p 29 t 7 iig 4 5 Subspeciei liujus \alde dubiae specimina me in heibams cuiopaeis, nee in berbano cl Asa Gray in America boreali bcla \idi et hanc ob causani lusum evimium tultur.p B ilhae esse aeslimo — Ramuh no\elh dense pubescentes, eglandulosi. hoha e basi rolundata v subcordata o\ata v subiotundo o\ata, a< uta, dupiicato-dentata, supra glabrestenlia, subtus petioloauo puhescentia, potiolus brovis Mmus, lamina 4-8-plo brewoi Strobili cjiindiicI, pedum ulati. pedunculus quam peliolus longior, squam<p m ugine pubescentes, lobi lateralcs lotundati ipctanguli, lobus inteiniedius longioi ovato-lanceolatus.

^. B. MicROPiiYiLv (Bunge fl alt suppl in Mem. de l'Ac de St-Petersb 183") P 50C), aiborea, ramulis fcitilibus dense et eximio glandulifens, folns paivis (basi cuneata integia obo\atis, strolnlorum scjudmis tnlobis, lobis augustis l.itPiahbus erectis, .samaiae ills nucula 2-J plo lationbub ,ʳ) In bibmae altaicae tractu onentah Bunge enum. pi alt p 84, Icdtb (1 loss, vol 3. P 052, Spath KV I c p 1()0; Fndl 1. t p. 19. B. fruticosa {J cuneiloha Regel monogr. p. 3"i t 7 fig. 16 23 Aibor 20 30 pedes alta, epideimide tlavcscente Folia excluso petiolo ciroiter 1-1 { poll longa et J poll, lata < basi cuneata integri obovata, obtusa v acuta, inaequalitcr dentata, juniora Mibtus ad ner\os pilosa, deindc glabrescentia ; petioh himmi 2 4 plo breviores, pilosub simbiii subse«silos, oblongi, squamae cuntiformes, margino vix pubescentes, antice trilobac, lobi omncs angusti, lateiales porrecti, mteimedio sdepissime latioies bre\iorpsque

§ 2. *Fruticosx.*

Fiutices ^amararum alac nutula 2-3-plo latioics v. earn .equanU s

t B IRLTICOSV (Pall fl. ross. t 40. fig. a. 6, c), ramulis gl.indulifen*, foliis c basi (iineala o\.ito-clliphcis. sapps acutis argute dentatis, samara alls nucula

LIPUIPI duplo lalKiibus J In Dd\uru (Pilhs rurczanmcw) in llpibus sijmcnsibus (K dd< Stulundorfl) in Mandshum hoieili (Mmmowioz), m Sibina onenlali 11 llu\ Utscbur (PiuHo-\\skv) — Korh sjn fl gtrm rd 2 p 7(>l II Grmlini Bunge cnim pi alt p Illinois ad B microph^Uim L(deb fl ros«s \ol } p 672 Hire/ fl but dih vol 2 p 28 TrauU pi mug t), Iiiutv et Mey in Midd fl oth p Kt B humilioi palustns impntis pei omncs dinipnsiones mino^ibus GDQPI fl ^ib \ol I p 167 t 26 fig 2 B di\aricild Iedeb 11 ross \ol 3 p bo2, IUIL/ fl laic dib vol 2 p 120 B iiutitosa a dim lini Repel monogr p *4 t G fiQ[r] 10 40 Hutcx 8 10 pc dilis, iarnis f KLIIS I miulis dcusp gUndulifen* novc His folnsque laxe pilo SUIJS tt deindL glibns lolu pttiolo lamina dimidio bieuoic suflulta, saepssnne icuta ranus obtusa nidi^ine liiplicito v miqualiter irgute dent it i buMusinsigiiitpr v I urns vi\ Lonspicue ^landuloso punctata id 1 | poll lon[r]n et , i o 1 idtL I olia lainulorura stenlium rossc duplic lo dontiti v sul ind(SUIJIIICISO dcntata lnlcidum usque 2] oil If ngi Miobili bi°vitci pedunculiti oblongo ellipti I v ranus oblongo cyhndiici, j cdunculi strobilo (linndi bie\lores squamae sacpissinv3 basi elon ato-cuneatae ipice Inlobc lobis ingustis brtvibus laterahbus porre0|is v subpatentibus lobo lntPimedu srpissime brevionbus Samaiarum alae ri'dcula sxpc duplo lanus scsqui tan lum latioics

k B MIDDFNDOBIHI (Frautv ct Mey in Midd ficise fl och p 81) rimulis ghndulifens, fobs obotitis v subrotundis obtusis crpnato-dtntitis sinnn alis nutulam Tquanlibu[c] usjuc duplo lationbus 5 ^[n] [s]il>nia oiimtil])oiLili tt lustnli in rp^ioue lmuiensi — Irautv in Mi\im pum fl im p 2J>, KC^LI ct lilin^ fl aj m Nicbtr , Regel monogr Bet p 40 t 8 lig 1J-27 B rotuudiloln Hc^el ct Iiling fl aj in p Jl(') tiutcx 3 10 ped i hs, r imis erectis ramuli^ {lus mm is d(nsc glindulifei is, novtihs saepissini pubesccntibus deinde ghbns *b* lid brtulfr pptiolita, t bisi tuneati A subouneald obo\aia v subrotunda, macqulliter cienatc dentatd, sjepis inic lotundilo ob usa, I irius aubacuta, utrinjuc 3-6-nenn, juniora pilosuli cl m(x gla rd, subtus sTpissimc cpunctata Strob h oblongo Ljhndrici v o\ ilo sub^lohosi, ptluiKiilm, nutant(s \ eiecti pulunculo giacili am nlum dimidium sul <*u[ua.n\(,* s minus obovito cuncatis, lpice tnlobis lobis obloi gis v line in *(*blon[0]is v lalioiibus, subdiquilongis, lateraUbus porrectis ldnus palenlibus

oL,communi& (Triutv in Mivim prim fl amui pag 2^); ramulis nrv(lis pubesfontibis, loins e basi cunpata ovato-ihomboi le s v obovitis stio fmlis oblongo cjlmdncis 5 *[n] ^egione amurensi (Maxim), in Sibma onentali p/opc Udskoi t in insula Scbandai (Middendorl) pr Aj n (Tiling), ad Lenam (Adims) mtfr OcboNk et hkutsk (Lin^sdorfl") Robustior Petiolus pirvus lamina 3 plunes bievior, lamina usqup IJ poll longi et I[1] poll lata Strobili saepissime penduh Sanuiarum afde nucula s[t]epissime duplo latioies

p, *qlobosa* (\\r\ monogr p 41), ramulis novelbs pubesccntibus, folns sub oibiculdiibiib rotund ito obiusis v oblusissimis, stiol ills ^lobosis v o\ iti« v oulon^is ^ In Sibim oncntali, in msuli Scbintar (Middendorl) id Tongain ct id I(nam (bcb mgin), in Sibim a'taica (Mcitens) B Mid dendorfii\ar sclmii irtiisis li mtv beib Humilis tolia suborbiculana \ OAato subrotunda subtus interdum ghnduloso punctatd \i\ipoll longi Strobili p nduli v erecti, squamarum lobis s«cpe angustis Simiiaium alae nuuilam circitei aequantcs v ei paull) latiores — AB glmdulosi cui luc ioima^roximi^solummodo samaraium »lis lationhus dibtinguitm^ Hue peitinrnt SJ ecimina sibmca, quae in monogi Bel nomine B nanae y mtcruiediT enumei IM

y,nitida (Rgl monogr p 41) lamulis no\ellis glibns resmo o rfhnduhfens mox la. lbusmlidis loins obo\atis v subrotundis, stiobilis oblongo cyhndncis Pio]>e Ajjn legit lilinj

5. B INTFRMEDH (TboiD ttste Reichenb IC fl germ vol 12 t 624 fig 128 J) ramulis dcnium 1 tvibus, folns ihomboideo-ovatis aiguie duplicato dentatis, samararum ilis micuhm aequantibus v. paullo lationbus 5 ^[n] Heheti* monti

bus Turae Lifponia roslu (M ddend), \oiwegn, Suecia borealis ct Isliiulu R^l Bern ub BU in 1 nil Mosc 18 p 407, Koch s^n od 2 p 761 B hj-bi ida e KJCIIII R^l Monogi p 39 B o cowiuisis I iest in herb leg. suec FiutiA G-7-pcdilis, ramosissimus Kirai eiecti, novelh nubescentes dcinde plibn lacves v iirissime parcc gl indu'ilcn 1 o n lhomhoideo-oviti v ovato subiotanda, u uta v pdiillo dcumimta junu i i j ilosulu ct iitunquc leMiioso-puncidta, adulta trlibeiiimi Stiohili CAlindiICI , squinieB tnlobae lobi laterilcs porrecLi lobo liitirmcdio latioies Species ^aldc dubn ot vuosi-militei planU h)bnda, e\ B alba Qt B nana

(> B GIUYII, Rgl Bern ubor Bet in Bull de Mosc 18 p 40b t 6 fig 9 13 rarauhs 1 lusquo juuioiibus dmso pubiscr ntibus, folus obo\alis oblu>is cie-nato dentatis smiaiarum ilis nucuh sesqui u^quc duplo litionbus ^ In Ohio (v in herb Asi Giay) 1 ruto\ Ramuh ct folia initio dense, deinde laxius pubescentii Join ramuloium fcrtihum e bisi inlr^ii obo\ati, simphutei crenato dentdta, obtusd, usque 1 \ poll longi ot J poll lala, ramuloium ste nbum fol a majora, o;ilo subroiunda, nhtusi v. aculiusuula grosse et acute cicmto dtntiti Gemmae sublanaiae Strobih oMon^o-cjlmrlnci, erecti, pedun culati, squ imae Inlobr, ciholitae; lobi obi)n$_o^r$i ldttrdles crctti v. palenles, lobo intermedio pltrum jue breviores. Hdbilus B pumilae, samaiarum ahs lationbus lacile digooscitur

§ 3. *Nanx.*

l«i tilices Samiraium dldc nucula saepissime duplo-pluiios mgustioics, v ranus paullo angustiores

7 B NANA (I spec pi p H94), su(Tiute\ ramosissimus nmulis e$_0^r$landulosis, fohis obtusissimis plcrumque lationbus qu lm longis obtuse cienatis, sama-raium alls dii$_o$u*>tissnnis j In Helvctix et Austria*. ilp bus, in montibus allio nbusEuropae mediae, in tinlosisl uinpdcboicilis in Sibim (in ic$_n$n JIIC ui ilcusi leg. Hoilminn, id fluvmm la^nijr le^ Middendorll), KamibuhUka (Libo-schutz), in Giarlandia, ler^{r}a no\d, Canadi —Linn fl lapp p 2bO t b fig 4, Du Hoi Harbk Baurn/ p 98, Willd sppc pi vol J p 46^r>, H <1 m t 91, Pall fl ross vol 3 p 654, luic/ 11 buc dill ^ol 2 p 130, liautv ctMey in Midd fl och p 83, liautv in M i\im prim H amur p 8i, Cngl bot. t 2326, Willd Berl Baumz p bO, H irti^ Lehib t 31 Reitbenb IC fl germ vol 12 t 621 fig 1278, Moessl Hdncfb Aufl *I* V)l 4 p 1706, Koch syn fl germ ed *I* p 762, GuimpelctHdjne Abbild d Hol/^; \ol 2 t I'i8, Roth (1 gcim vol 2 p. 478, Endl Bet in gen. suppl 4 pais 2 p 20, Purih fl dm sopl \ol 2 p 622, Mich fl dm sept v *2,* p 622 , lorr New Toikvol. 2 p 201 t 114 Spachrcv 1 c 19'> B ndiiaageminidR^el monogr 43. t 29 fitj 1-3 B nun a europacd Ledeb 11 ross vol 3 p 6 >4 Suf-lrutcx spitham'EUS usque biped ihs , rami adscendentes v pio,triti, ramuli ereui, novelh plus minusve pulcsccntos et deinde saepissime t>l*ibrcbLcntes 1 oha rnuiimd usque I^1 poll diametro TJ juant *i,* sajpissime sulirotunda sacpe jdtiora quam longi, obtusissima v subtrunciti, bdsi lotundita v rdiius di-ldtato cuncaia giosse simphcitei ^dupliciio-crenata, subtus reliculato-ve-nosa et P Bh b ^ p' ^ d l l p , bl l nosa et punctulatd Sliobin bre\^p ptdiceildti, ovilo oblongi v obli n^o cyhndrici squamas cuntilorm^s v obo\ tine, sdepe usque ad medium, i uius minus profunde tnlobae 7 lobi aequales v. liidequales, angustc iblongi \ am-Ditu ldiiores, later lies saspe poirtcti, ranus diveigentcs Samaidium ala saepissime angustissima, rdnus nucula dimidio v. piullo tantum angustioi.

8 B MICH\iXII (Spach re/ Bet in Ann. d sc nit ser 2 \ol 15 p 195),suf-frulex i unib piOLurnbcntibus, novellis dense pubostcr tibus, gemmis sublana-tis, loins miiumis ldtioiibus quam lalis uluividto-obtusi prolundc cienatis, strobilotum squimis infciioiibus tulohis \cl mtcgiis nuculisomnino jptciis J In Ifna Nova u id htoia Hudsonslx>-I ndl 1 c p 20, R$_n^r$l l*^{em} u Bet in Mosc 18 p 407 B nana Mich fl 1 OP am vol 2 p 180, Puisli fl am. sept \ol 2 p. (,22 B ndna y Mididuxn Rgl monogi. p 4T Frutex p^gmasus Ramuh eglandulosi Fohd bn vitei *u* tiolatd v suiscssiha.cunedto flibellata, subtonacei leticulala gldbra, minima diametro tuciier • poll

aeqjantia strobih sessiles, cylindnci, squama ova to-v oblongo-lanceolal i ct inferiores triloba[1].

9 B GLANDULCSA (Mich fl im bor vol 2, p 180), fiutex \ sulfiule\ rimuhs ghndulilloris, loins lotundalo-ohtusis c btuse crenatis, samaraium alis angustissmns v nucula duplo angustionbus 5 In Sibma el 111 Amenc 1 arctic 1 (New I iirfl«ind, I^cw York, Lake superior in montibus altionbus teste As«iGny)—Willd spec pi vol 4 p A6 , Puish fl im sej t V(1 2 p 622 B phndulosieLpnina Hook fl boi am vol 2 p 1 >6 B ^landulo>,i el B lotundiloha Spacli rov 1 c p 193 etl94, I ndl gen pi suppl 4 pais 2 p 20 B nana *[i* sibinca ot y inteimedia Retfi 1 monogr p 43 ct 44 B $_n^r$laiidulosa Asa Grn *M* 11111c 1 of hot p 4G0 —Iiutex s])itliamaBus v usque 4-j-pedalis Rami pioeumbcnles \ idscendpiiUs, 1 lmuli jnnioies dcn«c lesinoso glandulifen 11111 bicviUi p(Liol ila olxniuv suboibiculina v latioia quam longa, lotuiul ito obtusi et ol)tuso cienato dontata subtiis lcticulato-\enosa, glabeinma Slrobili oblongo-eylindnci, prdieelliii (recti, squamae inlobae lobi dngu&li, v oblon^i latciales ponceti v divineiti samaraium dla angustissima v lanus nueulam dimidiam aequans Van it

a, *lypica,* ciulc 2-4 pedali, umis ramuliMjuc cieclis, folns obovatis A nfenonbus subiotundis — In Ainonei IK real 1 ct iiutica, in funda New Justy, I'Lusylsama (Puish) Ohio el Lake supenoi ad Sabkitchawan (Iiouigeiu), Poil Fiankhn (HiUnrdson) Maino in ilpibus (Young) I abiadoret Ten 1 Nova (Monison) B glandulrsi \^eh 1 t;\\illd 1 i. Pursh 1 c , Hook 1 L , Spath 1 c , Lndl 1 c

p, *rnlundifolia,* caule spitbamaso v u«quc bipedah procumbpnte v id^een flcjite v 1 inns sub(recto, rmns rjmuli^qup adscendentiJ)us \ diffusis Joins suJ)oil)](uliiibus v htionbus (juam Jongis In Dihuria, in alpibus sajanensibus (Biddc), Sibirn altaiea bdiedlrnsi cl oricntah, Ktmtsehatki uisula Sitka, I abradoi, ad Hudsonsl av in Groenlan<li i, id eap Espcrcn et in montilms ilbis B rotundifoha Spaeli rev 1 c p 194, I ndl 1 *L* B nana *[i* sihuica ledeb fl ross vol 3 p 654, liauU et Mey in \Iidd. Rei*e il ocli p 8"i, lure/ tl baic dah vol 2 p 131 B niru Hook, fl bor. am vol 2 p 156 B nan 1 p sibinca et *y* intermedia Kcgcl monogi p 43et44 t 0 ńg 6 8 9-12 14-19 21-2C B Iittelhana in Sull jouin

10 B ALPESTHIS (Fi summ veg Scand \ol 1 p 212), frutex lamulis laevi bus, folm subrotundis v o\atis acutis v obtusis obtuse v obtusiusculc CM nato dcntatis, j>aniaiarum ills nucula baepissime duph m^uslionbus ^ In Suecia et ^o^wc$_n$l 1 Rossia lapponica < t media Islandi ct GroenlS,ndia —Rj,l Bem 1 c p 404 B frulicosa Fr 111 Flon latisb 1850 p 152 B bumihs Ir bcil) norm B fniticosa fi liumilis Rcichcnb it fl ^erm vol 12 t 622 fnf 1280 *B* fiutieosa Wits d(ndi bill \ol 2 t IM \\ humihs Wits)ni Spach rev 1 c p 19 J B nana *0* ilpostns Rgl Mono^r p j j t 9 lig M 16 17 19 26-38 B hybrid 1 a rhombifoha, *[i* lotundilolia et 1 aifmis R^l Monogr p *W* 30 40 *biuhx* 2 j-fodalis Ramuli $_n$labernmi Ia3\es\e v juniorcs paullo pubescentcs lolia pleiumquc pan a, ovata \ ^ulnoiunda v ovito rbomboidca, icuti v rotundalo-obtus 1 glabra, subtus reticulato-\enosi, CK n ito dentata, dffntibus obU(ksjmis v obtusiusculis , fob 1 lamuloium stcnliuni hisi lotundita v cordata uiteidum luiori (juarn lon$_n$ 1 Strohili yeduncuhti, Cilindiico-oblon^i squamarum lobi hteiales eiecti A subdivcr^cntcs lobo inteimedio saepissime bre\ioreset sipe latiores Sama taium al-E nuuila ^.tpissime duplo an$_n^r$ui>tior< s ^ in uno eodem strobilo nunc duplo mine li lplo nunc paullo lantum an$_n^r$ustiorcb — Verosinuhtei plai la **bybnda ex B alba pubescente et B nana — Vanat**

a, *typica* fol.is feie omnibus rolundato obtusis — i$_n$ Suecia N01 wegia et Jtossia IJOICJII B alpestns Ii 1 c B fruticosa humiLs Reichcnb 1 c B alpcstus \ai rotundifoha, var montani, var nanaeformis ct v ir subroti ndifolia Laest in herb ie$_o$^ suec B nana macro phylla tt nana mi|or laest 1 e B allialruticosi hub 1 isob B humihs Fi herb noim B nana 0 alpestns Regel I c holi 1 saepe suboibiculana \ p|>asicuneitao'o\ito-sul ioiup(lT,ramulorum stpnluim ba*.i rotundati

v. subcordata, interdum latitudine longitudinem superanle. Strobilorum squamae cuneatae; lobi saepe angusti, laterales erecti.

P, *communis,* foliis plcrumque acutis v. paucis rotundato-obtusis. — In Suecia, Norwegia et Rossia boreali, in Fcnnia, prope Petropolin, in Islandia et Groenlandia. B. hybrida a,p, y, Regel 1. c. B. lagopina Hartm. in herb, reg. succ. B. alpestris var. macrocarpa, var. auricula, var. auriculaiformis, var. dubia, var. palustris, var. polycarpa, var. crassiuscula et var. major Laest. in herb. rcg. suec. B. glutinosa var. pseudalpestris Bjoomstr. in herb. reg. suec. B. carpatica var. microphylla Kiihlw. fl. exs. fl. Petrop. Folia ovato-subrotunda v. subrotunda, ramulorum sterilium basi rotundata v. cordata. Strobilorum squamae lobi laterales erecti v. rarius subdivaricati.

II. B. PUMILA. (L. mant. p. 124), ramulis cglandulosis junioribus dense pubescentibus v. tomentosis, foliis obovatis v. obovato-subrotundis acutis v. obtusis, strobilis cylindricis, samararum alis angustis. *$* 1° America boreali et arctica. Du Roi Harbk. Baumz. vol. 1. p. 94. t.*3. fig. 1-4; Jacq. hort. vind. t. 122; Willd. spec. pi. vol. 4. p. 467;. Ait. hort. Kew. ed. 2. vol. 5. p. 300; Wats, dendr. brit. vol. 2. t. 97; Wangenh. am. 86. t. 29. fig. 61; Pursh fl. am. sept. vol. 2. p. 622; Hook. fl. am. bor. vol. 1. p. 156; Spach rev. 1. c. p. 192; Endl. 1. c. p. 20; Regel Monogr. p. *b'l.* t. 9. fig. 68-69, t. 6. fig. 12, t. 13. fig. 38-39. Asa Gray Manuel of bot pag. 460. Frutex 3-5 pedalis. Ramis erectis. Ramuli omnes v. lanlum novelli dense pubescentos. Folia breviter petiolata, crcnaio-denlala v. rarius subacute dnnlala, subtus pallidiora, resinoso-punctata v. impunclata, saepissime obovaja, rarius subrolunda. Foli.-i ramulorum sterilium saepe subsessilia, suborbicularia grossequc duplicato-dentata. Strobili oblongo-cylindrici; squama trilobae; lobi laterales porrecli v. plus minus divergentes, lobo interraedio sa3pe breviores. Samararum alae saepissime angustissimae. — Variat :

a, *typka,* ramulis foliisque junioribus dense pubescontibus y. sublanatis, foliis obtusis v. subacutis crenato-dentatis subtus cglandiilosis. — In America boreali (Nova Anglia, Pensylvania, Michigan teste Asa Gray) et in Terra Nova (de la Pylaie).

P, *glabresccns,* ramulis novellis tantum pubescenlibus mox glabris suljtus eglandulosis. — In Ohio (Sullivant), Michigan, Wisconsin. B. pumila p KlabraRegcl monogr. p.54. Folia obtusa, obovata v. subrolunda, crenato-deniata. — Forma intermedia inter B. glandulosam et B. pumilam. Affinis B. atpestri.

T; *glandulifcra,* foliis sublus rcsinoso-punctatis. — In Canada (herb. Asa Gray). Cetera ut in var. a.

S, *horealiSj* (Regel monogr. p. 55. t. 13. fig. 38-39), foliis acutis v. subacuminatis simpliciter v. duplicato-dentatis. — In Terra Nova. B. borealis Spach rev. 1. c. p. 96.

12. B. HUMILIS (Schrank baic. fl. vol. 1. p. 421), ramulis glanduliferis, foliis ovatis v. subrotundis argute dentatis, samararum alis angustis. *$* In Europa media et boreali Daburia Mandshuria boreali. Sibiria. Kamtschatka et America boreali. — Roth fl. germ. vol. 2. p. 478; Koch syn. fl. germ. ed. 2- P- '61; Ledcb. fl. ross. vol. 3. p. 653; Fr. in Flora ratisb. 1850. p. 152; bpach rev. 1. c. p. 193; Endl. 1. c. p. 20; Regel monogr. p. 46. t. 9. fifti 37i-55» *" la^ fi e- 1-18. t. 8. fig. 40-47, Regel fl. us. p. 135. B. fruticosa I all. 11. ross. t. 40. fip. D. R; Willd. spec. pi. vol. 4. p. 466 el ejusd. Berl. Baumz. p. 61; Pall Reise yol 3 ;ipp p 758> n> 133 t. K. H. fig 1 2 3 (cxcl syn. Gmel.); Trautv. et Mey. in Midd. Rcise fl. och. p. 84; Turcz. fl. baic. dab. vol. 2. p. l:io; Trautv. in Maxim, prim. fl. amur. p. 254; Reichenb. ic. Fl. germ. vol. n. t. G21. fig. 1279; (Juinipel et Hayne Holzg. vol. 2. t. 149. B. oycowicnsis Reichenb. ic. 1. c. t. 622. fig. 1281. B. Socolowii Jacq. fll. msc. B. myrsmoides Tausch in Flora ratisb. 1828. p. 753. B. palustris Rupr. in Bull, dc I'Acad. do St-P6torsb. 18n7. p. 55!). B. sibirica Lodd. cat.; Wats, dend. Brit. vol. 2. 1.154. fig. B. B. reliculata et B. ovalifolia Rupr. 1. c. p. ^60 et 561. Frutex 2-5 pedalis. Rami erecti. Ramuli plus minus dense glanduli-

fen, no\clli pilosuli mo\ glabri Folia plerumque acuta, rmus obtusa, mae qudlild v duplicilo dilute denlala, utunquc > 6-nenia, junioi i pilosuli et mox oMal)ia v ad nenus taLLum puberula subius lae\ia v itsinoso punctila lamuloium fcrtiliuni o\ati v ovato oblon^ i suljrotunda v raiissimf cordato o\ata, ram ilorum slenliuin bicvius petioliti, o\ato subrotunda v basi ssepe cordata et pi jfundius dontiti Strobih o\ ilo-oblonri v cyhndrui, erecti v ranssimt nutmtes squimde plus mmus\e cuneiioimes, anlice tnlobae 4g>bi aequales v mtoimetlius longior, lit^rales porreeti v plus minusve di\erhentes angusti v liiKiniedius latior Sainararum alae nucula 2-4-plo angustiotes — **Van at •**

a, *qununa,* folns sublus egl indulos s, strobilis biewler pedunculatis — In 1 uropL mo lia et bou ill, in turfosis subilpims Helvetia^ Ba.vari'e Austiu, Geiminia) boiealis, in Sueci i, Cuiomi, Iivonia in Rossia media el austrah, Sibma altaica biicilensi ct orient ih, Dihuna, ilpi feus saj in(nsibus, ^3ongone nuntibus et m piovincns Oregon et Wis-c nsm Ameuca3 bou ills B humilis, B irutioosa B oycowiensis B SOL)1J\\II et B sibmca auct supia citatoium JJ humihs a genuma, fi CJinrnulita et y Socolowu lle^el nionor p ^16 ct 48 Pedicellus bicvis, stiol>il 3 4-i>luiies bic\ 101 — V in it folns dcnticulalis (B humilis y com nnital L Hercl 1 c) v subgrosse dcnlatis (JJ humilis a genuini Regel 1 c), strobilis ovalj-oblon^is v subovatis, v raiissime subcylmdncis (B humilis o Soolovu Repel mono^r p 50), ramulis dense resmoso glan-dulil(ns v glindulis plus minus rans adspersis bpceimina in Amenci iioicali indiercna ramulis spaise ^landuhlens strobihsque subcylindrieis g indent

p, *llupiuhln.* foil is subtus resinoso*punctatis — In Dabuna (Socolow) et in Mmd ,huila (Maxim Maak) B humilis e Ruprechtu^ £ Ruprechhi ot 7j ov ilifoh i Rc^cl monogi p >l et o2 t 8 fft 40-47, t 9 fig 50 67 B pilustn*. \ar *u*\ r in Bull 1 c p 559 B frutieosa Rupreebtiana Irautv in Mixim prim fl am p 254 B reticulata et B ovjilif ha Rupr in Bull do 1 Ac de St P6tersb 18)7 p 561 trutex 3-4 pedahs folia o basi curipdta v rotundati o^ ltd acuti v ranus obtusa (B ovali folia IUIJ i) in i qn tlitei aiguU dcnliculata v grosse duphcito-d(nlal i (B r ticulata Rupi) btiobih c)lindnco-oblongi v ldnus oblong) OA it bttvitei pedunculati \ pedunculo longiore ^laeihore sufTulti, eiecti \ n utantes

y, *Kamfochahca* (Regel monogi p 49 t 9 fig 37 49), folns saepissimo coidato-sul rotundis v raiissime rotundato-ovalis acutis subtus e^landu losis, strobilis lon^e pedunculatis —In Kamtscliatka et in \lcutis tolia jnaequalilei v dujJucto-denlati Strolnh oblongo-tylindnei, eiceti v nutantes, j)cdunculo sliobilum dimidium dequanle suflulti, squamae cu-neatr aiitice tulobdL, lobi elliptieo oblongi, lateiales erecti Pcdunculus folium dimidium suba quans

g 4. *bahuntx.*

Aiborcs saepissime c\cels<B bamararum alae nucula duplo pluues angusUorcs Strobiloium squama, hieme deciduae, earum lobi plciumque abbreviati

13 B DAiiuiucA (Pall fl ross \ol 1 p 60 t 39 fig A), ramulis glabns \ f,landulosis loins e basi cuneaU \ iolundata ovatis acutis v acummitis dentdtis, amentis oblon0o cylindncis > In Daluna, Mmdshuiia (t in mon tibus albis Amencae borcalis —Pall Reise \ol 3 p 224 321 421 t K k fig 4 c l G, Lcdcb fl ro s vol 3 p 6ol, liaul\ in Bull, de la Soc. des nat de AIoscou 18o7 vol 2 p 445. t 7, Tuicz fl baic dih vol. 2 p 128, Rerfel in Bull de 1 Ac de St Pelersb 18JG p 4()0, Rupr in Bull dc lAc debt Petcrsb 18 J7 p ob2, Regol monogr p 13 t 10 hg 19 40, t 8 fig 36 39et(l uss p J3o B daliunca v ir M iximowicziana liautv in Ma\ pnm p 2oO B Ma\imowic/n Uupi in Bull de 1 Ac de bt-Pctersb 1856 p 43 J B M aki Rupr 1 c 18o7 p 5u4 Aibor cortice gnsco fusco profunde dirumpente Ramuh eiecti ^*Uhn* et pltrumque laxe v ranus

densius glanduhferi I olia e basi cuneata v rotandata o\ata, acula \ aeumi mtd, ineiuilitei \ ranus subduplicato dentata, junior i utnnque pilosuli ienus utnnque v sublus tantum ut id peliolos pilosula v ianus oinnmo ^labrescentia, in pagini inferiorc uiterdum resinoso punciata Stiobili pedun uilati, oblon$_n$) cWindiici, erecti \ dechniti pedunculum subaequantes \ e> longioics, strobiluiurn squimae Insi bicuter A bngms cunealae, tulobge, Lobi teiliau lateialcs sipi^inie plus minus di\ci$_n$ ntcs lohuquo lnlumcdio bi \ LCS latioresquc, rnius lobum intumedium suhjpqiuntcs \ lanuserecti samararum aide nuculi 2-4-plo mgustio es — Vanat

a *tijpica,* petiolo lohisquc subtus ad nervotf plus minu^ pilosuhs, strobilo rum squdmisbdsi brevitei cuneatislobislateialibus divcrgentibus saepeque lobo niteimLlio lationbus bicuonbusque — In Dihutii ct Mandshu na* B diluiicaauct supia ct B DihijriciviL M iximuwic/n lnut\ 1 c B Maxnnowiczn et B Miikn Rupr I c

f}, *amencana,* folns peti liaquc postta omnuio sl^re^centibus, stiobilo rum squamis basi bn$_r$^{r}ius cuntitis lol i> (quilibus oWongis obtusib latc- lalibus erectis —In monlibus albis (herb AsaGra})

li B LiincitOLiA ^Regel mono^r p 57 t 10 fig 4150) aiborea, ramulis novdlis pubesccnliJjus, folns rhomboideo v subcordato-ov itis ituminatis irioguldiiter incisis dentatisquc, stiobilis cylindricis, sainirirum ahs angus- lissimis *5* In ^{c}uem3 prounLii Vumelandia et m hortis cilti B alb i urhcirolia Spatb in \nn d sc nit sei 2 vol *U* p 187, *ndl $_n$en jl suppl /i pirt *2* p 10 B vnpultosa Fr in herb noim B pin nata bvbridi iundm in act Holm 1700 p HO t 5 \ibo? mediocns Ha- muh stenles et no\Jli pubescentes IMia petiolo gncih]>ubcscente sufTulta, e basi cuneata v truncata \ &ubconl ita ovati, plus minus acuminata, incigo lobata dentitijue \ giossc dujliLato aigut«qup dentata, junioi i ramulmim que stenliiim pubescentia, delude si pp ghbrrscentia siiobill ptdunculid cylindnci, squirm dense pubescentes, basi bicutei v longe cuneiti loin difformes ldterales porrecti v subdivcigentes, lobo intermedio saepissimo duplo tuplo\e bievioies —An lusus msignis B ill i

§ 5. *Costa'%.*

\iborej> saepissnne e\Ctlsce Samirarum alae nucula duplo v plunes angustio itn btiobilorumsqu im L hicine d^{a}ciduac, earum lobiplerumquelineares elongati

B S(HMIDTII (llgl Bemcrk uber Betula in Bull *do* Mosc 18 p 412 t 6 li» 14 20) lamuhs ^lal>ris spaise $_h$l induliftus folns e basi lotundita ovatis icurainatis duplicalo dcutatis, gemmis j,hbris, stiobilis p°dunculatit. cylindrms, nucuhs fere aplens 5 In Mandshuua lustro-oncntih (Schmidt, Maxunowicz) Viboi coiticc Idevi v nmoso tolia circiler 2-2] poll longa et usque 1 , poll lati, utnn jue 7 10 neivia supia glibia, subtus K smoso- punctata a ad neivos \ ilosa, potiolus mlosus lamina circitci 4 G plo brouor bliobih eiecU v paullo dec linali, poduncuIo 3-4 plo longiores Stiobiloium squamas glabras, cuneatae tulobae, lobi sublineares, laterales pjrrecti, mtei- medio pleiumque paullo bieviores

lb B NIGRA (Willd spec pi vol 4 p 464, 180>), ramulis]unionbus dtnse pubesceritibus, foln$_s$ e basi cuneata rhomboideo ov itis acuminalis argute dupliL,ito dentatis, gemmis pubcscentibus, stiobilis pc lunculatis oblongo- cylinuncis, samaiaium a is nucula paullu v duj)lo angustionbus ^ In Amenci boieah a Cdiolnid tlonda, Vuginia al Cdiiadnn, culUjue in bortis euiopaeis —Willd Bed Bmmz p *oh* loir New ^oik p 201, Watt* dendr but vol 2 t 1^3, p$_{uisn}$ fl$_{am}$ s$_{q)L}$ v J1 2 p *UH* Vit lioit Kcw od 2 vol *h V* ™> Hegel me nogr p 60 t 12 fife 1 12 t lo t$_{u_o}$' 30-37, Asa<*iay Manuel ol bot p 4$_{o9}$ B$_{lu}$]$_{na}$ Michx arb \ol 2 p 143 t 1 (diino 1811), bpich rev in aun sc ndt sei 2 vol l^r. p 18i, Endl Betula 1 c p 20 B lanulosaMich fl bor im vol 2 p 181 B ni$_b$na vir^iniana Pluk Llm p 67 Aibor excelsi coiticc mbiofusco demum nmoso wudescente Folia e basi cuneata o^ato ob'on^a v rhomboideo ovata, acuminata v nnus tan-

turn aculi, lunioi i (prapsoitim lamulorum stenljam) utiinque dense pubes centia \ sublanata idulta supra glabre^centia *et* infri]mbcscentia \ ad nervos tantum pubescentia, folia ramuloium stenlium densius pubescentia marginc sinuato sublobuhta dentataque, petiolus])ubescens lamina 3 4 pk hrevior Strobih cylindnco-oblongi v ranus o,vxto oblon$_n^{P}$i pedunculati erecti v nutintes podunculo lanato 2 3-plo longiores Stiobilorum squamae lamtae decidur bisi bieviter v clon$_0$'ito-cunej.tae tnfidae lol>i linean oblongi acuti, subaequilongi, laterales eiecti v ranus subdnertjentcs

17 B ULMIIOIIV (Sieb et/ucc m Abh d Koen Bayi Ak der Wiss torn 4 Abtb 3 p 228), ramuhs feitihbus glabns et interdiim plandulosis, folns e basi lotundati v coidata v subcord ita o\alis v ovito oblongis ^ en dato ovatis acummatis in cqualiter argute jue dentatis ulnnque 12-14 nenns gemmis glabns, strobilis cHipsoideis \ elliotico ohlongis, saraaiarum ilis nmula circiter duplo ing istioribus ^ In Mandschun i boieali et austro occidentali et in Japoni i leg cl Ma\imowiC7 —Miq in Ann Mus Lugri Bat *2* 1J(>, Regcl Uoriojr p Gb I 6 hg 20 2) B costata Trautv in Maxim prim fl ainui p 2o* B I rmani y costata Regel Monogr p 6^> t 13 fig 1-6 , tab 6 fi-,^{r} 36 et cjusdem fl uss p \ ^ Arboi excelsa trunco usquo 1 *$_2$ ped in diametro et cortice levi fliwdo-fusco \ fusco Rimuh speciminum feitilium glahn laxequfi glandulosi, speciminum ju niorum subindc pubes'entes Gemmc gkbrr, glulinosne toha utnu^quc ad nei\os plus minus p losuli, subtus in nervoium axillis barb id, in pagim infenorc punctis resinoMs demum obsoletis obsiti, dontibus poirectis, acu minatis, lpicc ipso. cal o^is poliolo circitci semipollicau pilosulo, frlii tunonum v specimmum juniorum saspe jubesfcentia Strobih sessiles v sul> sessilcs, ellipsoidei, erecti v dcchnaii, squama, glabid. A parce ciliolat i basi longe cuneatx, lobi lateiales rhombei v obovali v oblongi eiecti v di vergentes lobo liilermedio oblongo sapissime duplo breviorcs — Vanat

a, *typica*, folns saepe cordatis \ coidalo oblongis, strobilis breviter jc dicelldtis v subscssilibus oblongo ellipticis — In Japoniae msul i Jesso propc Hakod ue Rgl Bern 1 c p 414 B ulmifoln auct supr cil Folia cordata v e basi conhti o\atc oblonga \ lauus e basi rotun data ovata, saepissime insignilei aci.minali, argute dentata, dentibu longe acuminatis Strobilorum squimae lobis lateiahbus oblongis

p, *costata*, folus s<jepe e basi rotundati v lanus subcoidata ovatis \ o\ ito oblongis, sirobilis subsessihbus elhpsoideis — In Mandscbuna ct in legione amuiensi ^Mi\imo\vic/, Radde) R^I B^m 1 c p 4i4 B cos taia irautv c B I rmani Y cost it I Regel 1 c Strobilorum squama lobis lateralibus rhombeis v obovatis

18 B LRMHNI (Pham m LinnTa, vol G p 537 t 6 fig D), ramuhs jumo nbus plus minus pilosis, folus e basi rotund ita v cordata late o\itis acumi natis duphcato \ lnccquiliter ar^utequ-^{1} dentatis utnnque 6 lOnenns gemmis pilosis v lanatis strobilis ellipticis \ ovatis v oblongis, samararum ahs nucula duplo an^ustionbus *6 In* Sibina onentali, m Kimtschatk i Unalaschkaet in Mandschuua — Ledcb fl ross \ol 3 p 6o3, Spach rev m ann d sc nat ser 2 vol 1) p 190, liautv et \Iey fl och p 83, Regol ct Tiling fl ajan p 119, liaut\ in Mixim p-im 11 amur p 2o2, Regel Monogr p 6^ exduso s\n y Arboi ramis nmulisque erectis ramulis lunionbus stenhbusque plus minus pilose glandulifensque toll i e basi coi datav tiuncata v lotundita, late ovata, acuminata, duplicito-\ inaeqin liter argute dentata, utnnque ad nervos pilosa, in pagina mfen jro interdiim resinoso punctata, peliolo glabio \ ])iloso lamina 3-4-plo bie\iore suffulti Strobih stssiles v brevitei pedunuilati, erecti v paullo dechnati stiobi lorum squama basi longe cuneatt, lobi lineaiesN hnean oblongi, latcrales erecto patentes, lobo mteimedio bicvioie — Vanat

a, *typica (Reg* monogr p fi'i) ramulis dense glandulifens jumoiibus pilosis senusglabicsccntibus, ^emmirum siuamis mapgine piloso cilia Us, strobilorum elhptiLorum squamis piloso-ciliatis — In Unalaschka et KamtSLhalka. B Ermani Cham , Ledeb , Spach 1 c B Trmani *a* genuma Petioli ghbu Strobilorum squamae lobis angustis hneanbus

ti, *lanata,* lainuhs laxe glanduhfens jumonbus pilosis demum glabres centibus, gemmis plus minus dense albo lanatis, stiobilorum ellipti corum squamis margine villosjs — In Sibina oriental! prope Ajan et m Mandschuna boieali B Ermani Regel fl ajan 1 c , irautv in Max pnm 1 c. Petioli pilosi Strobilorum squamae lobis apicem versus lationbus

Y, *tomentota,* ramuhs jumonbus tomentosis gemmis lanatis, stiobilorum squamae lobis apicem versus lationbus Hdb in Sibina onentah (Middend) B Ermani Trautv et Mcy fl och p 8* Petioh villosuh Strobili oblongo-cyhndnci, saepissime breviter pedunculati

19 B BHOJPATTRA. (Wall pi as rar 2 p 7), ramuhs jumonbus dense pubescentibus v glabns glanduhfcnsque, folns e basi rotundata v ranus subcordata v cuneata ovatis acuminatis argute inaequaliterque dentatis, gemmarum squamis pilosulis v gldbns, strobihs cylindraceis, samararum ahs nucula 2-3 plo angustionbus v earn subaequantibus — In provincns boiea libus Indiae oncntalis, m montibus altionbus Japoniae — Lindl in Bot Reg 1840 misc p 73 Regel Monogr p 58 t 6 fig 13-19 t 13 lig 7-W Ejusd Bern uber Bet in Bull de Mosc 1865 II p 415 B utihs Don prodr. fl nep p 58 B Jacquemontu Spach 1 c p 189 et in Jacquem voyage dans 1 Inde, t 158 Folia utnnque 7-14-ner\ia, supra mitio adpresse pilosa, deinde saepe glabrescentia, subtus ad nerves msigmtei adpresse pilosa et jn nervorum axilhs baibata Fuhorum dentes porrpcti et saepissime msigniter acuminati Slrobih cyhndracei, ses^iles v pedunculati, 1-2 poll longi, sohtani v subbini, squamae mox deciduae saepissime basi longe cuneatae tnlobaj, lobus intermedius lineans v oblongus lobis laterahbus erectis v divancatis oblongis v ranus lineanbus 2 4-plo v i mus paullo tantum longior, margine plus minus pilosus Samararum alae apicem \eisus latiores, nucula 2-3 plo angustiores v ranus earn subaequaptes — Vanat

a, *typtca,* petiolis senceo-pubescentibus, folns* e basi «rotundata v sub cordata ovato-oblongis longe acuminatis utnnque 10 14-ncnns, lobis squamaium strobili oblongis — In Nepiuha, ID piovincus borealibus Indiae onentahs, m sylvis montium ins Nippon interioris (Tschonoski) B Bhojpattra Wall 1 c (senus ab eod in *List,* Bojpattra senptum, enoie loisan^) Ramuh juniores pube^centes, tandem glabres>centes glandulifen Folia lunge acummata, juniora supra adpresse pubescentia, tandem glabrescentia \ inter nervos laterales pubescentia, dentes paullo sursum cunati btrobih sessiles, solitaru v pedunculo brevi dense pubescente suffulti, squamae margine v llosae

(3, *latifoha,* petiolis pubescentibus, folus e basi rotundata ovatis acuminatis subtus eglandulosis utnnque 10 12 neiuis, lobis squamarum stro bill lineanbus lateiahbus intermedio paullo tanlum brevionbus — In pro\incus borealIbus Indiae ouentdhs Ramuh antecedentis toha supra in ncrvo medio et inter nervos laterales pubescentia Strobili sessiles, sohtani Squamae strobilorum margine pilosae

ð *glanduhfeta,* petiole puberuhs, folns e basi rotundata v leviter coidata ovatis acuminatis subtus lesinoso glandulifens utnnque 8 nervns, lobis squamaium slrobili lineanbus margine pilosis lateralibus intermedio cir citer duplo brevionbus — In pro\incus boreahbus Indiae onentahs — Ramuh glabrescentes, glandulifen Folia sujra glabrescentia v inter nervos laterales pubescentia, dentes marginis latiores Strobili sessiles, sohtani v. bini

£, *Jacquemontu,* petiohs sublente puberuhs folus e basi cuneata v rotun data ovatis acuminatis utnnque 7 9 nerui*, squamis stiobili utinantecedente — Inlmodo B Jacquemontu Spach l.c B Bhojpattra p, Regfi U P 60 Ramuh juniores pubeiuh eglandulosi tolu supra glabra, subtus glanduloso-punctata btrobih sohtani, pedunculati, pedunculus puberulus

5, *subcoidata,* petiolis glabrescentibus, folns e basi subcordata late ovatis longe acuminatis utnnque 10 12 nervns squamarum margine pilosarum

p 20 Betulaster cyhndrostachja Spach rev 1 c p 198 B acummata a, ft v, e, Hegel monogr p 61 t 6 fig 32 34 t 13 fig 29. PraEcedenti simillima, loins stepe lationbus dentibusque marginahbus erectis divert videtur btrobih uassiores — Vanat

a, *typica,* ramulis junioubus peliolisque tomentosis, folns ovatis cuspidato-'dcumindtis supia ad nervum medium pilosulis, subtus ad nervos et in venarum dMllis dense pilosis. B acuminata 6 genuina Regel monogi p 71. Folia in pagina infeiiore resino^o punctata v epunctata

p, *pilose* ramulis junionbus petiohs folnsque subtus ad costam mediam vpnasqup pubescentibus B acummata p pilosa et y arguta Regel 1. c. toha ovaia v o\ato oblonga, dentibus subinde minus acummatis

y, *uibglabra,* iamuhs folnsque subglabiis, folns o\ato-oblongis longe cuspidato-acummatis subtus epunctatis — B dcumiridtd glabia Regel 1 c

27 B MAXIMOWICZIANA, folns cordahs duplicato-dentdtis, dentibus calloso cuspidatis erectis, strobilorum squamis cunedtis tnlobis — In insula Jesso leg cl Miximowicz Regel Bcmeik ubcr Bet in Bull de Mosc 1865 II p 418 tab 8. hg 18 Arbor pulchemma, cortice albo papynceo Rami ramuhque gldbn, cortice brunneo nitente lenticellis adsperso Folia magna, e basi profunde coidatd ovato subrotunda. brevitei acummata, duphcato-dentata, utnnque 10-12-nervia, supra glabra, in pagina mfenore resmoso punctatd et in venarum axillis paullo birb.Ua, 3 3^ poll longa, 2j-4^ poll idta, dentibus erectis in cuspiùem callosam linediem acummatis, petiolo gldbro 1-1J poihcaii Strobili cyhndracti usque 3 poll longi, erecti v. plus minus nut uites plerumque qualerni, in racemum dxillarem dispositi, pe dunculi pedictllique glabn, petiolis breviores Strobiloium squamae cuneatae, 3 lobdi, lobi oblongi, vi\ ciliolati, ldteralcs erecti v.subdisdncati, mtermedio bievioies Sdmaiarum aide nucula 3-4-plo latiores

Species dubix hujus seclioms.

28 B AFFINIS (Endl 1 c. p 20), folns ovatis v ovalibus cuspidato-acumnidtib inJ-quahtei seiralis, dentibus acumindtis, strobiloium squamis tnlobis Uabelliformibus v cunoatis. — In Emodo. Betulaster affinis Spacli lev 1 c p. 199 B. nitida Regel monogr p. 72. Ramuh novelh simulac folia juniord tomentosa lolia bdsi subcordatd, m pagina mleriore resinoso-punctatd, ad nervos petiolosque tomentosa Stiobili bipolhcares, gemini, Ciassiusculi, squimirura loin lateidles nunc pualleli, nunc divaricati subrotundi v uuncati, abbieviati, lobus intermedius oblongus, obtusus Samaiaium dlae nucula paullo ktiores

29 B NITIDA (Don prodr fl nep. p 58), folns ovato- v oblongo lanceolatis v oblongs cuspidato acaminatis Siserratis, serratuns cuspidate, strobilorum sciuamis tmobis ciineifoimibus v flabelliloimibus — In Fmodo — Lindl. in Wall pi as rar p 7, Lndl 1. c p 20, Regel monogi p 72 Betulaster nitida Spach 1 c p. 200 *olia In si roiundata v subcorddta, subtus lesinoso-punctuldtd et ad neivos petiolosque pubescenti-tomentosa Str-obili graciles, loha noidlidsubiquantes, squamaium lobi lateiales abbievidti, subiotundi, lobus nteimedius elongalus, subhneans, obtusus. Samaraium alae loculo paullo Utiones

II. ALMS *Tournef mst. t* 3")9, *Vndl qcn pi. p* 272 *et suppl* 4 *part* 2 *p* 20, *Nees gen vol.* 4 *t.* 19, *bchnizl. Famil , HegU monogr p.* 73

Floras monoici, amentacei Floreb masc Amenti squamae peltatae, fjUinquebracteolatae, sublus triflorae v rarius 1-florae Pengonium saBpibSime 4-paititum v. lanus irregulanter 10-12-phyllum Stamina numero loborum v foholorum pengonn, us opposita et supra basin inserta Filamenta indivisa, brevissinu, antherae biloculares — Flores foem Amenti squamae]mbncatd3, carnosae, 2-florde, ^-appendiculatae Strobili squacn33 cuneifoi mes, antice breviter 4-5-lobae, lignosae, superne in-

crassatae, matuntate ase mvicem secedentes, nunquam deciduae lignescentes Nuculae compressae, apterae v ala membranacea cmctae, abortu uniloculares, monospermae — Arbores et frutices sylvestres et paludosi Folia autumno \ ranus senus decidua Floratio vernalis, nunc foliorum evolutione praecocior v coaetanea, nunc amenta flonfera folus adultis anni praetenti fulta

Sectio i CLETHROPSIS *Endl gen suppl,* 4 *p* 20 — Genus Clethropsis *Spark rev Bet in Ann d. sc nat* ACT 2 *tol* 15 p 20

Floratio coietanea Floies masculi squamis uniflons, penanthio 10 12 phyllo, phyllis insequalibus squamaeformibus — Amenta utnusque sexus e gemmis aphylhs, perulis omnino orbata, mascula longissima, graciha, in paniculam terminalem aphyllam disposita, foBminea solitana v racemosa Nuculae ala conacea v pellucida cmctae

1 A NEPALENSIS (D Don prodr. fl nep p 58), folns integernmis v minute calloso denticulatis amentis foemineis in quavis axil'a ricomosis, nuculis ah pellucida us duplo angustiore cintta 5 In Nepalia, in Emodo, in Sikkim Himalaya, in B°ngaha oi lentali —Wall pi as rar vol 2 p 27 t 131, Endl 1 c p 20, Regel monogr p 83 t 16 fig 4 6, t 13 ñ.r 40*3 Clethropsis nepalensis Spacb rev 1. c p 202 Betula leptophylla Wall cat n 2799 Arbor 30-40 pedalis Ramuli teretes, brunnei, lenticellis adspersi, juniores pube ferruginoa adspersi glabnve I*olia ovata v ovato oblonga, a<uta v subacuminata, v ranus subobtusa, basi rotundata v cuneata mtegernma v vix conspicue repandula v minute calloso dentic ulatd, supra laete viridia mtida glabernma subtus glaucescentia, resinoso punctulata et ad neivos ferrugineo puberula, excluso petiolo 4 •> poll longa, 1 $^{1}/_{2}$-*S* poll lata, petiolus \ 1 poll longus ghber Amenta mascula subfiliformia usque 4 poll bngj Amentorum toem racemi saepe penduli btrobih ovati Nuculae ovato oblonjrae, apice styhs 2 brevibus rectis coronatde, ala membranacea sursiim latiore cinctae, ala nuculam suba^quans v usque tnplo angustior, membranatea

2 A NITIDA ^Endl in gen pi suppl 4 part 2 p 20), folus saepissime plus minus eudenter crenulatis, amentis femineis m quavis axilla sohtarns T binis, nucuhs ala conacea cinctis — In Emodo, in Cashmir, in monlibus Kunawer — Regel monogr p 82 t 14 fig 23 30 Clethropsis nitida Spacn re\ 1 c p 202, bpach in Jacquem voy part bot p 159 t Io9 Ramuli fusci, lenticellis rans adspprsi, jumores puberuli, deinde glabn Folia elhplita v ovata v ovato-lanceolata, acuminata \ apicem versus senbim attenuato-aouminata, basi cuneata v rotundata, laete vindia, lucida, subtus minutissime resinoso punctulata et in nervorum axilhs baibuldta, margine sub lente remote calloso-denticulata% crenulata v e\identms crenulata v denticulata 2^-6 poll longa l|-3^poll lata Pedunculus sub lente brevissime pubp rulus j-i j poll longus Amenta feminea subfiliformia, usque 5 poll longa Strobih oblongo cvlmdnci, adscendentes v subnutantes Nuculae oblongae, stylis brevissimis 2 erectis coronatae, ala conacea nucula subaequilata v angustiore cinctae

Section ALNASTER *Endl I c* p 20 — Genus Alnaster *Spark rci. Bet in Ann, d Mus s6r* 2 *vol* 15 p 200

Horatio folus praecocior Amenta foeminea e gemmis 1-3 phyllis prodeuntia Nucule ala membranacea cmctae — Amenta mascula e gemmis teiminahbus lateralibusve aphyll^ solitana v bina, s juamae tnfloide , pengonium regulate, 4-pnyllum Amenta masc hieme nudd, foem hieme perulata

3 A VIRIDIS (DC fl f$_{r}$ vol 3 p 304), folus ovatis v subcordatis acutis v obtusis, racemis strobilorum tohis 1 3 ad autumnum persistentibus praiditis ^ In montibus Euiopae, in omni Sibirn, in Mandshuna et Japonia, in Sachahn etKamtschatkaet in America boreah — Indl gen pi suppl 4 p *20* Regel monoKr p 76 t u fig 4 22 Betuh ovatd shrank baio fl vol 1 p 419 B Alnobetula Fhrh Beitr vol 2 p ^ B viridis Chaix ap Vill n delpli vol 4 p 789 B alpina Bork A unduhta **W illd** spec vol 4 P 3^

B cr.spa Mich fl bor am \ol 2 p 181 A cnspa Pursh fl bor am vol 2 p 181 A Mitchellian i Curtis mss leste Gray in bull journ 42 p 42 A suaveolcns Heq in Ann d sc nat vol J p 381 Alnaster vindis Spach rev 1 c n 201 Alnaster fruticosus Ledeb fl ross vol 3 p 6o5 Frutex 3 15 pedalis Rimuh jumores ghbnv uubeiuli Folia ovata v elhptica v late ovata, basi rotundata v ranus suncordala, apice icuta v obtusa margine argute inaequahter v duphcato dentita v ranus sinuito repinda dentata que, dentes subcuspidati, creUi frolia caeteium utnnque vindia, m pagina mfrnoro resmoso puncuihta, supiaglabriv glabrescentia infra nunc omnino nuni> ad ner\os, nunc in venarum axillis tantum puberula, nunc omnino glabra Gemmae peruhtae Amenta mascula sohtana v bina, sessiha, ± 2 polliceslonga, eieclav plus minus dep^ndcntia Strobiho\ali, pedicello Kracih suffulti Nuuilae dla membranacea superne amphata cincU , ila nuculam circiter aequ ins v ea anguslior Varidt

a, *yenuwa,* loins simplicity v duphcato dentatis siltem subtus ad venas et in vcnaium axillis pubcsctntibus ^ In ilpibus et montibus oditionbus Luropae medial et m America boreili (New York Caiohna septen tnonah Lake superior, in montibus albis, etc) —A undis DC ti li vol 3 p Kb Koch syn 1 c, lorr New York vol 2 p 203 t lib, Beichenb IC 11 germ vol 12 t 628 et emsd fl germ exc p 174 Hirtig Lehrb t 2b BetuU cnspa Ait hoit K(w ed I vol 3 p 130, Mich fl bor am vol 2 p 182 B Alnok tula Lhrh Beitr vol 2 p 72 B ovata Schiank bdir fl vol 1 p 419, Guinipel et Hayne Deutschl Holzg t 147, Bert fl it vol 10 p 230 A vmdis a i^enuina Regel monogr p 78 Alnus Mitchelliana Curtis 1 c foima (bins obtusis A crispa Pursh fl am sept vol 2 p 623, Hook fl bor am vol 2 p 157 A ovata Lodd Bot Cab t 1141 A unduldia Willd spec pi vol 4 p 33b, Ait hort Kew vol 5 p 2i8, Willd Beil Baum/ p 21 Alnaster vindis Spach 1 c p 201 I rut x o-16 pedalis Ramuli jumores saepissime puberuh tolia elhptica v ovata, interaum in statu juvenili utnnque pubescentia, deinde supra semper glabra, subtus vindia ad ner vum medium secundanosque semper hntula, ldiius id nervos tertnnos v in toto rete venarum hirtula, in venarum axillis haibata, folia ramu loium stenlium saepissime majqualiter dcntata v ranus sinuato repanda dentataque Petiolus •— poll longus, puberulus Pedunculus pedicellique saepissime pubemli — Occuirunt in alpibus Europae et in America boreah formde transitonae ad vanetatem y

p *parvifolia* (Sautei pi exsicc), folns parvis vix pollicanbus utnnque vindibus ^ 'n a lp i DUS altionbus Hplvetiaa australis, in alpibus tyiolensibus et in Labrador A vindis var pumila Cesati pi exs A Biembana Rotaprosp d fl d prov beigamasco p 79*tinBci oestr Litt 1 p U3 Irutex humihs 1 3 pedalis 1-oha parva, vix polhcaua, ovato-oblongd et acuta ^ ranus ovata, obtusa, ulnnque undia supra glabra, subtus in nervo raedio tantum v etnm ad nervos sccundanos hirtula, margine saepe insigniter duplioato-dentata

y *sibinca,* folns simphcitei v duplicate) dentatis utnnque vindibus subtus ad nervum medium hirtuhsv in venaiurn axillis tantumbirbatisv glabns Hab in alpibus Helvetiae, Austnae Odlhffi, Bosnia et Corsicae, in Sibina uralensi, altaiua baicalensi etonentali in Dahuna, in Mandshuila, Japonia, in insula Kamtschatka et Sitdia, ad sinum Kotzebue in Amenta septentnonalietinGiOPnhndii Alnaster fiuticosus I edob 11 ross vol 3 p 6i5, Trautv ct Mcy in Muld Reise fl oth p 8>, Regel et Tiling fl ajan T 119, Jiautv in Maxim prim fl <nn P 2)7 Alnaster vindis lurcz fl baic dab vol 2 p 1 Jl exel s\n Alnus Gmcl fl sib 1 p 171 n 24 II A tnstis Woimsk in herb Ledeb A fruticosi Rupi fl simoj n 24 C) C A Meyer Beiti / Pflm/k Russl V n K8 Bnhila ovata lausch horn boh A repens Wormsk pi PXS A \irilisChnn in Linn vol 6 p SJ8 Bong veg d Sitcha in Mem d lAc d St Peteisb sei 6 vol 2 p 162 A vindis p sibinci lus i et c et y suaveolens Regel monogr p 79 81 Alnus suaveolens Req 1 c , Duby bot gall p 422, Loisel gall vol 2 p 317 It Bocc mus t 06, Gron et Godr fl de France vol 2 p 149

Transit ad var a Folia utnnque vindia saepissime us formae a majord ovata \ elliptica \ ranus basi cordata (in speciminibus Kamtschaticis) saepissime acuta rarius obtusa Lusum loins ovatis obtusis v acutis utnnque \iscosis indumento oibatis cl Requien nomine A suavcolentis (A sua\eolens Re \ in Vnn dos sc nat \ol) p 381, Dub bot gill p 422, Loiscl gill \ol 2 p **317**, Gren et Godr fl d Prance \ol *I* p 149) descnpsit Hmcox montil us Corsicae et Pedemonin et ex Japonia fol major lbus subtus tan turn viscosis vidimus

ô, *sinuata* folns sinuato rppandis dentatisque Cetera ut pnpeedentis — In Kamtschatki, ad sinum Kotzebuc, in insulis Kat|ak et Sitcba, in America boieah dfccidentih et in Canada A vindis Hook fl boi am \ol 2 p 157 A undis (5 sibinca lusus b et d Regel monogr p 80 et 81

4 A HRMA (Sieb et/ucc in Abhandl d Ac d Wiss in Munch \ol 4 Abth 3 p 230) folns elhpticis dttenuato acuminate racemis stiohilomm folns 1 2 par vis mo\ deciduis 5 J<iponia — Lndl m pen pi suppl 4 pait 2 p 20, Regel roonogi p 84 t 15 fig 1 9 Miq in Vim Mub Lug I Bdt II 137 — Rfjl Bern u Bet 1 c p 4M trutcv idmosus trunco ca>so Ramuh glibn, angulati, \errucis acispeisi Holia, e fcasi lotundata \ cuneild elhp tici et ittenuito icuminiti \ supon 1a ellipticc lancrohta v subinde elongdto 1 mceolata, juniora saepe in Itimcnto lixo piloso mox deciduo \estita, supra demde gldbn subtiis \ il nenob sub lente adpresse pilosa v in ^enaium axilhs piullo barbuhti v glibrj in pagina intenoic dense resinoso punctata, margine argute duplmto dentata **denlibus** antiorsum ^elsls calloso-aLuminatis 3-S poll 1JIPI 1-2 poll lati Petiolus pube*>cens deinde glabrescens t-\ poll long is \rnenti raiscula termimlid, sessilia sohtana v bind Piecta v nutanlid btrobih ovati pedicollati solitam v 1 > 1 ltomosi latemo puheiulo, jumorc folns 1 2pu\is deciduis pi&riiio Nucuix ol)lon«ae slyhs duobub ciassis erectis term matt aid membianacea suisum ampliala nuuulam Sd3pe subaequante cinctcp — Vanat

a *typicn,* sliobilis majonbus solitarns v 2 J racemosis, folns utnnque 10-l-3-ner\iis — In Japonu (Sieboll et Oldham), in insula KIUMU prope Nagasaki et in prmcipatu bimaiaia in insuldi Nippon sylvis mortinis piovincise Senans (Maximowicz), in insuli Jesso propc Hdko dale (\VeiDht) V firma Sieb et Zucc 1 c Regel 1 L

P, *multini*ru&,strobilis minonbus 3 5 racemosis, folns utnnque 12 24 nervns — In insula Jesso prope Mohidbi leg Maximowic/

Sectio 111 PHYLIOTHYRSU^ *Spach rci Bet in Ann d sc nat \rr 1 \ol* lo p 204 —Alnus sect Alnuu, et Phylloth^rsus *Indl I c p* 20

Flf ratio coaetanea Hor masc squamis tnfloir penanthio rcgulan 4 putilo Nucula ala membranacea angusta cinctae — Amenta utuusque scvus in iamuns novellis axillana v terminaha, perulis* omnino orbata, racemosa, aphylla

*> A ACIMINVTV (Kunth in Humb et Bonpl nov gen et spec vol 2 p 16 dniio 1817) foliis o\atis v ov itf)-subrotundis 5 In .llpibus America tropicae Mexico Nova Gianata Bolnia, Peiuvi 1 Chili — Mirb lnMim d Mus dhist nat \ol 14 p 464 t 22, Spich in 1 c p 204, Regel Bern u Bet Bull de Mo«c I860 II 423 A ferruginea Kunth 1 c p 17, Spach re\ I t p 200 A Mn belli Spach rev 1 c p 204 Betuh arguta Schletht in Linnana \ol 7 p HO (183>) A ar^uta Spich *rc*\ 1 c p 20) A Mn belli A acumindtd A fenugmea tt A uoutiLndl 1 c p 20 et 21 A acn Ji arguliRogelmono0M p K7yOctp 92 94, t l> fig IQ .'0 28J2, t if, fijs 3 7_JQ AljK1 Idirus nmulibquc tciotibu- ^libns \ junionbus plus minus fuiu^moo puhe ctntibus puce \CLIUCOSIS 1 olia ovdia ^ ovato suhrotundi srpibsime dcumnidta, ranub dcuta basi rotund iti mar **ftine** lnegulaiitoi v duplicato ainute dentata, supn obscure vindia glabri subtiii* dd nervos \ undique ferrugmeo pubpscentia v ranus in Aonarum axilhs tantum barbata Amenta mascula cylindnca, sessilia v pcdicellata, saepissime racemosa et tdminalia, lanus axillana Amenta foeminea race

mosa, pedunculata, sappissime axillana, ovato-oblonga Nuculac ala angusta membranacea cinct-E — Variat :

a, *(jenuxna,* folns acuminatis argute duphcato-dentatis subtus glaucis subglabns v saepius ad nervum medium lateralesque ferrugmeo pubescentibus — In Mexico, m monte Orizaba, Serra Colorado prope San Miguel del Soldado, Nauhngo, Acatlan et Chiconquiaco, in Peruvia et Chili A acuminata Kunth 1 c , Spath et Endl 1 c A arguta Schlecht , Spach et Lndl I c A acuminata a genuina et A arguta Regel monogr p 89 et 02 — Ramuh ghbn Petioh ghbn v \ix puberuh *olia saepissime insigniter acuminata et duplicato-argute dentata, subtus glauca v ranus nd \enis etnm palhde fenugineo-pubescentia v ranssime subtus subglabia et in venarum axillis tan turn baibata

p, *Viibeln,* ramulis subglabns, folns maequalitei dentatis subtus Rlaucis ad nervos venisque pallide fenugineo pubescentibus Hib in Peiuvia (Lechler), in Lcuador (Spiu(o), in Mexico prope Zecnaltipan (Hirtw), in Andibus Bolmuisibus in prov Lacarei L (Mandon) A acuminata Mirb 1 c A acuminafa 3 MirJ>ehi Regel 1 c pag 90 A jorullensi* Bcnth pi Haitw Ramuh gldbii v juniores vix puberuli Folia acuta \ ranuh panllo acuminata Amenta mascula infra v supra foeminea sita

y, *Spachu,* ramulis junionbus dense fenugineo-tomentosi? Habitat in Peruvia. A Mirbolu Spauh in horb Mus Par Ramuli deinde glabrescentes Petioh ipnugineo-pubescentes Folia arummata Amenta raascula infra foeminea sita

ô, *ferruqinea* (Repel monogr p 90) folns subtus fcirugineo tomcntosis — Jn Nova Granada (Humb Loudon), Bolivia (Weddell), St Fe de Bogota (Boussinauult), Chmqui (Wagener), Ecuadoi (Spruce), Peruvia — A fer[n]uginea Kunth, in Humb (t Bonpl 1 c , Spach 1 c, Endl 1 c Ramuli glabn \ juniores fenuginco-floccosi holia acuta \ acuminata, iiiegulantei v. ranus duphcato argute dentata

A JORUILENSIS (Kunth in Hum*> et Bonpl nn\ gen et sp pi \ol *2* p 16), iohis oblongo ellipticis v lanceolato-oblongis ^ In Mexico et Peruvia — Spach lev 1 c p 205, I **mil** 1 c p 20, Kegcl Bern u. B t 1 c p 424 A rastanifoha Mnb in Mem du Mus d'hist nit vol 14 p 463 t 21, ^pach 1 c p 204, Tndl 1 c p 20 A acuminafd y joiullensis et A Cdstanifoha Regel monogr p 91 t 6 fig 1-2 t IS fig 33 Arboi ramulis fusris glabus A jumonbus puberuhs Folia oblonga \ elliptico-oblongi, v oblongo lancco'ata, inT(iualitpr donfita v sinuato lepanda dentataque, subtus plus minus fenugineo-puberuU v glabia et in axillis tantum barbata Strobilos maturos non udi —An vanetas pidpcedentis? — Vanat

a, *typica,* folns elliptico oblongis acutis v inferioribus obtusis subtus pi JS minus fprrugineo-puberuhs — In Andibus mexicanis (Humb Schiede). A jorullensis Kunth 1 c , Spach et lndl 1. c A acuminata, p,jorullensis Regel 1 *c* Folia maequaliter \ duph alo-dentata, supcnora augustiora inferioia latiora

p, *castanifolia,* folns elliptico lanceolatis, subtus glabris et in venarum axillis tantum baibulatis — In Pennia prope Tacma (Dombey) — Folia mcequalitei dentaia ^ sdepis^ime sinuato-repanda dentataque, supra gldbia, obscure \india subtus feirugmea in venarum axillis tantum barbata caeterum glabra, supenora angustiora attenuato-akta, infe-[r]iora latiora

Scctio iv GYMNOTHYRS'JS *Spach I c* — Alnus sectio GMnnothyisus *Endl. I c*

Floratio folns prdecocior Amenta foeminea e geramis aphyllis prodeuntia Naculae apteiae v ala conacea v ran us submembrdnacea cinctae Amenta utnusque bCMis e gemmis aphjllis prodeuntia, propter perulas matunssime deciduas nuda racemosi Flor masc . squamis tnflons, pcngonio regulai 4-partito.

§ 1. Amenta focmmea in quavis gemma sohtana v bma usque terna.

7 A CORDIFOLIA (Ten fl nap prodr p 54, IC \ol 2 p 3£0 t 99), folns basi cordatis v subcorditis \ ranus nonnullis rotundatis nuculis ala angusta submembranacea nnctis *5* In Corsica in Italia in Caucaso — Spach lev Bet in Ann d sc nat ser 2 vol *o* p 208, 1 ndl gen pi suppl 4 part 2 p 21, Ledeb fl ross \ol 3 p 653, Lodd Bot Cab t 1231, Regel monogr p 110 t 16 fi$_n^r$ 2127 t II fig 20 A subcordata *C* A Mey nd ciuc E 43 Betula coidata Loisel not p 139 Arbor mediocris Ramuli fusci glabri v]uniores praccipue stenles pubescentes Gemmae ovitae obtusae tolia longe petiolata e basi cordata v subcordata ovata v subiotunda, ovato-oblonga v ranssime basi lotundata apice icuminata v ranus rotundato obtusa subaequaliter crenato dentata, saepissime supra glabra el in pagina inferiore resino^o punctulata, m axilhsque vemrura barbata, caeterum glabra ^ ranus utnnque plus minus pubescentia Pctioh glabu v ranus pubescentes. Strobih magni, ovati v ovato oblongi, in quavis gemma solitarn v bini Nuculae ala angusta vix membianatca cinct'e — Vanat

a, *genuina* folns omnibus basi cordatis ovatis v subrotundis apice a^uminatis v acutis v rotundato-obtusis utnnque glabns et m nervorum axillis subtus tanlum barbatis —In Coisica, Italia, Caucaso A. cordifolia Ten 1 c , Beit fl it vol 10 p 160 A rotundifoha Bert fl it vol 10 p 160 A coidifolia *v* genuina ct 3 rotundifoha Regel monogr p 111 el 112 t 16 fig 21-22 Folia subtus resmoso-punctata, in nervorum axillis barbata v ad neivos paullo pilosula caeterum ut petioh glabra Specimina folns cordato subrotundis (I apice rotundato-obtusis saepe occurrunt. Lusum singularem folus simil bus sod minonbus cl Bertoloni nomine A rotundifoliae descnpsit

p *subcordata* (Regel monogr p IP) folus e basi subcordata v vanus rotundata ovatis v ovato oblongis saepissnne acuminitis Hab in Italia pt in Caucaso A subcordata C A Mey 1 c — holia nunc glabri ot subtus in venarum axillis tantum barbata, nunr utnnque ad nervos laxe pilosula Petioh saepe pubescentes

y, *ullosa* (ttegel 1 c), ramulis folusque pubestenti-villosis, folns ut in praecedente In Caucaso bpecimina stenlia tantum vidi.

8 A ORIENIALIS (Decsnt fl sinaita in Ann d sc nat ser 2 vol 4 p 348), Joins e basi rotund tta v ranus subcordata cnato ellipuus v ovato oblongis, nuculis aptens — In Libano (Bo\e) Cypro Cilicia (Kotsrh>), Syria prope Beyruth (Bo\e) Musina (Balansa) — Spach re\ 1 c p 208, Endl 1 c p 21, Regel monogr p 112 t 17 fig 12-18 B Ion Ifolia Bov6 teste Spach 10 A tornentosa Hartig (teste A Braun) A oblongita Kotschy pi exsicc et Blanche pl exsicc or —Ramuli glabri v ranssime juniores puberuli Foha longo petiolata, e basi rotundata v ranus subcordata ovato elhptica, v ovato-jblonga, \ subcoiddto-elhptica, v ranssime supenora e basi cuneato-lanuolata acuta v ranus acuminata \ obtusa, mn^ine simphciterv duphcato cronato-dentata, utnnqut glabra rnlidd, subtus in vcnarum axillis tantum barbata ranus ad nenos et petiolos puberula Amenta juniora utnusque s(xus ^1 ulino I Strobih o^atl \ ovato-oblongi saepissime pro genere maximi pcduncuhii, in quavis gemma soli tain v bini Speumina culta ex horto Bcrolmensi sub nomine A subcordata3 accepimus — Ramuli stenles speciminum luniorum v tunonum ssepe ma,jis pubescentes folns majonbus subtus undiqtie pube^ccntibus A tomeitosam Hartig indicant

9 A MARITIMA (\utt sylv am suppl I p 34 t 10 1842;, folns basi cuneatis r_t In Mandshuna et Japonia, in Ameuca ad fluvium Delaware in Maryland — Re^el Bern u Bet in Bull Mosc 186i II p 427 A japonicd Sieb et /ucc in Abb d Ak d Wiss in Munclicu \ol 4 Abth 3 p 230, Endl in gen pl suppl 4 part2 p 21, Regel monogr p 8) t 15 fig 22-27, Miq m Ann Mus Lu$_o$d Bat II p 137 Betula Alnus I hunb fl jap p 76 A Hannoki Sieb >ynops p 25 A oblongLta Regel monogr p \U 17 fig < (non "WiHd) Arbor circitei 20 pelalis, trunco 4 6 poll crdsso Ramuli fusci

glabri v. ranus puberuli Folia petiolata, e basi cuneata Integra ovato oblonga, v ranus ovata v ovato-lanceolata acuta v icuminata v ranus subobtusa, nunc s"impliciter denticuldta dentibus callos s sursum versis, nunc maequah ter grosse dentata denticulataque dentibus ei^ctis denticulis callosis sursum versis, saepissime glabra et subtus in venarum axillis tantum barbata juniora ranus pilosula, postea subtus id venas pubescenti i Petioli graciles, saepissime glabri ranus pubescentes Strobili elliptici, in quaws gemma sohtarn v bini et term Nucule compicssa}, ovatae v obovata, aptciT v ah angustissima conacea cinctae — Vanat

a, *typica* folns acutis et ranus obtusis dcnticulatis utnnque ghbns et subtus tantum in nervorum axillis baibulatis Ad fluvium Delaware in Amencae borealis provincia Maryland A mantimi Nutt 1 c A oblon gati Rcgel 1 t Hamuli potiolique glabn tolia ovajo oblon^a v obovato oblongi denticulis in callum sursum versus acumimlis

P *japonica* Joins saepissime longc acumimtis deiiticulatis v mnequalitei dentatis ghbns et subtus Untum in nervorum axillis barbuktis — In Japonn (Sieb), in insula Nippon prope Yokoh ima in insula Jesso ad lacum Konomi leg Maximowic/ in Poimosa leg Oldham A japonic i Sieb et /ucc 1 c , Lndl 1 c Hegel 1 c B Alnus Ihunb 1 c A Hannoki Sieb 1 c Rimuh petiolique ^labii Polia o\ato oblonga \ oblongo lanceolata, Vnlibus in c ilium suisum veisus acuminatis

y *arguta* folns acuminatis simphciter v duplicato dentatis subtus ad nervos plus minus puberulis — In Mandshuna austro onentali (Maximowicz Schmidt), in insula Jesso ad pedem montis Kumanga take (Maxi mowicz), in msula Nippon pi ope Yokohami (Oldfield) Hamuli petiolique pubescentes v senus glabrescentes Folia ovata vel ovato-ofclon^a juniora saepissirae pilosula, postea glabresccntia et subtus ad nervos tantum plus minus pilosuli inaequaliter v duplicato dentata dentibus mi jonbus acuminatis rectis, dentibus minonbus saepissimc in '•allum sui sum versus acuminatis

§ 2 Amenta foemmea in quavis gemma racemosa.

* Nuculde ala submembnnacea angusta cinctee

10 V RUBRA (Bong in Mem Ac St Petersb ser 6 vol 2 p 162 Veg de Sitcha) folns o\ato-ellipticis obtuse lobulatis crenatisque — In insula Sitcln (Bongird Mertens SUwart) Vancouversisland (L}dll),in renaNo\a in Lalifornu, Colonit Ross (WringM) in RocU mountain (Hall et Hdiboui) — Hook fl lor am vol 2 p 1 >S, Miq Ann Mus Lugd Bat II p *ft* Rgl Bern u~ Bet 1 (p 4J0 Spach rev J (205 *ledeh* fl ross vol 3' p 6)b Endl 1 c p 21, Re^el Bern li Bel 1 c p 429 B incana y rubi 1 Hegel monogr p 99 t 17 hg 3 4 Arbor (?) ramulis angulatis, fuscis, gla bns v junionbus puberulis F0I11 m igna petiolata elliptico ovati acuia v obtusa sultus glaucescenti 1 nervis promincntibus rubns utnnque glabeinma v ad norvos plus minus pubeiula Stiobili ovito-elliptici Vanat gemmis glutinosis folnsquc glabemniis (v *e*\ \incou\crs island) v saepius feemmib paite pubciulis fohorum que nenis in pagma uiferioio laxe puberulis

* * Nuculae apterae v ala conacea cinctze

11 A GLUTINOSA (Willd spec pi *o*\ 4 p 334) folns cuneato obo\atisv subrotundis utnnque vindibus obtusissirr is saepeque relusi«, -y i_M Europa Caucaso Onente inJiponn in Afnca iiistiali — Onertn liuct vol 2 t 90, Spach lev 1 c p 207, Lcdeb fl ross vol *1* p 6^7 lndl 1 c p 2t Betula Al nus glutinosa L spec p H94 A birbata C A Mey enum pi cauc p 4 *i* A denticulata C A Mey 1 c p 43 A clliptica Ruj ami sc nat vol T p 381 A glutinosa o y ₑ, Regel monogi p 101 Art or ramulis fuscis glabns Mscosi^que, v ranus junionbus laxe pilosulis Folia petiolata, e basi cuneata obovatav subrotunda apire lotundato obtusissima saepeque retusa \ ranssime pauca subacuta, margine duplicato dentata, v ranus subaequaliter dentirulata \ inteidum inciso laciniata, saepissime glabia subtus m nei

vorum axillis eximie barbata, v ad \enas etiam adpresse pilosa, v ran us in venarum axillis nuda Pt ad venas plus minus pilosula, v ranssime utnnque glabernma Poliajuniora saepe glutinosa Strobih ovati, pedicellati. Isuculae aid conacea cinctae v subapterae — Vanat

a, *vulgaris,* folns duplicato crenato dentatis subtus in \enarum axillis barbatis ad venas glabns v plus minus conspicue puberuhs — In Tuiopa, Caucaso, in Onente in boongona (Schienk) B glutinosa Willd 1 c , Willd Berl Baum/ p 19, Gaertn 1 c Ait hoit Kew ed 2 vol 5 p 2S8, Sturm Deutschl Fl 8 t 29, DC fl fr \ol 3 p 149, Guimp et Hayne Deutsch Holzg t 137, &ren et Godr fl fi vol 3 p 149, Reichenb ic fl germ \ol 12 t 631 Koch syn p 763, Hartig Lehib t 23, Hornem fl dan vol 13 t 2301 A nitens C Koch in heib Berol Betula Alnus glutinosi Duroi Hubk Baumz 101 A barbata C A Me>. 1 c A glutinosa a vulgans Spach 1 c p 207 A glutinosa a et p b Regel monogr. p 102 et 10* t 11 fig 1 2 Gemmae, lamuli foiiaquc luniora saepe glutinosa Folia c basi cuneata obovata v subrotunda subtus in \enarum axillis sempei barbata ad \enas v obsolete v densius pubescentia Formam postenorem venis pubescentibus cl C A Me^er nomine A barbatae dt»scnpsit — l«olia ramulorum stenlium mterdum subacuta Lusus folns auieo \anegatis colitui in hoitis A glutinosa var auiea Lem ill hoit 1806 tab 490

(J, *denticulata*$_y$ folns inapqualiter v subaequahter dcnticulatis subtus m venarum axillis barbatis \ ad \enas plus minus puberulis — In Cau caso, Onente, Italia Corsica Hispanu et in Promontono Bonae Spei (I ckl et Zpyh) A denticulata G A Mey 1 c Lichw pi nov m it casp cauc t 2 A oblongata Willd spec pi \ol 4 p 33o et ejusd Berl Baumz p 20 Ait hort KPAV ed 2 vol 5 p 259 B oblongata Ait hort Kew ed 1 vol 3 p 338 Alnus cenferaHaitig teste A Braun A glutinosa p denticul ltd Ledeb fl IOSS \ol 3 p 6o7, Regel monogr p lOo t 11 fig 5 A glutinosa p subrotunda Spach 1 c p 207 A ellip tied Req in Ann d s< ndt \ol 5 p 381 , Gien et Godr fl fr vol 3 p 150,Bert fl it lbl A Monsiana Bert 11 it vol 10 p 163 A suaveolens Bert fl it vol 10 p 163 Rea in Ann d sc. nat 1825 vol 5 p 381 A dubiaReq in hi) DC Polia obovata v ovito elliptic* saepissime subaequahter denticulata, ran us in tqudhlei v subduphcalo denticulata, denticulis saepe in calhun acuminatis, apict lotundato-obtu^a v ianus re tusa, subtus dd venas plus minus conspicue puberula et in venarum dxillis paullo v. MX perspicue barbulata I[1] olid junioia sdepe insigniter glutinosa

Y, *queicifoha* (Willd spec pi vol 4 p *66-))* folns cuntato-obovatis pinnatifido-lobulatis lobis obtusis Cohtur in hortis, in Onente m montibus Hirdushiae leg Ho schy — Spach ic\ I i p 208 A glutinosa E pinnatifida quercifoha Regpl monogr p 110 Folia apice saepissime retusa, glabra et subtus tantum in venarum axillis barbdta

S, *laciniata* (Willd spec pi vol 4 p 315), folns pinnatifido-lobati*,, lobis acutis Colitur m hortis — Koch syn p 763 A glutinosa 8 pinnatifida Spach rev 1 c p 207 A glutinosa impenalis asplenifoha Versch lllustr hort 1860 p 7 A glutinosa c pinnatifida b lacmidta Regel monogr p 109 Folia e basi cuneata intent rnma ovato oblonga, obtusa v acuta, glabra, subtus in venarum dxillis bdrbata, lobis mtegernmis v cienulatis, acutis v acuminatis

E, *incika* (Willd spec pi vol 4 p 33o), folns pinnitipartitis v vane incisis, foliolis v lobis obtusissimis Colitur in hortis A glutinosa e oxyacanthaefoha Spa^h 1 c p 208 A glutinosi 6 inusa Koch s\n p 763 toLnnunc parva, nunc majoia, difformia, nunc subiotundd et lrre^ulanter pinnatipartita v pinnatifido lobata, lacinns v lobis obovato-oblongis diiticc crenato-dentdti[1]-. lobo inteimedio majore, subtus ad neivos pilosuld v in venarum axillis bubdla, edeterum glabia

p A PUBESCENS (Tausch in Flora ratisb **18)4** p o20), folns subrotundis ^ ^obovatis utnnque vmdibus infenonbus obtusis supenonbus acutis duplicato-dentatis — In Bohemia, in Geimania austro-occidentali in Lapponia et

in Caucaso. — Koch syn p 762, Regel Bern u Bet in Buil de Mosc 1865 II p 431. A badensis Tang pi exsicc fl bad A glutinosa p pubescens Regel monogr p 103 Verosimiliter planta hybnda ex A gljtinosa et A incana BamuU petiolique saepissime pubescentes, ranus glabrescentes fcolia juniora pubescentia, sen us supra glabrescentia subtus ad nervos v undique pubescentia v ranssime in \enaium ixillis barbata Strobili elliptici ISuculae subboibiculares, a]a conacea angustissima cinctde.

13 A ^RHULATA (W llld spec pi vol 4 p 336), fruticosa, folns saepissime o\dto ellipticis fere omnibus acutis utnnque vnldibus denticulatis v duphcato argute-dentatis ^ Hab m America boreah — Willd Berl Baumz p 21, Spach rev Bet in Ann d sc nat ser 2 vol 15 p 206, Ait hoit Kew ed 2 vol 5 p 2V) Pursh fl am sept vol 2 p 623, Mich arb vol 3 p 321 t 4 hg 1, Ion New Yoik\jl 2 p 202 t Ho Regel Bern u Bet 1 c p 432 B seiruldU Mich fl bor am vol 2 p 181 13 iu_0'osa Ehrh Beitr 3 p 21 A glutin vi acutifoha Spach 1 c p 207 A hybnda Reichenb IC fl germ vol 12 t 630 fig 1292 A glutmosa 8 serrulata Regel monogr p 106 Irutex ramulis junionbus sappe glutinosis, pilosulis \ pubesccntibus, senus glabrescentibus Folia pedolata ovato-elliptica v obov ito olliptica v late ovaia v raussimc lanceolato oblonga, utnnque vindia, supra glabra, bubtus ad nervos plus minus | uberula in venirum axilhs nuda, margine simpliciter dcnticulata \ plus minus *e*\ identer duplic Uo argute dentata, dentibus in Cdllum acuminatis Fetioli saepissime pubescentes Strobili elliptici \ ovato-oblongi Nucuiae suborbiculares v obo\atae, apterae — Vaiidt

a, *gcnuina,* foln* o\ato-e'hpticis v obovato-elhpticis acutis aequahtei \ uirfquahter denticulatis Hah in Alabama Geoigia, Caiolina Vnginia, Pennsylvania, ad fl Missoun et Ohio, in Nova Anglia cultaque in hortis europaeis A senulata Willd 1 c A glutmosa 8 serrulata a genuina Regel monosr p 106 t 11 fig 6 toln dentes margmales plerumque parci, aequales, ranus indequales \ folia nonrulla subduphcato-dentata

p, *rugoscij* folns ovatis v o\ato-elhpticis v ranus late ovitis acutis v ranus atuminitis argute duphcato dentatis — In Mas°achusetts, California Oregon et in Rocky mountains Betula lugosa Lhrh 1 c Alnus hyhndd Reichenb 1 c A senulata Mich 1 c lorr I c A, oblongdtd, A undulata A rugosa, A canadensis et A amencana hort A autumn ilis et A latifohd Hartig testc A Braun A glulinosa o serrulata c rugosa et d cahfornici Regel monogr p 107 et 108. t 11 fig 8-10 Folns plerumque rugosioribus 1 itionbus duphcato-dentatis ab antecedente dignoscitur E California specimina folns angustionbus lationbusque vidimus

y, *oblonqifolia,* folns lanceolatis acuminatis msi^nitcr duphcato dentatis — In "Novo Mexico (Wnght*)* A oblongifoha lorr teste Asa Gray

ð, *ciblusifolia,* folns olovatis rotundato obtusis simpliciter denticulatis — In Vnginia et Ohio A glutmosa 6 serrulata b obtusifoha Re^el monogr t 11 hg 7 Vix ac ne ux quidem ab A glutmosa p denticiilata folns apquahter denticulalis distmguenda.

\h A INCANA (Willd spec pi vol 4 p *33**)* arborea, folns argute duphcato-dentatis subtus glautis v incanis > In Europa, Asia et Amenca septentnoiiah.— Willd Berl Baumz p 20, Ait hort Kew ed 2 p 259 Reichenb fl exc p 175, Lede > fl ross vol 3 p 606, Turcz fl baic dah vol 2 p 132, Koch syn fl germ p 762, DC fl fr \ol 3 p 304, Spach rev 1 c p 200, Gien et Godr fl do f«r vol 3 p 1^0, Trautv et Mey fl och p 86, Reichenb ic fl geim vol 12 t 629 fig 12^)1, Guimp et Hayne deutsch Hol7g t HG, Inutv in Mix pnm fl amur p 258, Torr New Yoik \ol 2 p 202 Hook fl bor am \ol 2 p l[r]>7,Sw Bot vol 2 p 595, H dan \ol. H t 2K)i Betula incdna L »«pec p 1394 B Alnus (incana) Duroi Harbk Baumz vol 1 p 109 B incana Roth fl germ vol 8 p 477 A glauca Mich arb vol 3 p 320 t 4. fig 2 A hirsuta Turcz cat baic n 1064 Rupr Bull de 1 Ac de Si Petersb. 1857 p S58 A sibinca tisch teste Turczmmovv 10 A incana ^ndl gen c p 21, Regel monogr p 94 t 16 fig 1M0 t 17 fig 1-8, Ljusd Bern u Bst 1 c p 433 A alpma flork teste Endl Arborea, lamuhs teretibu-*, saepissime puberuhs \. subto-

mentosis, ra'ius glabrescentibus Folia o\ata v ovato-lanceolata v ovato-subrotunda, plerumque acuta, ranus acummata v obtusa, saepissime argute duplicato dentata, ranus pinnatifido-lobulata v incisa, supra glabra v plus minus adpresse pilosa subtu* glauca ad nervos v undique puberula v mcano subtomentosa, v ranssime subglabra Strobih peduncillati, elliptici Nuculae ah conacea saepissime angusta v ranus latioie cinctae — Vanat

a, *mlgans*, folns duphcato-dentatis acutis subtus dense pubescentibus v cano-tomentosib. — Hab in Luropa et in Caucaso — A. incana Willd 1 c , Hornem fl dan 1 c , Hartig Lehi b t 24 A incana a vulgans Spach 1 c p 206 A incana y genuina Regcl .monogr p 97 Folia saepissime ovata, ranus late ovata v linceolato-ovata omnia acuta v ranus nonnulla inferiorum obtusiuscula, argute duplicato dentata "v sublobulata

p, *glauca* (\it hort Kew ed. 2 \o\ o p 2)9) folns duplicato dentatib acutis subtus glaucis ad venas v undique laxe pubescentibus — In Europa, in bibnid in Mandschuna, Japonia (Maxini), in Novo Mexico, California Penn Yan ad Sasktachavan, et in montibus albis America boreahs A glauca Mich 1 c A intermedia Schrad in horto Gottingensi — Regel monogr p 96 t 16 ng 19-20 A incana (J glabrescens Spach 1 c p 206 A mcana vai tirolensis Siut in Reichenb IC fl. germ \ol 12 t 630 fig 1293 A jncina v pinnatifida a laciniata Regel monogr p 99 t 17 fig > fol a elliptico-ovita v ovata v ranus sublotunda, acuta v ranus acuminata \ nonnulla infcnoium obtusiuscula, duplicato dentata v ranus pinnatihdo-lobulata Specimina a cl Maximowiczio in Japonia piope Hakodate et Jukohama item ut s>pecimina a cl Stubcudorffio ct Mejam lecta foliis majonbus suboibiculatis gaudent Cl Miquel hanc formam (Ann. Mus Bot Lugd Bit. II p 1J7) ad A. incanam y husutam ducit

y,hirsuta (Spach 1 c p 207) folns ovato-subroumdis duplicito-dentatis obtusis subtus dense pubescentibus v molliter tomentosis —In Dahuna, Mindschuria, Kamtschatka, Sibnia oncntdli A hirMita Furcz. cat baic dah n 1GC4, Rupr in Bull d l'Ac d St-Petersb 1857 i) 558 A mcaiu 6 hirsuta Ledeb fl ross \ol * p 6i6 luicz fl baic aah vol 2. p 133, Trautv. et Mej in. Midd Reise fl och p 8b, Trautv in Max. pnm am p 2-)8, Regel fl uss p 13b, ejusd monogr p 97 toll a saepissime obtusibsima v interdum nonnulla ct prae(ipue supenoiaacutiuscula

8, *sibmca* (Ledeb fl loss \ol 3 p 656) folns o\ato-subiotundis v. late ovatis obtusis duplicato-dentatis subtus qhucis ad nervos tantum pubescentibus — In Sihnia altaica et oriental^ DLhuua et Mandschuna. A sibinca Bisch in luic/ cat baic n 10^3 A incana y sibinca fcpi"h 1 c p 207, Irautv, et Me> in Midd Rtise fl och p 8h, lurcz fl baic dah vol 2 p 133, Regel monogi p 98 — A simillima praecedente vanetate folns glabi ioiibu*= subtus glaucis dignoscitui Specimina \anetatis p in Japonia lecta foimam tiansitonam cxhibent

e, *parvifoha*, folns pan is o\alis obtuse pinnatifido-lobuhtis — la Suecia A incma 6 pinnatifida b pamlolia R<b'el n onogi p 100 t 17 hg 7 A mcam pinnatifida Reidienb ic fl fcerm \ol 12 t 630 fig 1294 folia circiter 1 ! poll longa et polhcem lita, obtusa v acuta, obtuse lobulata dentdtaque, subtus ad nenos v undique puberula

t, *pinnalijida* (brach ie\ Bet in ann d sc nat »er 2 v h p 207), foliis o\dto-ellipticis pinnatihdo-incisis, lobis acutis utnnque acute serratis — In Suecn, Luronia — Wahlenb fl suec p 622 Ledeb fl ross vol J p b8b B pinnata S\A act Holm 1790 B mcina v pindtifidd c vulgans Regel monogr p 100 t 17 fi^ 6 Folia acuta, subtus ad neivos lantum \ undnjue pubeiula

η, *acuminata* loh s ovato ellipucis pinna'ifido-incisis, lobis acummatis subintegernmis Culta in hoitis A nicana pinnatifida d acuminata Regel monogr p 100 fig 8 folia acumindta, subtus ad nervos v undique pubescentia, lobis acummatis lntegernmis \ in latere mfenore tantum aigute senatis

Ordo GXGVI. SALICINEJE **(1). — Amentacearum genera** *Linn. PrxlecL Ord. nat. p.* 528; *Juss. Gen. p.* 407. —Saliceae *Rich, ex Kunth in H. et B. nov. gen.* 2. *p.* 22 (1817). — Salicineæ *Rich. mscpt. A. Rich.* (1828), *Elem. ed.* 4. *p.* 560; *Endl. Gen. p.* 290, *Enchirid. p.* 177; *Meissn. Gen. p.* 348, 259. — Salicineæ *Bartl. Ord.* 119. — Amentaceæ, A, Saliceæ *Reichb. Consp. p.* 83. — Salicacea? Lmd/. (1836) na/. *syst. ed.* 2. *p.* 186; *ejusd. veg. kingd. ed.* 3. *p.* 255.

Flores dioici, in amenta lateralia vel sublerminalia sessilia et squamis vel bracteis paucis suffulta aut pedunculo plus minus foliato nonnunquam etiam gemmifero ïoliato conferta; singuli bractea mcmbranacea (squama) persistente vel decidna integra vel lobala glabra vel pilosa concolori vel discolori obtecti. Perigonium nullum. Torus (nectarium) aut minimus in glandiilani simpliccni vel duplicem vel annulum parvum vel urceolum oblique truncatum tumens. *Flos masculus :* **stamina e cenlro tori exserta, duo vel soppe plura; filamentis filiformibus, librris aut basi autjuxta totam longitudinem monadelphis; antheris bilocularibus, basi li\is, loculis appositis, connectivo obliterate contiguis, lonpiludinaliterdehiscentibus; ovarii rudimento nullo.** *Flosfemineus:* **ovariuin liberum, sessile vel pedicello torum plus minus superante pedicellatum, e carpophyllis duobus conflatuin, carpopbyllis marginibus valvalirn connatis vel plus minus inflcxis uniloculare; placentis linearibus brevibus parietalibus, ovulis pliirimis adscendentibus; stylis duobus vulgo inter se connatis, sligmatibus aut integris crassiusculis aut bipartitis, laciniis plus minus filiformibus vel carnosis. Gapsula uniloculans, bivalvis, polysperma, valvis apice solutis demum plus minus revolutis. Semina plurima, erecta, minima, testa membranacea, umbilico basilari truncato, funiculo brevi in comam lanuginosam totum semen obvolvcntcm fatiscente, albumine nullo. Embryo orthoiropus; cotylcdombus planis convexis cllipticis; radicula minima, infera. — Arbores, frutices, vel fruticuli facie herbacci. Rami alterni, teretiusculi, saepe fragilissimi, intcrdum Lenacissiiui, nunc lorulosi, nunc viminci, divergenles vel erecti. Folia altorna, simplicia, integerrima, plus minus serrulata vel rarius denticulata seusubfissa, serraturis saepe glanduligeris, penninervia aut in lateribus obsolete palminervia, petiolo plus minus longo semitereti vel compresso petiolata, decidua. Stipulajsquamosai deciduije, vel foliacea) et saepe persistentes, obliqiiae, subserralae, in ramulis vegclis majores. Gemma) laterales et terminales.**

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(1) Auctore, quoad char, onlinis et genus praecipuum, N. J. Andersson, Reg. Acad. sc. Holm.

1. SALIX *Tourn. Inst. p.* 590. t. 364; *Linn. Fl. lapp.* 1737. *p.* 280, *Gen. n.* 1097; *Linn. Codex ed. Richt. p.* 964; *Juss. Gen. p.* 408; *Gxrtn.* 2. 56. *t.* 90; *Endl. Gen. n.* 1993; *Meissn. Gen. p.* 378; *Willd. sp. pi.* 4. *p.* 655-710; *Steud. Nomencl.* 2. 493; *Wahbcnb. Fl. lapp. p.* 655-710; *Hoffm. Hist. Sal.* 1785; *Wade on Salloivs and Osiers,* 1811; *Seringe Essai d'une Monographic des Saules,* 1815; *Dumortier Wilgen,* 1825; *Host Salix*, 1827; *Koch Comment, de Sal. europ.* 1828; *Sadler Synops. Sal. Hungar.* 1831; *Fries Comment, de Sal. Suecia*[1] *in Nov. Mant.* 1, *p.* 21-80 *[conf. Hartm. inSv. Wet. Akad. Handl.* 1851); *Trautv, Salicet. in Mém. près. d VAcad. de St-Pe'tersb.* 3. 607-636, *De Sal. frigidis in Mém. de la soc. des Nat. de Moscou. t.* 8. *p.* 281-346; *Smith in Trans. of Linn. soc.* 6; *Wimmer Flora od. Bot. Zeit.* 1849, *Jahresber. d. Schles. Gesellsch. f. vaterl. Cultur* 1842 *et seq., Denkschr.* 1853. *p.* 150, *Salices europeæ.* 1866, *etc.*; *Traunsteiner Monogr. d. Weid. v. Tirol* M. *VoralberginZettschr. des Ferdinandeums in Innsbr.* 1842; *Andersson Sal. Lapponiw,* 1845, *Ostindiens pilarter (in Sxo. Wet. Ah. Handl.* 1858. *p.* 465-502), *On East-indian Salices* (*in Journal of Linn. Society vol.* 3. 1860. *p.* 39), *Bidrag tin Kann. om d. i Nordamerika pilarter* (*i Ofversigt af Wet. Akad. Forhandl.* 1858. *p.* 109-132), *Salicum Monographia in Sr. Wet. Akad. Handl. t.* 6. p. 1; *lleichenb. Icon. FL germ. Cent.* 250. p. 1182-12G9; *Ilartig Vollst. Naturgesch. d. fo)tl. Culturpfl. Deutschl.* 1851. *p.* 75-93; *Loud. Arboret.* 3; *Forbes Salicet. Wobnrneme* 1829; *Kerner Niederwster. Weiden (in Verhandl. dor zool.-bot. Gesellsch. in Wien* 10. 18GJ). *p.* 3-56, 179-282, *et in Oestr. not. Zeitschr)\ Wichura Die Bastardbefr. im Pflanzenr.* 1865; *Chamitra Kent. Weid. (Est. p.* 277 *(serius ab eo derelicta).*

Flores dioici in amentis plus minus laxis dispositi, squamis (bracteis) obtecti. Rbachisteres v. angulato-scrobiculata, raro glabra, saspius cinereo vel rufo-pilosa, in ament. masc. citius decidua, in femineis diutius persistens. Squamae lanceolatae, lin^ulatae, vel concavo-rotundatae, aut obovatae, apice integrae vel rarius glanduloso-crenulatae, concolores sc. pallide stramineae fulvae vel roseae, aut discoloressc. basi pallidae flavse v. viriduias apicem versus fusciores piceae v. atratae, dorso toto aut tantum apice pilosae, barbatae v. ciliatae. Torus glanduliformis, in formis tropicis aut maxime alpinis et arcticis in duas glandulas, unam anticam alteram posticam non raro partitam divisus, aut integer et fere annulivel subcyathiformis, in plerisque autem simplex ettantum anticus. Stamina in plensque gemina, in quibusdam nobilioribus 3-12; filamentis filiformibus, liberis aut a basi connatis pallide stramineis, rarius deiloratisfuscis; antheris rarissime etiam connatis, typice aurantiacis, in aliis purpurcis post anthesin fuscis. Germen plus minus conicum aut obtusiusculum aut subulato-rostratum, glabrum v. tomentpsum villosum v. lanatum, saepe pedicello iusertum; stylus olon^atus aut obsoletus, integer vel fissus, llavus v. fulvus v. fuscus; stigmata bina, aut crassabrevia et Integra, aut in laciniis duabus saepius angustis partita. Gapsula unilocularis bivalvis, valvis prope basin seminiferis, dehiscentia retrorsum arcuatis, falcatis vel circinatis. Semina plurima, erecta, comosa. Embryo axalbuminosus, orlhotropus, radicula infera. — Arbores excelsae, frutices elati vel fruticuli trunco subterraneo et ramis flabelliformibus humistratis. Gemmae perula calyptriformi obtectae, terminales non evolutaa. Folia lanceolata, obovata,ovatae. s. p. saepius elongato-angustata, penninervia. Amenta in regionibus temperatis saepius praecocia sessilia nuda, in calidis et fri^idis coaetanea foliato-pedunculata. — Per partes fere omnes LOtius orbis divulgatae, ubique formis et modificationibus inter se multifariam connexis scatent, saepe bybriditate procreatac, ultra modum intricatae.

Sahces sequenti modo dtsponuntur :

A) PLEIA\DRA, stam 3 ∞, squamis pallidis, caducis, concoloribus Sp 1-27
- 1° *Tropxcx*
  - 1 *lndic i.*
  - 2 *Onentales*
  - 3 *Africans'*
  - 4 *American v*
- 2° *Tcmperatx*
  - 5 *Amygdahno,*
  - g *Lucida*
  - 7. *Fragiles*

B) DIANDB^, stam. 2, hbens, squamis discolonbus, persistentibus Sp 28-141
- 1° *Microstylx*
  - 8 *I ongifolu.*
  - 9 *Cmerascentes*
  - 10 *Roser*
  - 11 *Argentex*
- 2° *Podoslylx*
  - 12 *Virescentes*
  - 13 *Jitgidoc*
- 3° *Macrostylx*
  - 14 *Pruinosj?*
  - 15 *Micantes*
  - 16 *Nivejs*
  - 17 *Isitidulx.*

C) SYNANDRJ£; stam 2, filamentis connatis, squamis discolonbus Sp 141-161 . . . . . .
- 18 *fncanx*
- 19. *Purpurea .*

A SAUCES PLEIANDRJE — Sahx, tnb 1, Amenna (Plin) *Fries Mant* 1 p 41 — Chlontcae *Kerner Weid. Oestr. p.* 43 — Sdhces Pleiandrae *Anders, monngr p* 1

Amenta 9 foluto-pedunculatd squamae concoloies pallidT in flonbus femineis deciduae Iorus saltern in flore masculo biglandulosus Stamina saepisbime 3-12, basi villosa, hbera Capsulsc crassiusculce, vulgo glabrae, stylo nullo vel brevi rostratae — Arbores vel frutices altiores l^olia elongata plus minus attenuato-cuspidata, glanduloso-serrat i, typice glabeinma

1° Iropicae vel subtiopitae

Torus in utroque flore saepe annulans vel urceolatus Capsulae plerumque basi valde crassae, vulgo longe pedicellatae, confprtae Stamina semper ultra 4 Regiones tropicas vel subtiopicas potissimum mhabitantes

§ 1. *Indies v tettaspermx.* — Arbores. Folia typica basi latiora, argute serrata, ngida, nitentia. Amenta subranflora. Gapsulae ovals, subangulares.

1 TETRASPERMA (Roxb plants of Corom 1 p 66 t 97), amentis plus minus pedunculatis pedunculo folnsparvis suffultis, masc longis laxis flonbus fere vertiullatim remotis, femineis elongatis demum ranllons, squamis oblongo-spathulatis vel subrotundis flavidis dense guseo-tomentosis deciduis, capsuhs ovato-globosis v ovatis glabernmis longe pedicellatis, pedicello nectanum subcyathiforme quadruplo supcrante, stylo vix ullo, stigmatibus integris brevissimis crassis, folns ovato-lanceolatis v linean-Janceolatis longe acummatis supra satuiate vindibus subtus plerumque glaucescentibus glabcrnmis vel pihs adpressis subbirsutis serrulate v inttgiis demum ponaceo-ngidis, stipuhs ovatis deciduis *5* Ad npas tt in loois humulis per totam Nepaham frequens, 111 montibus Himalaya et Nilagin, Khasia rcg alt 2-4000 ped (Hook fil. et Thomson), in Coromandeha (Roxb), Oude (Walhch), Java (/olhnger n 2927) — Willd sp pi 4 p 637, Hoxb 11 md 3 p 7)3, Wall Catalog n 3701, Blume Bijdr p 517, Trautvett Mem de St Petersb 3 p 629, Anders Sal ind in Act Holm *I81O* p 484, Proceed Linn. Soc 4 n 13 p 41, Sal Monogi p l fig 1, Wight it pi. Ind 01 c 1954, Forb

Sal wob t 31 Arbor trunco non alto sed vahdo, humana cra^sitiej ramis undique palentibus glabns, no\ellis tantum gnseo tomcntosis Folia pnmo us S fi igilis, demum us S pentaniiia* nostrae sat simiha, 2 4-poll longa, 1 poll, lata, demum subconacea, margine acute sed subtiliter serrulata, dm peisistentia, ila ut gemmae amentiferae non raio in axillis evolvantur Amenta masc. suaveolentia,2-pollicdn<i, graciha, laxiuscula, fcnnnea 1-1] poll longa Capsul-B obscuie vuules, gnnuLeformes, hneam longje, saepe subquaternatim collectae (inde nomen'). — kximie vanat hdec species in India onentali m-digena quoad formam et indumentum fohorum, longitLdmem amenti et pedicelli capsulae, quaie formoj sequentes ut niodificationeshuicadnumerandae.

a, *sum eolens* (Andeis in Proceed Linn Soc 1. c p 41), amcntis raascuhs numeiosismultifloris longissimisdistincte pedunculatis squamis latissime ovatis dense albo villosis apice sum mo nudis, folns demum saltern glabernmis subtus dense glauiescentibus integris — Jn India onentali ad A|nn (V Jacquemont) et in Himalaya (Hugel n. 526) S suaveolens Andeis Act Holm 1. c p 491 S. Myurus Wimm herb \ind S Hugeln Wimm ibidem Arbor ramis rufo-castaneis glabernmis Folia us Laun nobilis similhma, supi i medium polhcem lata, fere 3 poll longa, adulta. eximie conacea et mtenti-glabemma. Amenta odoie grato suaveolentia, 3-5 poll, longa, aurea (v. s)

P, *ichno\tachya* (Andeis in Proceed Linn Soc. 1 c. p. 14), amentismasc distinctc pcdunculatis anguste cylindraceis valde remotiflons squamis crispato-villosisdciitiusculis loins anguste lanceolatis acutato acuminatis serrulatis subtus glaucis Ad Kankal, prope Pondichery (Peirottet) et in Nepali i (WalhclO S lehnostichya Lind] in heib Wight Anders dcta Holm 1 c p 488 S Tondichenana Anders, in herb Mus pans (v &)

-y, *Ntlaqinca* (Andei* mon. p. 3), amentis masculis pnmo densiflons, squamis rotundatis densissime tomentosis, folns linean-ianceolatis seirulatis hrmis — In mont Nilagmcis. 5 Nilaginca Miq in Hochst pi coll Metz 1851 n 982 Piaecedenti eximie similis, sed folns adhuc angustioiibus magisquc conaceis, amentis minus kxis Modificalionem sis tit ma xi me angustitoham S tetiaspeimae (v s)

6, *Horsficldiana* (Andeis mon p. 13), amentis paucifohatis, ma^culi-s 3-4-pollicanbus sublaxitlons, femineis **1J-2 J-poll** , squamis pedicellos superantihus, capsuhs o\oideo-attenuatis ghbiescentibus, stylo dislincto H, folns pnmo senceis demum glabiescentibus tenuibu** ovato-elhpticis altenuato acuminalis 6-2 \ poll longis 1-^-1 poll lalis —In insula Java Op den Oengaran (Hoisneld), et Sumatra? S Horsfieldiana Miq II md I at I 2 p 4bl

* s PYRIN\(WI11 Cital pi Ind orient n 3705), amentis bie\Her pedunculdtis [illegible] P duus su ttultis excurvatis elonpato-acutiuscuhs subnnflons, squamis [illegible] Dueciduis spathulatis cinerascenti-pilo^is, capsuhs ex ovata basi attenuatis giairis fuscis pedicellatis, pedicello ncctanum quadiuplo superante stylo smmullo, stigniatibus integris ciassis, folns lanceolatis acutis integernmis uemurn jigid ls utnnque sparsim cineieo pubcscentibus *5* In India onentali S3 [illegible] (Pe t)ttet » Walhch) —Anders Act Holm 18)0 p 486, Journ Linn W^II-1. [illegible] p 4l, M onogr Sal p 4, Miq *l*\ Ind Bata\ 1 2 p 461 S vvduicniiWnnm hb Vindob b lenta Fries No v fl s\ Mint 1 p 78, Anders Aihor [illegible] P C P o01 > Jouin Linn. Soc 1 c p 42, Monogr Sal p 4 fig 2 Innffa [illegible] *\mis fu SLO-cinereis glabns, novelhs gnseo-tomentosis Folia 2 3 poll [illegible] 1 1 ^ P aullo infia medium latiora, in apicem subproductum attenuata [illegible], obsoleiiiis undulatd v serratd, supra obscure vindia costa veni^que iidviuis, subtus pallidiord, utnnque pilis adpressis cinerascentia, jurnora ou^curc sencea, adu ta glabreScentia ngidis ima, petiolo 2-3 Ira. longo Amenia jem- brevitei pedunculata, e-ecta v flexuosd, i-polhcana, pedun-LULUS ioins 2-3 mniutis instiuctus, squamde obovatse, fulvo picea?, capsula peaicciio squamam cLquante paullo longior, o\ato conica, in apicem attenuata. Amenta masc nudiuscula, *3* 4 poll longa, squama angustiores Cst sine uubio b tetrasperm* na affinis, ut ejus mera vanetas pubescens forsan sit judicanda, vetant tamen capsulae in apicem evidtnterattenuatae nee globoso

grcnultPformes A S urophylli vix differt nisi capsulis longius pedicellatis et attenuatQ-conicis Ex mdicis formn nostrae S fragili similhma (v s)

3. s CAIOSTACHYA. (Anders Act Holm 18)0 p 489), amentis sessihbus longe cjlmdiaceis flexuosis den^ifl »ns, squimis paivis fulvis pilis albo-gnsPis hir sutjs ipice subfuscis donsius persistentibus, cipsuhs ovato-globosis vmdibus Kldbofnmis longi Nime peduellatis, podicello nectano minuto pubescentc iere seUuplo lon_0^riore, stylo nullo, sti^matibus divineitis, folns ovato-lanceolatis undulatis tenuibus lntogerrnnis subtus glaucis^utnnque primo sen ceo-argenteis demmn ^labiescentibus *$* In India onent , in sylvis humidis 2000 metr clevatiA Kahouta ad Mdhabad (Jacquemont n 250) —Anders Journ Linn ^00 4 13 p 42, Monogi Sal p 5 Aibor mediae magnitudinis, habitu S ilbae Hami brunneo picci, ccerutescenles, apioe ilbido-villosi Folu \\ 2 5 P^0^ longa, vix polliCHjn lati, subtus sub^laucescenti llbida Amenta feminoa omnm6 scssiha, 3J poll longi, pitentia, obtusa, rhichis hnsuta, valid 1, squam r obtuse, pedicello duplo tuplovc brevion s fipsula pedicelli 1 1 i lin lõngi lon_Ditudine vel eo ^uhbievior, anguste conica, palhde vircscens, sii^nnta scssilia in lot mam uucis divisa Ob capsulas longe pedi-CPlla'as et brevts ad typum S teirasperm^ acccdit, sed Toliorum forma et indumento S py^nn im non paium sitnulat Quxrc ndum timen cst num morbo quodam c lpsulac defoi mes; a species ideo dulu 1 ? (v s)

4 S UROPHYLLA (Lindl in bb soc Linn ct Wall Catal n 3708), amentis peduncLilatis folns parvis sufTultis arrectis cuivatis pumo densiflons, squaims, ovato rotundatis dense mcano pilosis c ipsuhb o\ato lanuolatis ghbcinmis luscescentibus peduello IHO anum bib tcne superdntc, stjlo brevi, sti^mati bus cnssis. cxcurvdtis, loins 1111Oc oliti> dcummatis inte^erninis pilis pauus raolhter hirsuns supia saltern dunum ^labrati^ ^r_t In Oude Indide orient (Wai lich); etm msuli Jiva (/ollingtr — Andeis. Act Holm 18)0 p 487, Journ Linn SOL IV 13 p 4«, Mono^r S il p 5 S Zollin^ciiana Miq in 7oll Catal 2 p. 108 et in II Ind Bit 12 p 462 Arbor nmis cmereo brunneis eliam novellis glibris Folia anguste lanceolata, *l\ ]* p 11 longi, p LUIIO infra medium 4 lin lati, basi att^nuati, apioe sa pe subobliquo lon_e^re acumi-Data, intcgeirima vel denticuhs lans mmutp scmil ita, supra pallide vmdula, sub us evidontcr ptllidioia, cost L Ntnisjue ole\ *i\.u,* juniora utunque pilis ad prcssis senct L, demum glabrcscentn, ugidi Aincnti feminea^^cto pitentia, polhcma, ljliia *16* muiutis birsutis sullulti , squamae basin gprminis tpgentps, cipsula ovato conica, fuho inuniiei, pelicello lere hneam longo 5 tetrasperniE maxime afhnis, sed distinguitur folns saltern pnmo mollitPi puberulis tenuissimis pellucidis lntcgeinmis capsulis icutiusculis, brcvuis pedicellatis Habitu quasi *ad* species oiientalcs b albae arfines tiansitum praebens (v s)

5 S POPUIIFOTIA (AnJ(is Act Holm 1850), ajnentis sessihbus densiflons masc clongitis laxis fem cjlindnus obtusis folns mmutis suffultis, squama obtusis tomentosis, cipsuhs globoso conicis albo lanatis obtusissimis subsessili bus, nectano minulo cip^ulde basin lttingente, stylo nullo, stigmatibus crucifoimibus, folns longissnnc pptiolatis ovalibus bisi subcordatis *a\))te* longe dcuinmato cuspid itis tenmbus utimque glibrcscentibus acute cienatis *6* In India orient 1I1 (Perrottat, Jacjuunont, in lib Pans DC) —Anders Journ. Linn, Soc IV 14 p 48, Mono^r sal p G hg 5 Afbor mediocns vtl frutex majons ma^mtudinis Kami fjs 0 pier 1, glabeinmi, novelli sub^lancpscf ntcs l^olia 2-4 poll longa, infra medium 1 2 poll Uta, sorntuns glandulipens margine inflexis, supra obscure vmdia costa \enisque ipgulantoi lincita subtus vix pallidiora \enis subnnpressis pulchre leticulata, rntentia, ngida, petiolo loie pollic n pctiolala Am<nta mascula folns 53 minutis biacteata, 2-S pollicaru, squimae ldt^ rrtundato ovatdp bisi dense griseo tomentosde Stammi numerosi Amentd fem inciirvo-erecta 1-1J pollicana,bracieis])iu cisbisi stip ti, squdina. OMt^oblon$_r^r$i, dcnsissimc UnittE Capsula ovito-subtmngularis, lina dpiisissirna albo lUvidi llibitu vilde singulans, folns longissime petiolatis latiusculis ngidis, amentis vilde den^flons, (apsuhs globoso-conicis et albo lanatis ab omnibus facile diversa Ob folia 11s S tctraspermae similid et capsulas stylo orbitas id species Indiae pccuhaies hanc

associavi, quae tamen amentis sessilibus capsulis tomentosiset sessihbus longe recedit Nonne S Koreensi affims et ad div *Purpurearum* pertinet[9] (v r s)

§ 2. *Orientales vel acmophyllx*. - ^ ^ bores. Folia longe lanceolato-attenuata, Integra v. subintegflPsubtus glaucescentia. Amenta denjum densiflora, capsulis crasse ovato-conicis, breviter pedicellatis.

6 S ACMOPHYLLA (Boiss. Diagn pi. orient 7 p. 98), amentis pedunculo fohato msidentibus crassis rectis, squamis deciduis ovato cucullui's v oblongis cnspato pilosis vel in femineis glabns, stammiDus 4 5, capsulis ov no oblongis gladiis pedirtllatis puiitello mclaiium bis iei\e supawintc, stigmatibus sessihbus ci issis, iolns bublmeui lanceolaiis longissitue acuminatis glabernmis sul)tus glaucis mlegiis, slipulis minmiis r t In Persia, ut in alpe Kuh-Daena (Kolschyfl Pers austr 1845 n 020), prope uibcm Schnas (1 c n *S2S*, 020), in monte Elbrus prope pa^um Pas^gala et m friuce piope Dervent (Kolschy pi Pcrs boreal n 121 U78)j, in Kurdistan ad uvos pi jpe Amadiet, tt ad pigum Gara (Kotschy pi Alepp), et in byna ad Aleppuin (Boiss) — Andeis Sal mono^r p 7 lirf 7G Arb u sit illi Bann gratiles, rubolli Folia 2 5 poll longa, 4-G hncas 1 »ta7 inhma ramulorum oblusiuscuia et DIUcronulati, ceteia ipice leie subulato atlenuata, supri Id te vindia costa vah la et venis parallch confluentibus porcuisa, suhtus aut intense klauca aut pallidius MinJula AmentamasculI pollicaua, cjhndiu i,auica densiflora, leminei vix rolliiaiia, subovaln, ihacl I \illosa, squamis Inlc is ra] suhs palli le fulus vix luiLain lon^i^ Chiiationbus S Safsif sed hibitu folioium onn ino S Baby onicae sinnlis A piion diffciL tapsulis multo bievms ptJicellais, fohis longissune cuspidato a« unnnatis, a Babyloinca stuuimlius 4 t>, capsulis cusse ovatis pediLelUiis — Hue otia n sine ullo d ibio pcitinent S glaucophylla et s dcilbiti Anders AU Holm 1850, ctJouin of linn Soc J p 43, ex India orient,ill i Jaoquemout lepoiUUc Ilia taint n am ntis sublongionbus fol lsque tdiuionbus, bsec amenlis nn o r i^ laudoiis et cipsulis bisi inagis atlcnualis **nonmtnl recedunt (v s)**

7 S PrHsjcA (Boiss m Koisrhy pi. Peis nisli n 101), amentis breviter foliatopedunculatis oblongo cylindncis (ieciiusoulis masc bexandns, squamis oblon gis acutiuscuhs f(ie tons glabns flave>>cenUbus, capsulis oblongis acutis glibus pedicello nectanum bis superante pedfcellatis, stylo breus^imo, stig maiilms ctassis mdiusis, loins anguste lf^ceolatis sub^essilibus interns utnn^ue glabemmis vmdibus *5* In Persia austrah ad uvulos in montmis circa pigum Gere (Kotsch^) —Boiss Didgn \\ orient 7 p 94, Andeis Sal Momgr p 8 fig 7 Rami n'i icillimi, rulielli, feie pcnduli l>olia jumoia vix pollicc lon^ioiaetJ lin lati basi attenuata apice suhmucronulita, glabernma, concolora Stipulae nulla Amenti masc literalia, nu ncio&a, folns pirvis J t suffulta, vix pollicem bnga, densilloia, auiantiacea, feminca cvJin <jiica, obtusa, subp jllicaiia, squamae in utiaque diutius porsistentes, sed demum dLcilui. ilavoscenUs glibdiimse, tcriues Cdpsultp vincli tlavestentos s acmuplylldL ita ailing ut, p n s rtini quii'n speununa LiiiLum juvenilu examuitiie mihi full occasio, \n (Jicen audeo in ab ca sit specie disJinaa Hetedit tamen I inns eximie giacilhmis, loins multo tenuionbus et brevionbus, amentis sublongioribus, squamis diutius pcrsisluitibus tt omnmo glabns, capsulis demum bievms pedicellatis Habitu b Babylonicam facile revocans ab ci distin^uitur flonbus miscuhs hexandns (v s)

8 S DAVICSII (BOISS in KoUcby pi Peis austi p. J35), amentis masc. bractealis crass< cyhndiaceis lecliuscuhs dcnsillons, squamis ovatis flavidis o\tus glabns stamnnbus 2 3 anlns, folns oblongo lanceolatis bisi attenuate apice breviter cuspuldtis uifimis ob^usis ceteris brevitei attoi uato-acummitis subintegns demum ^lahernmis concobnbus *5* Ad fontes montis Kuli-Barh prope Schnaz (Kotschy) —Boiss Diagn pi or 7 n 98, Anders Sal Monogr p 9. Arbor procera ex cl Kotschy Ramuh iecti Folia 2-3 poll longa, semipolli**oem lata, juniora subtus margineque parce et adpresse cihata, omiua mox**

glabeinma, utunque laete vindia, subtus non pallidiora nee glaucescentid Amenta mascula, quae sola udi, 12 IS lin longa, basi folns parvis sessihbus spathulatis obtusis suffulta bquMMe latiusculae. cucullatae magnae, flavido-iulvae ipue rotundalae Antheia^fcvae aurantiacae Affinis S dcmophylhe, pro cujus sf xu masculo flonleio^Bmio hanc habuit Boiss* 1 c , mihi autem b pentandtde similior videtur, a qua diflert staminibus pducionbus diflèrt Ob id prtBupue notabihs quod hinc Salicum species onentales vere polyanthas illinc S frigilemv albam in senem continuam aperte conjungit bed propiid species vix dicenda, ultenus attente mquuendi (v s)

§ 3. *Afncanx v.octandrae.*— Aibores vel frutices alti. Foliaanguste lanceolata, cuspidalo-attenuata subtus glauxd. Amenta inox densillora abbreviata. GapsuldB subglobos<e, nonnunquam subcaesiaB.

A. Boreah-afncanae.

9. S SArsAt (rorsk Cat pi iEo'yP[1] P [7C])> amentis breviler pedunculatis folns pauc s suffultis, squamis ovdto rotundatis v. oblongis obtusis saltein marginc vulgo villosis plus mnus cito dcciduis, staminibus non raro refle\is, capsulis ovato-globosis glaberrimis vmdibus demum confprtissimis pedicello nectanum demum quidruplo superante pedic lldtis, stylo subnullo, stigmatibus crassis brevissimis, folns pnmo lenuibus et subintegns demum fere coraceo ngidis anguste lanceoUtis cuspidatis senuhtis utunque glabernmis supra vindibus, stipulis in junionbus ramuhs evidentibus «emicordatis £ In iEgypto inferioii et supenon, ut videtur ficquentissima in npis fluvu et secus vias culta, in Nubia et Abyssinia (^chimp n 700 Kolschy n ib, 736) — Trautv Mem del Ac id dcStPe'tersb III p 612 t 2, Anlors Sal Monogi p 10. f 9 S subsenata Willd sp pi 4 p 671 b octindra Sieb exsicc Arbor sat procera hdbitu v S dlbae v babylonicae Rami ghbeinmi testaceo-Tinluliv rufescentes, jumores viminei v subpenduli Folia adulta bre\itcr petiolata, e basi pleiumque latiore sensim ot longe attenuato cuspidata, supra laete vindia, subtus pallidioia vix mtom glaucescenti I, j) poll longa, ¹ poll et ultra lata Amenti dut sulsessilu mt distincte pcdunculdtd, anguste cyhn dncd, masc vix poll longi, aurei Stam subocto 1 niiinea plcrumque loliato ptdunculati \ 1 poll longd, demum fere globoso lbbieviata, capsulis viridulis drcte condtnsatis Stylus pnmum subdisimctus, dtmum obsoletus Stigmata flavescentia OuKkfe *A* ₒ[r]yptidc *i* L sp pi 2 p 1444, Amoan Acad 4 20-), non e diagnosi me «| eciminibus in herb ˏnte extncan potcst, b pedicellata[9] — Modihcationes hujus m convalle Nih vulgatissima3 iormae sequentcs ciedo

a *Nilotica,* amentis brevionbus squamis totis densissime albo-villosis diutius persistentibus, cdpsulis ovito-subconicis, pedicello nectanum ter superdnte, loins anguste Unceolatis, stipulis cito caducis —Hajo forma, locis siccis secus \ns saepius obvi i amentis longius pedunculatis, magis foliatis, angustionbus et bre/ionbus, squamis villosis senus caducis, folns denique angu^tionbus minus acute serrulatis et subtus subglaucis quidem recedit, sed formis intermediis numeiosis cum vera S bafsaf q t certissime connexa

{J, *cyathipoda,* amtntis aicuatis bievibus, masc incurvatis, squamis bast villosis apice glibns filamentis brevibus , lem squamis utius caducis, capsulis angusle conicis pedicello nectaiium valde cyatniforme duplo tantum supeiante lusco-vnidibus folns pnmo tenui^simis et htius lanceolatis miegiis —In Abyssinia (Quai tin Dillon et Petit in Mus Pans),etin valle regionis soptentnonalis Scholoda ad upas fluvn (Solnmper) S cvaihipoda Anders in Rich fl abyss 2 p 29o S Blumhardtiana Schimp. it abvss beet 1 Mdrtio 18J7 S dxillans Anders in Rich fl ab^s 2 p 27i amentis in axillis foliorum persistcntium valde ngidorum folns vix ullis suflfultis dtnsiflons — Modificationem axillarem ex Ab)ssinia etiam repoftaveiuntQuartin-Dillon et Petit Cum S Safsaf normali formis numeiosis aperte confluit, et b telraspermam eximie simulat.

Y, *hirta,* amentis masculis elongatis densiflons folns rite evolutis 4-6 suffultis, squama iotundatis pilis sat longis hispidissimis, folns subovahlanceolatis apice fere cuspidato-mucronatis utunque senceo villosis mcanis — Ad fmtes I\ih (Sibbatier in Mus Pans) ES Safsat ita reeedit folns \ix pollicem longis, medio htionbus, basi apiceque acutatis, utnnque dense mcano-villosis margine integeinmis, amentis deraum foliatopedunculatis, ut facile species propua sit salutanda Specimina tamen perpauca tantum vidi, mihique eodein modo ad S bifsaf ^e habere visa est, ut S hirsutaThunb ad S Caenensein seriem Uaque Salicum in Africa boreah ei in Afuca meudionali obvise omninoanalogamterminans (\ s)

10 S SENEGALENSIS (Anders Sal. Monogr/p 12 fi,j 10) ramulis, lateralibus longis annotinis fohatis apice flontens, amentis pauciflons, squirms ovatis roseis apice glabns, anthens fuscionlus, capsuhs glabns irroratis, pedicello nectanuin \ix superante stylo brevissimo stigmatibub crassis indivisis, folns elhptico-oblongis ol>tu*is mucronatis mtegeiiimis tenuibus utnnqup gla bernmis subtus pallidionbus *5* In Senegal (Perroitet, 1825, in h DC petrop et pai) — Mert in h petrop sub Adans 189 S coluteoiaes Mubel in Mem du Museum 14 p 412 20 (1), liautv in M6m pr6s a' 1 Acad da St 1 ctersb 3 p 622 Arbor vel frutex ramis sat erases glabns Folia basi subcuneata, apiceobtusa, vix pollicem longa et semipollicem lata, subtus sub pruino^a, breviter petiolata Stipulnc obsoletae Amenta basi interrupta, ramulo di$_{o}$itah folns remotiusculis 6 8 vestito flavido ffracili pedunculata Stam 8, filamentis basi \illosis squimas duplo superantibus Capsule linea breviores, obscure vindulae Species vel foima sat singulars, S Safsaf in Africa onentah indigenae sine dubio affinjs, forsan modificatio abnormis, lempore msolito florens, cuius capsulae saepissime etiam defoma'ae conspiciuntur, sc ad basim hssae ibique corrugatae Habitu a cetens longius recedens tamen cha ractenbus cum us bene congruit Cum S Cananensi, m insulis adjdcenlibus crescente, parum habet commune (v s)

B Austro-afncanae

11 S CAPENSIS (Thunb fl capens p 130), amentis saltern femineis sat longe pedunculatis folns panis 3-5 suffultis »-quamis nudiusculis (vel albo villosis) ovatis ruiescenti testaceis mox deciduis, capsulis ovato-globosis glabns \el roredine sat denso glaucis pedicello nocianum quadiuplo supennte, stylo ^ubnullo, stigmatibus crassis indivisis, folns anguste lanceolatis demum condc°is margme subievolato acute glandulo^o serrulatis acuminatis glabns subtus plerumque intense ghucis, stipulis obsolelis *5* I'er regiones capenses African australions sat frequenter occurnt, ubi a botanicis plensque collecta, * me prope Stellenbosch u\a examinata — Fries Ofvers af Kgl sw Wet Ak Forh 18o6 p 121, Anders Sal monogr p 13 fig 11 S jEgyptiaca iiunb prodr cap p 6 , Sieb fl cap n 131 Arbor mcdiocns vel fiutex piunoigyalis, ratni subviminei glabemmi Folia nunc subtenuia, 1^ poll jonga medio somipollicem lata, su[ia vnidia subtus pallide glaucescentia, \cmc- clur[1Oia] ^ngustion et lonpioia, sc S 5 pollices longa, vix 5 poll lata, lit-ɔ[ss]i?[le et su]rJfD[n](lue acuminata, aut modice aut \alde argute serrumo[a], ^~[u]ta subngidi, subtus minus dense qlaucescentia, amenta (i|U« ciunt V [m] [tr]opicarum ssepc in axillis foliorum senus e\oluta conspimiqiiiii , i[l]?[dscula] bieviter pciunculata, erecto patula, semipollicana, squa suhnr-Jg.afu[cntibus] P[dlllals]» [stam] bubocto,anthens aureo fulvis, feminea nvahe-l..ora i[brtvisima], sulwalia, saepe vix semipollicem longa, capsule ovatis, ux lineam loogis, pedicello subbievio-ibus Huic vel formae locales vel accidentals affines seorsim notandae

p, *Ganeptna* (Anders Salic mon. p 13), amentis adhuc tenuionbus, capsuns minonbuset nonnihil crassionbus, folns anguste-lanceolatis Jongius cuspiaato-dcuminatis subtus intensius glaucis — Plunbus locis Afnc® australions observata, ut ad fl f»anep (Dr'tge Lxstcc), Cadembo, Wap-

(1) Nomen *coluteoides* pnontate gaudet, ideo admittrndum (Alph , DC)

perthal, Gnadenthal et Rivierzondmnde, Grasbergnvier, etc S Capensis Fries 1 c p 121 fc Ganepina Burch cat pi Afr extratrop n 2669 L lypica b Capcnsi non diflert nisi gracilitate omnium partium, ramis valde vinnneis, iolm 2 4 poll longis, vix ultra ; poll latis, amentis masc ijieviUi pe lunculdlis eicctiusrulis, ftm brevissimis ct ranflons, capsulis jue cvwlentci mmoiibus S lejhcn bond herb (Flies 1 c.) quam ad Mdgclis-Rivier collect /eyher (exsuc n 15i2), adhuc graulior est modihuitio folns dn^ustissinns subluscdtis marine acutissime serratis insi^nis Ad bane etiam ppitinel b Ndtdlensis Wimm horb \indob a Gueinzio m ljoit Natdl collocta (n H6), quae prd2terca loins ldhuc ii^idioi IJJUS subtus concolonbus, amentis masc subpiaecocibus in aYillis tufiormn peisisientium, squamis albo-hnsutis et stamimbus aureis vmegatis giudet (v s)

Y, *mucronata* (Anders ib), amentis pedunculd'tis biewbus et crassis, folns rite evolutis «-uflultis, squamis subdense albo MIIOSIS demum deciduis, Cdpsulis ovato conicis L.labris, pedicello ntctdnum (bis-) quddiuplo supcrdiitc ptdiLelldtis, folns ovdto lanceoldtis pnmo mtegns vindibus, (Icnium senulalis ct subtus mtdise glducis, nervo medio in apice distant tiqs excurrcntt ^ In rcgione capensi pi IOLIS (Inunb , Drége n 2H1,] cklon n 12>6) S muciondti lhunb fl cap p 140, WiUd sp pi IV p ()8>, Fries 1 c p 120, i\ov Mdnt I p 76 I mtex erectus, ramis subtoiulosis lusus l«olia adulia sipe fusciord evddunt, raio plus quara pollic 1111, arete condensatd, ita ut ramuli valdt folidti consjjiciantui deninii \jy\hva, Ainenla erecta v excuivdta, pollicana, squamis cipsulas arutiuscul is pnmo suboccultdiitibus Ad & (dpensem se habet omnino ut S Nilotica ad b bafsaf, 1 e squainis villosis diutius peisistentibus soluiiimodo divcrsa (v s)

S, *hinuta* (Anders 1 c)$_t$ folns plus minus den e Imsutis mterdiim utnnque senceo-villosis \el canescentihus mir$_h$riru subiovoluto tcnuissime serruldtis \pl inUgns — krescit multis in Joe s Aln ae cdpensis tt Caffraride (lhunb 1 tklon et Z yhcr, Mui d et Mure, etc), ut urjsbeigrivier, Witei\ il, Ber^dllei, intei Langevdllei et Olifanl rivier, etc (Die^e) s Imsuti lhunb *V* cip p. 141,Willd sp pi 4 p 695, Fries 1 C p 1>0 Nov M int 1 p 77 (v s)

torma*: loins muime husutis a normnli b (aponsi habitu qmdera sat diveisae, txstant autem rnodidcitioncs fohis partim pilosiusculis VPI subglabrebccntibus, de quibus vix dici potest utium ad hanc an ad S mutronalam \ Cappnstm peitincdiit

12 S MAIUGASCAKIFNSTS (BOJ in \\ DC), imuiUs longius pedunculatis ranMor s, mast piieutibns, sqmmis pilis cmeieis hispidis, ieminois br^Mbus squa ins glabicsrenlibus tandem dtciduis, capsuhs sulglob)sis g abommis fuscesLentibus yeltcclIo iiPctarium quadruplo ^upcrante, stjlo pdrvo, folns ldnceoldtis utnt que vindibus subtus pulchre v(nulosis apice n versus serrulatis <7 In convdllibus prov Imimmins Maddgiscar interior is (Bojcr 183 5) *H* in m ntosis prov Lrnirna sec Irics, qui ut palnam ttiam afTert « Holtentott-Holland » —Anlers Sil moi o$_r$n p. IS li$_n$' J2 S austi^hs Hils et Boj incdit sec PncsNov Mint 1 p 77(1), Irauiv M6m pr6s a 1 Acdd de **t Pcicrsb 3 p 622 Trutex ut \nl tur non iltus vel aibor humilis, lamulis valde torulosis ann)tinis pubescpnub is l^olia A *X* pollice lon^iora, 1 poll lati marine subipvoluti ipicem vprsus tenuissime senulata, supra opace \ rifiia, subtus \ix glances entn odulla tamen lon^ioia, longius aculita tt subtus onsp ue pillidion Quod ad lmenta us p daculcntium subsimihd scd masculd inullo mikib rir Hora, cipsula? pirum nidjoies, mituiaB subcorlugilaa, fusco pice<e cl \ix gliuco lnoratJ? A speucbus in AUica. australi (onliiK niili in li^ems loins, dincntis tt rapsulis pdrum distincta, at cum 11s ctitissime af/niis,dd eas sehabctfcie utS S**ne^alcnsis id boreali ifncdnas, ampnti[6] longius ct folnto pcdunculdtis folns brcvionbus et tenuioiibus 11011nihil lecedens (v s in h par et DC)

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(1) Nomeu *austtali jure pnontatis admittendum (Alph DC)**

§ 4. *Austro-americanx v. Humboldtianx*

Arbores vel fruticps alti Folia hneana, serrulata, saepe subfalcata, subconcolora Amenta graciha subittifloia, rapsuhs conicis subrostralis

13 S HbMBOLmiANA (^MHpP Pi 4 p 657), amentis serotims patentibus ramulo folnfeio pedunERIStis densiflons, squamis acutiuscuhs subciliatis fulvescentibus nervosis, capsuhs ovato conicis vcl subglobosis glabcrnmis longe pedicelhtis pedicello necHnum ciassum 3-5 superanie stylo subnullo stigmatibus sessilibus ciassis bifidis folus lancoolalo lineani)us longissime attenuitis argute denticulUis utnnque glibtnimis, costa cia^sa nervis laterahbns ante margines lncurvalis, stipubsLpxfbnulhs 5 In America mendionali a rngno Chilensi medio usque in Brasiliam sit frequens quum in plaga occidentah turn in onentih, in Nov Gianadi (Humb) — Kunth in, H etB No\aGen et Spec 2 p 22 t 99 100, Tiautv in M m.dclAcad de StPetcisb 3 p 614 , LeyboJd in Mart H brasil fisc H p 2*>7 t 71, Anders Sal monogr, p 16 iig 13 S Chilens s Molina lust nU Chili p 140 (1), Grael Sjst Nat. 1 p 7J S Magellamca Poir Cncycl mcth suppl. ^ p 6b — Sal Wob t 8 Amor 3 6-orgyalis, ramisstnctis \1m1ne1s gldbns <le >se foliatis Folia 2 4 polh ana 1-3 lineas lata, ^-erratuiis depressis glanduli^ens, costa tuhescente, adulta ngidiuscula Rimuli laterales flonfen 1-^ pollicires dense foliati Amonta masc 2 3 polhcana, auiea squamis Tcutmsculis fommea etiamsepe 3 polhcana, demunx subi an flora, squamis interns aut dentiouhtis capsuhs hnea longionbus fusco nnduhs quoangustiores co longius pedicellatis (v s)

a, *Marliana* (Anders man p 10), folus htionbus ideoque neivis latenhbus evidentius pdrillehs 1 0 noivis sccundams in neivum mtrimar^inalem martini panlhlum confluentibus, amentis quam loin bnvionbus, squamis integernmis, capsylis bisi attenuatis f Inomm ripaflum Amazonum BiasiliD frequens S Maitiana Leyb in Mart Fl bns f»isc 13 p 228 t 72 ot pby* 6 Ouaha specinnna mberbanis vims Pt figuris cilatis llluslrata millis notis ccrtis nee Inbilu ullo peculian a veu s Humboldtiana ut comronensvalde poljmorpba didenc nnhi videtur Gapsulae 9 3 liu , lonpe pedicelliti oblique tumuidL Nervi secundaru non raro etiam in S Humboldstiana vera coniluunt *

P *falcata* (Anders 1 c), amentis masc heptandns, squamis subrotundis obsolete denticulatis, dense albo \1llos1s, caps ihs ovato conicis bievius pedicellatis, folus lanccolato lineinbus falcato cuivatis Crescit piope Tiuxillo Poruvianorum, Juxta liltus Ocoani locis aienosis (H et B) S falcata Kunth 111 H. etB Nov gen 2 p 2-J, Irautv 1 c p OH lam Kunth de h ic planta dixit proximi (t fortasse nil nisi \anctas M1I11 mod licitio videtui folia inde densius albo hirsuti s juati -e etiam tomentosde et capsula? bre\ius pedicellate Sat ovidenterin S 11 ^ram abit (v s)

YJ *oxyphylla* (Anders 1 c) imentis bieviter foliafo peduncuhtis elongatls crecto pitulis suhlensiflons squamis bisi siltem villosuhs demum caduc s (apsuhs p 1 a^i non cr issa hnceolalis glabernmis icutis pedicellatis pedicello nectaiium bis quatervc supci)rite stjlo minimo stigmatibus bre\issimis ciassis, folus e bisi lation itienuito hneanbus \el angiisto lancpolatis glabeiumis vel subtus subpubescentibus dent culato-^errulatis stipulis semicoidatis *5* In temjeriLis Mexici piope Chil pan/ingo (Humb Beihndier n 1491 U>06, *W* 2212, 2317, J026 ^umiclirast *M*^\) *a* in insuli Cubi (linden, n 178b) *>. oxypbylla Kunth in H rt B nov gen 2 p 24, Tnutv Me 111 Acid St Petersb *1* p 616 — Uliuni lite forma S Humboldtnnx an S nigraB angustiiolue sit issr nndi rcbcio, certisMmc eas apcrte coniungit A pnore hibet tolii eximic clongata, saepe 6-8 poll cma et angustata, sed diff^rt loins nr n raro basi lationbus neivis saspius discretis, non raro subtus puberulis,

(1) Nomen *Chilensis* Mohnae vetustius, ideo admittendum (Alph. DC)

amentis brevius pedunculatis et minus foliatis, squamis basi lationbus et villosis, capsulis vuJgo majonbus « gram tntici lumons magmtudine» basi angustatis et in stylura quodammodo rostratis, stipulis demque sat magnis (v s)

14 S. BONPLANDIANA (Kunth in H èt B Nov Gen. et Sp 2 p 24 1101,102)' amentis (axillanbus) subsessilibus cyhndraceis dnsiflons curvatis, squamis ovatO'Ovalibus obtusis praeseitim bdsi villosis, cdHilis conicis apice subpioducto acutiusculio glabns, pedirello neclauum duplo superante stylo \ix ullo, stigmatibus crassis mtegris, folns elongatis lanceolato Imeanbus ngidis mar gine crebre serrulatis utnnque glabernmis subtus pallidionbus -5 Jn Mexito Ions apncis prope Moran, Cabiera, Quitlan et Pathuca alt 1270 1350 hexap (H B) —Kunth bynops pi aequin, 1 p 36i, Trautv Salicet in Mem prés àlAcad de St Petersb 3 p 610, Anders Monogr Sal p 18 fig 14 Aibor piocernma de9cnbitur lamulis gldbns Folia 5-6 polhces longa, }-J poll lata, ba«i attenuati, apice longissimp attenuata, costa vahdissima, subtus vix glaucescenti i Amenta irnsc 2 J poll , fern subpollu Stamina 6 8 Capsulae obscure vindes — Species maxi me ob^cura a S Humboldtiana ad S nigiam aperte transitum efficiens, S Safsaf vel etiam S albae quoad ioha simihs (v s)

(5, *palhda* (Anders 1 c) folus longe acuminato-attenuatis utnnque sed praBCipue subtus tenuissime puberulis supra pallido vindibus subtus intense ghuus margme tenuissime serrulatis, stipulis semilunatis in cahdis regni Novae Hispaniae (Hurnb) A S Bonplandnna non diflett nisi loins fdlcaiis ddhuc longius acutatis et prajcipue subtus ad costim tenuiter pubescentibus Cum S occidentali maxime analoga. S pallida Kunth in H et B INov gen 2 p 25 et byn. 1 p 366

2° Temperatae.

Torus vix annulans sed duplex Capsulap comco-angustatx saepe subbrevitei pedicellatcE aut sessiles Stamina non raro 2-3 — Species regiones extratropicas temperatas (S pentandra et foimae affines etiam septentnonales) inhabitantes

§ 5. *Amygdahnx* Koch coram p 17, Kerner 1. c. p. 46, Anders. Monogr. p. 19.

Arbores vel frutices, ramis elongate flexihbus Folia lanceolato hneana, longe acutata, vulgo acute ^errata et pumitus glabeinma nee \iscida, saepe subtus intense glauca rpticulato venulosa Amenta fohato-pedunculata, squamis concolonbus persistentibus Toi us in flor. masc biglandulosus Stamina 3 8 Capsulae glabernmae, rufescentes, longissime pedicellatae, stylo obsoleto vel rarms subexserto.

15 S NIGRA (Marsh. Arbust p 293), amentis fohato-pedunculatis elongitis laxiusculis subranflons erectiusculis masc 3-5 indns, squamis in amentis misc rotundato ovatis cucullalis villosis, in femmeis ovato lanceolatis acutiuscuhs glabnusculis vel basi et margine villosis palhdis plus minus caducis, capsulis conico angustatis vel conico-subgiobosis fusco vmdibus glabeinmis pedicellatis, pedicello nectanum quadiuplo superante, stylo obsoleto stigma tibus brevissimis integris crassis fuhis, folus anguste lanceolatis vel lanceolato liDeanbus basi saepius lalionhus longe acuimnatis crebre serrulatis glabns subtus reticulatim venulosis glaucescentibus vel vindibus, siipuhs sat magnis semicoidato lanceolatis *$* In America boreah a mare mexic no usque ad lacus majorestt in Rocky mountains sat Irequens—Willd sp pi 4 p 6-J'', Trautv M6m delAcad de St-Pttersb 3 p 614, Hook fl boreal amenc 2 p 148, Toney fl New York 2 p 209, Gray Mdn. ed 2 p 417,Andeis Sal boreal ainer 1 c p H4, Sal Monogr p 19 fig 15 S Carohniana Michx fl 2 p 226 S vulgans Clayt fl virg (ex Muhl et Pursh) S ambigua Pursh fl p 617[9] *lcones* Muhl Neue Berlin Schr 4 t 6 fig 9, Michx Sylva t 125. fig 1, Salicet Wob. n. 11. U ediagnosi allata elucet notis perpaucis

a S amygdahna orbis vetens differre vidctur hapc ei maxime analoga, in orbe novo vulgans, eique pecuhans iorma Quod S Humboldtiana in America australi haec omnino in boreah, innumens formis (S oxyphylla, etc) mvicem connexae A S Humboldtiam taraen typice recedit S nigra amentis multo breuus pedunculatis, staminibus paucionbus, squamis magis rotundatis, capsulis longius et tenuius pedicellatis basi ciassionbus et ob usionbus fere granuliformibus, flKis basi vulgo lationbus et costa ut plunmum albohirta Difficiliusauiem cnaracteiibus a S amygdalmadistmguenda Est tamen \ulgo arboi 1o40puhlis iamis fragihbus, folia habet vulgo multo magis elongatd, teneia, angustioia, subtus minus \el vix glaucescentia, dense serrulata, amenta conspicue laxioia tenuiona et rantlora, stamina numerosiora, et capsulas longius podicellatas magisque productas ct maiores — Formae ex folns maxime notandae sunt 1° tolus vix 3 polhces longis, medio e\identei lationbus, bisi subiotundatu, costL supra albo-tonientosi subtu^ suhpallidionbus—Nostne S amjgdalmr similif Haecvarnt amentis fere pollicanbus, flonbus masc subcondensatis, capsulis subglohosis brevius pedicellatis, seu amentis 2-3 polhces longis acutiusculis laxe flexuosis, flonbus masc verticillatim dissitis, capsulis ovato-conius vindulis — 2° Folns subpollicanbus basi apiceque subiotundatis, sed evidenter apiculatis, subtus ghucescentibus S tostacea iamis fla\o testaceis (Wright Mex n 1876) — 1° Folns 3 5 pol lices longis, infra medium vix semipollicem latis longissime attenualo-cuspiditis, glabernme nilidis cone lonbus Fbt interdum fohis oblique curvatis subhnean-lanceolatis (s falcata Pursh fl amer p 617 S Purshiana Spr , <x Torrcy), \e\ loins Aalde angustatis demum sat ngidis (S hgustnna Michx hist arb amei sept 3 p 226 t 5 S Houstonian i Pursh 1 c p 6U[9] Trautt 1 c p 615, Sal Wob t 11 b tnstis hoit) Vanetates ex diversis charactcribus sunt

a, *marginata* (Wimm. in sched herb Vmdob), amentis elongatis gracilibus, flonbus contiguis, squamis hnsutis canescentibus, capsulis breviter pedicellatis, loins hnean-lanceolatis leviter serrulatis venarum rarms pone marginem coniunctis — Ad New Orleans (Drummond) AS nigra recedit squamis floium 9 villosis, capsuhs basi subpuberuhs stylo subevidenti apicuhtis

p, *amygdaloides* (Anders Overs afwet Akdd Forh. 1858 p 114), amentis patentibus 9 cnssiusculis, squamis paice pilosis, capsuhs longe pedicellatis angustatis glabcirimis late lanceolatis apice cuspidato productis subtus glaucis Ad Missouri (Neuwied), Millwaukee (Lapham) Illinois (Brendel), Red River (Hour£,cau) — S tnandraj europeae simillima sed squamae facilhme deciduum, folia longius petiolata PiaetereaS lucidam simulat

Y, *lonqipes* (S longipes Shuttlew lib Hook), pentandra, amentis breviter pedunculitis folussuffultis laxiusculis, sqiidmis ovato-lanceolatis dorso villosis, capsulis ovato ^lobosis glabernmis fubco piceis, pedicello nectanum 6ies superante, folns lanceolatis v lanceolato oblongis subtus glaucis et dense reticulato venulosis b longipes Anders Sal boreali amer 1 c P 114 Hab prope St-Maiks Hondap (Rugel) AS nigra, cui habitu simillima, parum differt folns lationbus et brevionbus obscunus vindibus, amentis vix 1 ' poll longis valde ianflons, capsuhsque granuliior-Mibus longissime pedicellatis, quibusomnibus S Capensi superflue alfinis et similis Hue certe leferendae *l°ienulo!>a,* folns inns o\ato oblongis obtusiu^cuiis submucronatis subtus quasi cinerascentibus nervis acutissime prommulis supenonbus longissime altenuato-lineanbus, capsulis ##[nia]^[nis] rufesconlibus Ad S nigiam tran^itus In Novo Mexico (Wiight n 1879) — 2° *qongylocarpa* (Shuttlew), folns e basi lation longe attenuato lineanbus obsolete pubesccntibus In Florida prope St Marks (Rugel) S oocidcntah proxima

ô, *Wnqhlii* (Anders Monogr p 22), amentis brevibus densiflons crasse cylindraceis curvatis obtusis, pedunculo folns paucis et paivis instructo, squamis mox et facilhme deciduis flavidis pilosis, capsulis ovato-conicis glabeinmis flavis longe pedicellatis, pedicello nectanum 4-6ies supe-

rante gracili glabrrnmo folus anguste la ceolato lmeanbus glabernmis serrulatis subtus glaucis vcnulosis —In No\o Mexico (C Wrightn 1877) S Wngbtii Anders Of\ers vet Akad Forh 1858 p 115 Foliorum forma et colore omnino b nigras siniillimi sei amentis brevibus eL crassis valde dcnsiflons ab ea rcccdcns et fiostrirn S albam subsimulans

16 S OCCIDFNTALIS (Bosc, *ex* sched herb Hook), amcntis saltern masculis brevitor peduncul itis folus parws, lemineis iutpm folus mijoubuset plunbus suIFultis, squamis densissime villosis vel potius linitis, capsulis sat magnis ^loboso conicis brunreib glabernmis lon$_n$c pedicolhtis pedicello nectanum 4 bies supermte folus e 1 asi •tuhiolundi \o\ dtttnudta lincoohtis dcuminatis ngidis utnnqnc cinen^cpnli pul esmihl us (sti vilde allo tomentosa supiademum glabriti* subtus glaucesc ntil us stipulis similunatis In In nidd et in ins (ubd —-Koch fommint p 10 An lers Sal Monogr p 23 h$_n$ Ifa A vera S nigia cortp quidc in loin* majonl us I e o 6 p Uices lou gis inln medium fcrc poll litis vul$_n^r$o dense albo hirsute multo magis n^idis forma lere ut in S Bonphndiana amentis bievius pedunculatis folus paucionbus suffultis squ mis ovali lotundalis et dor si sime cinis cipsulis d(mum majonl us basi ci issionbus difUit innumens iuipm l rmis interim el is ur]im exposui mm ei conduit ut n odificiti)nibus S n i y r folus tpnuissimis nn$_n$ustr lmoaribus, us S Huml oldti M<P smnllimis, ad cas folus ktis hirsutis suhinte$_o^r$ns, ut habet S occidentals, series una contigua cxislit Ad S nigtam quadammodo se habet ut S hirsuta dd S Capensem (\ s)

17 S nti\NDRA (I sp pi 2 p 1442), amentis fohato pedunculdtis elongatis ldxius^ulis subianflons patulis misr tnandns, squimis fdllide fla\is in unentis masculis ol ovatis tcnuiter Llbo {ilosis in fern nei& anguslionbus acu tmsculis «»iltom apice glabus subpersistontibus capsul s ovit -conic sobtusis iufesccntibus ^ltbernmis pc licelldtis p dicello nectarium tnplo quintui lo supeiante slylo obsoleto stigmatibus brevissirtis enssis integns recurvatis ful\is loinsoblongo-lmccol itis \c\ ovntis nro sublinc uibiisdcuinmatisciebic serrulalib utiinque gl ibornmis sul tub ScEpi is ghucis ngidis stip Is semi coiddt -linceoldts -Jin I urcpificih omni i Rumeli SicilidcLlIis| iniaborenli usque in Suocum boiealem (loined") et Ro siam orient ilpm in Asiaeregione (dspicd (L(hm nn, Buhse etc) et cauo isic i ut>que in Sibin im bukalensem et lfnonem Ammens(m (Mi\imo^iC7; — Will! sp pi 4 6V1 ^m bnt 1004, Hook etAtn but fl ed 7 p. 393 W imm 11 v Schles ed 3 184 Sil europ p 12, Sei I ss p 7T,(»«U(1 helv 6 209 Beriol H it 10 301 Trautv Mnm mosc *H* 68 An lei s Monggi Sal p 3 fi$_n^r$ 17 S ain^^alinaL fl suec n 881, Wahlenb fl SUPC p 661 Pi Mant 1 p 142, Andcis Sil lipp p 17 lan^eDinsk fl ed J p 731 Koch Comment p 18 synops ed 2 p 24, Hartig Forst Cult p 417, Host Sil p 4 t H 14 Kern Wei'J ©estr p 1O2} Gien et Godr fl fr 3 12 Gri^eb fl rum p 3VK, Willk ct Lan^o il hisp p 226, ledeb fl IOSS] 600 Mdximowicz M6m d Si 16teisb 9 p 242, Bunge 1 c 7 49), Coss ct Bubs Nouv Mcin Mosc 12 201 S Villaisiana Flupge Willd sp 4 p 655 Ouss SF p 624, Jimtv 1 c p 619 S Hoffmannima Sm L B t 262Q b HoppeanaWilld sp 4 p 654 b andrcgyna Hoppe Iraut\ 1 c p 620 S hastata et S pfntandra Tbuill pans p 512, 513 S ligu-trna, s semppiflorons ^ teruiflora, S Vdria et s \enusti Host Sal t 5 16— *Icones* Andeis Sil 1 ipp i i Host I c , r B t 143-) 1936 26^0, *sal Wob t 15 18 F! D t >DS Reicbb Icon n 12)6 i260 Hartig 1 c 48 — *Exsicc* Thin arbor n IM, Ir Hb noim] 51, Ueichb n 292,709, **1631**, **Billot n** 2**63, Ser n 7 ?8 29, 4S AAimm Hb Sil n 38,51 122, Kern Hb n 2-> 30 Coll Sal 13, 14 Hutcx \ irbuscula s t\ e bur^yalis Irunco corticcm quotannis ib|icienle, nmulis glibernme nmdis odorc et sapore miti amyglahno Foh 1 3 4 poll longa pollicemlata hasi sul rotundi, latenbus recLiuscula, apice subito acumm«iti, ulnn IUP glabpnima, supra nitide lucida et saturate vin In, subtus pallidiora dut snppius intense glances oenUa costa prominente fulvd, nenis venisjue leticulito anastomosantibus Amenta 2 3 poUiciricj gracilid masculafolus paucionbus pleiumque suffulta, flonbus subverticillatis lanflora, femmea cyhndnca obtusa Saepe in autumno

folns adhuc persistentibus amenta in axillis dcnuo evoluta conspicuintur (ut n plensque Salicibus tiopicis) HaecS seinperflorens Host A cetens speciebus in Europa indi,rPna facile dignoscitur, diificillime autem a S mgradistmguenda, qua tamen mtflto elatiortrunco valid 1011 folns magis elongato-atte nuatis, utiinqtie undihus \ in costa supra hirsutis, fl masculis ^ 10-andns, cipsuhs vindulis m igis(fue elongato aitenuatis — A isunt b tnandiae formae numero ae folus etamentis tam \ me ludcntcs ul vanetates pnmaiiae difficillime proponcndae sint

a, *discolor*, folns subtus intense glaucis Vanat 1° latifoha, folns ovatolanceolatis vcl late hnceohlis subal)iupte acuminatis, 2° angustifoha, folns anguste lanccolitis vel siiblineinbus argute seirulatis aut integernmis ngulissimis, 3° microphylla, frutex piostralus, folns parvis subtus albidis, stipuhs longionbus Haec, quae potis^imum S amvgdatini auct. s>pius silvestns occumt et Luropje occi lentah magis peculnns videtur.

p, *concolor*, folus utnnque vindibus subtus palli lionbus Vanat 1° latifoha, folns ovato vcl obovato lanccolatis sensira acuminatis tenuibus sat argute senatis, — 2° iiujusiiioha folus evicte lanceolatis \el lanceulato ellipticis, — 3 microphylla, folus vix polhce longionbus ovalibus H L C ^ triandra vulgo appellata, in Asia frequentior, in Europa saepius culta

Y, *lenuijuhs*, amentis gracilhmis vix 1) In crassis, capsulis basi crassis brevibus co rule n sat is

ĉ, *crassijiilis*, amentis 2 2T lin latis, capsulis conicis aut condensatis et brtMter pcdicellatis, aut subiariflons, lon^i is pedicellatis

X (1) S. ALOPECurodES (Tausch hid hort Canal 1821 et pi select Bobem), amentis masc valdc (long ms ciassiusculis densiilons tnandus fle\uoso-patulis, s uarnis obtu^is lotis lon^p pilosis filameniis s]iiamis duplo tnplo\e superantibus basi pilosiusculis, cipsuhs conico oblong is klabeinmis longe pedicollatis ppdicello neiliiium quaier sup(Miite, stylo gracili sube\idente, stigmatibus paititis, folns sit If n^e pttiolatis linean-lanceoliitis longe acuminatis utnnque b'l iherninis subconcolonhus costa lata flava acute et sat dense seiratis, stipulis longc diutius pers stcntibus oblique semicordatis acutiusculis saepius senaiis *s* In Bohemia prope I'rag (Fausch) in Siebenbuigen (ex Kotscby) et piope Vmdobonxm (Ncilr) In hortis ex #i vindobonensipnmum culta ad plurcs deinde dnulgata —KemerWeid (Tstr 1 c. p 190, Anders Monop r Sal p 26 fig 18 ^ speciosa Host Sal o t A7, Wimm Hb. Sal n 77 S amygdalino liagihs Wimm Mora 1848 p 333/, Neilr H v N. CEstr ^>« S f i,nlis tn india Wimm Denkschi 18o3 p 156, Sdl europ. p 136, Reithb Ic n 12?>7 (*>ed pill gucihoies'), Wimm Coll bal n 1) - Ex S tnandia et S fn^ih procul dubio hybnda A b fragih habet folia juniora exjinie tenuia facile sub pielo nigncintia, vems pellucidis lmeata apice oblique attonuato acummita, lutescenti vindia amenta masc bncteujhirsutis suffulta, iilimenta valde don^ita stnnnnca, donique cipsulis Rongatoicutas A s tnandii folia adulla ngidioia migisque lucula densius serrata costa valuit pioimnen e linpili, stipulw mi^nas subpcrsisUnles stamina semptr tna, cipsulas e\identpr lon^ius pedicellatas breviores subfuscescentes — nuas se|iientes, bujus facile modificitiones, etiam lllustravit Rerner 1. c

a[p] *hoiatsti(b* Kovatsn Kern 1 c), amentis ^ gracilibus hlitmlwe bis longionbus squamis'eie^labns bisi tanfum breviter pubesocntibus unde amenta no\p]la glabnuscula, stamiuibus gcmims vcL terms, filainentis brevibus, fohis bie\i1ei acuminatis, stipulis serratis — Nonno potius S tuandrx >anetas ad b h igileiu acccdens? In Austria prope Glo^gniU et W ion (Kerner)

p[i] *sublnandra* (S tnandra Item 1 c p 189), am*niis <? crassis latitudme I is longionbus, squamis pilis longis lectis husutis, staminibus gpminis v t mis, hlamea,is c'on^aiis 'olns lon^ ncuminitis, stipu»[s]

(1) Hsbndae sub hoc signo enumerantur.

integris. — Kern. herb. Sal. n. 21-23. S. fragilis subtriandra Neilr. Verh. d. zool. Vereins in Wien 1. p. 117, pro parte. Nonne S. fragilis modificatio S. triandram revocans ? In Austria inferiori.

XX S. UNDULATA (Ehrh. Beitr. 6. p. 101), amentis |>cdunculatis erectiusculis cylindraceis obtusis densiflõris, pedunculo foliis 2-4 instructo, squamis floridis tenuiter pilosis apice obtusiusculo barbatis, capsulis ovato-conicis pedicellatis, pedicello nectariiim bis superante, stylo evidente, stigmatibus bifidis divaricatis. foliis lanceolatis basi saepius latioribus apice longe acuminatis acute serrulatis supra obscure subtus laetius viridibus ulrinque demum f?laberrimis,stipulis semi'cordatis. $ In Europa mediaaTranssylvania etBavaria usque in Sueciam (ad Upsaliam), in Rossia ad Petropolira et in Anglia (culta et silvestris?) — Willd. sp. pi. 4.- 655; Trautv. MGm. de l'Acad. de St-Pétersbourg 3. p. 616; Koch Comment, p. 20, Syn. ed. 2. p. 742; Hartig Forstl. Cult. p. 417; Fr. Nov. Mant. 1. p. 62; Lange Dansk. fl. ed. 3. p. 732; Hook, et Am. fl. brit. ed. 7. p. 394; Gren. et Godr. fl. p. 3. p. 126; Gaud. fl. helv. 6. p. 211; Ledeb. fl. ross. 3. p. 601; Anders. Monogr. Sal. p. 28. fig. 19. S. triandra-viminalis Wimm. Flora 1849. p. 39. Denkschr. 1853. p. 157. S. viminalis-triandra Mey. fl. hannov. p. 500. —*hones :* Reich, n. 1261; E. B. t. 1436; Fl. D. t. 2550; Hartig 1. c. t. 47; Sal. Wob. n. 13, 14. — *Exsicc. :* Fr. H. norm. 3. 53; Reich, n. 960. E formis inter S. triandram et viminalem (quas S. multiformem appellavit Döll fl. Jnd. p. 506) haec extrema ad S. priorem ut S. mollissima ad posteriorem vergens. Frutex sat altus, ramis virgatis glabris. Folia 3-5 poll, longa, infra medium fere pollicem lata, marginibus[1] plerumque undulata. Amenta mascula rarissima, ab Ehrh. triandra, a Greniero diandra descripta! Feminea primo flava, pilosa, If poll, longa, dense flexuosa. A S. triandra facile diflert capsulis brevius pedicellatis et siylo rostratis, a S. viminali foliis glabris et viridibus, capsulisque pedicellatis. Nuperius hanc formam e S. alba et triandra ortam suspicatus est Wimmer (Sal. europ. p. 144) ab ea S. triandri-viminalem (S. mollissimam Ehrh.) distinctam jiroponens (Sal. europ. p. 140) cujus formas tres sequentes enumerat: S. Trevirani, S. hippophaefoliam et S. mollissimam, capsulis pubescentibus bene distinctas! Has autem cum S. viminali similitudinem majorem haud abnegandam praebentes huic speciei associavi; omnes autem cum S. undulata seriem efficiunt integram, ut jure centendit Doll et plerique. (v.v.)

p, *hebecarpa,* capsulis pubescentibus. S. undulata Ehrh.; rarissima.

Y, *lanceolata,* capsulis glaberrimis. S. lanceolata Sm.E. Bot. 1.1436; Trautv. 1. c. p. 617.

8, *latifolidj* foliis basi latiori, sensiin attehuatis.

e, *angustifolia,* foliis basi et apice attenuatis angustis.

X X X S. KRAUSEI (Anders. Mon.Sal. p. 29. f. 20), amentisbreviter pedunculatis erecto-patulis cylindraceis subrarifloris foliis 3-5 parvis subtus sericeo-pilosis acutis integris suffultis, squamis testaceis obovato-lingulatis acuiiusculis stramineis longe sed sparse pilosis, capsulis ovato-conicis oblusis basi glabris apicem versus tenuissime puberulis longe pedicellatis, pedicello nectarium 3-5[io] superante, stylo minimo, stigmatibus divaricatis emarginatis, foliis obovato-lanceolatis basi angustatis acuminatis saltern juniorilws subtus tenuissime pilosis supra nitente glaberrimis subtus pallidioribus vel glaucis, stipulissemicordatis. In Silesia prope Breslau et Oppeln, rarissime (sec. Wimmer). S. triandra-cinerea Wimm. Regensb. Fl. 1849 n. 3, Fl. v. Scbles. ed. 3. p. 207. Herb. Sal. n. 141 et Coll. Sal. n. 248, Sal. europ. p. 146: S. triandra-aurita Wimra. Fl. v. Schl. 1. c. Verosimiliter hybrida proles, cujus tantum tresfrutices hucusqueobservati. Proxima est S. triandrae, a qua amenta foliis suffulta, lineari-cylindracea, squamas testaceas parcissime pilosas, capsulas fuscassubglabras, folia pure viridia habet, ut simul e S. caprea vel S. aurita folia saltern juniora sat evidenter sericeo-pilosa, brevia et obovata,subrugosa, capsulas longius pedicellatas tenuiter puberulas. «Exstant duae formaj, altera foliis paullo majoribus semper fere puberulis, germinibus puberulis (coll. n. 248), altera foliis minoribus fere glabris germinibus aut ex parte pubescentibus aut totis glabris (coll- "• 248b.) » Wimm. (v. s.)

§ 6. *Lucidz v. pentandrx.*

Ai bores vel frutices, ramis nitentibus subtenacibus Folia basi latmscula, apice iaepo lon?e cuspidata, adolescentia viscidd, acute glanduloso serrata, lucide m-tentia, subtus pallidiora, pedunculo glandul gero Amenta fohato-pedunculata, squamis ante fructus matuntateui caduus, toro in utroque flore biglanduloso, staminibus 4 12, capsuhs plus minus pedicellatis glabemmis testdceis, stylo uulio , stigmatibus cra&sis

18 S LUCIDA (Muhlenb No\ Act Soc rsat Scrut Berol 4 p 667), amentis pedunculo saepe siipulato foliato plus minus longe pedunculatis, squamis palhdis ovdto-lanceolatis saltern apice pleiumque glabus, staminibus 3-5 flavo-aureis, capsuhs glabeinmis obtusis pedicellatis, pedicello nectaiium ter quaterve superante, stylo brevi, stigmatibus integiis crassis, fohisexovata basi lanceolatis longissime abrupte et cuspulato acuminatis densissime glanduloso serratis utunque gldbns lucidis demum conaceo ngidis subtus palhdionbus, stipuhs semiovdiis senatis, petiolo supeine glanduhgeio —In npis fluviorum potius lnundatoium per Ameiicam septentnonalem mediam usque in alpes et ad fl Saskatchawan adsoendens — Willd sp pi 4 p 6G7,lrautv Mem de l'Acad de St Pe'teisb 3 p 625, Puisb fl. 2 615, Nutt Gen. p 231, Hook 11 hoi am. 2 p 148, Torrey fl New-York 2 p 208, Asa Gray Man ed 2 p 417, Anders Sal Amer 1 c p 115, Monogr Sal p 20 fi{? 21 S penlandia hutt bylvap 77 — *Icones* Michx Svha, *2* t 12o f 3,Torreyfl New-York t 119,bcihct Wob 32 —*Ex6icc* BarrattSal 17 Haec speciesamencana nostiae europede b pentandiae lla simihs et chai actenbus ei congruens, ut, si formas exiremas resjncias, nullo modo ab ea distingui possit Foima typica attamen plerumque recedit folus cicumine longo tenui quasi flagellan cuspidatis, ba&i rotundatis, vulgo crebnus serratis, magisque cornceis, stipuhs sub peisistentibus non laroetiam in pelunculis evideniibus, gemmis maxImis rulescentibus, capsuhs obtu<.ionbus longnisque pedicellatis. Vanat attamen non tantum loima et mapnitudme etc fohoium, sed etiam arnentis et capsuhs. Quod ad folia has modificatione* distmguas 1° *latifolia,* folus 3 4 poll longis, ad medium feie **1 i poll** latis, basi aut rotundatis aut subangustatis, ^pice brevius vel longius cus| idato-acummatis, tenuibus v ngidissimis — 2° *oiah folia,* folus o\ah oblongis acumine bieviore cuspidatis vel tantum acutaus maionbus v mmoribus H<ec nostrce b. pentandrae similhma In regionibus majis septentnonahbus Amencae — 3° *angmltfolia,* folus plus anguste lanceolitis, basi subattenuatis, apice vulgo longius attenuatis Locis alpestnbus — Adhut mdgis a foima typica recedit •

P, *macrophylla,* pedunculo valde elongato, folus magnis stipulate m~ structo, amentis £ crasse cyhndncis elongatis, squamis palhdis acutius' cuhs magnis basi et intus pilosis, folus tenuibus 5 6 polhces longis infra medium fere 2 poll latis e basi subcordala v rotundata late lanceolatis m acumen clongatum cuspidatis costa \enisque supra albo pilcsis subtus palhde vmdibus ma^iuo sat crebre crenulato-serratis, stipuhs magnis lunatis argute serratis — Ad « Lower Frazer-nver » 49° lat. bor. (Dr. Lyall, 1859) et in npis ad Rio Ri\er (Bourgeau, 1859)

19. S ARGUTA (Anders Sal Monogr p 32 fig 22), amentis elongatis subdenbinoiis erecto patuhs foliato pedunculatis, squamis plus minus argute denticu-latis ff amemis ac^ medium pilosis, capsuhs ovato-conicis glabemmis breviter pedicelldtis, pedicello nectinum MX duplo superante, stylo subproducto, stigmatibus crasbii, fusci>, **foliit.** anguste lanceolatis basi attenuatis apice longeacuminato pioduoiis tenuibus utunque viMdibus \enis fuscis anastomosantiJ)U9 leuculaiismargme aigute et subprofunde seiratis, stipuhs minutissemicoidatis in America boieah m Novo Mexico (Fendler n 816 sp masc), in Kocty mountaius (Burke et Geytrn 287) etadfl Siskatchawan prope Cailton hou^e (Bourgeiu) S Fendlendiia cT Anders. 1 c p 115(1) Est forma aut mera angustitolia b Iucida3 (sed stipulis, squamis, capsuhs et folus hnean-lanceol a

(1) Nomen *breitdlenana* ex lege piiontatis servandum, aut vetustius adliuc nouKnvdiietdtis pf *lasiandia* pideponeQdum.(Alph. DC;

tisrecedens),aut quasi hybuda a S^lucida et S cordata angustifoha, habitu sat singularis, charactenbus autem valdeamlugua Hue ut modificationes tantum refei endae

p, *lasiandia,* amentis masculis longis erectis curvatis acutuscuhs, squi mis profunde et inaujualUtr serrulato dentatis glanduhgcns spathulatis glabns, stam 5, ńlamentis lon&re hispidis, folns m^uste lanceolatis acutis imis adullis umnque gl »bemmis subtus parum palhdionbus — In California ad fl Saciamento (Haitw n I!b4 Bigelow in Whippey evpedit) S lasiandra Benth pi Hartw p 335 S lucido angustifoha var Anders 1 c p llo

Y, *enjihrotoma,* amentis longe pedunculatis patuhs curvatis acutis basi subrmHons, filamentis fuscionbus, anthens miuutis, loins tenuionbus lacile mgiescentibusjunioiibus rufo hirtis adultis utrmque glabns subtus opatis In npis et insulis lacus Wmipeg America, boieahs (Hb Asa Giay), ad Columbia mei et Port Iranklm (Hb Hook) S erythiocoma Banatt Sal amer exs

6, *palltscem* amtntis foh ito pedunculatis, £ brevibus squimis obovatis obtusis glabns 9 oblongis squamis angustissimis et temnssimis lanceo 1 iti*- glahernmis cnpsulis comco-atlenuatis distinctis pedicellatis, pedicello nectmum quulruplo sup lante, stylo subdisuucto, sti^maiib^ crassis, folns crassiuscuhs apicc plus minus cuspiddtis supia opaco-vm dibus venis impie sis subinaequahl us subtus pilhde glaucescentibus marline minus arguU glanduloso senulatis — In Amer boreih ad fl Saskatchawan (Bouigeau) A ver i S lucidd noli paium difTert ramiscras sis testaceis, folns pnniitus pubeiulis sui id venis obscunoribus impressis, subtus sat intense glau is co sislentia dunonbus, ammtis masculis bie vius pedunculatis,squimis exmne tenuibus et glabernmis, capsulis multo longiub pedicellatis etsLjlo subdistmcto rostratis

E, *alpigena,* amentis brevibus o^ilibus folns sat magnis suffultis capsuhs stylo evrdention, stigmatibus demum fuscionbus*, folns conaceo ngidis utrmque lucide viridibus acutato cuspid itis in pedunculu c ncolonbus subintegns —In Rocky mountains ad Cimpemcnt de la forct brilLce (Boui geau) AS lucida et b aigutatypica diffeitstdtura hum ill, folns conaceo rigidissimis utrmque lucide viridibus et ele\ato nervosis, us in peJunculo obtusiusculis ita ut S Novae Anghae non male revocet ideoque affinitatem quandam cum S cordata ultei IUS demon tiet.

5, *hutisquama,* amentis brevius pedunculatis brevibus erecto patuhs squamis fldMdis aj ice summo excepto albo lnrtis, folns angust s argute serlatis Ad lacum Winipeg (Bourgeiu)

20 S LANCIFOLIA (Anders Sal Monogr p 34 f 23), amentis magnis longe pedunculatis patulis cyhndraceis den lflons pedunculo fol is magnis instructo squamis stramiiieis tenuibus aciitiusculis gla[1] us hcile caducis capsulis glabns comcis brevitei pe licpllatis, pedicello nectanum vix dujlo supeiante, stylo obsoleto, stgmatibus subintegns, loins ex ovato-rotundati bisi in cuspidem longe productum aequahter attenuatis margine subtilitei glanduloso serrulatis supra obscare vmdibus subtus pil ldioiibus vel immo opace gUucescentiliu^ demum ngidis, stipuhs nulhs vel mox dec duis 5 *[n] Amenca boreah occidentah, in insula Vancouver (Dr Lyall) Arbor ma&ma ramis fusco-casta neis, ramuhspubcrulis, gpmmis piiMS I olia 4 G poll longa Amenta feminea 2-3 tolhcaiia — intei S lucidam ruicropln 11am et S nigrani htifoham ita amlngit ut dilfiollime ah ns distinguatur Ab ilia lubet folia latiuscula, margine et praeupuo bdsi f.landuloso seiratd, pedunculos longoifolntos capsulas lufescentes magnas acutas brevius pcdicellatas a posteuoie iamos anno tinos et pUiolos sat longos pubeiulos, consist* ntiara fohorum ngidiusculam folia subtus ciebernme rcliculato-'venulosa et opaca vel glauce&centia, costa flavapercursa (v s)

21 S PENTANDFA (L sp pi. p 1442), amentis sat longe et fohato pedunculatis densiflonsobtusis nutanti pdtuhs, fl masc 4-liandns, squamis o\atis vel obovdtis pallide flavis saltern apice glabns, lachi glabra, capsuhs conic is rostra*

tis glabemmis demum pedicellatis, pedicello nectarium fere bis superante, stylo brevissimo, stigmatibus crassiusculis patuhs, foil is ovato lanceolatis acuminato-cuspidatis dense ^landulo o sonatis glabemmis adolescentiaglutinosia demum ngidis lucidis subtus pjllidionbuset crebre venulosis, stipule ovato-oolongis, petiolo supeine gl mduli^ero *$^* In priMs paludosis et sylvaticis Eu ropae lere totius ei Aside piaeupue septentiionalis ab Italia mendionah usque in Laponiam boredlem, a Galha in Kamtschaikam (n America S lucida, huic diialo$_n$d) ajque \ul^ iris ade^L — Willd sp pi 4 6i8 Tfautv Mem dc 1 Acad de St-Peieisb 3 p 610, Wimm Sal. europ p 22 Anders Sal Monogr p 3T f 24, Hook etAin bnt 3 ed 7 p , Koch Comment p 13,Fr Mant 1 p 21 Wahlenb sutc p 6o7, Lange Dansk fl id 2 p 6ol,Koch Sjnops ed 2 p 739, Kern Oesti Weid p 179 HartigFoial Cult p 418, Wimm fl v Schles ed 3 p 183, Gaudin helv 6 pi 21o, DC fl fianc 3 p 287 Godr et Gien fl li 3 p 124, Bertol fl ital 10 p 311, Lcdeb fl ios>s 3 p 597, Mavimowioz fl amur 1 c p 24i, Bunge, Mem div bav de StPiteisb 7 p 49o s heimaphroditica (mcnstr) Linn sp 1422 S p lyandra Geld in Schiank hair fl 1 p 228 S JUeyuiana Borr in Hook But Fl ed 3 — *hones* H D 943, bv B 32i,Ho^tSdl 12 *h* B 180j, ReiUienu 1267 12G9,IIJLILI^ frorstl Cult t 49, bal "Wob 134 — *Lx&uc* hhrh Arbor n 48, Ser n H 49, Heichb n 1425, tr H noim 9 00,9 59, Anders bal Monorfi f 24, Wimm. 79, 80, Billot, n 10bo, Reiner Hb Sal n 1-3 — Aiboisapc excelsa Irunco validJ omnibus partibus ^labernnid, llavescenti vnidis Folia forma vana, typite subovilia ^el I Uc lanceolata apice plus minus produclo acumimia, 3 4 poll longa, poll ice-u lata, costaflava, primo glutinosa ut char tae adfi\a mancant, demum subcouacea splendentia glandulis sdepe stipitatis seirata Vmenta ma^cula sipe 1 2 pollicaua, aurea, squamis basi \el ad medium tuiuiiu ciispato sill sis auiuitd fcminealongioid 1 2-polhcana,demum pendula. sub hyeme ssepius pcibistentia, squamis anguslis tenui nbus, capsulis pillide fldMdis \inJi testaceis stiamineis Si ecies elegantis->imaeximie \ananb statura (nunc frutLX huuaihs nunc arboi allissima) ramoLum coloit (vindi, rub o, IUSLO, vitcllino), folus htis v angustis, obtusiusculis vel cuspi iato acuminatis, tenuibus v couaceis, amemis longius vel brevius pedunLulatis, arrectis vel recurvalis, stiminibus 4 vel usque ad 10, capsulis rostiatis vel obtusiusculis, etc Sequentes piaeprimis notandae ob formas folio rum reccdentes

P, *latifoha,* fohislatitudineduplo-tnplove longionbus acutisvel cuspidatis. Saepius fi ulescens

y, *angmtifoha,* plerumque arborea,folns latiludine tnplo quintuplove Ion gionbus basi angustaus margine argutius serrulatis noniarostamimbus paucionbus instructa — bonne s> tnesii Kerner Oesti Weid p 183 quae 1 c S superpentandra fragilis salutatui b. qua. S polyandra Bray, Ines herb norm 12. n. GJ[9]

8, *microphylla*^ folns vix pollice longionbus supra medium ' poll latis brcviter atuminatis basi an^ustatis Arbor parva prcEsertim in legionibus fugidis fiequentior

22 S CARWOPHYLLA (1 rautv et Meyer Florula Ocbotensis in Mid lendorf Sib Reise 13 p 77 t. 19 20), amcntis coaetaneis longe pedunculatis anguste cyhndraceis pedunculo loliato et stipuhgero squamis rotundato obo\atis dorso glabro mai^ine tenuitei cihatis pillule stramineis ner\osi% staminibus 5 8, lilamentis basi pilosis, capsulis ovdtis glabns breviter pedice latis, pedicello nectauum ccqumte v bis ^uperante, stylo m nimo bifido, sti^miubus bipaititis excurvatis, folns ovatis basi coidatis apiceaouminatis m irgine glandulososeiratis utrinque ghbenimis subtus pillidius \irescenlibus, stipulis suborbiculatis glandulo^o serrulatis ^ VU fl Polowinnaja, prope opp Udskoi et ad sm Ujakon (C\ped Midden lorff), prope Ajan legit Tiling, et in montibus Stdvonoi (Dr F. Schmidt) —Reg et liling /\ >ra aj inens in ISouv Mem de la Soc desNatuial de Moi>cou v II p 117 Anders Sal Monogr p 37 fig [2]& Est quasi a b pentandra et s pyrolaefolia hybnda, notis tamen ut etiam habitu liuic proxima et facile distincta Frutex dicitui altior, rami adultiores fusci, glabernmu F$_o$ha ^--2 poll longa, supra pure vmdia lucida, pnmo ad

tostcim mediam parce pilosiuscula, mox glabemma, pulchre venulosa, subtus dilutiora sed nun glaucescentn petiolus eglandulosus,] *I* lin longus stipulap petiolo plerumquc duplo breviores Amenta mascula (quae sola udi) vix pollice longioia 2 lm ciassa, foliis densis nt evulutis suiTulta, squam e margine saepe retusje lbique semper cilns parvis scabidL. (v s)

X S CUSPIDATA (Schultz fl stirgard suppl p 47) amentis foliato pedunculatis vel svibrellexis subdensifloiis stamimbus 3 S pillidionbus, sjuamis oblongo lineanbus basi sxpe cnspato-villosis rhachi pilosa, capsulis conico rostidtis ex ovata bisi lon^e attenuitis glalus pedicellatis, pcdicello nectaruim ter quateive supcrante, stylo mediocn pallido, stigmitibus ciassiuscuhs margindtis, foliis oblongo lancec latis supra medium litioiibu? subito et lonf,c s»(pe obhq ic icummatis dense glmduloso seuatis demuin glabcmmis nitentibus pure wndibus subtus pallulionbus junionbus tenuitate sub prelo nigncintibus stipuhs semicoiddtis obliquis peliolo snpernc glanduligero J i n Euiopa media pissim, ion ubique adhuc rite recogmta ideoque paucis tantum locis indicata, ut in Anglia, Germ am a bore ill Dmia, Succia usque m lac Mcelaitn circi Petropohn in Livonia,GuronidetLitbuania —Anders Sal Mnnogr *xl* fig 2b, Koch Comment p 14, Synops ed 2 p 740, Hook et Am bnt cl 7 p 39J, Kcrncr Wcid Oestr 1 c p 181, Lange Dansk H ed 2 p. G[r]>2, Ledeb fl ross 3 p 597 S fragilis pentandia Wcinm Schles Fl ed \ p 208 Denkstbr I8[r]jj p lb) S pcntandia fragilis Wimm Rcgensb Hora 1849 n J, Sal europ p 134, Mey H hinnov p 499 S Mcyenana Rostkov in Willd Beil Kaum/ ed 2, p 427 (vanatio stammibus reflexis sec Kodi et Wimm , Hiriig Poistl Cult p 419, Trautv Mem delAcad de St Petersb J p ()IT —*Iconei* Reich f 12G6 Hirtigl c t 50, Fl D 2487, Sal Wob t 31 — / *tsicc* Wimm Hb bal n 29, Kein Hb n 4,Fr H Norm 15 61[9] Inter S ingilemetS pent indiam omnino media et ab us sinedubip orta AS pentdndnbabet stitui lm dibonsclegantis, ramoset ramulos lenaciores, petiolos apice glanduligcios lolia in acumen migis subito acuminata n^idioid et sat lucida, amcnla longa ct dcnsiflora, stamina nunic rosioii, a S fragili truncum validum tL rimificationem, folid multo angustioia ct tenuioia subtus pallidiora obliqua, cipsulas rariores longius atte nualo rostratas Horcndi temport etum medium tenet inter parentes Inter S pentandram et fragilem duas foimas caelerum oflei t ill Kerner 1 c sc S Fricsn et S Pokoinyi Quod ad S *riesu aainet a S pentandra (cujus vanatio an^ustifoha nuhi vuletur') vix diflert nisi folus angustionbus et longionbus stammibusque 4 8 — S l'okomyi Kern ' c p 181 (S fragile herb Sal p [r]> sec Keiner S fiagihs pentandi i ^clll II v Nied Oestci p 2-»3) ut v angustifoha S cuspidatL, ad S lidgilcm apeitius accedens (in heib Sal p 8 etiarn hoc nommc desigmvit Keiner b Iragilis var Pokonyi) vi detur fl masc sdepius 2-3 indns, loins latitudine 4 duplo longionbus subdi •versa Fodem modo duis modificationes distinxit Meyci S In^ili-ppntindram (S MeyemriauiWilld) et s pentdiidro ln^ilem (S cuspidatim Sch) Adhuc not «biliorcm a Petiopoh misit amiciss Kurmcke folus adhuc angustionbjs et ngidionbus distmctius glanduloso-serratis msignis (v s ,

X X S HEXANDRA (Fhrhr aibor exsicc n 140), amentis foliato-pedunculatis curvato-p ltulis densiflons cyhndi iceis rhachi pilosa, squamis omongis palhdis vel rufescentibus superne nudis, staminibus4-6, filamentis basi hnsutis, capsulis subsessilibus ex ovata basi attenuate glabcmmis, pedicello nectanum brevissimum subaequante, stylo obsoleto, stignntibus patulis, foliis lanceoldtis basi angustatis apice longissime ot oblique dttenuato-cuspidat s junionbus pilisadpiessis scnceis, aaultis glabcmmis lucidis utnnque vindibus ngidissimis mdrgine crebre ^landuloso-serralis petiolo longo apice glanduligeio In Austin alpcstn ct infcnoie (Sal/burg) et ad ^teizin^ lyiolis (Kein), prope Posen (Ritschl) et lilsit (Heidenieich) ex Wimm Etiam exGtrmania boreili dllata — Phihr Beiti 8 138, Anders Sal Monogr p 40 1 27 S Ehrhaitiana Mey Ghl Hannover S pentandra et alba Ker ner Ocstr hot Zcit 18J8 p 123 (Hitschl 11 v Posen p 291 Wimm Sal europ p 138 >*)* S albo fi i^ilis Mty fl Hdnnov p 499 p [p]—. *Exsicc* Kern Hb Sal n 19,20 Wimm Hb Sal 101 Coll 186 (?) torma quoad synonyma authentita obbcura ilonbus s alba- iiondc S pentandr* propior. An

plane eadem ac Weimmaniana nescio A S pentandra distinguitur folns pnrao pilosis angustionbus subtus ntrvis tenuibus parum prominuhs venisque ciebre anastomosantibus quasi leticuh is mentis grauhbus p losis, capsulis bievionbus, aS *alba,* folns mox glabemmis margine trebemme glanduloso serratis supia lucide vnidibus, petiolo gldnduligero,amentismisc 4-6 andns A S vindi differt folns multo angustionbus longiusque cuspidatoattenuatis utnnquc puije vindibus supn sublucidi maigine ghnduligens et ameniis A S cuspidata folns junionbus subsenceis, longius cuspidatis, rigidis, flor masc 4-6-dndns, capsulis subsessilibus et stylo obsoleto aniculatis.

§ 7. *Fragiks v Albse.*

Arbores vel frutices, ramis giacilibus ad insertionem plus minus fragihbus Folia lanceolata, longe et saepe, oblique acutata, tenmter glanJuloso seirata, subtus glaucescentia Amenta lohdto pedunculata, sqmmis concolonbus caducis toro in fl masc biglanduloso, slaminibus binis 1 inus terms, capsdhs subsessilibus (vel idiius pedicellat s) gldbunmis, vindiusculis, stylo suhnullo, stigmaiibus crass s, integris — *Fragtle*\ Lhrb Comment p 13 p p___*Fragile* *et Albx* Kern 1 c p 45 (cum Pentandns)

23 S FRAGILE (L sp pi 1443), amentis breviter peduncuhtis folns paucis pnmo suffultis patulis vel recurvatis densiflons hirsutis, squamis pallidis acu tiuscuhs pihs longis basi plerumque hir^uiis, slaminibus geminis vel ranus terms (|Udternis strammtis, capsulis olongito conicis attenuatis glabemmis pedictllo nectinum bis lerve supei inte, stylo mediocn, stigro itibus partitis divancatis folns lanceola i» ohlique acummatis juni(nbus tenenbus subpilosis ldultis glabernmi^ subngidis subtus pallidionbus, slipulis (quum adsunt) semicordatis facilli ne deciduis 5 Ad npas et in locis paludosis per totam Tu lopam Sibinam, in provinc rnucasicis, Persia Asia minon etiam in Ame nca boreah cultar Spontanea vix nisi in Asia australi-occidentili — Wiild SP- pl 4 p 669, Koch Comment p IS, Nyman Syll p \k\, Harlig torstf Cult p 419, Fries Mant 1 p 42 Host Sil p 6, Wimm Sil euiop 1Q Anders Sal Monogr. p 41 Wahlonbg n 2 p 6J7 Lanpe Dan k fl ed 2 p 652, Kocb Synops ed 2 p 740, Wimm Schles fl ed J p 184 Kern Weid Oestr p 184, Smith bnt p 10>l Hook et Arn bnt fl ed 7 p 39), DC fl fr 3 p 288, Godr et Gren fl fr 3 p 124, Ser Ess 79, Gaud helv 6 p 212 Willk et Lange hisp p 226, Bertol ital p *03, lenoieSyll p 479, Sm fl giacip 2i2 Ledeb fl ross \ p 598, Bunge Reliqu Lehm 1 c p 495, ichihdtchtflT As mm Asn (i y Mon ed 2 p 416— *Icrncs* Sv Bot t 373 Fl D t 2+84 L B \ 1807 Ho^tsil t 20 22(?), Hirtig 1 c p 51 Rtich t 1264 Sal Wob 27 — *Fxsicc* Ehrh arbor n 88 ser 12 Bill norm 1955 And sal Monogr f 28 Fr fl n I, 60 Heichb n 1163 Billot n 19o5 Letfe n 50 Wimra n 87 Coll Sal-9 Sal austr 6 7 9 Arbor cilo crescens, sat alta, ramis undique vergentibus, ramu lis feie rectan^ulaiite divancatis eximie fiipillimis mtactd sec ill Kerner, in foimam pyidmidakm excrescit arboi tolia 1 •> poll longa semtuns glandulif,ens mfleus cienata junura sat tenuia ct sub pielo facile nigrescentia subpilosa, adulta ngidioia Stipulne tanturn in ramuhs sat ma^na? Amntimdsc 2 poll longi pnmum flavesoenti pilosa deind subianflon ^> amina so.pissime bina non laro aulem plura in smgulo flore obstrvantur (IiucS $fr_{dff}ii_{1Sl}$ prlyandra Neih *h*\ v Niel Oestr p 2ji, lcferendaeta a hexamlii dmtinUi tostc Wimmero) CipsuldB vindulae exsiccaticne nigncaates, sub *ny\o* aj ice incrassatai, linei longiores Occurnt

a *anguthfoUa* folus an^ustis 2 3 poll lories semi-pollicem latis^ppius ^"intus fdllidis \el gliULtscontibus Rerner Hb sal n 10 S fidtnlissima Host't 22 23 (adS vindem i Wimmero relata')

P *latifoha* folns 4 fipoll Ion-is polhcem latis aut concolonbus(Kern Hbsal n 9) aut discolonbus (Kern 1 c. 6 7) — Haac S persisifolid Schl , S exce'sa Tausch , s Monspeliensis sal Woo t 30

Y, *decipiens,* cortice ramulorum tcstaceo «gemmis fuscis », fob s peduncuh

et ramulorum infimis obovatis — S decipiens Hoffm. Sal p 2, t 31, $m £ B t 1937 et auct vanor, Sal Wob t 29 — Est levis modificatio saepissime amputatione quotanm orta passim obvia

6, *australis*, amentis densionbus et crassionbus squamis rufescentibus saepe fusco-ner\osis ovatis vel obovatis fere ton glabns filarnentis basi dense villosis, antliens minutis auiantiaus, fohis brpvionbus sed lationbus saepius obovatis brevius acurmnatis — In Imoretia et cetens provincus caucasicis (Witman), Persia (Hansen) et prope Alpppum (Kotschy pi Alepp n 84) Habitu a S alba non valde ahem, sed folns omnino tenui bus, nudis, amentis crassis, filamentis longis diversa

X S VIRIDIS (Fr Nov Fl suec ed 2 p 283), amentis coaetaneis fohatis cy-Jindrace^s elongitis gracihbus densiflons, masculis patuhs vel recurvatis femineis erectiusculis gracilionbus, pedunculo fohato s juarms oblongis obtusis basi pilosiSj staminibus geminis intcrdum terms, hlamentis palhrie flavis an thens aureis, capsuhs breviter conicis ohtusiusculis glalernmis pedicellatis toedicello nectanum subauperante stylo rainimo stigm itibus patuhs bilobis foins lanceolatis apice subiecto longc acummatis ten iter gland uloso-serrulatis primo suhsenceis deinle glabemmis supra lucidis vnidissimis Mibtus palhtle vindilms vel glaucis ngulis exsiccatione vix mgncantihus stipulis ovatis glanJulose serrulatis deciduis "> Ad npas et vias in huiopa media usque in Hoi mum Sueciae, lotis special i bus vix idhuc accuiate assignata, ut pote cum S alba v fragih saipius commutata— Fr Mant 1 p 43, Nyman , bynops fl euiop p 343, Hartm Skaud Fl td 9 p 17b, I ange Dansk H ed 3.p 730 Kern Wcid Oeslr p 186 Hb Sal n 12 13, Anders Sal Monogi p 43 f 29 b Russehana I orb Wob t 28, KochComm p 15, Reichb Lxcurs 1049,Hartig Foist Cult p 41 S fragilis p Russelliana Koch bjnops p 653, Ledeb fl loss j *p* D98 s alba y vindisWahlenbg fl SUPC p l->8 S fragi hsalbaWimm Denkschr 18^3 p 1^6, Fl v Sthl ed 3 p 208 , Sal europ p 133 S albi fragilis JMey Fl Haiino\ p 40), Ritschl Fl v Pos p 206,— *Icones* H D t 248b, Anders Sal. Monoji J 20,Ioib Wob 19 28 Reichb D fl 1^265 Lst ail or pulchra et excelsa, quum habitu turn chaiactenbus inter S fragilem et S albam oinrnno media, tirumque sine ullndubio hybndd. proles Ab ilia habet tamos diviiicitos (spd sdepius m arhore flores masculos proferente pendulos b pen iula Sei Lss p 79 (9) S fiagilis pendula Fr Mant p 43 (^), folia aduliangida glaliemma pure vmdia sat angusteseirata, am(IIU mascula crassiora et longiora fir xuo^o patula, capsul is evid(ntius pedicellatas angustioic*> sed a S ilbi tamos minus iragiles, folia etiam exsiceatione pure \mdia apiee subiecto Hcuminaia jurnora spaise subsencei, amenta mascula raagis fulvo auiea etdensiora ieminea crccta, cipsulas puie vindes bievius pedicellatas non in stjlum attenuato-rostratas Sub tnbus provenit modifieatiouibus

a, *fracihoi* folns sit longe et subobhque acurainato cuspiditis, juruonbus plus minus hirsutib deinuin glabns subtus vulgu glauc sepntibus, lemo tius serrulatis, amentis paueifoliatis, masc pallidius flavis, lem elongatis, — Magis ad S fragilem accedens S palustns Host bal p 7 *X* 24, 25?, Kern Hb Sal n 14?

p, *excelsior*, typica — Fr Herb Norm. I 61 S excelsior Host Sal p 8 t 28 29, Kem Hb Sal n 12 hpee flonfera, sed flonbus tetrandus) S gracilenta Tausch S Russeliana Koch

7, *albucen\}* folns antfustissimis, longissime ct lecte acuminato cuspidatis, szepc utiinque sat diu pilis tans spar&e senceis — b alba, habitu bimilior b excelsior (Host) Kein Hb bal n 12 folia

Dt b Russeliana bm bnt p 1045, f Bot t 1808, magna fuit dissensio de nui hie hibet ill Wimmer (Sil curop p 21) bmithn si veiba in Fl bnt s(quimur ejus S Russeliana lpMin S fra^ilem, cjus autem S fragilis «petiohs dentato-glandulosis», b cuspid dam Schultz nidicat *bed* Smithii, qui S fragilis ue floiem 9 quidem videiat, nominibus synonymisque posthac faule carebimus Hoc nomine arbon *m* certam maffnitudine mirabiliter execlsa pra?stantem b fragilis ipsius absque dubio iilubtravit bmithius^ deinde autem formab later b fragilem et al-

bam mtermedias aut ex 11s hybndas et in Angha ul m Gennania media minime raras huic assignaverunt auctores varii

24 S ALBA (I sp 1449) amentis foliato-pedunculatis flexuoso patuhs ff mmeis erectiusculis subdensiflor s , squanus flavescenlibus apice glabnusculis, staminibus saepius geminis, cnpsuhs ovato comcis obtusis glibns, pedicell) nec-Urium brevissimum sulipquinte, stylo vix ullo stigmatibus uassiusculis cmaiginatis di\ancilis, folns 1 inceolatis iectc acuminalis glandulo«o-senu latis utnnque plus minus adpresse senceis, stipulis lanceolaiis mox deciduis 5 In Sibina usque ad licum baikalensem in provinc Caucasicis in Asia minori in Syria (GaillardoL), in Persia (Kolschy), et in Africa septentnonali (Kialik etc) Inquilina facta in omni luropa quuin boieah (Suecia) turn mendionah (Grctua) Ltiam in America nunc ternpons colitur — Willd sp 4 710, Koch Comment p 11>, Fi Mant 1 p 44, Host Sal p 9, Anders. iSal Monogi p 47,Wahlcnbg suec p 653 Lange Dansk fl. ed 2 p 654, Koch Synops ed 2 p 741 Wimm Schl ed 3 p 184, Sal europ p 16, Kern Oest Weid p 187, Hartig Foistl Cult p 420, Drell H v Bad p 487 , Sm but p 1071 , Hook et Am but ed 7 p 396, DC fl fr 3 p 283, Gren et Godr fl fi 3 p 125, Sei Ess p 82 Gaud helv 6 p 205, Willk etLangf hisp p 226, Bertol it 10 p 246 Gnseb fl mm p 34 J, Iedeb fl ross 3 p o99, alt 4 p 2o> Bunge Rel Lehm 1 c p 49i, Coss et Buhse Nouv M6m de la Soc de Most 12 p 201, Asa Gray Man ed 2 p 41G — *Iconts* Hoffm Sal t 7, 8, 24 f J Host Sal t 32 33, E B t 24i0, Reichb IC t 12G3 Sv Bot t 523, H D t. 2i52, HirtigForstl t 52, Sdhcd Wob 136, 137, Coss Atl — *Etsicc* Ser n 10, Fr 1 62, Bill n 847, Wimm Hb Sal 90, 156, Coll Sal 11,12, Kern Hb Sal n 15, 18 Arboi plerumque excelsa, ramis stnctis, ramulis flavo viridibus minus fragihbus Gemmae obtusiuscuLc, snepc apice albo hirsutde Folia basi et apice subdquahter angustata 2-3 pollices lojiga, ad medium somipollicem laU, margine tenuissime glanduloso-senulata, aut utnnque pilis idpressis llbo sericca aut supra glnbnusculi sublus pilosa demum ngida Amenta 1 l^pol licaua, squamae ad basim VIIIOSULJL tulve, flavde v miniatap filamenta basi •villosi antherde aureae; capsuh vindula, A b fragili dilleit lamis stnctis; ramulis subtenacibus, loins rectiusculis vulgo llbo senceis, amentis mascuhs brevionbus et dcnsionbus, anthens aureis lemmt is brevionbus augustionbus et orcctis, capsuhs hie \ lonbus subsessihbus viridibus Multis taruen foimis (hybudis) cum ea confluit Vanat insuper.

(3, *ulellina,* ramul s rubellis vel testaceis gracillimis, folns sa3pe angustionbus — S vitelhna L sp pi ed 2 1442, Willd sp pi 4 p 66b, Host Sal p 9 t 30 *il*$_9$ Sal Wob t 20, Ser Cxs 9, 19, Lhrh aib n 78 et auct plur —Hat) ubique cum priori, sed vix nisi culta (et forsan sem pei cultura procreata) obseivata

Y, *splendins,* loins utnnque tomentoso senceis argenteis S splendensBray.

ð$_j$ *cirulea,* folns demum glabratis subtus sordide glaucis S caeiulca. (Sm *h* B U 2 31).

e, *ngida,* loins longissime cuspidato-acummatis ngidissimis In Songana

? *tristii** (liautv in Ledeb fl alt 1 t), ramis subpenduhs, folns elongitis longissime dtuminatis demum pilis tenuissimis obtusis vel ommno luude glabratis — In Sibina altaica ct m Son^ana pi bus, tt ad in- [illegible] angustias dullek Boghas m rc^ione montina (Kotsihy it cihcicum in Tauri alpes RedgarDagh, 18->0 S amygdalmuBoiss inscripta Habilu. singulari, lacile cum S acutiloha compaianda, folia novella et ramuli annoiini non laio subpilosa conspiuiuntur

7j, ovolii, loins brpvionbus o\ah blongis in acumpnbreve subito attractis, 3 3$_2^1$ unciam longis, unciara latis — Inter ceteias occurnt Wimm

6, *microphyUa,* folns vix unciam longis 3 4 lineas latis nunc argenteis nunr ghbuusculis *v* Nauis locib Euiopae et Asiae minons (bafranbol, Andsch, ex Wiedemann)

t, *latifoha,* folns late ovatis p bisi ovita sat lon$_n$'e acuminatis densius et drgutius» serratia supidvulgo glabri^ bubtus plus minua aigenteis — la

Asiaminon (Wiedemann) E Syria adsunt specimina «S libanotica Boiss » mscupta et a Gailldidut colleotd, qu<t iolia habent potiub obovata et amenta mascula longis^una, ceteium us ex Asia minon simillima, quae ad S. micantem nostram transitum praebent

x, *Kassanogluensis* A S. alba vulgan vix recedit nisi folns junionbus dense et molhssime senceo villosis Jatiuscuhs ct brevibus, amentis femineis brevibus, capsulis condensatis brovibus basi eximie crassis Ad httora San et in montibus alt. 4000 (Kotschy) b Rassanogluensis Kotschy it cilic kurd. 1859^ n 64.

A, *Pameachiana*, folus subtus quasi lufesccnti hirsutis. Rhode island. S. Pamcacbiana Borr. sec A Gray man ed 2 p 716

JJL, *micans* (Anders Sal Monogi p 49), amentis lohato pedunculatis arrectis curvatis subranflons, squamis obtusis pallidis caduus pilosis, capsulis ovatis glabernmis, pedicello ncctumm foie bis supuante, stjlo mnnmo, stigmatibus bifidis divancatis crassiusculis, loins ovah-lanceolatis supia paice pilosis subtus densissimc s< i ICCO argentatis micantibus margine glanduloso-scnulatis — In Caucaso (Wittman Hb P(trop) b albae sine dubio maxime afhnis, a qua lamen dignoscitur folus et cipsulis Folia pmm, qute in ramis flonfens 1 H- poll longa, iere \ poll liia, apiceet bisi feie cCqualiter attenuala, supra sat caha obscuie vindi lucida aut •pilis nonnullis derehctis adpressis obsolete pilosa, subtus pilis rectis ad press)s senceis argenteo-micantia In ramulis novelhs mijora fiunt, supra medium latiora dpice cuspidaLi et aigutius scrrulata sed subtus cana et senceo micantia, nervis valide prominenlibus acute venulosa Amenu (fem tantum vidi) lj poll longd stnctiuscula, basi folus parvis 3 4 suffulta, rachis dense villo&a, squaoice facile deciduae, lutescentes, ciliatae, capsulae biunnescentes, obtusiusculaL, vix linca longiores, neetanum sat longum tiuncatum, pedi ello cvidentius duplo brevius (v s.)

X S BLANDA (Anders Sal monogr p 50 fig 31), amentis subpiaetocibus breviter pedunculatis patuhs vel subrecurvis angustu cylindiicis, pedunculo folns 2 3 parvis mstructo, squimis pallide stramintis lanceolato lineanbus glabns pilis paucis ciliatis, capsulis angusle comcis ^labemiujs aouliu^culis pedicclatis, pedicello nectanum elongatum duplo fere tuplo superantc, slylo obsoleto, stigmalibus inulioinbus excuivit, loins auguste lanceolatis longissime et oblique acuminatis senulatis uirinquc glibcrnmis subtus glaucescentibus, stipuhs feie nullis — In Gennaiiia ad Hinau (C Ipmcncon). b Babylonica-fragilis Clemencon in herb DC liabitu et chaiactcnbtis cxictc inter S. Babylonicam et fiagilem media. Ab ilia hanet loha longissima et tcnuiter cuspidatA, subtus glaurd cosia fulva et venulis densissime articulatis percursa, amenta brevia (subpollicana) rccurva, loins paucis et parvis suflulta, i S lragilifoha fere exstipulata, obhqua, capsulas pedicellatas acutatas subiostratas (v. s)

25 S. BABYLONICA (L sp 1473), amentis subcoaetaneis paucifoliatis gracillimis brevibus curvatis, squamis ovato-lanceolaus obtusiusiulis strammeis superne saltern glabns, capsulis omnino sessilibus ovato-conicis glabernmis pallide vindibus stylo subnullo cum stigmatibus crassiusculis divancatis integris flavido, folns anjfuste lance latis longissime et suboblique acuminatis serrulatis utnnque priuutus glabernmis subtu^ saepius glauccscentibus, stipulis scmilunatis vel acutis.lamis saepius laxi sime et longissime pendulis Jin regionibus Asiae centiads occidentilis (Persu et prov (aucasicis) forsan spontanea, nunc perEuiopun iijstialom et mediam usque in Daniam etper regiones plerasque tropicas tt subuopicas totius orbisculta — WiUd sp pi 4 p b'21, Ko(h (omment. p 17, N>man Syllogu p J4J, A iders. Sdl monogr p 50. fig 32, D(fl fi j p 286, Godi et Gren fl fr 3 p 126, Gaud *HLIV* 4 p 12r), 1'll 2 p 8 Ldb ft 3 TO T M d savant* de bt-Petersb 7 p 49b, Nouv Mem de Moscou 12 p 201, Pursh Amei p (>I4, Asa Giay Man ed 2 S propendens bcr. Sal helv. p 73.— *Jcones* Gmel I c t 34 *i* 2, M,hk. Handb 4 n 1196, bane Wob. 22, Goss. Atl t. 27 — *EXMCC* Ser. hxicc. n 45, 73. Kotschy, it Gihco kurd 1819 n. 817, Kern. hb. bal austr. n. 5, Billot n. 1. Arbor ramulis (saltern apud

nos) fere usque ad solum pendentibus elegantissima Gemmae parvae acutissimae Folia 3-6 pollicesr luiiga iaro pollice latioia, basi attenuata, apice longissime cuspidato-acuminata. Amenta subpollicana, folns paucis et paivis suffulta, mascula straminea foeminea, vnidula, capsulap vix hue am longae.

a, *typica** ram is erectiusculis rubicundis, foh is subintegris aut angustis aut lationbus subtus pallide vindibus. — Kurdistan, Mesopotamia, etc. (Kotschy pi Alepp Kurd n 400.)

p, *culta*, ramis laxissime propendentibus, folns tenuissine cuspidatis obhquis argute spiratis subtus glaucis — Pro\enit aut latiiolia aut angustifoha, longifolia \el bievilolia — Modificatio saepe culta loins cirunato-reflexis vel corrugatis deformis est S. annulans Forb Sal Wob. t 41.

y, *Japoniccij* amentis sessihbus nu<hs cyhndncis acutiuscuhs defloratis valde elongatis flexuosis giacilhniis, squamis ovatis testaceis glabnuswculis capsulas fere ad medium aequantibus, capsuhs o\atia glabus subsesfcihbus, stylo muiuto glabro, stigmahbus mtcgris, loins lanceolatis cuspidatis acute seiratis glabns subtus palhdionbus —Juxta Nagasaki (Ihunb), Htkodadi (Williams et Moirow) S Japonica Thunb fl Jap. p 24, ic II jap. 31, Willd sp pi 4 668, A Gray in Pany Jap Exped. 2 p 31^, Andeis Memoirs of the American Acad of science and art. 4 p 450 Cum S Ilabylonica saepissime tonfusa ab ea quodamroodo diflert folns bievibus exacte late lanceolatis, acute et sat dense seiratis, serratuns evidentei productis, amenus eximie numeiosiset confertis, longissimis et laxissimis Vix autem nisi modihcatio liujus speciei dicenda. (v. s)

26 S MACROLEPIS (Turcz Catal baik. in Dull Soc. Nat Moscou 1854, t) 369), amentis masculis sessilibus, leraineis longe podunculatis, pedunculo folns captens aequalibus v-4 mstructo, squamis ciducis luteo vindibus ovali-oblongis subiiuncatis nervosis glaherrimis cihatis leie tolas capsulas mvolventibus, capsuhs oblongis oljtusis minutis subglaucescentibus glabernmis pedicellatis pedicello nectano subun ulan triplo superante, stylo bcevi ad basin usque bipartito, stigmatilms bifidis, folns oblongo-spathulatis basi attenuatis apice acuminatis apicem versus senulatis subius intense glaucis utnnque glabernmis. Ad fl. Selenpa (Tine/) in regione Ochotensi prope Udskoi (Midd), in virgultis Dahuihe suhalpinae (Turcz) et in montibus Stavonoi (F Schmidt). — Anders Sal monopr p. 52. fig 33 S bracteata Trautv. in. Midd Reise 1,2-3 p 77 Species singulans, affimtitis duhiae Squamis caducia, pallid is et pellucidis cum S fragili congiuit, sed diflert folns et amentis, capsularum forma et pedicello cum S amygdalina, sed difTert folns, glaucedine foima et serratura foliorutn cum S. purpurea, at differt amentis Dictur aibor excelsa. Rami gracilhnn, folia circiter poHicana, amenta, eadem longitudine (v. s)

27 S SONGARICA (Anders Sal monogr p 53. fig. 34), amentis pedunculo paucifoliato msideniibus gracilibus fkxuosis, squamis caducis pallidis glaDiiustuhs, capsuhs conicis glabernmis obtusiuscuhs pedicellatis, pedicello nectanum semicirculaie bis terve superante, Mylo lere nullo, stigmatibus crassmsculis divancatis, loins anguste lanceolatis vel hneanbus laevissimis et lucidis sat longe petiolatis margine subindurato remotissime et obsoletissirnp glanduhgnro vix seirulato pure vindibus utnnque glafceinmis concolonhus ^ j_n Songana in npis fl Ischu et I *lee* (Schrenk). S alba-purpurea? I^1 legantissima species inter S alb mi ot puipuredm media. Arboi mediocns, $^{1\ n\ n\ I\ s}$ Km ihbus pcndulis viiclhms Oeuimj[1] paiv.r ddpre^sae. Folia 1-3 pollices longi, m ijoi i ad medium J poll lata, angu&tioia subhnearid vix 3 lin latiord, costaet vonis subtus elevaus stnata, petiolus subpolhcans Amenta 2 pollices longa, tlexuosa, omnium gracilhma Capsulae minutae rufo-testaceae (v s)

B SALICES DIANDR^:

Flores masculi diandn, filamentis discretis, nectanum singulum, squamae apice fusciores vel minus nigncantes

1° Microstyls.

Capsulae stylo nullo, obsoleto vel minimo apiculatse, saepius Ionge et gracillime pedicellatae.

§ 8. *Longifolix.*

Formae Americam occidentali-septeritrionalem inhabitantes. — Frutices ramis vimineis. Folia linearia, primaria pinnati-partita, sequentia denticulata. Amenta ramulis lbliatis pedunculala, non raro conferta; squamae stramineae, subdeciduae. Capsulae obtusae, saepius brevissime pedicellatae.

28. S. LONGIFOLIA (Muhl. N. Berl. Schr. 4. P. 238), anientis in ramulis lateralibus plus minus elongatis foliatis texminaiibus elongatis lineari-cylindricis primo densifloris, sijuamis viridi-flavidis glabris vel basi villosis obiusiusculis subdenticulatis deciduis, stain. 2, capsulis oblongo-conicis obtusis breviter pcdicellatis, pedicello nectarium emargiiiatum vel bilidum productum aequante, stylo nullo, stigmatibus glandule quadripartite instar sessilibus, foliis linearibus lon^e acuminalis margine mucronato-dentatis ulrinque viridibus glabris vel pilosiusculis brevissime petiolatis, stipulis parvis brevissime caducis. ♄ In ripis fluviorum per Americam totam borealem quum occidentalem (in California, Oregon, etc.), centralem (Rocky mountains, ad Mississipi ceterosque fluvios), turn orientalem et septentrionem versus ad II. Saslcatchawan; in Texas (Berlandiur, n. 3019, 2308), in Mexico novo (Fendler, n. 813, 814, Wright, n. 667, 668, 18*27, 1874, 1875). — Willd. sp. 4. p. 670; I'ursh 0. 2- p. 613; Hook. fl. boreal, amer. 2. p. 148; Torrey II. New York, 2. p. 210; Carey in Asa Gray Manual ed. 2. p. 417; Anders. Sal. bor. Am. 1. c. p. 116, $al. monogr. p. 54. S. rubra Richards. app» p. 37. (Hb. Hook.). S. fluviatiRs Nutt. Sylva, p. 89. (S. macrotachya Nutt. 1. c. p. 89. S. exigua Nutt. 1. c. *p.* 90?). — *Icones:* MUhl. 1. c. t. 6. f. 6. Anders, monogr. f. 55.— *Rxsicc.:* Barratt, n. 23. Frutex diflusiis, vulgo 2-pedalis, ssspe autem adhuc altior, suhvimineus, in [illegible] tunco et ramis interrium protratis lateque radicantibus. Folia in surculis 3-4 poll. longa, in ramis fertilibus subbreviora, {{- poll. lata, basi attenuata, apice longe acuminato- roducta, initio utrinque pubescentia, dcmunrvulgo glabrata, costa et nervis elevatis subtus fulvis utrinque lineata; folia quae post germinationem novella exstant non raro pinnatipartita obscrvantur! Amenta saepc 2-4 in apice ramorum collecta, ramulo tarnen ovoluLo longissime peUunculata, mnscula subpollicaria, angusta, anthoris post anrhesin ohscuris. Amenta feminea saepius iongioca magisque rariflora et angusiiora; capsulic viridulae, demum totaj glabraj vel serico-argenteae; nectarium lineam elongatum apice subbilidum (v. v. in California).

p, *pediceUata* (Anders, monogr. p. 55), amends elongatis flcxuosis, capsulis glaberrimis t.-staceis, pedicello nectarium elongatum superante distinctius pedicclatis, foliis angustis suhinlegris. — In 'ipis 11. Saskatchawan (Bourgeau, 1858). Habitu amentorum singulari a forma normali sat diversa, sed vix distincta species.

1, *argyrophylla* (Nutt. sylva Amer. p. 87?), foliis et capsulis tomento argeuteo lucido micantibus. — In Texas et Mexicp novo (Berlandier 2371, Wright n. 1873). Variat : 1° *opaca,* foliis lomento cinerascente vix lucido obscurioribus. Haec S. incanam Europae simulat. — 2U *cmguslissima,* foliis angusLo linearibus, vix pollice longioribus et linea latioribus. S. brachycarprt ^tt. 1. c. p. 85? In ripis fluviorum in California (Fremont) ct Uucky mountains (Nuttall). Ob id pneci[jue raemopubilis, qucd saltern indumento foliorum et capsularum ac| sequentes praebet transitum sat evidohtem. S. taxi'folia attamen habet amenta multo breviora, subovalia, ramujos valde elongatos tcrminantia et folia adhuc breviora.

29. S. SESSILIFOLU (Nuttall N. Amer. Sylva, p. 84), amentis ramulos elongatos laterales terminantibus cyliudr^cis densifloris, masculis recurvato-pendulis, squamis apice glabratis, capsulis conicis brcvibus crassis cinereo-tomentosis sessilibus, stylo brevi. stigmatibus cruciatim bifidis, foliis sessilibus acumiiiatis integris vel denticulafis utrinque griseo-tomeatosis vel demum subde-

nudatis, stipulis acutis petiolo sublongionbus. In America boreali-occidentali ad Sumass-pranie (Dr Lyall) — Anders Sal. bor Amer 1 c. p 116, monogr Sal p 55 fig 36 Aiboi vel frutex magnus, 1-3-orgyahs Folia 2-3-poll., medio fere semipollicem laia, aut exacte lanceolata, apice longius producto acummata, aut supia rapdium latiora, mox denticuhs parvis vix ^errulata Ramuli floientes 6-8-poIlicarcs, amenta mascula ob squamas apice glabias brunnescentia, feminea autem canescentia Habitu foliorum b Smithianam nostram non male simulat. A cetcns modificationibus S longifoliae recedit haec forma folns lationbus et longe acummatis, amentis eximie gracihbus et recurvato-pendulis, capsulis breviter conicjs vix pedicellatis. (\ «» in h Hook)

P, *villosa,* fohis brevibus vix polhce longioribus utnnque albo-villosis bam lationbus apice cuspidatis, amentis pollicanbus eiertis attenualis, squamis hirsutis In Oregon (Lobb, 1852 in h Hook) Folns leucadtndron, flonbus Mimosam simulat (Nutt) A priori non panim differt, e t a S Hindsiana folns lationb'js, amentis in ramulis valde elongatis ex ovata basi attenuata, capsulis minus evidenter rostratis

30. S. HINDSUNA (BenLh pi. Hartweg, p 3*5, n 1956 et herb), amentis bievibus crasbis densidons in ramulis loliatis brevibus teimuidlibus, squdmis acutiusculis dense tomentosis capsule e basi gibba longc rostratis angulosis tenuiter pilosis bievitei peiliu llati^, pedicello nectano tenui bievion,folns anguste lanceohtis basi et <ipice squallier atteniutis .iculis maiginc mtegern* mis utni que lncdno-tomentosis v. Unatis suhopacis In California(Hartwc^, 1956, Bigelow, Hb Hook Benth) —Anders Sal. Amer p 117, bif Monogr. p. 56 (iff. 37 A S longifolia dd S tdxifoham transitum cfficit evidentissimum, nous Umen ab utid(|iie f|uodimraodo dneisd A S longiioha ramis floriions multo brevionbuh, amentis vix pollite longioribus, squamis m,ulto auguslionbub busutib, qapsuhs basi ciassionbus, apice magis rostratd., folusque demum pollicanbus medio 2-c-t lm. latis torn en to denso griseo opaco nee aif-jentco lucido oi tcctis a b taxifoha mignitudine omnium partium ioima t\piti difleit, ad earn tarn en ita acoedu formi tcnuilolia, ut non nisi amen Us lon^ionhus, brcvius pedunoulatib quadammodo disiingui possit (v s)

p, *tenui folia* (Anders monogr. p 56), folns polhcem longis 1-2 lm latis acutis utrmquo cinoreis. — In npis Snake nvei (Buike in h. Hook*) et Novo Mexico (Schui ibid)

31. S. TAXII-OLIA (Kunth in H et B Nova Gen. et spec. 2 p. 22), amentis in ramulis annotinis dense foliatis terminalibus ovato oblongis v sub^lohosis snepe confeitis, squamis basi pilosis margine onspato-ciliatis, capsulis ses^ihbus ovato-conicis. stumalibus s»essihbus crassis, fulus omnium minimis lanceoUto-lineanbus acutis obsolete denticulatis pubcbcenti-^enceis quasi distichis — Lohtur in hortis Mcxici, Queietan, Zelagae, alt. 900-1200 hex Hoiet Augusto L pluubus locis icgniMexicani in heib vanis etiam \idi. — Anders ?U)rdArmi pil 1 c p 117 Sal Monogi p 57. fig n)8 S micropbylla Schlecht et Chamisso Linna;a VI p 354 (18)J), Hook, ct Am Boţ, of Beechey voj. p 311 t 70 Arbor a Kunihio dicitur procemma, ramis iil-»-lenonbus apice pendulis, ramulis teretibus, fuscescentibus glabrts, aanotims abido-senceis Folia exacte sessiha, subdisticha, lanccol ito lmearia, obsolete denticulata, utnnque canescenlia]\iniord aigcniea, 3 5 hnegN longa, Jineim lata Amenta valdt seiotma, mascuU interdum 3 4 congesta, non raro fere globosa, dment,i fem e floribus suboctoms composila Videtur modificatio mixime microphylla et microjulis S longifohae, vains formis inUrmediis mdubie cum eä connexa

a, *wicocoma* (Anders monogr), capsulis dense argenteo-sericeis brevionbus

P, *Iciocarpa* (Anders lb), capsulis demum glabns vel pubescentibus longius comco-iostratis.

S 9. *Cinerascentes vel Caprcx.*

Arbores mediocres vel frutices non raro humiles, ramis crassiusculis subtorulosis Folia vulgo ovaha vel obovata, breviter et saepissime oj)hqu9 acummata,

supra obscure vindia glabra vel pubescentia nervis impressis inaequalia, subtus tomento incano velutina nervis elevatis rugulosa, marcescenlia brunnea. Amenta praecocia, sessiha, haud foliata. Stamina anthens defloratis sonliie flavis. Capsula longe pedicellata, conica, obtusiuscula, valvulis demum dehiscentia ommno revolutis, stylo obsoleto vel nullo. — Capreae Koch, p. p. — Cinereae Fr. Mant. 1. p. 53. (cum aliis). — Rugosae Kern. 1. c. p. 52.

32. S. CANARIENSIS (Chr. Smith, sec. Webb. Phyt. Canar. 3. p. 270. t. 215), amentis sessihbus bracteis nulhs vel cito decidms suflultis erectiusculis albohirsutis, squamis obtusiusculia fusco-fulvis Jongissime albo-pilosis apice nudiuscuhs, capsulis crasse ovato-conicis plabernmis pedicellatis, pedicello nectanum tnplo quadruplove superante, stylo brevissimo, foliis anguste lanceolatis integris supra glabiis vel nervis pucescentibus subtus glauceaceniibus*, gemmis magnis cum ramulis obsolete glaucescentibus. *5* In ^ylvaticis et secus vias, in aquosis et ad convalliuin nvulos insularum Fortunatarum : Ganana (Leman), Tenenffa (Bourgeau), Palma, Nivana et Madera (Chr. Sm.). — V. Buch Beschr. Canar. Ifis.p. 159-178; Lowe prim. Fl. et Faun. Maderae, p. 14; Anders. Sal. monogr p. 57. fig. 39 — *Exsicc.* : Bourgeau, pi. Canar. n. 195. 1502. Arbor non parva, vel arbuscula saepe 20-pedalis; ,rami virgati jumores incano-tomentosi, saepe gtaucedine subirrorati. Gemmae gldbrae v. cinereopubeiu!ae. Folia 4-6 pollices longa, l-1±, poll, lata, basi modice angustata, apice longius proJucta, mtcrdum obsolete crenulato-undulata, subtus nervis areolato-connexis subreticulata; atipulae parvae, caducae, falcato-semilunatae. Amenta ma>c. l-l.-} poll, longa, aureo-pilosa-; feminea valde conferta, 1-3-pollicana, ihachi et >quamis dense et longe pilo&a. Capsulae lmea longiores, obscure vindes, demum su bin grit antes. Stylus fuscus; stigmata subconniventia. — Ut ex his apparet quasi inter S. pedicellatam et S. daphnoidem intermedia, sed mihi magis cum S. grandifolia analoga videtur et per S. Silesiacam (cui ins>iper non parum similis!) cum S. capreis cetens coniigua. S. Silesiaca in Silesia, S. grandifolia in Austnae et Helvetiae alpibus, S. demque pedicellata in ivgione meditenanea, haec in insult Fortunatis, prajterea non negandum est hanc specicm in multis, turn notis turn hahitu, S. discolorem amencanam revocare et hanc cum formis affinibus in orbe vetere optime conjungere. Denique mediante S. pedicellata cum S. Safsaf et cetens foimis Afncae indigeuis sat aifinis est, eas capsulis pedicellatis breviter et crasse conicis valde simulans, unde inter S. subtropicas et boreales stylo nullo sed pedicello longo capsularum praditas nexus evidentissimus! Sub duabus occurrit formis :

a, *subdap lino ides,* amentis longissimis, capsulis saltern exsiccations nigrescentibus, ₃quamis et rhachi longe albo-villosis, foliis usque ad 6 pollices longH rigidis subtus sat intense glaucis, gemmis magnis conico-rostratis, ramis interdum glaucis. (v. v.).

p, *sub pedicellata,* amentis brpvibus ob squamas glabriusculas minus viHo^is, capsulis laetiu^ viridibus longius pedicellatis, folus basi et apice aequahter attenuatis teuuionbus >ix 2 poll, longionbus semi-poll, latis initio subtus pubescntibus costa et nervis elevatis rugulosis, gemmis mmonbus, lamis vin li-testaceis (v. v.).

,33. S. PEDICFLLATA (Desf. Fl. Atlant. 2. p- 362), amentis demum breviter pedunculatis basi paucibracieatis elongalo-cyhndraceis rariflons, rhachi villosa squamis lulvis apic^ parum mfuscatis ot'longo-obtusis saltern basi pilosis' capsulis ex ovata basi conicis glabris pedicellatis, pedicello nectanum 6-8"' superante, stylo brevi, stipmatibus brevissimis bilidis suberectis foliis oblor.go-obovatis v. lanceol Uo-lmgulatis subtus reticulato-rugosis t'omentosis, inargine undulato-crenatis v. integris, stipulis semicordaiis serratis, ramis plerumquo tomentosis. ^1n regione mediierranea occidentali, sc. in Hispania (Baetica), in Siciiia pi. locis, in paludibus Cdlabnae, in Corsica (iiequien, sec. exempl. a D° Cisson). etin regno Al^eriensi et Tunetano ad rivulos. — Ten. Syll. p. 480; Guss. Synops. 2. p. 623; Lange et Willk. fl. hisp. p. 229; Bertol. fl. ital. 10. p. 31° (sub S. nigricante); Anders. Sal. monogr. p. 59. fig. 40. — *Exsicc:* Choulette, Fragm. Fl Alger. n. 278- (excl. ram. masc. qui ad S.ab bam pertinet); Billot n. 2365. Arbor mediocris vel frutex sat diffusus. Folia :

1° late lanceolata, 4-6 poll longa, basi et apice aequahter attenuata, supra lucide vindia, subtus denuddta venuloso reticulata, us S grandifohae simiha; 2° obovata, &ubintegia, obscure vmdia, subtus dense tomeotosa ut in b Caprea brewfoha, 3° lanceolata, seirata, longius attenuata, supra canescuntia, subtus dense tomento«a et rugosa ut in S. cinerea angustifoha Ob capsulas longe pedicellatis gldbernmas et stylum brevissimum certepraebet cum S dfncanis affimiatem magnam Rhachi villosa, capsuhs glabns et squa mis ferrugineis baibatis non parum S hastatae simihs et, his omnibus notis compositis S Silesiacae maxime affinis vel in sua legione analoga Eo dem modo quo & Cananensis, cui insuper ita similis, ut difficilhme distinguatur, ramuli et gemmae non raro glaucescente& conspiciuntur Cl Wimmer hanc speciem veram Europae incolam haud accipere vult (Sal europ p 9). (v s)

34. S (RANDIFOLIA (Ser Tssai dune monogr des Saules, p. 20), amentis breviter pedunculaus bisi folns parvis dernque suffultis patuhs subranflons crassiusculis, squamis terrugineis apice fuscionbus non longe pilosis, capsuhs ex ovata basi elongato-lanceolatis nifano-tompntosis pedicellatis, pedicello nectanum 4 6° superante, st^lo brewssirLO, *>tigmatibus ovatis bifidis patulo-divancatis, folns oblongo-obovatis basi lon^e attenuatis acuminatis planis sed sub[f]us costa neivisque acute prominentibus argute reticulatis supra vindibus subtus cineieo-glaucis et pubescentibus margine undulatocrenatis, stipule reniformibus, gemmis glabrescentilms — In jugo alpino mendionah europaeoperltdham boieaiem, Gallidmmdximeoccidentah au^tralem, Helvetiam, Bavariam et Austnam, lbi sat frequcns — Koch, Comment p 36, Synops ed 2 p 70, Kem Weid oestr p 242, DC fl fr 5. p 343, Godr etGien fl lr 3 135, Gaud II. helv 6 247 , Bei tolon fl ital 10 332, Wimm Sal europ p 64, Anders Sal monogr p 60 S cinerassens DubyBot Gall p. 423, Hegetsch fl helv 2 3o2 - S dppendiculatd Vill Delph 3 77*) s sphacelatd Loisel gall 2 *AiS.* S acuminata grandifohd etS stipulans Sei Exsicc n 41.2 — *Icones* Reichb n 1225, Host Sal t 72 (S monandn) Anders 1 c. fig 41 — *Frsicc* Wimm Hb Sdl n 83,84, Kein Hb Sal n 147 151. Lst fonihMere alpigena,S capreae velS cinerea? ltd similis ut a plunbus hujus imdificatio alpina censeatur (cfr. Neilr. fl v. Nied Oestr p 262) nee ab us distinguitur nisi imentis mitio minus villosis, capsulis demum longius et gracilius pedicellatis densius dlbo-lanatis, loins typice valde elongatis basi eximie angilstatis et reticulo nervorum pulchernme proinmente In lejionibus cditioi bus alpium supra dbietis terminum adscendens humilis adest rarais torulosis, folns breMbus et eximie incanotomentosis, quo magis autem regiones t>ubalpinas et adhuc mlenores secus torrentes rapidos descendit altior exuescit folia majora tenuiora et utnnque vindia fiunt, amenta etiam magis praecocia, ita ut demum difhcilhme ab affinibus distinguenda \idoatui Praeteiea S bilebiacae simillima eique in suit alpibus omnmo analoga. Itaque modificationes sequentes propono .

&,pubp\cens, frutex humilis, ramis crassis nodosis diutius mcano-tomentosis, loins spathulato-obovatis supra et praecioue subtus cano villosis demum glabrescentibus sed opaco cmereis et exsiccatione saepe nigncan tibus lncano glaucis, imentis subcoastaneis breviter pedunculatis,capsuhs dense alho-viilo&is, stipulis panis — Kern. Hb Sal n 146 Vanat 1° pam/oita, folns pollite fere longionbus, supra medium J-J poll latis, utnnque sat dense incanis — 2° *miaustifolia,* folns 2-3^ poll longis supra medium vix pollicem lati>, ba^iff versus longe attenuati^, supra demum glabratis sublucidis, subtus glducis Ha?c forma in repione summa 'iipium optime viget Hie \emimiliter jungendae sunt S albicans (Bonjean in ber Ess p 21 et Exsicc n %;, amentis elongato-cyhndraceis suDranfloris, b juamis ferrugineis apice piceis albo-villoMS. capsuhs brevuer pedicellaiis, pedKello nectanum 2-3 supeiante, sty'o saepe bifido tul\o, stn.matibus luscis bihdis cruciatim patuhs, folns utrinque molhter incano-Mridibas subtus intense glaucis s granditoha p lanata Gaud helv a, p 248 - 3° S Laggen Wimm Bot Zeit 18o4 p 162.*S* glaucagrandifoha Wimm Sdl europ p 256 Hab in Mont Cenis (Bonjean ap Ser), Oberwalhs am Rhonegletscher (Lagger), Diableret, prope Bex

(F Thomas et ipse) - Magnam certe cum S glauca habet affimtatem (ob amenta GOcCianea capsulas bitviter pedicelhtas stylo bifido apiculatas>), sed loto jam indicno sal copiose crescit et quo rnagis loci declivia tum eo magis ad formas vulgans S grandifolia* hanc utnseuntom ohscivavi, mihi ilique hujus species forma typica vi-

P, *nrescmi,* frutex plunorgyahs interdum in formam et magnitudinem aibons evcrescen* .amis i.noo-piceis vel testaceis, stipulis raagms cor-iatis fohis saepe maximis obovato-ianccolatis supri lucide vindihus subtus pallidionbu- <Witissime nervosis basi plus minus longe attenuatis mirgine saepe grosse trenatis, amentis pnecocibus brevibus magis densinor.s subebractcatis Loci huiuiliora alpium secus amnes et nvulos octii| U Van it \» *grandifolia John* usque ad > 8 polhces longis supra medium] i - 2 poll latis, subbre\c acuminitis s d]nsi lonce attenuatis suj n satuidie vin iibus gl ibernmis, subtus crebrc et valide venulo«orpucuhtis nunc id nervos saltern paroe puberulis nunc glabernmis — *l°acunlaha* foliis 2-4 toll longis sat icumiiiito productis supra medium I I, • poll luis - *pbieufoha,* folns obovato-oblonms vix 2 noil longis supia medium 1 1] latis ngi lionbus subtus obs^uns et p w l vtQiilosis S Silesiacc sin illima — 4" *tcmnfoha,* folus latiuscX et elongatis supia laetius vindihus subtm pallidionbus molhter lomentosis tenuibus In regnmibus lnlenonbus s capreim vol S cinerpnm simuhns Hire cst folns 4-5 poll lonn'is supia medium 2 poll latis vcl f Ins obovatis ijuct valdo oblique \el folns infia medium subla' tionbus apice plus minus et vulgo recte acummatis Hybi das seauentes S gnndifoliae proposuit ill Kernel *

X S AITFNUATA (Anders men p 6'0 iraentis coaetanois o ovito-cylindraceis scfiiamis acutis ap ce itratis cipsulis lonce peditellatis, stigmatibus patulis' IOIIIS elhpticis pnmo senceo lomentosis subtus cinereo-ghucis —Kern s' siinergririd.fob.a-cp.eil c p 246 Hb Sal *n* 153,154 In Austria infenoie Mini S grandifoliT n.m.s cogn ita v.detur

X X S MACRQPHYLLA (Anders lb), amentis subcoaetaneis,masc ovatis squamis apiceatratis capsulis cano tomentosis stigmatilms conniventibus, folns elhnticis basi rotundatis sulrtus alb.do-toraentos.s — In Austria infenore S sub grandifoli i caprea Kern 1 c p 247 — Vix ab S caprea dueisa

X X X S LiMNoti-itA (Anders lb), amentis sem.pollicanbus nudis sessilibus, squamis fulveMsentibus, capsulis cinereo tomentosis parvis bicvitei ppdicella- Us loins obovatis supra venis lmmtrsis riigosis obscure vindibus suhtnc opaciscrebemmevenulosis stipulis null.s S aunta-grandirolia Kern CW hot Zutsch 1864 p 187 Hb Sal n Io2 - Prope CEn.pontum *1* \- SL S aunta vix distinguere valeo A vera

35 S SILISIACA (Wilid sp pi IV p 060), imentis sessilibus bis! h teis paucis vel null.s suflultis Ucmum breviter peduntqlatib et biacteatw i d S n m oblusis squamis apice fuscis longe pilosis cipsulis ex o^atai basi c onr o elon^tis glabns sf uceisw) , e licellitis pedicelTo nPctaiium"io" supemme stylo hrevj, stigmatibus ciassis bifidis *di* mcitis, folns obova ρ vel ov >tn el' lipticis vel plLsmnus hte lanceolaus acumiuaiis undulxto! errat.s ™ tenu.tate rurtscinlibus dcmun| olscufe vi.ul.bus subtus ,ubwncotonfii" et siib omentosis iiervis itutf j n m.fiulis tetitiiUtis slipulis rtndo?mil?ui Sin •IpjbM„ I ieg.on.bus subalpm„ Silc sidP quum boi ussJe turn^ui,,S« m Car" Huiirfini Buumina Pt Bosnia Ouam ex Itaha Hen fre^ svH fl

"h ca t.on s S 1 S.04 * p W0) Utuleruntauctous sine ullo dubio mo- Lelatim Sm r u V o imt C(nsemUe ^ ir \T Sco11 * provenU uti S sphan ?n synnn. *J* ^ mlerj letdFi voluit Wimnier - Koch Comment n S M L , V 7iq Wimm Iahresb d schlcs C,esellsch 1857. *t'hlk* AndSrs q»i?*1l M** P lb8, Sdl e ?10 P p W), HartiK Fortl Cult p 404 fnhi VMM n FM ?C1 JoKr p 66 S *lu6m*" Scbk Handb t 317 SK fagifolia Willd n. 103. S lasiocvpa Wimm. S Mauckscim «artig Forstl CulU

pi p. 396— *hones* Reichb 1219, Anders 1 c. fig 42 — *Exsicc.* Wimm HbJ Sal n 2 3 26 27 Frutex in regionibus supenonbus (ubi cum S Lapponum et S hastata fiequentissime mtermixtus) parvus subdepressus, in inferioribus (ad terminum supenonm S purpuredi) quasi in formam irbons excrescens, rdmis glabns, gemmis etidm glabns parvis Folia forma exmie \ im typice ob vito valia basi brevitei attenudia ayicc non raro 0 lique subicuminatd 2 J poll longi, supia medium 1 2 [oil lata, margine subintcgra pnmo utnnque villosa mfesc niia, demum ghbiescentia et ngida sed tenuia et exsircdtoone obscure rufesctnti vindia Amenta mascula subcylmdnca a thens demum fuscis, feunnea 1 2-polhcana Capsulaa typice glabrnt, vindes vel rufescentes, line i sub'ongiores, stylo crassiusculo flavido — Tximie vinat arbusculd vel frutex humihs subdepressus, folia t, latitudme summa dd in^uste lmceolita, nunc utrmjue pihs conspersa, nunc glabrata, utnnque vindia \el subtus glducescentn., amenta proecociat omnino sessi la aut subcoaetanea, pedunculo bievi folus parvis instiucto, rhichi vul^o gldbra vel hirsutd Est sine ullo dubio S cdpieis maxime affinis ab us ad tjpum s hislatae ti msiens A cij)reis non semper tute) differt loins mlescenti v ndibus, tenuionbus et n$_G$ridionl us sed vix coridceis, icute 1 ervosis utrinqup feie com olorihus lmentis dngustis capsuhs noiinahter gldbns vulgo ddhuc longius pedicelldtis, stylo brew dpiculatis et a S hastata folus Irequentius hirsutis, minus leticuldto venulosis etlucuhs, capsuhs multo longius pedicelliti-», stylo brevion — Hegionem sibi peculiaiem occupans in ct nlio luiopdp, omnino inalo^a est S gidndifoln in llpibus adhuc merwlionalil us, cm in&up r hdbitu simillima et notis cems vix ulhs distmguenda, per eim alttni dt(m etidm quandam cum S pedicellati adhuc dustrdlion et S Cinaupnsi pianbet In societatp S Cdpudrum frequenti^sime crescens multas exbibet loimas iul cum us bybndis aut ad eas ti insitonas, quacum sequontes ex Silesix alpibusaffert ill Wimmer (Cfr Denkscbr 1853 p 167 et sciueut)

|3, *subcaprra* (S caprca-silesnca 'Wimm Fl 1849 p. 43), amentis elongato cylindncis, lem Lxiflons, squamis ferrugineis seminigens, cipsuhs long(subulatis obtusis (albo villosis), stylo suboblitterato stigmatibus eiectis loins ovahbus subtus niollittr cdno tomentosis ru«rosis —Wimm bal europ p 08 Hb n 8 fem , 134 misc Coll Salic n 8 33 Sal **191-194, 196 — Formae vanae'**

Y, *subemerea* (S cineiea silesiaca Wimm Denkschr 1 c) , amrntis oblonpo cylindncis 1 dsi laxiflons capsuhs pedicello longo conico subuldtis (senteo gnscis) folus oblongo ovdhbus v lanceclatis acutis suprd sordide vindibus subtus glauco pubeiuhs lugulosis —Wimm Sdl europ p 211 Hb Sdl n 62 Coll 197, 1^8 Duo specimina mventa I

ô, *subaunta* (S aunla silesiaca Wimm. Flora 1 c), amentis ingustioi Ibus et brevionbus, squimis fenugmeis, cdpsuhs cano-lomentosis v nud uscuhs, folus obovato lanceolatis v o^allbus glabns subtus j?laucopalhdis — Wimm <-al euiop p 209 Hb Sal n 21 34 63 130 Haec frequentissinaa et formae numerosissim<e' Coll 199 203 206 208 210 **211**

£> *Caucasxca,* amentis breviter pedunculatis folus pnrvis 3 5 suffultis angustp cyhndrdccis subdensiflons, squdmis obovttis lpice infuscatis P'us minus I< n^e ilbo pilosis, cipsuhs m^uste COMICIS rlabns vel tonientosis icutis pedicellatis pedicpllo nectdimni terquiterve supeiante, stylo t vuU mi bifulo stigm itihus ptrtitis patulis folus elliptico-oblon^is Dicvitot dcuunmtis tcnuibus utunque gl Lbenimis concolonbus \cl sub tus Fallidioubus maigine undulaU) crenitis stipulis semicoidaiis scnulatis acutis s ^iles at i Lcdeb fl IOSS 3 p 609 p p In provincns CAU casicis (Noidminn Hb Fetrop et Ledeb) — Viridt r *liioearpa* capsule longis pedicelhtis *g\\h* ipmna — 2° *crmtarpa* capsuhs hi PVIUS pedi eellatis ffnsto tomentosis — Frutex rorle medioons staturae lamis erecus torulosib cortice fusco atro glabemmo obductis Ptidm novelhs glaberrxmis. Folia jumora obova^o-ro^uadata, subpollicana, pellucida,

utunque, costa forsan excepta, glabernma et dilute vindia, adulla 2 3 pollices longa, vix polhcem lala, lanceolata, acuminala, supia obscure vindia, subtus pallidioia vel etiam opace glaucescentia, margine inaequa litei seirata vel undulala, pnrum firma Amenta masc subcoaetanea, crecta, anguste cylindncca pollicana, fominea longius pcdunculuta, et folus sat esolutis sed paucis suflultd, ptiam pollicana et 2 h» crassa, capsulae vindulae, vix lineam longae , pedicello, stylo ct stigmatibus rufcscentibus Habitu cum S hastati et nigncante etiam quodammodo congruens vix a S Silesiaca specie distinguuida, ab ea habet ioha tenuia, pHlucida, concoloia, amenta giaciliaet capsulas longe pedicella tas, sed diflert amentis pedunculate subserotmis loins evulentioubus suttultis, capsulis brevius pedicelhtis et stylo evidention.

"3() S. AURITA (L sp pi 1446), amentis sessilibusbiacteis vel folus minutis suffultis, masculis ovatis, fcnnneis bievitei et anguste cylmdraceis densiflons obiusis, squanns fenugineis apict mfuscatis tenuiter pilots, capsulis elon gito conicis albo-tomentobis (\el glabnusculis) pedicelhtis, pemcello nectdnum ter quatene superante, stylo nullo (vel brevissimo), stigmatibus brevibus ci LSSIS crecto pitulis, loins obovito obkmgis vel lingulato-Ianceohtis recurvato apiculatis undul ito-uenatis lugosis vul^o tenuibus supra obscure vmdibus *el* incdiiis subtus glauci^ tomentoso-hiitisiiervis prommentibusreti culato sciuposis, stipnlis renifoi mibtis, gemmis et ramuhs ^labn^ saepius IUfescentibus ^ I" prat is (I sylvis uligmosis, paludibus etc pei omnera Euiopam, usque in Lappo ii im infenorem , in bibina altaica (sec Ledob), uialensiet id 1 myp ct Jamau-tdu (Bunge) etiam in Persia boreali ad Asterabad (Buhse) sed voiosim S. cinerca — Willd sp pi 4 p 700, Koch Comment p J8, li Mant 1 p a5, Wimm.Sdl euiop p -)1, Anders i5dl Monogr p 69,Wablbg Suec n 1138, LangeDansk fl ed 2 p 661, Koch Synops ed 2 p 7rj0, Wimm fl v Schles ed 3 p 186, Kern Weid Oesti 1 c p 13, Hartig *orstl Cult p. 402,Godr etGren fl fi 3 p 136, Gaud fl helv 6 p 24J, Hook et Am bnt fl ed 7 p 404, I inge et Willk. fl hisp p 229, Bunge Relnju lehminn 1 c p 497 S uhgtnosa Willd Lnum pi h berol 2 p 1007 S rugosa Sn *bxs.* p 18 S ulmifolia Vill Delph 3 p 776 b Iserana Pre^lfl cccft etReichb fl excurs (formi pusilh dppiessa ex Wimm) S molhs, S spireaefoha, b cinnamomca, b ciucrea bchleichei Exsicc — *loones* Hoffm Sal t 5 f 3 t 22 f 1, k B t 1487, Reichb icon 1220, Sal Wob t 124, Hailigl c t 39 Anders 1 c i 4*, — *Lxsicc* Ehih aib n 39, Ser Txsicc r> 37 101 102 (>), 103, 1 r H N 7 60, Wimm Hb Sal n 25, Kerner Hb Sil 1 bo 171, Billot n 848,928 — Sal capreae maxime alfinis ab ea sappe dilficillimp di^tinguitur 1st tamen frutex vulgo non altus, ramis gracilionbus di\ancatis,]unionbus rufescentibus, Stepius glabns, folns brevibus vix 2 poll lon^ionbus, typice late et breviter obovatis apice brevissime acuminatis, basi \alde angustatis, tenuibus, junionbus eximie rulescennbus, rugosis et crispis, amentis 1 levionbus et angustionbus, capsulis brevius pedi cellatis vix lanatis sed adpresse senceis AS cineiei dignoscitui ramis et gemmis glabrescentibus, loins lalius vindibu> et valde rugosis, capsulis magis dlbo-senceis vel rans«=imp glabrescentibus Stipulap m hac minus de ńciunt, plerumque mdgnae, unduldtae, saepe crispae —Quoad folia maxime ludit, e latitudine permagnaad formas anGustissimas, apice rotundata vel sat longe acuminatd, glabernma, vindia vel dense mcano-tomentosa, majora (usque ad 3 pollices longd, supra medium 2 poll lata), et mmora (vix polhcem longa et semipolhcem lata), margine Integra seu crispato serrata Has praecipue sequenti modo disponenias censeo

a, *nemowsa* (hr. Bot Not 1840 p 187), frutex sat altus, fere arbuscula, ramis saspe strictis, folus obovatis vel ihombeo subrotundis sciuposo-iugosis, stipulis magnis, amentis fere polhce longionbus Ad b Capream p >tissimum vergpus Vanat]OI;««C«IA, folus tenuibus utnnque vmdibus lere gUbratis nunc margine subintegns nunc crisp ito undulatis, stipulis magnis Hapc praenpue locis silvalicis — 2° *cmera&cens*, loins ngidionbus supia plus minus opacissubtus evidentius canescentibus margine sappius integris, stipulis inteidum nulhs vel parvis Hab in locis minus aquosis

p, *uliqmosa*, liutex mediocns, ramis undique divancatis, folus plus minus

basi attenuatis hngulato-obovati9 vel anguste lanceolatis planiusculis, amentis brevionbus et tenuionbus Locis magis uliginosis Ad S cineream fere accedens Vanat 1° *virescens,* folus tenuibus obsolete crenatis utnnque vmdibus, 2° *cmerascens,* folus demum subconaceis subintegn,s pr«fi«ertim subtus canescentibus

y, *imcrophylla,* frutex subdepressus vel humihs, ramis brevibus torulosis cnssiusculis, folus vix pollice longionbus obovato rotunditis vel oblongo-ovalibus immo ba>i subcordatis secus nervos tomentoso incanis, amentis brevibus In pratis pascuis et paludibus uliginosis — Ad S antiquam accedens Vanat \°*virtscens,* folus tenuibus utnnque vindibus exsiccatis saepe nigiescentibus (fere S repentem revocans), 2° canescens/olus crassiusculis, utnnque sed praesertim subtus plus minus dense mcano-tomentosis

37 S CINERFA (L. sp pi 1449), amentis praecocibus sessihbus basi bracteatis mascuhs oblongis femineis elongato cylindncis piimo densiflons, squamis apice nigntantibus dense gnseo tomentosis acutiusculis pedicellatis, pedicello nectaniim 3-V superante, st^lo brevi vel subnullo, stigmatibus brevibus crecto patuhs, folus ohovito lanceolatis breviler acuminilis bisi angustatis undulato-crenatis supra sordide vindibus vel pubescpiitibus subtus palhde gnseo-tomentosis nervis elevatis lugosis, stipulis subreniformibus, gemmis et ramulis tomentosis — In omni Luiopa, a maxime meridional! usque ad fines infenores Lapponiae, in Asia media et per bilmiim usque in Kamtschatk im (9 Beechey ex Hook et Am), etiam in laun alpibu»» (Kotschy it cilic 18i3) et in provincns caucasic s E Peisia boieali mihi dubia. — Koch Comment p 35, Fries Mant 1 p j4,Wimm Sal europ , Andeis Sal Monogi p 71, Wahlenbg Suec n 1137, Koch Synops ed 2 p 74«, L uige Dansk fl ed 2 p 660, Kerner Weid Oestr p 128, Hartig Torstl Cult p 403, Hook et Am. bnt fl td 7 p 403, Gren et Godr fl fi 3 p 1)4, Lango et Willk fl hisp. p 228, Beit fl it. 10 p 333, Ledeb, 11 ross 3 p 607, Bungt Rehqu. Lehmann 1 c p 497 *> acuminati Ehrh arbor p 89,Hoflm. sal p 39, Ser Ess p 12. S rufineiMs D< fl fi 5 371 S aquitica Sm but p 1075 — S lanata Vill Delph 3 p 777 b. Hoffmannnna Bluff et Vingerh 3 568 S dumetorum but fl helv 2 p 284 S oleifolia Sm but p 108) S tonstncta Guss Enum pi Inai p 403 — *Icones* Hoflm Sal t. 6 et 22 f 2, Host Sal t 68-70, L B 1402, 1437, 1897, S\ Bot 56ri, Fl D 2601, Reichb 1222, 1223, Hartig 1 c t 40, 41,Sil Wol) t 12*>, 126. 127 —*Exsuc* Ser. Lxs 3 4 5 26 95-97, K<i Hl) N 7 V), Wimra. Hb Sal n 57 58, K^rner Hb. Sal p 164 165 — Saepius cum S capreae comparatur et ob foimas magnopere vanantcs difficillime ab ca distinguenda quaie etiam cum eaa Bentham (forsan mento) conjungiiui Vulgo in foimam arbusculae mafons excrescit, lamis subtorulosis divancatis *cot* lice cmereo, in annotmis molliter cano tomentoso obductis Folia, qu,p fcrma exinne vana, typice minora et angustiora, basi magis attenuata apice lation bicvius acummata, consistentiadunora, supra obscure et sordid? wndia, nun raro tomento tenui canescentia, subtus palhdioia et guspo tomentosa, ssepe ommno denudata \el lufescentia, neivis acute prommentibus areolato reticulatis Amenti senus evolvuntur, mascula centnfuga, multo angustioia, staminibus saturatius fuho-aureis, capsiilis mmonbus — S giandifoliae ^alde analoga, ab ea differt folus vulgo minonhus et brevionbus, apice lationbus minus pure vindibus stipulis minonbus, amentis exacte prdpcocibus et capsuhs guseo-hirtis minus pedicellatis A b aunta recedit loins magis elongati-., textura crassionbus, canescentibus, subtus palhdis, ramis et gemmis tomentosis

a, *lahfoha,* folus obovato oblongis apice plus minus brevi obliquo supra medium saepius pollice lationbus Vanat 1° *Integra,* folus subintegns, virescentibus vel incanis. — 2° *enspata,* folus crebre serratis saepius vinduhs, inteidum opaco incanis

p, *lonqifoha,* folus lanceolato-oblongis saepius ad medium lationbus integns vel cnspatis virescentibus s cmcreis.

Y, *brevifoha,* folus latuudinc non duplo longionbus saepius serratis vires-

centibus\el mcanis Vanat microphylla, folns vix semipollice longionbus et subiotunddto obovatis

6, *laxiflora* amentis serotinis in peduneulo plongato foliato patulis, squamis angustis fulvis capsulis If ngi sime pedicclhtis stylo subevidente — Valde singuldns iorrna cujus p cimiiiipa"ura adbchottwiU prope Bres *' lau lectd communicavit ill Wimmer

✕ S LUTESCLNS (Kerner Weid Oesttn 1 c p 131), initntis sxpe brpvissimc pcdunculatis folns sq dinaefoinnbus 4 7 fultis, feniiiipis bis ter longionbus quam latis, s judinis in basi palhdis | ilosis, capsulis longe pedieelldtis, pedi cello necianum tpr qumquics superante, stigmitibus piect patuhs folns» oblon$_0$o-obovatis unduldto suratis adolescentia hiiescentibus opaci^ utnnque mollilcr tomcntosis i lultis supra obscure vmdibus jubuuhs subtus cino lomcnto^is — In Silesn (Wimra) Neomarchi i prope Dnescii (I asch) M D Baden |i Doniucschingen (Biunnen) (arlsiuht et Heidelberg (Doll), etidm in Anglia (tcste Wiram) — S unerea aunli Wnnin M 1849 p 43, Denkscln p 163 S auntd cinerea Wimm Keg 11 1848 Sal europ p 202 S muitmervis Doll 11 bid p »IG —Cum s aunli tommuma habct ramos di\ancdtos ter ues glabios pdrtes iloiuun nnnores ct capsulas bnves, scd cum S unerca amenta h n^rora stvlum bievisbimnm sed sulevidentem iohorum iormam et indumentum Nonne melius S cinereL **pat viflora**'

38 S C/VPRFA (L sp 1448), amentis pr«ecocibus s(silihns biactois mu\utisdenique suffultis ranflons, iuas uhs ovali ovalis lumntis eloni^ato cylindncis bubpeDdulib squa ris acutis a[ice niyris lon$_n$c vill sis dpsulis con co elon gatis obtusiusculib cireieo touientosis peduellatis pedicello n clanum 4 6ies supei ink stylo subnullo stiKmatiluis ov itis bifid is conniveniibus foliis ovato ovahbus v(1 latp ldncc 1 itis obo\ itisve obliqut dcuuiin itis obsolete un duldto crenatis supra virulibus ^labi s subtus palli Iionbus touientosis in neivi9 saepius elevatis inolliter lanatis, stipulis l^niloiimbus gemmis pt ramis glabns *5* In omui Eui)pa usqut in Lapp mam subalpin im, p(*i* Asiam mcdicim et borealem in Sibinam baikalensem el legionern Amuu isom in re gione Cmtdsi Asia minoii el Fersn borcili (^ed spfcimnid cuta ox ea ttira non \idi)—Wilhi sp pi '* p 703, K cb Conimcnt p 37, lories Mant 1 p 57, Wimm Sal europ p 5), Anders Sal monogi p 7o, Wahenlb Suec n 1136, Lange Dinsk H ed 2 p bfal Koob Synops ed 2 p hO Wimm 11 v Schles ed 3 p 18i Kern Weul Ocstr 1 c p 247, Hartig toisll (ult p 402 Oren ct Godi II fi *i* p 13), Hook et Am brit 11 ed 7 p 404, Iangp Pt Willk 11 lusp p 22(), Beit 11 it 10 p 335, ledeb 11 ross 3 p 009, Bungp Uel Lehmann 1 c p *Vil,* Max niim *b* Amur 1 c p 243 Losson et Buhsc Her ptrs 1 c p 201 - ^{s} tomentosa bei Exs p 14 s hybnda Vill Delpb 3 p 778 S aungeiana JLij abr J98, DC 11 ir 5 34i S ulmifolia Ibuill Par p 518, DC 11 fr 5 340 —*hones* HolTm Sal t 3 f 1 2 IS 1 4, Host Sal bb-67, Sv Bot <)8, PI D 24), I B 1448,Reichb 1224, Hartig ioistl Cult t 48, Sal Wob t 121, 122 Anders Sal lipp fig 0 Sil monogi lip 45 — *Ixsicc* Ehrh arbor n 08,Ser n 68. 76 80 98 99, Reichb H3I , Fr H N , Bill n 462 Wimm n 40 5o 56 Coll Sal 21 2o, Keinern 157 160 Arboi vul^o sit all i tiunco leie pedem crasso et cortice nmoso, ramis fuscis \e\ satuutp vindibus, etiam annotinis «?j.pissirae typice glabns Gemmae sat ma^na, cistaneae VP! rufescentes tolia lorma idm >dum vana typicc ovalo ovalia *2-o* polices longa 1 3 poll lita basi rotundata non mo subcordala neivis se undan s 6 12 supia dilutionbus subtus elevatis lunatis rugosa, peiiolus sat lon^us llivus Amenta pumo albo-villosi nid«««cula laAe niro llavicanlu ovih-rotundat i femiuea usquo ad 3 poll lon$_n$a demum lanlloi i sul pen lula Cdpsulae linea longiores, canescentes stigmatibus lulvi^ 1 ximit v mat 1 statuia arboi excclsa arbuscula vcl fiutex, in rcgionibus alpcstnbusbumilis 2° folns *a)* latilolia lol lotundalo o\ Uibus supi i glabns, sublu* sat dense tomcntosis bdsi rolundatis \el ingustitis, *b)* parviloha lol o\atis v obovato-ovaubtis subtus niveo tomentosis v glabrescentibus basi i jtund itis v an$_n$^{r}uslatis (Reich f. 1227), c) angistifolid lol lanceolato obovalis, basi longc aou minatis, utnnque aut niolliier cino-toinentosis (tune S la{ ponuui \cl Ldestadiauoe bimilliuid el in re$_b$iombub alpinis ficqucntior) aut glabemmis et

tenuibus vel sabius tomentosis (tune s grandiioliae sat simihs) Praeterea vaiiant folia in omnibus Integra vel undulato immo cuspato-serrata btipulae giandes, petiolum subaemantes, vel paivae subdehcientes — Amenta, longitudme et crassitie vana, in alpilms mterdum bubeoaetanea i«quamas in speciminibus nonnullis dtemrnas vidi, unde inientd fernmea eximie dichioi. — & caprea vinculu mliino cum ^ ami'a eteineitd (onjunctd, founds non paucas exhibet, dequibus valde inceituni vidtlui cunam op Lime smt adscnbendae.

p? *orbicularts,* amentis *ciasse* cylindncis 1J poll longis semipoJlice *tras*siuscuhs, squamis atns longissime villdsis" capsulis parvis conico bubulatis tenuiter tomentobis longissime pedicelldtis, pedioello tenu'bbimo nectanum iere dedes sup rinte, loins obo\dto-oibiculatib lere 2 poll longis 1 \ -*2* poll ldtis pldnis supra gldbeniniib subtus parce tomentosib vindiusculis neivis tenuissime elp\atib vix mgobib lntpgornmis — Ad urb PetropawloA Kdintschatkae Cdpsulib sohto longius pedicellate paiviset ioliib tenuibus, planiubcuhb, modiu tomentosis, orbicuhii^buj el giandibuba \erd et tjpica b capied difftit An vere b tdpredp conbociandd ? (v. b,)

Y, *capwola* (S. capieola Kernel in hit), ameniis bieviter ovatib vel oblongib squarnis fpi%tot^ piceis, capsulis longius pedicelldlis conicosubulatis albo-cinereis, stylo brevi, stigmahbub bievibus, folub mino ribus superne satutatius opace virulibus rugosis subtus cmpreis obovatooblongis, basi subito angustatis Ftidm in bilesid et pi ope Wipn s cipiea-aunta Wimna H 184(), Kun Exbicc n 161 162, et lorsan (turn S capiei mioiophjlli bni I xsic(n 9^ Uuoad lolid b durilae sat similis, se«l aiuentis S cdpieae Miln loima tanlum hujus spetiei polymorphae videtur.

X S REICHHARDII (Keinei Wi id Oestr p 249), nUiupntis longis, dntheiib oblongib, amentis lein oblongo cyliudiicis, cap^ulis cinereo-villosis s>ligmatibus linembus eiectib, folns oblorgo-obo\atis bis lo igionbus qudiu latis, dpiu bieuter atumimlis basi longe aUetiuitis supri soulide \iiuhbus jjubeIUIIS hubtub molliter cano-tompnLObis, ^eniinis pubeiulis — S polymorphd b Host balix t 69 b cdpiea-cmeied Wimm Hoid 184*4, p A3, etc Kern. Exsicc n 163 E Silesia cL Austru lnfenoie (piopp Wicu) dllata binp dubio ahis etiam locis haud mfreqaenlci Amontis angustionbus, Cdpsulis magis cmereis, folns supri sordide vmdibus puberuhs, el gemmis iarrusque submcanis cum S cineied congruit

3() S WMIICHIANA (Andeis Act Holm 1850 p 447), dmentis gnnlibub sebbihbub ditenuatis erectis densilloiis bidcteis pducis et minutis buffultis, masc rectiuscuhs diireo-pilosii, *lemuiPib gnseo hirtis, sqaamis* basi *hirsutu** apice mluscatis acutib, capbule conicis cl mgatib incano-toinentobis matuntate glabiescentibus pedicellatis,pedicello nectinum bis-qudterve supeiante,stylo nullo, stigmatibub erpctiusculis, fuliis ovdto-oblon^ib dcuuiindtis j unionbus utnnque drg(nteo-tomentobis ddultib supia gldbratib sul)Lub seuccis demum conaceib mdrgine aut omnino interns aut obsolete cicnilo-senuldtis — Andeib journ. Linn Soc 4 14 p -DO, Sdl monogr p 80 fig 4b Sequente* fornads, quds non bine hesitations in undm spenem ipdegi, amentib et loins inter se non pirum discrepdnteb in eo congiuunt, quol loha habent tenuia, senseo-tomentosa, amenta nudd gracilid longe fUccida et cdpsulab longas angubtas, plus minus pedicellatdb, stylo nullc apiculdidb, deiibius vel lanus se needs

a, *qnsea* (Andprs monogr p 80) dmentis valdp confeitis 1- U poll longis omnino sessilibus, squamis longis -a utis pdllidib djuce infuscalib, cdpbulis linpan com is an$_n^r$ustisbimis incdno-loiuentosis subsessilibus, pedicell) nectdiium subsuperdnte, loins supid glabiatis maigine tenuitei b'rruktis — i$_n$ Indu oupntdli Ncpdl, Kuiidon, billet (Willich 1821), Kdlimdth, Hogesin vdlley(ii 00 OOO ped dlt btidchey et Winterbotom) b gnsea Wdll hst n 3700, g non D) Aibor v liutex mdjoiib aititudinis Kdmi lobusti, picei, glabn, novelli tomentosi Gemmas subtugoaae, duaium gldbiescenieb. Fulid petioUu, Uuceoldta vel ovdto-

oblonga, saepius in apicem acuminatum suhito attenuata basi subrotundata v obsoletius attenuata, 2 3 poll longa, j - 1 poll lata adulta supra glabernma laete vmdia, rigida Amenta mascula ereUi 1 J polh cana, densifloia feminea 2-pollicana anguste cjlindnca flaccida (v s. in h. soc linn Lond)

p, *julacea* (Vnders mon 1 c) amentis brevissime pedunculatis longi simis valde attenuatis flexuosis, s iuamis obtusiuscuhs ipir e fuscis glabratis capsuhs pube tenui conspersis demum Klabrescentibus peihcello nectauum ter quatene superante, folns subtus argenteo pilosis margine remote et minute denticulate oblongo ovalibus obtusiusculis 5'[n] sylws supra Hyderabad Indiae onentalis alt 260U-2730 *mur* (Jacquemont) — Act Holm 18IO p 476 Fruttx diflusus Rami glabn, ftisco hrunnei, novelh puberuli demma[1] magne mtentes toha2-2j poll longa 1 * j)oll lata, b LSI attenuata, apice subobliqua Amenta ftminea 3-o-polh cana, patenti divancata Cap^uldG 2 lin longae subcanescentes, stigmata fulva — Habitu amentorum non male S. phyhcifoliam revocat,sed «*tylo nullo longe ahena (v s in h par)

Y *sencea* (Anders mon 1 c), amentis breviler pcdunculatis crassius culis squamis acutis aternmis fere totis glabns capsuhs brevibus obsolete puberulis pallide fulvescentibus, **p^pfccllo** nectanum triple supc rante folns utnnque sed subtus dcnsius seruto micantibus *s* In Hima laya boreali Occident rcg temp all bO(K))(K) ped ad Banahal (Dr J D Hooker et Ihomson) Arbor lamis tcnuibus, fusco piceis glahns Foln 1-1-Jpoll longa ad medium **J** - „* **poll** lata plus minus lanceolata, apice acuminata v acutata Amenta Jeminea 1 \ poll longa rhachis villosa Capsulae pallide flivcscentes —Htbitu adhuc magisquam toima julacea S phylicifoha? subsimilis. (v s i n n Hook)

40 S SILBOLDIANA (Blume Bijdr p S17), amentis sessilibus nudiusculis trectiusculis densitlons, squamis lanceohto lineanbus *u* stattis cuncolonbus margine stugosis, cipsulis conico ovalibus obtusis piJis rigidis dense hirtis pedicellatis pedicello hnto nectanum duplo superinte stylo obsoleto stig matibus bifiais loins oblongo oval bus utnnque ^libf minis subtus rpacis acute nervosis margine acute sed icpandorsemtis , In Japorna ad Hakodaki etc — A Gnyin Peirvjap exped 2 p 319, Anders in AsiGiay plants of lapan in Mem. of the Araenc Acad vol 6 p 451, Sal mono^r p 84 lig 47 Arbor ramis fuscis ghbns >olia I[1] 2^ poll longa poll ice latioia basi roiundata apire breviti racuminata, supra obscure \india subtus subglauc°scentia Amenta leminei MX pollicarn cinciascendd, rhichis villoso hirta Capsulae lineam Irngae, conico oblongae A «<peciebus europaeis nulli quam S grandiioliae similioi b Koreensi maxime afiinis, sed tolia plane **ahena[1] (v s)**

41 S BRACHYSTACHVS (Benlh pi Hattwcg 2 p 336) amentis stssilibus bie vibus cur\atis densiflons moMiter villosis basi nudis v biacteis piucis et cito dcciduis suffultis squamis atns obovatis acutiusculis j **ills** longis senceis dense vestiTis, capsuhs albo senceis couico acutatis pcdirellatis pedicello nectanum 4 5" superjnte, stylo nullo, stigmatibus sat longis flavulis in tegns subdivancatis folns obo\atis subtus densissime'et compacte vclutmotomentosis demum glabratis mfescenti venosis slipuhs nullis In Cahtorni P, sylvis prope Monterev (Haitweg n 19^7, (oulter bcouler) — Andei*> Olvers Wet Akad I«orh 1858 p 121, Sal mono^i p 82 fig 48 Vix pro certo die re audeo utrum hanc loimam cuju^ spcunima tantum pauca sed authentica vidi cum b discohre ut ejus modihc itio occidentals, conjun gere, an abea disunguere moncam Amtnta quidem breviora sed squamae et capsulae pror^us eaedem, folia etiam eadem forma sed multo bieviora, supia obscure vuidia subtus plerumque vellere lucido et molh cinereo velutina NostrL S cinereas haud absimihs sed imentis multo brevionbus, longe albo-senceis et fohis ngulo conaceis rccedit (v s in h Benih et Hook)

p, *Scoulenana* (S Scoulenana Barratt sec Hook Fl boreal Amer 2 * p 145), amentis longionbus magisque ranflons et tenuibus, capsuhs mi DUS senceo-vilJobis, folns angustionbus et acutionbus pnmum villo

rufescente dense obtectis, costa albo tomentosa. VanaJ 1° *tenuPfvlis,* dmentis femineis polhcanbus patentibus vel returvatis'2 3 lm crassly capsulis vix linea Ijngionbus, stigmatibus brevibus fuscis. folns spathulatis molliter rufescenti-velutinis Hab m Amcnca boieah ocudentah prope Columbia (Scouler), ad Fort \ ancouver (Tolmie) o Scoulenana Hook 1 c Modificationem iolus supra laete vindibus, subtus denud itis sed ruñs in California leg Wrangel (Hh Petr) — 2° *crassijulis,* amen tis masculis subtlavatis ob filamenla longa a urea luudis, lem I7 poll longis et crassissimis, squama lati^ ran us yillosis, capsulis fere 2 lin longis, e basi crassa lyhndnris, folns obovatis velWe ferrugineo velu tinis Hab. in California (Coulter n 656) S caprooides Anders, ofvers. Wet Akad Forh 1 c p 120 Modificationem amentis masc brevionbus, ovah-rotundatis, squamis longissime villosis, folns ovah-oblongis apice product is et stipulis sat magnis ornatis ex Oregon prope Astoria reportatam in Hb Asa Grayi vidi

42 S. DISCOLOR (Muhl Neue Schnft d Gesellsch Nat Fr , Borlin 4 p 234), amentis sessihbus biacteis vt 1 loins MX ulhs suffultis pnmo densiflons crasse cylindncis, squamis apice atns pilis lulvis vel gnseis longc hirsulis capsulis coincis acutis cineieo-pilosis peüiLellatis, pedicello nectanum 4-bies superante, stylo brevissimo^jtematis lacinns hneanbus elongitis fulvis, folns oblongo-obovatis vel ohoWFlanceolatis longe petiolatis ngidis pnino sei iceis demum utnnque glaberñmis supra costa venisque tlavicantibus lineatis subtus sat intense glauus margine mtegns vel remote serrulatis stipulis acutis, gemmis magnis glabns 3 In America septentnonah praseriim onentah, Caiohna usque in regioneni quam perflint Saskatchawan — Willd. sp pL 4. p 66S, Pursh H bor amer 2. 613, Hook 11 boreil amer 2 147, Toney Fl New Yoik 2 206, Asa Giay Manual ed 2p 414, Andeis Sal boreal amei 1 c p 123, sal monogr p 83 hg 49 S balsamilera et S stnsiti\a Barratt -~ *hones* Muhl 1 c t 6 f 1, Sal Wob 1 147 — *Exsicc* Ban itt, n 3 Frutex 6-pedahs et ultra, ram is non raio subci sns, annolinis saepe pab u hs Folia 2 ĩ polhces longa, 1-2 poll lata Amenta masc. vix pollice longioia, laete a urea , femmea 1-3-polhcana, laxifloia et suhpendula Capsul* sat magnae, cinereo tomentosae, acutae Quod b caprea in 01 be veteie haee in novo mcdiantibus S Cananensi, S Silesiaca et S giandif ha Amenta lere eadem, praehertim mascula, sed capsulae majores magis conico-acutat *P* stylo brevissimo pilis occulto, stigmatibus longionbus, lolia longiora el su)»tus evidentei glauca Ramis non raro glaucis, folns ngidissimis lanceolatis et subtus glaucis, gemmis magnis acutiusculis et amends cyhndnus (omma fere ul in S Cananensi) S daphnoidem non parum rovocit, formde quam S commixtam appellavimus eximie simihs, sed capaulae longius pedicellfltap et stylus nullus' — Quoad formam folioium vanat 1° *latifolia* loins lite o\aliellipticis 3 6 pollicanbus margine evidentius unduhto trenails, stipulis sat m ignis — 2° *augustifolia*} folns latitudine tnplo vel quidiuplo longionbus, mine ovato-oblongis tenuionbus undulato cienatis supulatis majonbus v mnionbus, mine lanceolatis n^idis crenato-seiratis itre exstipulatis — J[u] *hirsuta,* folns supra sparse puberulis, subtus velleredensissimp submicante tomtntosis (Hb Vmdob)

P[9] *enocephala* (b enocephala Michx fl. boreal amer, 2 p 225), amentis masculis bre\ loribus, lemineismagis densiflons,squaonsat-atis rotundau obovatis pilis longissimis dense \illosis — Asa trray manual ed 2 p 464 Anders Sal boreal amer 1 c p 117 Hab tumpnore In herbariis [v]ani« mdubie identicas nunc S discolor nunc S enocepbala promistue signatas vidi, nee e scnptis auctorum differentias ullas extn care potui, nisi jam allatas, e forma squamarum desumtas sed viles — Hue acctdit forma

!> prmoides (S pnnoides Pursh fl North Amer p 613), folns unentis et capsulis ut in pnore, sed stylo nonnilnl magis evidente, stigmatibus sat longis divisis, lacinns fihfoimibuscoronatis —sal Wob t 40 Hab etiaoi in America septentnonah in eadem regione ac pi*cedentes Ob id praecipue mcmorabihs utpote aude, legiones magis septentnonales Amcricae oriental is praecipue inhaDitans, forma capsularum ad b humileiu

transitum quadammodo efficit — S myncoides Muhl ad hanc referri solet, mihi propius ad S cordatam ea forma accedere ejusque modificationem elficere videtur.

Nonne ad S discolorem etiam referenda est S paradoxa Kunth in H B NoviGen ct Sp pi 2 p *2i*^ e qu L pauca specimina tantum eaque deformita vidi Folia oblong) lanceolata, acuta basi adnata Integra, supra glabeninu, saoiusglauca, rufescenti-tomentosa, amenta lateraha (sprotina adsunt) Lapsul«fi hir»utae longe pedicellate slylo null) stigmatibus quadnfidis Vix ulhs charaitennub a S discoloie distmguitui, nisi folns subtus rufescenti tomentosis et amentis (insohta evolutione) serotims

43 S GEYLRIANA (Anders Sal boreali-amenc I c p 122), amentis pedun culo brevi iolnfero infixis brevibus subrariflons, squarais fulvis obtu^is spaise pubescentibus, capsulis ex ovata basi oblongis ten liter senccis pedicellatis pedicello nectanura 6e" supprante, stylo nullo s(i$_{rt}$Mnnibus s»s*ilibus cruciiormibus fulvis, folns lanceolitis apiccm versus breviter acurainatis plams utnnque molliter tom^ntosis lntegemmis In America septentr Missouri, Oregon et in Rocky nuuntains (Coll deyer n ^fa).—Anders Sal mon p 86 fig 50 S vaginli-iCitiatdL valde snnilis seldilTert habitu toto, ramis s<epius glaucescentibus, folns (quae tain en nojiUp- tantum vidimus) multo angustionbus nee late obovatis, mtegerninis, iSHf sut>tus rufescenti tomentosis, baud tenuitate pellucidis, amentis vix semipollicanbus pedunculo brevi folns & 4 parvis instructo Amenta mascula sessiha, vix bracteata, majora et crassiora stamina raagis auieo fulva (v s)

44 S VAGANS (Anders Sal boreal Amei 1 c p 121), amentis giacihbus brevitei pedunculatis folns parvis 3 r) suffultis patulis obtusis, lemineis valde rauflons, masculis anguste cyhndncis pallide auieis, squamis lineanbus obtusis pallide lulvis parce pilots, uapsulis ex ovata basi linean cyhndncis vel conico-rostratis obtuse sent is (ianus glabus) longe pelicpllatis, pediplloe nectanum S(')e supci nue, stylo vix ullo, stigmatibus biputitis lacinm patulis, folns lite laiiLtolatis vel obovato oblongis subinlegns d mum ngidis hirsutis vel glabns, stipuhs parvis —Anders Sal monogi p 8b fig SI Hoc nomine collectivo f)rmas scquontes conjunxi inter se sÜ^ura, habitu, forma, indumento et colore folioi urn nileHuin sat div(r»as, vix autem distinctas species constructione emm floruin omnino similes

a, *cinerawns* (Anders 1 c), frutev depressus vel aibor biorgyalis ramulis annotinis vulgo tomentosis, folns typico obovato 1 inceolaus basi attenuatis apice brevitei dCuinmitis aut utnnque memo tomcntosis aut supra ghmis palhde vmdiljus subtuj»])alli lionbus tomcntosis nervis reticulaus elevatis, capsulis senceo tomentosis plerumque conico-iostratis stigmatibus magnis — In Lapponia lornensi, per oninem Rossiam sept^ mediam et arcticam usque ad Kamtschatka et icgionem Amurensem b livida cinenscens Wahlb fi lip p 27 i s depiessa cineidscens Fr Mant 1 p W\ S depressa velutina Koch Synops ed 2 p 751, Bunge Reliq Lehmann 1 c p 497 — In regionibus alpmis depressa et folns cnv>iusculi:> utnnque sat dense cinereo-hirUs ornata, quum m regiones mfenores secus fluvios sylvarum descendit altior fit arbor, lamis te nuionbus, folns minus dense butis et habitu S capre<e vel cinereae, a quibus tamen bene distmguitui loins raulto minonbus et brevionbus, fere exstipulatis, amentis magi" ranflons, capsulis mullo brevionbus, longius pedi ellatis, squamisque totis pallidis S *]P m* si L fl suec (fl lapp n 361) sine dubio ioimim mixime hum Liu b lanatae lespicit, b lanata (J, ^p pi p U4h, ut i[)S0 hibet — tx formis numerosis sequentes praecipue notandae \° *capr i [ormis* K«je«t in sched amentis majonbus, capsulis crassionbis bicviu«« pclicpllatis, folus 1 J poll longis bupn modium fere polhccm litis basi longe attcuuatis supra omnino glabemmis subtus levitei ct molle tomi ntosis Hdb in Lipponia lor nensi (Ldistadius) Habitus folioium omnino s caprpdi minons, sed amenta pioisus S vagantis quanquam minus lanflora, quamobrem iorsan hybnda proles —2° *auntotdf**, fiutex humilis, rarnis eximie divancatis glabus fuscis annotinis parce tomentosis, folns parvis obo-

vatis bagi vix angu&tatis se(l rotundato-subcordatis tenuibus utrinque subglabrescentibus subtus palhdis, veins reticulat s rugosis, amentis brevissime pedunculatis, capsulis brevibus magis conicis Ad flum Ischa rysch Sibmae (Turcz) Lst quasi e S vagante cum S aurita hybnda, et S liviclae formisquibusfldm analoga —3° obscttra, fohis lanceolatis apice e\ basi subdequaliter altenuatis tomento utrinque simili subdenudato opacis In Kamtsciatka (blewart, Lubanski Hb Petrop) Specimma lantum stenlia fohib rite evolutis vidi, facie omnino S versitoliae sed reticulationa aperts ad s vagantem peitinentia — 4° *flonda*$_{y}$ amentis sat longe foliato-pedunculatis, valde elongaiis et eximie ranllori!*, squa mis lenuissimi* elongatis apue glabnusculi^, cap^uds pom to subulatis 3-4 lin longis tenuissime puberulis, pedicello nectduum fere 10'" superante, folus elongjto lanceolatis utiinque mcano-lnrtis sed subtus palhdionbus In ie£ioni Amurensi (Maxim) et *in* bibnid onenlali (Stutendoiff Hb Petiop) S depress i unertscens Maximovitz Flora amur in Mem pi 6s alAcad de bt Petcisb t 11 p 2*4 Habitu a formis vulgatioriDus valdc aberrans et quod ad folia us S viminalis haud di^simihs Fgha 2-2-j- poll lon$_{D}$a, supra medium \-^ poll latd Cap sulae 3-4-hneares, viEidul<£

P, *roUrata* (Anders mon p 8), folns majonbus saepius lanceolatis el dilute venulosis sublub tenuitei tomeutosis et acute reticulato-venosis' obovato lanceolatis apice longius acuminatis Hdb in omm America boieali quum occidentali turn onentah usque in piovincias medias frequentei, etiara in Mexico novo (tendl o 815). b lostrata (Richards appenxj p ii), Hook fl boredli-anxencina *X* p 147, Toirey 11 New Yoik 2 p i11, Asa Gray Manual ed 2 p 416, S vagms cineriscens pccidcntdhs Anders 1 c Nullis omnino nous a iorma cinerascente lapponicd el sibmcd distingui potest, ad quds nisi statuia procenon, loins majoubus et longius acumimlis plenius evolutis diflerl Saepe in aiborem biorgydlem, tiunco nou crasbo sed evidonte exciescitl Quod dd ïQIIOrum van itiones insigijes 1° *latifolia*, fol X^{1} -3 poll longis supra medium 2 poll latis tenuibus subinte$_{0}^{r}$ns subtus mollitei tomentosis us S caprcae si millions Lecta in ins Vancouver (Lyall) — 2 *lanata*, tol ovato-subcordatis crassiusculis utrinque dense tomentosis Ad Lower Fra/er met (Lyall) — 3 *obovata*, fol obov ito oblongis 1-2 poll, longis Haec nobis typica amenema viddur luequentissimi cst ludit fol ovah-obovatis rigidissimis surtum lcuLe scnatis supra nicinis subtus subUiude tomentosis, us b ambiguae simillimis et folns obovato-hngu Utis 2 poll longis -J poll laUs Ambse in Rocky mountains (Bourgeau). — 4 *ianceolata* folns elon^atis slipra medPUm parum lationbus gnseo hirtis, lolus ^aide tenuibus 1 inc^{n}olito-obovdtis, vel supn subtomentosis subtus paitim saltern glducesccntibus Ad fl Saskatcbawan (Boui^eau) Ad sequentem sat evidenler transit.

•y, *liuda* (Anders 1 c), frutex vulgo humilis, ramis iufescenti castaneis valde divancatjs glabns, folns *ovdh* obovatis v hngulato lanceolatis tenuibus glabernmis supra lsete vmdibu*? subtus hwdis \el pallidionbus nervis minus distmcte hneatis, cap^ulis saepe tenuissime puberuhs, stigraatibus bievibus S livida Wahlcnbg fl lapp n 272 t lb f 6 Ut jam supid monui nullis notis ex amentis desumt s a var cinerascente diMingui potest, folus tamen magis al phylic folias vergit. Modificationes sequentes attulerunt auctores 1° *livida*, folns pnmo phcatulis tenuibus mox ldevissimis lundis glabei nmis p^rallelo nervosis subtus Inidjglaucis Fi Nov Mant 1 p 58, Koch Comment p 39 Hartig *orstL Cult p 408, Ledeb fl ross 3 p 611 S aibuscula 8 Lmn 5R'i?i ^{6} p ^{144} ^{b} fohosa Afzel msc , Lmn fl lapp ed 2 'p 29S Willd sp pi 4 $_{p}$ 62^Reichenb f 2009 Re^iones pra?cipue alpinas et sept brdiidinaviae mhabitat In Rossii media (ut ad Pctropolin) et Fennia Quo magis austium versus descendit eo ma^is mutatur, ut fit — 2° *bitolor* (b bicoloi Fr 1 c), folns pnmo lugulosis lenuibus mox laevissimis icliculato venosisjqnionhus subtus velutmis demiini ^laucis (baud hvidis). RcicUeub 1.2008 Habitu fohoiuni S duntam quodammodo ie-

vocat Etiam in regione badensi occunit (Doll fl bad p 499) — 3" *Markeana* (Anders 1 c) frutex altioi fol is majonbus utnnque glaber nrais ovato ovahbus acuminatis sa,pe sat argute serratis ngidionbus, slipulis non raro rndgnis ^tdrkedna Willd sp pi 4. p 677, Pdtze, Elkan et Mey *1 v Pieussen p I3y, Loiek hg 1205 Reichenb f 2010, Hartig 1 c t 413 ^ mdhfoha *Be*^ Gdhc 2 p 313 Praecip ie in pro vincias Bomssiae et Rossia, injiri bdltici ddjacentibus et in Silesia supe noii occunit A typid foliorura inagnitudine et ngidnate nee non stipulis paruni recedit sed in edin frequenter txaclc dbit Hue etiam Salix n 1977 Karelin et Kmloff (capsuhs glabns, saepissime pedicellatis quodammodo deformis) — 4° *Americana* loins magnis 2 } poll longis late lanceolatis v subovah obovatis grosse undulato crenatis, piimo tenuibus subtus partim glaucescentibus, demum ngidiuaculis utnnque vmdibus, nervis palhdioribuset piomiuenti reliculatis pulchre percursis E regione ad fl Saskatchawan pluid specimina i Bourgeau fecta vidi *orma, niagnitudine et ncivdiicnt lolia ouuiino cum us S rostratae congruunt, sed dcinum saltern glabci imd us S discolons haud absimiha Ccl Doll qui S hviddm Wdhlbg etidin inicgione ba Jtusi (lucus in Europa maxime ni(i ldiondhs) crescere nionet, sc in palude pi ope Pfohre a Md Brun ner dctecidin, vanas formas enumerdt db tacum dins Sahcibus ut fertui, bybnditdle procredtas, scilicet

X S CffiRULEactNS (Doll fl von Bad p 5P), lamis patcntibus fusco-vindibus vel viridi iuinscentibus giacilibus, annotims ruolhlei tomentosis subcine leis, loins planiusculis obovdtis vel obovato-ellipticis apice breve obliquis, pleruinque minute undulato cienatis, supra vindibus pilis ad p res sis consf er^is subtub hvidis venis elevdtis reticulatis,)unionbus subpubescentibus, adultis gldbris stipulis ovato vtl seiuicorddto remformibus, amentis brevissime pedunculdtis squamis obovato oblongis cuiereo-tornentosij. apice mfuscatis, capsuhs ex basi ovata conico c^lindraceis obtusis incanis, pedicpllo nectanum 4 fa" superante squdmam supeiantc,stylo brevi stigmalibusellipticis plerumque bifidis S cinerea livuldBrunn S aunta Starkeana Patze in schea — Mihi pouus S cinerede associandd Mdetur

X X S LIVESCENS (Doll 1 c p *i10),* ram is diverge ntibus gracillimis annotin is cinereo tomentellis, adultis glabns folns obovdtis saepius apice obliquis basi dttenudtis supra pilis bievious et idpicssis conspeise vindilms subtus glabns viridi livesoentibus venulosis marline crenuldtis, amentis subse«silibus ovato oblongis, diithens semptr lldvis,cdj suhsex rolundaU bdsi conicis obtusis incano lomtntosis stylo bievissimo, sti^niatibu> ellipticis vel obljngis in tegns vel bifid s Hdb in Borus^id ad Konigsnerg (I atzej, Tilsit (Heidenleich), Lithuann et Posoma, M D Baden et in Lapponia pitensi b aunta et hvidd Wimm Deukschr J8o3 p 2<*7 bal europ p 247 S Patzei Wimm Hb Sal 9i Coll Sal 189 190 S auuta p sublivida Laest in sched Fr Mant. 1 p 5b, Andera bal lapp p 57 p p (alicfi ad S bistulam And)

X X X S STLNOCLADOS (Doll 1 c p *>2l),rauiis*gracilibusannotinis tomentellis ciiieiascentibu->, loins oblongis vel oblon^o lanceolatis acutis vel apice bieve obhqu s J argme subrevolutis supra plains pilis adpressis tenuissime con spcisis subtut» hvidis subpubeiulis a^pe argenteu pilosis venis prommulis saltem dcmuiu evidentius reticulatis stipulis obh jue ovatis, squamis floscu lorum anguste oblon^o lincaubus obLusis pallide fuscescentibus, Cdpsulis ex ovatd bdsi sensiui diifeustdtis obtuse,pedicello nectdiiuui quddruplovel magis superdnte, siyio brtvi, stigmalibus. patulis bihdis fuscis In M D Baden, Posoma Ritsciil) prope Kouigsbeig (Pat/e) et lilsit (HeiH- -""-h S. livida repens Biunner, Wimm bal europ p 239

X X X X b MYRroiDirs (Doll 1 c p 522 nee Fr), frutex parvus ramis subgracilibus diveigentibus junionbus pilis brevibus subincanis, loins planis elhp ucis ovaio-eihpticis vel obovato acuiiusculis vel apice breve obliquis margine obsolete serrulaus vel crenulatis demum bubrevclutis supia saturate v ndibus Diteiitibus (mde nomcnl) subtus pallidis sublivcscentibus venis aubelevatis pnmum pilis adprcssis subsenccis ddultis glabrij, stipulis in surcuhs semicordaiis \el reniioroiibus, amentis brevibus elliptico globularibus velelliptico-

oblongis pedunculatis folns parvis suffultis, squamis glabns vel pilis ad pressis cinerascentibus hirsutis, capsuhs sensim angustatis acutatis glabns pedicello nectanum subtnplo superantibus, stylo elongato, sligmatibus oblongis bifidis In M D Baden et prope Tilsit Boiussiae (Heidenreich) S hvida nigncans* Brunn Wimm Sal europ p 230 Mihi potius forma humiln S nigncantis visa

§ 10. *Rosex s. Myrtilloidcs.*

Fruticuli humiles, lamis gracihbus Folia tenuia, elhptica vel lanceolata, glaucescentia, plerumque glabernma, reticulato-venosa, juniora roseo pellu cida Amenta foliato-pedunculata, ranflora Squamae apice parum infuscatae *et* pilosae Capsulae vulgo glaberrimae et longe pedicellatae, stylo subnullo apiculatae

45 S PROLIXA (Anders Sal monogr p 94), amentis breviter pedunculatis folns 3-4 parvis suffultis eiectis lemmeis eximie ranfloris, squamis lingulato-oblongis apice subfuscionbus in amentis masculis dense albo-villosis in fern plerumque glabnusculis, tapsuhs ovalo-conius obtusis «?labernmis rufescentibus longissime pedicellatis, pedicello nectanum 8-10ies superante, stylo subevidente stigmatibus crassis brevibus erectis, folns obovato-lanceolatis acuminato productis integris supra laete vindibus subtus pallidionbus v concolonbus venis fuscionbus subreticuiato lineatis, stipulis petiolo duplo tnplove brevionbus 3 In Am rica boreali-occidentali, ad Lower Fra/er River, 49°lat bor lecta (Dr Lyall, 18^9) —Anders 1 c fig 52 Foima elegantissima, S rugulosae onustae non dissimihs, sed potius quasi e S pedicellan et S pynfolia (vel alia S coidatae modificatione) composita Frutex sat altus, ram is valid is glabns Folia usqu» ad 2 poll ices longa $ poll lata, basi angustata, ipice breviter acuminata Stipulae parvae, serrulatae Amonta mascula ob aquamas hirsutas subvillosa pallide aurea, feminea 2 pollices longa, omnium maxime laxiflora, capsulae fere 2 hn longae, valde rostratae. A S pedicellan, quae in America occidentah non crescit, facile distmguitur folns acutis stipulatis pure vmdibus, capsuhs tenuissimis et longissime pedicellatis a b. lugulosae lormis, ex orb? veteie, folns planiuscuhs, amen Us masc. villosis, fem valde laxiflons (v s.)

46 S MYRTILLOIDIS (L sp 1446), amentis fructifens longe pedunculatis foliatis ranflons erectis, squamis oblongs obtn&is flavid s vix apice fuscionbus glabnusculis capsulis ex ovata basi oblongo-cyhndncis glabernmis rufescenti caesns longp pedicellatis pedicello nectanum 5 8ies superante, stylo viz ullo vel brevissimo, stigmatibusbifidis minimis divancatis, folns ovato-oblongis basi subcordatis obtusiusculis integernmis superne opace vindibus subtus glaucis utnnque acutissime elevato nervosis 3 'n paludibns per partern sylvaticam Lappomae etSueciae boreahs usque in Smolandiam, in Nordlandia, in Miesia, in alp Carpathis et bavancis et prope Monacum in Galicia pr Lemberg in Rossia arctica septentrional 1 et media (occidentah) per Sibinam septentnonalem etarcticTm usqup m Kamtschitka, et Amencam occidentaltm arcticam (sed ibi saepe cum ibis specielus valie coniusa) — Wihlenb suec p 666, Fries mant 1 p 71, Anders Sal. lapp p 67, Sal. monogr p 95, Koch Comment p 57, Synops ed 2 p 753, Wimm *ti* v. Schles el 3 p 18, Sil europ p 112, HartigForstl Cult p 411, Led b fl ross. 3 p 6l3,Trautv Mtm de la Soc d Nat 8 p 380, Midd Reise Bot 1 P 1^3, Maximovic7'Amur (M6m de 1 Acad St-P6tersb 9) p 244, S ele-„ ins Bess Enum p 77 (modihcatio) —*JCOUPS* Wahlenbg fl lapp t 18 f 1, Anders Sal lapp f i9,Sal monopr fiff 53, Sv Bot 646, Reichb 1244,Hartig isj'w*l3' F1 D SU PP l n ln —*Ersic* lxsicc Reichb n 1139, Fr H N 8. 6i, wimm Hb Sal n 69, Coll n. 110 Fiuticulus elegans vix plus |uambipenalis, taciegldberrima subcaesid Rami rufo-nitentes Folia mitio pihs adpressis praecipue subtus sparse sencea, demum omnino glibemma, inrra medium plerumque Iatiora apice minus sub icuminata sed saepius obtuse rotundata, pollicem longa, £ poll lata, stipulae vix ullae nisi in surculis Amenta mascula suboostanea anguste cvlmdnca, lfetissime aurea, anthens exsiccatione subfusta teminea subserotina crassiora, rachis s<epius glabenima, capsulis hneam Ion-

gis demum lubellis Quoad folia admodum vanat,us Dempe nunc majonbus, 6vah-rotundatis pollice longioribus et fere pfclhcem latis, vel oblongo ovatis, vel demum subhneanbus et tune saepe costa plicata Amenta, quae typice ranflora, subindc mdgjs densiflora evadunt (v v)

P, *pedtcellans* (Anders mon. p 96), amentis longe et fohato pedunculatis, crassiusculi^ subclavatis, squamis oblongo spathulatis glabns strami neis, capsulis ovato-comcis brevibus glabernmis rufescentibus obtusiusculis pedicellatis, pedicello nectanum lOies superante, stylo subnullo stigmdtibusbrevissimispirtitisdnaiicatiSjfolus oblongo lineanbus, utnnqup nallido j,lauce«»ceiitibus et acutissime nervoso reticulatis 5 In America boreali onuitali sat frequenter, a Canada septentnonem versus — Pursh fl am 2 p Gil, Torr Fl New York 2 p 212, Hook Fl. boreal amenc *I* p 460, Asa Gray Manual ed 2 p 417 S myrtilloides Tuckerman in Sillim journ *kh* p 34 Anders Sal boreal amer 1 o p 175 Vix ulhs notis nisi jam alhtis de folns angustionbus, pallidionbufi et acutius nervosi9 desumtis a nostra S myrtillolde distingui potent Est fnrticulus vulgo altior et vogetior, ramis migis stnctis folns 1 \ poll longis, \ poll latis, amentis vix polhcanbus subclavatis (v s)

47 S FUSOSCENS (Anders monogr p 97), amentis lateralibus foliato pedun cutitis laxiusciilis subraufloiis, squamis fuscescentibus acutiuscuhs glabnus cuhs vel brtviter cihitis capsulu ovito conius subrostratis glabernmis pedicolUtis pedicello nectanum quadruplo superinte, stylo pcrbrevi^ stigma ti bus cnssis inttgris v subbilobis folns obovato spatliul itis basi ^alde angustatis apice brevissimc acuminatis utrinque glabetnmis subtus glaucesrenti^us demum ni^'ilcantibus ngidiusculis longe pet?olatis margine integris A el obsoletis^ime undulats ^ In Kamtsohdtka (Beech ey), ad Alaxa (Kostilski e ad ostium (1 Udd rpg Ocliotensis, etiam ad fl Bof, uida (Midd) S myr tflloidts f 1 2 Chiraisso in Iinnaea6 p r>39 S llnmnifolia Hook et Am feeechey Voy p 117 t 26, liautv Middend Reise I 2 3 p 80. Anders 1 c fig &4 Videti r fiutex parvus lamis subfligelliformibus gracillimis gla bns Folia | poll Idta polhccm longi Pedunculus pollicans, laxe pendulus Amenti \ix polli ana Capsulas obscure fuscescentes, rufo piceae \\ lin longae S myrtilloidi similhma sed differt crescendi modo, forma et tolore foboiuni amentis densionbus ob capsulas multo brevius pedicellatas

p '*minor* rimuhs ni igis elongatis flabelliformibus folns vixpolhcem longis dislinUiUs \enoso-costitis o\ahbus vel elongato obovatis acutiusculis SubtUs minus nhucesccntibus, imentis fem crissiusculis, cdpsulis crasse o\atis brdVius podiuPlldtis In insulis iron Behnngi S myitilloides f 3 Linn PI 1 c«p rj39 Quasi dd S ovalifrhani trmsitus bant speciem rbisan formam maxime ifctiCam S myrtilloidis vel tx S myrtilloidi et S dictica compositam probdns

X S BUOULOSA (Anders Sal monogr p 97), amentu frurtifens foliato-pedunculatis ranflons patulis sqUamis oblongo-spatbulatis fulvis apice fustio nbus glabnuscuhs, capsulis ovato-conicis glabns vel tenuitor puberulis longe pedioelluis, pelicello npctdnum 4 lOies superante, stylo brpvissimo vel sub nullo stigmatibus cnssiusculis subeiectis, folns elhptico oboAdtis vel late lanceolatis subtus jallidionbus rugoso venu'osis utrinque suhpul esoentibus demum mterdum gl ibratis S aunta-myrtilloides Wimm Regensb Fl 1849 n S bal euiop p 245 Sequentes duae formae inter se valdc similes, charactenbus quodammodo distinctae a S myrtilloide et b aunta lorsan hybridse.

«, *onusta* (Anders 1 c) amentis pedunculo elongato folns cetem aequabbus mstructo pedunculatis erectiusculis magnis ranflons squamis elongato-oblon«is toto drirsd pihs rans (onspeisis capsulis e basi modice crassa cyllndncj conicis obtusiusculis fere 2 lin longis omnmo glabernnlis lufescenti-tcstiteis lonigissimp pelicellatis pedicello nettdnura f^re ft lOies superarile, stylo Vix ullo stipm itibus o\atis integris eiectis, folns late lanceolatis pnmo rufpsrenti pplluculis utrinque glabt* s supra viridibu* nervis imprpssis rugulosis subtus glau&s Hab in Lithuania, Volhyhiá et Silesia Specimina ex regiohe Amhrensi (S myrtilloides, flrtmarkica

Maximovicz 1 c. p 244) nimis juvenilia, sed forsan hue spectant S. onusta Besser en Volhyn p 78, Ledeb fl ross 3 p 614 S auntomyrtilloides Wimm Flora 1845 n 28 S myrtilloides-aunta Wimm. Fl V Schles ed 3 p *IW* S flnmarkica Hartlg Forstl Cult p 409 S. vilnensis Goiski (ex Hartig) — *Iconcs* Reich f 1245? Andeis Sal mon fig 55 Lst S myitilloidi sat similis, sed differt folns utnnque acutis supia venuloso phcatis, squamis amenti pilosiuscuhs, a sequente parum diveisa nisi fulns et amentis (v. s)

p, *Ftnmaikica* (Anders 1 c) amentis fohato-pedunculatis patentibus brevibus idiiflons, squamis oblongo spathulatis glabnusculis apice fuscioribus subpilosis, cdpsulis ex cnaU basi conico elongatis glabns pedicelldtis, pedicello neUanum 4 6" sUperante, stylo brevi, stigmatibus subbifidis erectiusculis, folns elhpticis obovatisve subintcgernmis stipra opace vindibus subtus nervis reticulato rugulosis parce pubescentibus saepius pallidionbus —In p iludibus sj lvaticis Ldpponiae mediae (Laestadius) S Finmarkicd Ti les mant 1 p 68 Magnam cum priori habet similituuinem, sed diffleit quodammodo Folns 9oidide vindulis supra et piaecipue subtus pilosiuscuhs demum glabrescentibus, in ramis feitilibus basi sacpe subcordalis et prorsus int«genimis magis reticulato rugosis, amenlis bievionbus mmusque laxiflons, capsulis demum minus ovatorostratis Duabus gaudet modificationibus 1° *latifolia,* frutex 2 3 pedahs, ram is crassiusculis divergeniibus fusco dtns, folns pollice sublongionbus afoovatis \ol late lanccolatis apice obliquis basi modice subangustatis supia saLuiate vnidibus ot evidenter impiesse nervosis subtus elevatonervosis inaequMibus diutius pubescentibus marline undulato crenulatis exsiccationo facile nigrescenliltus, ameiitis femineis subpraecocibus et riensiflons bicvissime pedunculatis, folns 2-4 parvis sufulus, squamis sparsissime pUbescnntibus apice Fulvescent^ latioii sulibarbatis, capsulis sat matins (linea longioies) lulescentibus, pedicello nectdiium vulgo sextuplo superante, stylo obsolcto, stigmitibus integns In Lapponia Pitensi (I cfislad) S aunta p])a udosa Ltxstad (1823) S paludosaHartm Skand Fl ed }p 23b S aunta paludosa Hartm 1 c ed 7 p 179 b fin mark I ca l*r , Anders Sal lapp p 69 fig 20 Lx habitu potius hanc formam e S iugricanu et S. myitilloide procreitam suspican mallem. Supra terminum S auntae detectd dicnui — 2° *angustifoha,* fruticulus humih r, nmis gracihbus eiectis lusro castaneis glabeinmis, folns obovato lance ol itis b isi sat longe angust itis apice subprodilcto acutiuscuhs, supra satuiite vindibus, suMus paium 'pallidionbus, m rvis supra impressis subtus ele\atis et anastomosantibus ruguloso inaequalibus parcissime pubescentibus, amentis masculis tenuibus fulvesccntibus, femineis bievissime pedunculatis, eiectis eximie lanflons brevibua, rhachi hirsuta, squamis angustissimis glal)nuscuhs lulvescentiim'* capsuhs \it in precedents forma sed ai gnstionbus, stylo plane nullo — In Suecia boreali, ad urbem P'teo Westrjbottniap,et in Heijedelia — LS hvida dunta difficillMne dignostendd nisi loins magis dcutatis et lugosis, amentis bievibus el capsulis glabetrimis

X X S HIRTULA (Andeis Sal monogi p 100f ^6), amentisangustiserectiuscuhs foliato-pedunculatis, squamis oblusis subtruncatis apice fuscionbus glabnusculis, capsulis anguste conicis subcyhndncis plus minus^e tenuiter senceis pedicellatis, pedicello neclanum 4-8[1] • superante, stylo subnullo, stigmatibus brevissimis crassiusculis S hvidd-myitilloides Wimm. Denkschr 1853. p 166, Sal europ p 248

a, *subemerascens,* folns ovah-obovatts breviter et 9uboblique acummatis supra opace vindibus nervis lmpiessis tenuissime puberulis subtus rugulosis ct molliter pubescentibus, dmentis cyhndncis, capsulis albosenceis — i$_n$ Lapponia Tornensi, ubi etiam S vagans cinerascens adest (Laestddius), etiam e St Petersburg (v. s)

P, *subhvida,* folusngidiusculis utnnque glabnusculis Vanat foliis*l°ovaliobovTtis plaiuuscuhs obtusiUscUlis sublucidis — 2° lanceolato obovatis tenuibus acutatis nigrescentibus vel pure vindibus In Suecia boreali

ad urbem Pitea (Laestadius), Lithuania (Fischer-Ooster, Wichura et Wimmer) Difficile sane forma suhcmerascens a S rugulosa finmarkica nisi capsuhs saepius saltern senceo-lmeatis distinguitur, folia etiam magis molliter tomentosa Forma autem sublivida habitu singulan, a cetens magis diversa, certe a S myrtilloide et S vagante hvida orta (v s)

X X X AURORA (Anders.Sal monogr p 101. fig 57), amentis longe et foliato pedunculatis ranflons erectiuscuhs brevibus demum subpendulis,squamis flavis obovatis dorso et apice parce pilosis, capsulis ex crassa ovata basi comcis obtusiuscuhs pedicellatis, pedicello noctanum 3-5ies superanie stylo evidention lulvo, stigmatibus bifidis divancatis, folns ngidis ovato ovahbus vel elliptico oblonpis supra vindibus costa impressa et vems subelevatis lmeata sublus gfaucescenhbus saltern pnmo pilisaigenteis adpresse Inrsutis margine Integro subreflexo — S repens et myrtilloides Wimm Denkschr J853 p 170, Sal europ p 249 S finmarkica Willd Enum suppl p 66, Koch Comment p 51, non Fr In msula, prope urbem Pitea in Suecia borealI (Laestadius) et prope Monacum Bavanae (v s)

x ? *lejocarpaj* amentis brevibus, capsulis glabernmis attenuato-elongatis longe pedicellatis, folns minimis elliptico linembus subtus sat dense argenteo-pilosis S fusca aurora Laestad S fusca abscissa Lasstad—Amentis ad i> myrtilloidem, folns ad S repentem aperte accedens

xx ?*hebecarpa,* amentis sirbclavatis erectiuscuhs, elongatis, capsuhs majonbus I asi crassionbus brcvius pedicelldtis tenuiter senceis, folns majonbus ovah-rotundatis aut ovah obovatis nunc tenmbus subm^ncantibus nunc ngidiuscuhs subtus glaucis, pilis argenteis cito evanidis — S. fusca myrtiola et S rosmanmlolia Laest in sched (e Bottma).Capsulis ad S repentem, sed folns ad S myrtilloidem propius pertinens

X X X X S VEBSIFOIIA (Wdhlenb 11 lapp p 271), amentis pedunculatis folns paucis suffullis densiflons ohtusis crasse cyhndricis, squamis obtusiusculis ipice saltern fusio piceis vel atus cinereo-pi|osis,cipsuhs ovato-conicis parce hirsuiis glabnsve pedicellatis, pedicello nectarium demum 2 4ies superante, stylo elongato palhdo, stigmatibus bievibus luteis bifidis erectis, folns lanceolatis ovato vel obovato Unceolatis basi saepe subcordatis argenteo tomentosis vel sordide viridibus denudatis hneato-nervosis — In Suecias paludibus regionis sylvaticae et Lapponia, Norvegid septcntnonah, Lithuania (Gorski), lutlandia et Dalecarha, ad Petropohn (Ruprecht) et Vilna Wolhyniae — Wahlenb succ n lUo, Fr Summa veg p 57, Anders Sal lapp p 62, Sal monogr p 103 hg S8, Ledeb fl ross 3 p 613 S fusca Fr No\ Mant I p 69 S ueglecta Gorski in sched S lapponum myrtilloide» Wimm Hon 1849 p 46 Sal. europ p 251 — *hones* Wahlenb fl lapp t 18 f 2, Anders 1 c f 17 Sv Bot 511 — *Ixsicc* Fr H N 3 p 56 Trescit inter $. lapponum et S myrtilloidem e quibus certe hybnda proles, quare etiam sub duabus formis occurnt

a, *sublapponum,* nmis fusus glabus, novelhssubcinescentibustomentosis, folns lanceoldtis 1 J - 2 poll longis e basi ovata apice acuminatis utnn que cinprascpnti-lomrntosis vel demum soidide denudatis margine subrevolutis praesertim subtus costd et nervis secundarns hneatis, amentis brevms pedunculatis i JIUS minimis suffultis capsulis vindibus tenuiter canescenti tomeutosis in stylum elongatum att«nuatis — Habitu S Lapponum proxima e qua tamen differt folns et capsulis multo minus tomentosis, folns basi conspicue lationbus amentis foliato-pedunculatis et capsulis pedictllatis.

p, *iubmyrlilloides,* ramis tenuibus rufescentibus, folns supra glabnuscuhs subtus pallid (»nbus tenuiter pilosis ex ovato-coidata basi oblongis obtusiusculis, amf ntis masculis tenuionbus subcylindncis, femineis gracihbus subrariflons, capsuhs longius pedicell tis glabns vel pih& hinc inde rplictis tenuissime puberuhs e vindi fu cescentibus stylo evidente sed brevi Modihcatio hujus folns basi longe attenuatis quae S versifoha myrtoides (si folia omnino glabra) Fr Mant I p 70, Anders Sal I app p 66 fig 18,d, b, c S myrtoides Haitm Sk Fl ed 4 p 322, appellate

S finmarkicae sat si mills et <1b ea vix distinguenda, sed quodammodo distinguitur folns opace vindibus magis attenuatis, et capsuhs stylo elongato apiculatis'

§ 11 *Argentex s. repentcs.* — *Argentez* Koch Comment, p 46. p. p. (cum Roseis). — *Incubacex* Fr. Mant. 1. p. 6<i; Kerner 1. c. p 54.

Frutices saepe humiles, vulgo locaarenosa praepnmis eligentes, ramis tenuibus adscendentibus vel stnctis Folia clongata, liDean-lanceolata, sordida, supra acute nervosa, subtus saepissime argenteo-tomentosa, margme revoluta aut ^erruhta, demum marcescentia nigrescentia Amenta subsessiha Antherae post uithesin mfuscat* Capsulae plus minus pedicellatae, stylo saepius perbrevi sed distincto

48 S SITCHENSIS (Sanson mscpt ex Bongard de Vegetatione ins Sitcha, in M6m de lAcad de St-P6tersb t 2. p 162), amentis fructifens breviter pedunculatis folus pan is et paucis 1 *i* suffultis erecto arcuatis cyhndraceis densiflons, squamis flavis apice fuse ion bus dorso pilosis, capsulis e basi crassa brevitei ovato-conicis ar^enteo-tomentosis breviter pedicellatis, pedicello nectanum bis superante, stylo elongdto, stigmatibus crassis vix emarginatis crectis, folns oblongo-obovatis fere cunealis apice rotundato subacuminatis planis mtcgns v obsolete crenulatis supia cano-virentibus nervis impressis subtus lucide argenteo tomentosis costa et venis elevatis lineatis ^ In Amenca boreah-occidentah in ins Sitcha (Mertens), Oregon (Scouler),]uita fluv Columbia (Hinds), ad Trazer River et in Cascade mountains (Dr Lyall) — Ledeb fl ross 3 p 609, Anders Sal boreal amer 1 c p 126, Sal monogr p 106 íiK 59 Pulcheirima et distinct ssima species Frutex medioens, ramis subvimineis, novelhs cinereo-tomentosis Folia 1-2 poll longa, supra mpclium 1 poll lata, ba^i aequahtcr drigu&tata apice rotundator v acumine subproducto acutiuscula. e\siccatione brunnescentia, costa sola albidopubesceute, subtus nervis secundarns 12-16 e costa regulanter divergentibus lineata Amenta praecocia, subsessilia, demum subptdunculata adscendentieiecta, masc apice pnmo florentia, anthens demum luscescentibus, fern demum 3 4 poll longa. squamis glabnuscuhs, capsulis lmea longionbus, stylo brevi sed pediculo sublongion, apice cum stigmatibus brevibus et crassis fuscescenlibus

a, *congesta,* folus angustionbus, amentis ob capsulas crassissimas et breves subsessiles valde densiflons 3-4-pollices elongatis — Ad Lower Frazer River (D[r] Lyall)

p, *denudatdj* folns subtus demum glabrescentibus tenuibus (us S Silesiacae v S cinereae haud absimihbus) — Etiam prope Lower Frazer River (D' Lyall)

Y, *Aianensu* (Anders monogr p 107), ramis glabns fuscis, folus brevionbus subconateis supra mtide glabns subtus opacis subtomentosis ranssime argenieo micantibus, stipuhs acutis sat elongatis amentis confertis — Prope Ajan (Tiling n 252 Hb Petrop) S Sitchensis Regel et Tiling fl Ajanens in N Mem de la Soc des Natural de Moscou, v 11 P 117 *oima fohoium et imentorum a S Sitchensi nonmhil recedit, ei autem certissime maxime affinis Transitum haud abnegandum ad S speuosam haec forma etficit, unde affinitas certa cum S lapponum mdicdtur

49 S ABGYROCARPA (Anders bal Monogr p 107 fig 60), amentis brevibus, oblongo-cyhndncis patuhs subranflons pedunculatis, pedunculo folns 2-4 cetens paulo minonbus mstructo, squamis fulvis obtusis tenuiter albo pilosis, capsule bieve conicis argentpo senceis vel lanatis pedicellatis, pedicello nectanum quarlruplo superante albo, stylo elongato rufo, sUgmatibus bifidis ldcinns divancatis rufo piceis, folns lanceolaio-hngulanbus vel lanceolatonneanbus supra glabris impresse venows subtus glaucis pilis adpressis ar-

genteis plus minus senceis mtidis costa fulva et yeras prominentibus hneatis mtegiis vel smuatis A In Amencae borealis locis alpinis etfrigidisut White mountains, Kort Frinkhn, Mackenzie-river, Labrador (*), Newfoundland, etc S fusca Hook fl boi amci 2 p 151 (P P) S repens Puish Am 2 610, Nutt Gen 2 231, Andeis Ofvcrs vet Ak *orh 18i8 p 126 et S arbuscula ibid p 130 (p p) Fiuticulus ramosus, ramis glabns rufesctntibus ererlis Polu polhce sublongiora, vix \ poll lata, basi longius attenuata apice subpioducto fere acutdU, marline acute revoluto demum smuito-undulata, supid satuiate \mdid cosla et nervis impressis inaejualia, sabtus pnmum pihs adpressis elongdtis senceo-micantia demum glabrata glaucescentia costa rufgscenti lineata Amenta pedunculo subpolhcan pedunuilata, o\ah-oblonga, anther® mmutd? subfuBLfcscerites Capsulau vix j hn longee Quoad habitum inter fc arbusculam et S repentem Europe fere media, fohorum forma et nems, praecipue autem capsulis lactco tomentosis, haud male etiam S candldam leferens frxstant etiam sprcnnin L (lorma denudata) folns glabernmis ngidiuscuhs, us S pedicoilans amencandL simillimal Nonne ex his duabus hyhrida proles? Ab omnibus diflett capsulis minutis longe pedicel-Uti<5 et stylo ttrminatis (v s.)

a, *sencpa,* iolns subtus sat intense serueis glaucis

p, *d, nudala,* folns utunque gldbris, subtus opace vmdibus, us b pedicillans subsitnihbus

50 S PFIIOLAMS (Sm in I inn Tiansact 6 p 122), amentis sessilibus fructifens hrcve peduncuhtis folns parvis vcl bracteis su/Tultis eiectis demum subranflons, sqnamis fulvis dpice fusuonl)iis longe et tenuitei pilosis, capsuhs o\atis dcutiUBCiilis gnseo-tomentosis pedicellatis, pedicello nectauum quadruploqmntupli) supeiiitite, stjlo perbievi, stif?mdtil)us hrevissimis bifidis erectis fill vis, folns ividiusculis anguste liuLeoldlii (uspidatis argute serratis aut Hilepnssillem demum utnnqur glabns sulitus glaucescentibus petiohs longis, stipulis pdrvis, 5 In regionibus medns Aniejicae b realis in npis fluviorum sat < opiose In Angliam mtroducta, et etiam in ahib hortis sdepe culta — Willd sp yil 4 p bOS, Toney fl NewYoik 2 p 207, Hook fl borealianioiiL 2 p 148, A>a Giay Mdn ed 2 p 41^, Andeis 1 c p 126, Sal monogr p 108 fig 61 S lus^ata Puish fl boieal amer 2 p 612, Engl Bot t 1147, Sal Wob t 23 Fmtex med ocns lltitudinis, ramis subvimineis, atns vel fusco-piceis, tenacibus toha 3 4-pollicarid, vulgo semipolhcem lata, juniora utnnqiie pilis senceis sed parum rnicantibiis bnsuta, demum glahernma, ^pia nitidi ct saturate viruha, subtus glauoescentia, costa venisque elevatis lulvis percursa, petiolo 3-6 lin longo Amenta masuila sessiha, semipollicem longa, ovali-oblonga, condensata, squamls mgricantibus, anthens effloratis fuscescentibus, fcminea fere pollicem elongata, tapsuhs acutiusculis — Vanat

o, *subsencea,* folns mitio sat dense sericeo-pubescentibus demum subglabratis pilu rans subtus derehctis angusto lnnceolatis iiurgine crenu latis, amentis subdensiflons, capsulis brevius pedicellatis obtusiuscuhs (S spncea Hb Asa Gray e Massachusetts) Here quum habitu turn ttotis S senceae mnaime afflny*. i qua vix diflert nisi a menus magis laxlflons, capsulis longioiibus et loins demUm subtus bubglabiatis

P, rtgrida, folns utrin^ue glabernmis dehaum ngidis aculissime serratis supia laetissime vindibus subtus evidenter glaucis, amentis distmctius p«»dunculalis, capsulis acutionbus —Vanat 1" *latifoka,* folns 2-3 poll longis ovah-hnceolatis basi subrotundis rnedio fere J poll ldtis subito cusnidatis argute scnatis ngidissimis aut \aldo intense felaucis aut pure et lucido \indiljus Haec quoad folia us S lucidae v mgrae latifoliae non dissimihs spd amenta longe iliPna' — 2° *lonqifoltn,* folns 3 4 poll lofigis hnedii lancpoUtls bisi anguslatis acute serratis subtus minus intense plaucis Haet fere lypica — 3° *brevtftoha,* folns M poll longis anguste lanceolate ad medium vix } poll laiis subtus pallidionbus setfatis

Y, *angustifoha,* folns anguste lanceolatis fere lwieanbus margme tenuiter

serrulatis v subintegns subtus glaucis pnmo senceis demum glabratis. S rosmannifoha Barratt (Hb Hook) et Hook. Fl boreal -amer 2. p 148 i p — Haec, quae legiones magis septentnonales praecipue mcoht, ndstiae S rosmannifohfle sat similis, scd diffiert foliis suoserratis, tnpsUlis longius pedicellatis et habitul *Ad* sequentem tiansitum evidentissirric efflcit et ab ea dilficillime dishnguenda, e contiano in formas minus latifohas et rljidas S petiolans sensim confluit*

ð, *gracihs* (S ^ricilis Andeis Sil boreal -imer 1 c p 127), amentis femmeis gracillimis subpenduhs demum subfohato-pedunculatis valde laxiflons, squamis lingulatis aj ice inluscatis capsuhs ex ovataiiasi longe rostrato acutdfis tenmter senceis vel glabnusc hs longlssime pedicellatis, prdiccllo nectanum feie 8 superante, stylo hievissimo sligmatibus bipartilis iuscis divantdtis, foliis anguste lanceolato hncanbus serrulatis latitudine fere decies longionbus subtus palhde subglaucescentibus utnnque demum glabns *$ Xd* (lum basltatchawan (Drummond, Richardson, Bourgeau) S losmannifolid Puisb fT amer 2 p 612V, Hook fl. boreal amer 2 p 148 p p (non L) — Vanat 1° *sencocarpa*, capsuhs angustc conicis 2) lin longis tenuiter senteis — 2° *lejocarpa*, capsuhs basi ciass-ionhus glabtnimib vindi testaceis — Habitu et charactenbus prsecedentis foimae angustifohde et nostrae S repentis rosmarinilohae admodum siraihs sed differt foliis adhuc angustionbus, amentis subfohato p(dunculatis clevdtis et cdpsulis Iongissime pedicellatis Fiutex humilis, ramis divisis erectis gidcilhmis Iuscis Folia fere 2 poll longa, 2 4 lin lata, anienld ieminea vu pollicana

c, *sencea* (S sencea Marsh Aibu<pft amer p 140), amentis sessihbus fructifens bievissime pedunculitis bracteis paucis et parvis suffultis cyhndricis detisiflons squamis nigncantibus pilosis, capsiilis ovato-oblQngis obtusis gnseo tomentosis pedicelldtis, pedicello nectanum ter quatervo supeidntc stylo brevi sed subdistincto, stigmdtibus crassis brevissimis connnenlibus fu^cis, foliis tenuibus UnceoUtis longe acuminatis pierum que serratis supra obscure vindibus gldbns subtus palhdioubus argenteo-micantibus ^ ^n nPls aienosis fluviorum in Amenci boreah non idid — Muhl N Berl ^chr 4 p 239, AsaGiayMan ed 2 p 414 ^ gnsea Willd sp pi 4 p 699, Pursh fl am 2 p b16, Anders Sal.* amer boreal 1 c p 126 S petiolans v gnsea lorrey fl New-York 2 p 207 S pdiolaris sencea Anders Sal monogr p 110 fig 61. Frutex 4 lOpedilri ramis vimlneis tenaCibus fusco viridibus v atns glabns Folia 2-4 pollicaua, \~\ poll latL apicc sffpe subobhquo longe Cnspidatd, mitio tenuia el utiínque pilosa, demum supra obscuie viridid, subtus argenteo-seiicea micantid serrdtuns depressis glanduligens crenata Amenta etiam masculà pollicana, anguste cyhndnca, incurvata? anthens dpmum fuscis Capsulae subovales crasscB, quasi sessiles denique conspitue pedicelldtaB stylo fere nullo sed stigrrntibus fuscis connatis Forma major foliis fore J-4 pollicaiibus lls S lragihs quodammodo slmihbus ?au(let, sed subtus intense argpnteo-spnccis micant, forma minoi loins subintegns sa?pe denudatis S pftiolarem talde simulat et pei earn ad tjpum S repentis pertinere demonstrat Auctores varn (Toney, K ch m Comment p 21, et Borrer) hanc speciem cum S getiolm conjunxeiunt, nix notas erilere possum quibus inter se distmguantur, haec autem S sencei nlerumque amentis longionbus magis densifloris et cyhndncis, capsulis evidenter obtusiuscuhs et densius tomentosis, foliis denique acutionbus vulgo subtu* senceis excellit (v s)

51 S HUMIUS (Marsh Arbust ararr 1785 p. 140), amentis sessilibus bracteis tiullis vel minutis et paucis suffultis ovah oblongis subruriflolis, squamis obtusiustulis superne afns longe albo-p4losis, capsulis e crassa basi elongato-conicis ro«4t alls albo hnsutis petlicclatis, ppdicPllo nectirnim siltem qiladruplo super mte stylo brevl sed subdistincto Tulvo stigm itihus crassis erectis, iohw petiolatis obovato-oblongis apice lation bieviter acummitis supra prlabns subtus glducescentibus pftlhde tomehlosis vel gl ibrati* exsiccitidne nigrtscentibus marglne integns vel undulato-crenatis, stipuhs semiovatis acutis serratis ^ In locis siccis et glarè6sls ad marjfihes sylvarum et ria-

rum in America boreah media, etiam in California (ubi vidi) sat vulgans Asa Gray Man ed 2 p 444, Anders Sal boreal-amer 1 c p 126, bal Monogr p 110 fig 62 S Muhlenbergiana Barratt Sal amer. n 1, Torrey fl New York 2 p 205 S conifera Muhl Neue Berl. Schr 4 p 240 t 6 fig 9, Willd sp pi 4 p 70S p p , Pursh fl amer ? p 612 Frutex 4-10-pedahs, ramis fragihbus, annotinis cmereo-tomentosis Folia 2 5 poll longa, supra medium saepe pollice sublatioia supia opace vindia costa albo hirsute, subtils tomento tenui mollia vel eo denudato pallide glaucescentia, hnean-oblonga, apice latioM, strpulis saepe sat magnis basi fulcrata Amenta masc J-pollicana anthens ruscescentibus femmea pnmo subovalia demum pollice longiora, capsulis sat longis fere undique divancatis irregulana Est quasi inter S tnstem et discolorem media, folns angustionbus ad pnorem, lationbus ad postenorem vergens (v v)

a, *qrandifoha,* folns obovato oblongis 3-4 poll longis ultra medium U, poll lalis supra nitidis — S conifera Muhl Vanat \° *obtusifolia,* fohis acumine perbrevi apirulatis subtus aut denudatis glaucescentibus, aut tenuiter alno tomentosis — 2° *acumvnata,* folns apice production acuminate, subtus tomento saepms evanido glaucis S pnnoidi (sub S discolore) subsimihs sed differt folns tenuibus, amentis brevibus, capsulis brevius ppdicellatis

P, *longifolia,* folns oblongo-spathularis 2 4 poll longis supra medium •} poll latis — Vanat i° *nqidiuscula* folns demum ngidis Ion gins a^uminatis supra opacis sed glabns subtus densius tomentosis Ad S. tnstem appropinquans — 2° *glauca,* folns supra nitide vindibus acumi nato-cuspidatis subtus denudatis intense glaucis — 3° *tenuis,* folns valde tenuibus rufescenti subpelluci I is subtus vix tomentosis opacis.

y, *an gush folia,* folns 1-2 poll longis \ix } poll latis subtus glaucescentib is vel tenuiter tomentosis - Hue forsan etiara peitineni S. recurvata Pursh fl amer 2 p 609, sec B irratt in herb Hook , et forma *opaca* capsulis brevius pedicpllatis glabrescentibus vinduhs, folns glabriuscuhs Ex Novo Mexico (Wright n 1878)

6? *Hartwegi* (S Hartwegi Benth. pi Hartweg p 52), amentis (axillanbus sessihbus) brevibus cylmdncis erectis dentitions obtusis, squamis oblongis atns obtusis basi pilosisapice glabus stamimbus filamentis elongatis anthens aureis, folns elongato-lanceolatis v Imearibus supra mednlni sublationbus brevitpr acuminatis basi angustatis supra glabns nitidis obscure vindibus sublus tomento brevi subferrugmeo cineieo sparse obtectis vel denudato glaucis maigmc lenuissime serrulatis — In Mexico ad Angangujo (Hartweg n 390) Specimina tantum folnfera, ut formae plures regiones mendionales inhabitantes, amentis valde serotinis in axillis foliorum ornata \idi, dequibus itaque nil certi enuntiare audeo Forma foliorum fere ut in S nigra, sed tomentum cano rufescens et glaucum omn no ut in S humih angustifolia, squamae etiam atrae et stamina bma Huic speciei itaque haud indubie associanda

52 S TRISTIS (AitHort Kew ed. 1. *i* p. Jy3), amentis sessilibus basi nudis globoso-ovahbus subdensiflons, squamis basi fulvis ceterum fusco-atns obtusis longe pilosis, capsulis breve conicis basi crassiusculis dense gnseo vel subargenteo-tomentosis pedicellatis, pedicello nectanum tei-quintuplo supe rante, stylo brevi, stigmatibus crdssis mtegns v. emargmatis erectis, folns subsessilibus lingulato-lineanbus supia opace gnseis demum subdenudatis subtus adpresse lacteo tomentosis costa et nervis elevatis rugosis margine revoluto vel undulato mtegns, stipulis parvis vel aulhs j In IOCH arenosis et jn montium declivibus Amencae boreah onentalis mediae — Muhl N Berl Schr 4 p 241 t 6 f 9, Willd. sp pi 4 693, Asa Gray Manual ed 2 p 4H, Anders ofv Akad Forh 18^8 p 126, monogr p 112 fig 63 S longirostns Michx fl 2 p 226, Barratt Sal n 2 S Mublenbergiana Willd sp pi 4 p 692 p p S villosa Sal Wob p 183 t 92 Fruticulus humi lis nmosissimus L 4-peddlis habitu gnseo tnsiis Folia £-1 ; poll longa 2-4 lm lata rugul^sa, subtus tomento lacteo ex albo caerulescente sat denso corrugdto quasi landta, venis e costa sublutescente fere lectangulanter divan

catis irregularibus elevatis distmcte lineata, supra opace gnsea, demum n-gida Amenta in ramulis dense conferta, uiitio fere globosa, 2-3 lin longa, anthens initio rubicundis demum flavis, capsulis vix lineam longis, stylo ob-soleto et stigmatibus fusco piceis Quod in Euiopa S repens haec omnium humilhma Salix in regionibus Amencae boialis, ubi nulh nisi S bum ill alh-nis, ad quam loins glabralis proxime accedit ita ut vix distinctas diceres has species duas, ab ea non recedens nisi foliis saepissime angustionbus et breMonbus densius gnseo-tomentosis, amentis et praecipue capsulis bre-vionbus (v s)

a, *glabrala,* foliis elongatis acutis basi longius attenuatis supra glabratis subtus to men to vix ullo obductis sed intense glaucis

P, *nivecij* folus brevionbus subcorrugato undulatis supra, tomento tenui gnseis subtus densissime et sublucide mvea

53 S REPtNS (L sp 1447), amentis subsessilibus fiuctiiens ovah cylindiICIS brevitcr pedunculdlis et folus parvis suffultis, squ imis spatbulatis apice sae pius lnfuscatis pilosis, anthens eifloratis nigresceiitibus, capsulis ex ovata tasi lanceolatis tomentosis glabnsve distincte podicellatis, pedicello nectanum bis terve superante, stylo brevi, stigrndtibus o\atis integns v bifidis, (olus ovah bus elhpticis lanceolatis vel sublmeanbus apice subobhquo inar$_b$ine saepius recurvdto integns vel remote serrulatis supia lucid is elevato nervosis subtusplerum |ue sciiceis velsaepeutunque subc*sns, slipuhsobsoletis ^ 5I^Q pratis et pascuis uliginosis per totam Europam boieilem et mediam pr<eser tim occi lentdlem, ab Hispania et lyroh itdlico usque inBothniam Lx Sibiria uralensi altaica et Baikalensi et Dauna etiaua indicator (sed dubia, utpote lbi veiosiniihtei S rosmanmfolia) Jx Asia minon specimina a Wiedemann lecta vidi —Linn suec n 89b Ldngc Dansk fl ed 2 p 6b4,Fr Mdnt 1 6o, Koch Comment p 47 bynops id 2 p 757, Host sal p 16, Kern. Weid Oestr p 268, Wimm fl v Schles ed 3 p 19, bal europ p 117, Anders Sal monogr p 113, Smith fl bnt 3 p 1061, Godr et Gren fl *9lbr* 3 p 137 Gaud fl helv 6 p 233, Bertol fl it 10 p 326 Willk et Lange fl hisp p 2JO, Ledeb fl ross 3 p 614, Maximovit/ fl dinur 1 c p 245, Bunge Reliqu Lehm 1 c p 497,Willd sp pi 4 693, Hartig Horstl Cult fl p 412 b luscaLinn suec n 897, Wdhlenbg fl suec n 1140, Srn fl bnt 3 1060,L B I960, Hook et Am fl but ed 7 p 399, Hoflini &dl 15 t 28,29, Willd sp pi 4 694- S incubacea *L* suec n 895 (*), Sm C B buppl i 2600 S aienana Linn it gotl 206, suec n 351 S depressi Hofl'm Deutsch fl 2p 265, DC fl fr 5 34b, ber Lss p 9, Lxsicc n 61 62 b ai genteaSm bnt 3 1059, E B t 1364,Gaud helv 6 p 236 HartigFor^il Cult P 412 S polyinorpha Ihrh arb n 49, Ser Lxsicc n 11,3b b piostrata ^m Recs Cyclop n 98, L B t 1959 b parvifoha Sm in Rees Lncycl n 102, E B. t 1901 S foetida Sm K H 4 p 208 b adscendens Mn [1] c n 103, K B 1962 S rostrata lhuill fl pans 516 S decumbens Forbes Wob n 88 S veisicolorHoit Wob n 77 —*hone** E B 183, 088, I0o9,1364, 1959, 1960, 2600, Reich 1239, 1240, 1241, 1243, M D 2489, Host t oj, Nil Wob t "7 84, 88, Anders 1 c f *bk—hxstcc* Lhrh aibor n 49, Fi H N 6. 55, Reichb n 1239 Bill. 1959, Wimm n 13, bei n 35, 36, 61 63, 66, 92, 93, 106 107 Species ut S nigncans omnium maxime polymoipha ita ut specimina potius quam formae s^epe ab ductoiibus vanis sub nominibus pro-posita *1st* enim 1° 1 rutex 2 5pedahs, vel 2° Fruticulus 2 3-pollicans ID hisce duobus adsunt a, folus lanceobtis hneanbus, quae aerum leiocarpae vel sencocarpae, *b,* fol oblongo ovalibus, qua? leiocarpae vel seucocaipae , c, fol ovali orbicuiatis, quas aut leiocarpae aut scncocarpae. — Ab omnibus iterum obveniunt modificationes folus utnnque glabernmis, supra obscure vmdibus subtus puberuhs, tomentosis vel senceis, vel utnnque dense tomentosis, de quibus et alus conf ad monogiaphiam, p 114

P, *rosmarinifolm* (s rosmarinifolia L sp pi 1448),amentis sessihbus.fruc-tilens subglobosis subdSnsiflons breviter pedunculatis et folus paucis paivisque suflultis, squamib obovatis atns pilosis, capsulis ex ovata basi lanceolatis acutis tomentosis pedicellatis, pedicello nectanum bis terve superante, stylo brev I subobsoleto, stigmatibus plerumque bifidis divan-

cąlis fuscescentibus, folus stnctis lineanbus vel anguste hnęan lanceo-Jatis apice lecto acuniinatoş plants lntegerriinis vel remote glandulosо-denticulatis supra obscure viridibus glabns, subtus adpresse senceis vel glabns, stipuhs parvis lanceolate —In pajudibuj>spongiosis in Anglia, Germania boreali onentah et media u&que in Austnam onentalem (Temęswai Banatus) Dania et'buecia mendionali et Gotlandia — Sed in Rossia occidentah fiequenuoi et deinde per regiones Sibiriae in Amuren sem Limites inter hmeetveram s repentemvixulli sedmp lificitionem sistit peculiarem, lefeiones occidentales fugiens, in orientahbus optime e\oluta, et saepe a S repente differt staiura dension, ramis virgato-strictis tenuibus, foil is elongato-productis formam line^rem ssepissime indue/itibus, vulgo plants et tenuionbus, amentis demque brevionbus fere subglobosis demum evidentius sed breviter pedunculdtisbracteis pau cissuffultis S manniloln Willd sp pi 4 p 697, Koch Comment p 48, Synops ed 2 p 755, Pr Mant 1 p 64, Hdrtig *orstl Cult p 413, Wahlbg Buec n. 1141, Lan$_b$'e Dansk H ed 2 p 664, Hook et Am But ft ed 7 p 397, Beitol fl it 10 p 327, Ledeb fl ross 3 p t>J5 S re pens d rosmannifoha Wimm Sal europ p in s repeiis rosmannifolia Andeis Sil monogr p Uo fig 64 S Integra Ihunbg fl jap (s>ec spec m herb Berolin et Pans) S reppns losmannifolia Kemer Oest Weid 1 c p 266 b tpnuis, S. httoialis et S pratensis Hon Sal t 2 p 14etli t 47,48,5052 — *Icones* Hartig 1 c t 43, Fl Dan t 255b, Sal Wob 86,87, Reichb t 1242, I B t 1365 — *Exsicc* Ehrh arbor n 119, hi H N b n 56, Keiner I2o-178 Dilh cillime a S lepente distingmtur — Vanat *latifolia* f)lns oblongis v I oblonge lanceolatis 2 5" lon$_e$'ionbus *qnim* latis (S pralensis Host), — *anguitifoha.* folus lineanbus vel aNgustissime lanceolatis o 10 ° longio-nbusquam latis

Y, *flavtcans,* folus jumonbus subtus flavicanti-smceis, demum utnnque glibus subtus caesns elevato-\enulosis, amentis longionbus subpedun-culatjs, stylo evidention In region e Amuren si — Nonne eidem quam sub nomine S repentis attulit Trautv in Middendorff Htise 2 1, 2, 3 p 79 e regione Ochotensi ?

X S REPENS-CAPREA (Lasch m htt), amenfis sessilibus ovatis denslp, squamis, nigns oblongis villosi^, capsulis subsebsihbu-* conicis ilho tomentosis stylo mediocn, stigmatibus oblongis patulis bin4is folus ovali oblongis plicato-apiculatis leviter rapandis supra bvissime puberulis subtus candicantibus dense senceo-tomentosis In Germania prope Dnesen in der Neumarkt (Lasch) et Breslau — Wimm De/ksclir 1853 p 170, Hb Sd 73, coll 216 S caprea-repens Wimm Sal europ p 237

X X S RFPENS-CINEREA) Wimm Denkschr 18a3 p 71), amentis oblongo-cylindraceis subsessihbus, squarais spathulatis seminigns villo baibatis, cap-suhs brtvibus conico-subulatis cano-lomentosis in pedicello m diocn vel brevi, stylo brevissimo, stigmatibus oblongis subinlegns patulis, loins ovali oblongis (oblongo-ovahbus) bre\iter atutis supra viridibus pubciulis (cme-rascenti-viridibus) demum glabns subtus glaucescenti pa/m, p$_u$he sencea tectis venis vix elevatis —Wimm Hb Sal 1, M v Schlu ed 3 p 206 S cmerea repens Wimm Floia 184^ P 45 Sal euiop p 23b S sub^e-nceaDollFl v Bad ot7 Prope Breslau Silesiae (Wininiei) et Pfohien M D Badenws (Brunner) Quantum e specimmiljus peipauus nuae examindvi, ju-dicare possum, parum e form is latifolns S ambiguae hae tiflerunl

X X X S AMBIGUA (Fhrh Beitr 6 p 101), amentis subsessilibus densiflons oblongo cyhndncis Iiuciiferis breviter pedunculate j$_0$Jn$_s$ pa$_{rV}$is raio suffultis, squamis obtusis luho luteis apice fuscionbu*. pirce pilose capsulis ovato-comcis gnseo tomentobis pedicellatis pedicollo nectinum ter quiterve su-perante, stylo brevissirao, stigmatibus cr«issiui>cuhs em<ir^inans erects fuscis, folus elhptico lanceolalis v obovato o\alibus oblique recurvato apiculatis margine subrevoluto intęgns vel remote senulatis supra nervis impressis >meat»s subtus ruguloso-reticulatis adpresse villosis demum ngidis, stipuli* semi-ovatis rectis. —Inpratis spongiosii. paludobis et pascuis humidis pei Ku

ropam mediam fere omnem ubi parentes* vegetant, ab Helvetia in Sueciam WeçUam et in Rossiae occidentahsprovinciisbalticis-rWilld sp pi 4 p 700, KoclJ'Comment p 49, Sjnops ed 2 p 7o3, Lange Dansk fl ed. 2 p 663, frodron et Gren H fr 3 p 136, Hook et Am brit fl ed 7 p 400, Ledeb fl ross 3 p fal4, Anders Sal monoj<r p 117 S aunta c ambigua Fr Nov Mant. 1 p 54 S. phcd|,a Fr H Hall p. 148 b mcubacea (L) (plicata) Fr Nov Mant p bb s versifoha Ser ess p 40 (p p), exsicc n 60 S. spathuhta el S proteitoha Schl S Lantana Hartig Foi^tl. Gulturpfl p. 410 t 41 S aunta-repens Wimm Flora 1849 p 49. Fl v Schles ed 3 p 205, Sal euiop p 233, Nilieich Fl v Neied Oest p 262 S lepens-aunta Wimm Denkschi 1853 p 171 — *Icones* Reichb 1243 *b* (et c >), Fl. D t 2670, I B t 2733, Sal. Wob t 1^ — *Exsicc* l«hrh arbor n 109, Ser n 66, *r H N 11 64, Wimm Hb Sal 20,35 36, Kern Hb Sal n 173 Est procul dubio e S aunta et S repente hybnda proles, nunc huic nunc illi evidentissime accedens A pnore habet loha latiora oblique acuminata mgulosa et tomentosa stipuhs sat magnis ornata, amenta pauciora et lon^ioia, sjuamas vulgo fulvescentes et capsulas longius pedicellatas, a S repente capsulas sdt<pe stylo quanquam perbre\i ipiculatas et brevius pedicellatas, folia ngidiuscula mirgine frequtntius levoluto Integra et CXSIUM-tione saepius nigncantia habitum demum et sUturam humiliorem ramis tenuionbus intricatis, quare etiam sub duabus occurnt formis

a, *spathulata,* frutex pins minus elevatus, ramis stnctiuscuhs, lamuhs diutius cinereo pilosis, amentis etiam huctifens brevius pedunculate; capsuhs pedicello nectanum quater supennte et squama pallida longiou pedicellatis, stylo valde oosoleto, folns exsiccatione vix nign^antibus saepius stipulatis apice subobliquis S spathulati Willd — Vanat 1° *latifolia,* folns non raio 2 poll longu 1^ poll Latis ovalibus Haec est hnti, folns adu'tis ngidis, utrinque incano tomentosis (b cinereo-repens Wimm Fl 1849 i 4->), vel glabnuscula, folns tpnuionbus saltern supra demum glabratis vindibua — 2° *anqustifoha,* loins plus* minus late lanceolatis vel ovato-ovalibus, vix polhcem longis, lmentis brevibus Haec est hirta, loins adultis ngidis utrinque mcano-tomentosis, vel glabriuicula, folns tenuionbus, saltern supra demum vmdibus.

P, *phtata,* fruticulus pleiuraque depressua ramis t trunco vahdo subterraneo eiectis, foln^ tenuionbus facihus nigncantibus apice rectmsculis ranus stipulate, amentis fructifens plerumque paucifoliato pedunculate, capsuhs brevius pedicellatis, st}lo evidention — S phcata Fr Variat 1° *cmerascensj* folns utrinque vel saltern subtus plus minus cano-vel argenteo tomentqsis. In locis andis vel immo arenjsis! Hsec forma vanat folns subovahbus apice subobliquis aut interns ant apitem \eisus seirulatis magmt. \anantibus, et loins plu^ minus lanceulatis plerumque int^gns — *V* u m c t m, folns saltern supra glabris tenuibus virentibus exsiccatione faule nigncantibus Haec est folns subovalibus 4 poll latis, ^el lanceolatis vix i poll latis Ex .juibus omnibus praeterea extant modifitationes lejocarpaj et hebecarpae Wimmer (Nachtr 7UT Flora v Suhlps p 39) et post eum Patze, Mejei tt Elkan (Fl v der Proyinz Preussen p 142) de iiybnda lorma, S tinereo losmannilolia, mentionem fecerunt hpecimmibus nullis a me wsis non dicere audeo utrum a S ambigua angustifolia sit distincti Speciraina in Hb Sahcum n 36 a Wimmar divulgata, queque a S rosmannifolia proueata quodammodo autumavit (cfr Denkschr I8i3 p. 171) sed aunta-repens appellavit, verosimihter ex S rapente orta,

X X - s ^ s PAIZEANA. (Anders Sil Monogr p. 124. fig 67), araentis sessilibus bracteis paucis suffultis brevibus.den^itlons erecto-patuhs cylmdrici9, squamis oblongo-obovatis apice rotundatis atns pihs cinereis villosis, capsulis conicis aLUtis facie glabnusouhs sed senat.m parce pubeiulis pedicellatis, pedicello piloso nectanum superante, stylo elongato, stigmatibus integns crassis erectis, folns anguste lanceolatis brevibus acutis utrinque mcano-pubescentibus subtus seuceo-micantibus margine subrevoluto acute serratis, stipuhs nullis 3 Circa Fischliausen prope Koenigsberg (C A. Patz#) b.

daphnoides *y* cinerea Patze in sched S daphnoides repens Wimm Denkschr 1853 p 155 Hybnda proles sat singular-is Frutex non altus, ramis crassiuscuhs, fusco castaneis, lucidis Folia 1 { poll longa, 3 hn lata, us S repentis sat simiha, sed acuiiora, ngidiora et distinctius sẻirulaU Amenta us S daphnoidis, sed YIX pollicana, bracteis paucis et parvis suffulta, squamae et capsul* ut m eadem specie sed hae brevius pilosae et rotun datae, lllae pili^ brevissimis seriatim conspersae (v s)

X X X X X S SUBALPINA (Forbes Sal Wob t 93), amentis masculis subsessih bus oblongo-cyhndncis erectis densiflons paucihracteatis squamis rotundatis apice fusco purpureis basi tenuiter puberulis, filamentis luteislongis,anthens aureis, folns linean lanceolatis basi apiceque subaequaliler attenuatis breviter acuminat s maigine revoluto integns supia opace \indibus tenuissime mcano tomentosis subtus vellere lacteo tomcntosis costa flava percuisis demum sat ngidis —Anders ^al monogr p 12^i hg 68 s ropcns incana Wimm Sal europ p 155 Colitur in horto heiolirunsi et plensque Sec ill Wichura in Helvetia silvestns detecta A S incana habet amenta cylindnca, squamas obtusas purpureo marginatas, stamina aurea, Jolia subtus lacteo-toinentosa costa valida flava percursa a S repente amenta oblonga crassiuscula, stamina hbera, iolia latiora demum ngida, supra opaca, Dervis impressa, margme revoluta

2° Podostylae.

Capsulae typice pedicellatae et stylo producto rostrata?, stylo et pedicello subaequilongis

§ 12. *Virescentes s. Phyhcifohx. — Nigncantes et Arbuscul<pKern. — Phyhcifohx* Fr. Mant. I. p 48 (cum Rigichs et ε|ιι-).

Fiutices saepe alti, regiones boreales, alpinas vel arrticas mhabitantes Kami tenues, mfuscati > olia latiuscula, subobovata v ovato lanceolata vulgo utnn que glabra et vmdia, subtus glaucescentia, remote et inflexo senulati, mar cescentia nigrescentia Amenta ovali cylindnca, subsessiha, antbens post anthesin sordide tlavis, caps alls vulgo senceis plus minus pedicellatis et stylo rostratis

54 S NIGRICANS (Sm. Trans of Linn. Soc VI p 120), amentis praerocibus plus minus pedunculatis loins vel bractei-* saepe suttullis cyhndncis, feminejs sublaxiflons patulis, squamis acutis pilcsis apicem versus nigncantibus, capsulis comco rostratis glabns vel tomentosis ppdicellatis pechcello ntcta' num plerumque 5 8ies superante, stylo producto, stigmatibus crassiusculis patentibus partitis, loins lai ceolatis ovatis basi coidatis roiundatis vel angusstatis integris vel serratis pnmo \ulgo pubescentibus adultis saeje glabiatis supra costa excepta vindibus subLus glaucescentibus vel lastius Mndibus nervis elevatis subrugosis, stipulis saepe sat magni«« *%* vel *5* In omni Euiopa a partibus mendionalibus Jtaliae usque in mnxime boreales Scandmaviae et Rossiae, vulgo loca alpestua et editiora montium eligens Vix m Asia, nee in America occuint — Willd sp pi 4 619, IT Mant 1 p 52, Wablenbg lapp n 485, suec p 668, Anders Sal lapp p ^6 Sal Monogr p 125 Haitig Forstl Cult p 405, Lange Dansk fl ed 3 p 740, Koch Synops ed 2 p 748, Wimm fl v Schles ed 3 p 189, Sal europ p 20 Neilr fl v Nied Oestr p 263, Kern Weid Oestr p 238, Sm br fl J 1047, Hook et Am br fl ed 7 p 404, Gren et Godr fl 1 3 p 138, Lange et Willk fl bisp p 229, Bertol fl it 10 312, Ledeb fl ross 3 p 608 S phvhcifoha (L) Wahlenbg lapp n 48?, suec p 667, Koch Comm p 40, Willd sp pi 4 695, Gaud fl helv 6 p 220 S phylicifolia p Linn suec. n 880, sp pl.p 1442 S stylosaDC fl fr 5.339 S stylans Sei Ess p 62 S has tata Hoppe, Vill delph 3 774 t 50. f 18 — *hones* Wahlenbg fl lapp t 17 f 2, Anders 1 c. f 15, Sal monogr f 69, Fl D 1053, 2553, E B t. 1213, Reichb n 2017, 2018, Hart 1 c p. 41 c , Sal Wob 37 41 42 53

54 7f> 96-120 12* —*ETSICC* FI H n. S 62 1 6J 8 (,2,Reicho n ->68, Wimm n 42 Billot n I960, Kern n 10 118 E sahcibus hucusque co^mtis forma maxIme \anabilis neo ullis notis certis uinquam defhnenda Hutcv nunc in lormaui arbons bau 1 mediotns excrescens, non laio brcvissimus c\a dit, fere piocumbens Rami dnaneati nunc ciassi nunc graciles, glab e nitentes aut incano tomentosi Folia nunc 4-o pollices nunc vi\ semipolliceni longa, 2 poll ad 2 J lm lita, omnes foimas a m-uime rotundato oibieului acHmearem liidutntia, glabeiuma \el denMssime mcano tomentosa, integer nma vel cnspato serrate, vulgo vindia subtus pallidiora \el sat intense glau cescentia, exsiccatione iacilhme et dense marcescum nigncantii Ament vana longitudine et crassitie, mascula o\ah oblonga femin a nm^is cyhn-dnca capsul*e 2 lin longae comco rostntde, vulgo \indulae aut testace«je — S phyliuloliae pioxima et foisan in earn abiens, ab ea tamen vultjo difieit foln«- migis inaequalihus sub lente purx tis ilbis con^peisis et tonuiute lacil-hmc nitjiicantibus, capsulis lemum majoubus *>tylo longion rostiatis bub duabus modificatiombus piimams occumt

a, *boreahs* (Anders Monogr p 128, S borealis tries Bot Not 1840 p 193), amenti" coaitanei° p°dunculoelongato villoso ioliatopcdunculatis, capsulis maximis longe stylifei is, loins magrns saepe ciassis et dense to mentusis — Hab praecipuc in le^ionibus subalpinis Laj)poniae et buecia borealis Exstat aut *kjocaipa* lut *lubecarpa* pnoi potissimum b ph\h cifolia Wahlenbg , poster or S nigncans ejusd Van it etiani 1° *giaiidi-folia* folns maximis 4-5 polhce« longis usque ad 2 poll latis \ulpo tenuio nbus et utrm^ue undibus (b Rudbcckna tr in sched) Viboi \el arbuscula. elata — 2° *crassifolia,* folns ciassis utnnque mollitei villosis, \enis subtus sat clevatii> rugfsi^, ovatis aut obovatis, marine iemote scrratis us S ca])rece sat sirailibub In alpinis — 3° *tenuxfolia* folns te-nuioiibus aut omnino nudis \indibus subtus palhdis, aut parce pubes-tentibus, mtegris aut serratis ovali oblongis, oblongo obovatis, \el an-gUbte lanceolate In sylvis et secus HUMOS et amnes.

p, *protea* (Anders Mon p 128 S cpmpestns *hues)* amentis Juevionbus saei)issime piaecocibus nudiustulis magisque ranflons, capsuhs bievius pedicellatis ct stylo subbre\iore iosliatis, Joins nnnonbus et tenuionbus \induhs, nunc o\ato ovahbus basi subcordatis, nunc subl ntau lanteolatis basi apice attenuatis, integns aut ciispato-senatis — In regioncs centiales alpmas bcandinaviae et in Luiopa ctteia aut alpina aut campestu Lximie polymoipha 1° *Lejocai*pa, caps glabns Hue leleienfia? sunt b Vmma-niana Willd bp pi 4 p 663 S Andersoniana Sm E B t 2343 U se-quentes species Hostianae S ovata, b glaucescens, S auuta, S men-thdefoha, b. nvalis, S piunifolia, S parietarnloha in Host Sil p 23 *lo* tab 74 86 In regiones ouentales (ut Austria) tmtum lejocaipa —2° *hebecarpdj* capsulis pubescentibu& \cl albo-villosis Hue b rupestns Dorin E B t 2342, b toistena Sm 1 B 2344, S. cotinifoha bm *h* B 1403, S hirta Sm E B 1404 et mullae aliae

55 S PHYLICIFOLIA (L Sp 1442, ex auct Smith et Fries), amentis sessihbus basi demum minute et pauci-bracteatis densiflons ciassiusculis, squauis acutis pice nigns albo pilosis, capsulis conico-iostratis acutis cincieo-tomen-tosis vcl j,labns pedicellatis, pedicello uectanum bis terve supcrante slylo elongato tenui, stigmatibus bihdis divcigentibus, loins ovato-ovalibus vel elhptico lanceolatis remote serrulatis mU^nsvc su| 11 lucide vnidibus subtus glaucis utnnque glaberumis, stipule obsolf Us an^ustis 5 In rcgionibus alpinis buecid. et Norvcgiae totius abunde, in Angha boreali et bcotia, inHarz Brocken et Silesia, in Transylvania HungaTia, Gama centiali, Pyienaus austrahbus, m Ros^a ad Peiropolin, Rossia sepieutiionah, Ural (Brauth) et Sibina oiientah? (btubeudorlj Ex bibina ince-ta, in America vix crescit — Linn pi lapp ed 2 p 291, Fi Nov Mant I p $_{O}$0 Anders bil lapp p 42, bal Monogi p 131 Koch Synopj* ed *X* p 7J>1 , Ledtb fl. ros& 3 p. 611 I B t 19^8, Sm'' bnt 1040, Hook et Am bnt fl cd 7 p 40b, Hartig foistl Cult p 391 s a buscula J-inn p 886 a Wahlc nbg lapp 11 476 t 16 f 2, suec n 1122 Koch Comment p 44 S arbuscula Weige-lianaKcinei bal austr p 208, L B t. 2bo6 b bicolor Lhih Bcitr o. Ib2

Willd sp pi 4 691, Koch synops ed 1 653 S Weigeliana Willd sp pi 4 678, Wimm europ p 26 S foimosa Willd 1 c p 680? S ladicans Sm m E B t 2700 Willd 1 c p 676 S laminea Loisel gall 2 p 343 (ev Gren) S Dicksonnna Sm I B t 1*90 s phjllireifoha Borr L B 2660 S tenuifoha, Sm & B 21K6? S Davalliana bm *h.* B 2701 S Boirenand Sin. F B 2619 S tenuior Borr E B 26^0 S propinqua Borr *T* B 2729 S. nitens Anders E B 2655 S Wulfeniana Sal wob n 42 S patens Sal wob n 39 — *hones* Andeis Sal hpp f 9, Sal Mon f 70 Sal wflft) 38 39 44-47, 50 52 Hartig t 110 (3)9) Reichb 2001 2002 — *Exsicc* h H n 3 54 Wmim H &al n 4,ColL n 87 Re chb 1629 1(^30 Kern n 6 Sal n 89 Frutexeleginlissimus, usquead 10 ped ihs, ramis fusco piceisvel ru bellis, nindissimis, divancatis Folia hnceolata supra medium sublatiora, basi apiceque attenuata, margine obsolete cienulato senata, 2-4 poll longa, J-l poll laid, supn nitule \iridn, subtus intense $_{h}$>lducescentia unde, \ento a^itata pulchernmuin leddunt spectaculum, pinna |uventute pihs adpress s ieclis subhirsuta demum glabeinma ngida, marcescentid brunnea Amenta mibc aurea, omnium eongcnerum maxime piaecoua antbens flavib, feminea cylindnca obtusa$_{\%}$ Capsule aigcnLeo hnsutae minoies glabratae, majores, biunnco testaceae' Ex ea forma typici mnum in moduin ludit haec species pidecipue llpina In regionibus mtenonbus fruticem format sal altum, valde diffusum, folns tenuionbus subtus niiuua ghuus amentis crassionbus migisque lanflons, capsulis demum nidjoiibu^ saepius glabns stylo longion lostiatis ad b nigncantem e\identer ti insiens H<ec potissimum est S majdlis Wahlenbg Fl lapp n 483 in Fl suec p 668etiamS nigncdnti subjuncta et cum ea confusa (immeiito b hastata-Weigeliana a Wimmero Sal europ. p 218 appellata, copiose emm viget ubi nullumS hastatae vestigium') Forsan ctiam S tenuifoliabm bnt 1052 et ti Bot Not 1840 Suis autem tocis ^n subsylvaticis et alpibus bumihor fit, folns eximie \anans, quae modificationes ad sequentes potissimum refern possunt 1° *latifoha* folns obovato-ovalibus latitudine duplo tnplo\e longionbus Varnt fol mtegns v serntis, parvis et magnis discolonbus \ concoluiibus capsula pubpscente v glabra, statura humih v elata — 2 *angustifoha,* fohis lanceohtis \el hngulato obovatis Vanat ut latiloha In Alpibus d mum quum altius adscendit (scd vix supra terminum Betularum existit) adhuc humilior fit, folia minora et angustio^{r}a, amenta migis serotina, squamae dilut ores et cipsulte subsessiles Itaquejn regionibus inferioribus difficillime a S nigncintp distmguitur, nisi ramis teruionbus min-us divancato-intiicatis folns firmionbus, ranus supra in costa albo-hirsuta lineatis, subtus evidentius discolonbus, basi plerumque attenuatis, amentis valde praecocibus folns fulcratis, densiflons capsulis ranus rostrato-attenuatis, pedicello et stjlo brevion — et in legiol nil us editionbus ilpium in S irbuscuhm abit quae timen typice differt folns minonbus oblongo-lanceoUtis, amentis subserotinis fohato-pedunculatis squamis obtusis fulvis glabrescentibus et capsulis sessihbus stylo saspc bifido Quomcdo foimae, quae hanc in Asia onentali et America septentrionali lepraesentant (ut S phjhcoides S chlorophylla, S macroslachya, b iulcrata etc), ab ea differunt sub sequentibus exposui Salici phyhcifohaeut Jbrmae suis locis huic analogae forsitan subjungendae sunt

P, *Hegctschiveilert* (Anders monogr p 135, S Hegetechweilen Heei in Hegetsch M Schweitz p 963) amentis subconetinis demum pedunculatis arrerto-incurvis cyhndiaceis haud densiflons, pedunculo loins paucis instructo, squamis lanceolatis pallidis apicem versus obsumoribus tenuiterpilosis capsulis conico rostiaiis (plus minus) senceis pedicelhtis, pedicello nectanum duplo tup'o\e superante, slylo elongato, sligmatibus bipartitis vel subinte^ns folns ovdhbus \el oblongo-obovatis ghbemmis obsolete crenulatis subtus sat intense glaucis supra luude vindibuspnmo tenuibus demum ni^idis, stipuhs semicordatis petiolum longum haud aequcintinus In Helvetia Valesia ad Rhonegletscher Urserenthal et Samaden in Fngadm (Heei) — Koch svnops ed 2 p 75> Wimm Hb Sal n 70, Sal europ p £20 b phvlicifoha-hastatd Wimm Denkschr 1853 p 168 Haec forma, qmm Heer forsitan a S ni^ncante et S hastata, sedWimmer a S phylitifolia et S hastatapiocreatam credunt,

a vera S phyhcifolia non diffeit ni3i amentis plerumque folns peipaucis suffultis ^uis locis frequens dicitur, s hastatam quidem revocat amentis breMler pedunculatis, folns stipulate subtus flavescentibus tt reticulato \enulosis (v s)

y, *Rhaetica* (Anders 1. c , S Rhaetica Kern Hb Sil n 119, a, b), amentis bievibus crassmscuhs latitudine duplo tnplo^ e longiontms oblongo cvhndnceis obtusis patulis subdensiflons, pedunculo amento duplo breviore folns paiMS 2 4 instructo squamis fulws apice iuscis acutis parce pilosis, capsulis conicis elongatis tenuiter tomentellit* vniduhs pedicellatis pedicello nectinuin tnplo supeiante, stylo bievi superne subiusco subbilido, stigmatibus fuscis lobitis, folns membranaceis ngidiusculis obovatolanceol&tis breviter acuminatissupia lucide vindibus subtus glaucis co^ta flava valida percursis margine tenuiter inflexo cicnatis longe petiolatis, stipuhs parvi semiluratis, ramis castaneis glabus, gemmig rufescen tibus glabns In Sel miner Thai in Tirol (Kern) A S phyhcifoha. non differt nisi amentis subtohato-pedunculatis el capsulis stylo brevion apice fusco et subbifldo rostrati^ Est itaque quasi hujus speciei m Austria niodificatio ad S arbuscul im mijoreai (Waldstemianim) accedens, vix a S Hegetschweilen tute distinguenda (v s)

56 S DRUMMONDTANA (Barratt in Hook Fl. bor$_x$ Araer 2 p 144), amentis sessihbus cjhndncis erecto patuhs subdensiflons obUrhs basi nudis squamis fulvis apice mfuscatis obtusinscuhs cmereo pilosis, capsulis conicis tenuiter senceo tomentosis pediccll ilis, pedicello nectanum tuplo superante, stylo producto rufescente, stigmatibus bipirtitis erectis, folns obovatis integris supri glabns subtus vellere densissimo candido tomentosis demum ngidis, stipuhs lanceolitis subtus glaucis ^ In America occidental! alpina (Rocky mountains Drummond) — Anders Ofvers wet akad Forh 18o8 p 123, Sal Monogr p 137 lig 71 Frutex ramis stnctis castaneis nitidis Gemmae mmutae glabiae Folia adulta fere 2 poll longa, supia medium pollicem Uta, apico parum producta, basi attenuata, supra satuiate vnidia, subtus albida costa llava prominente , petiolus longus stipulae pai\ae Amenta femmealere 2 poll longa Cipsulae lineam longae, stylo apice glabro cum stigmatibus fulvo-piceo Vanetitem capsulis glabns etiam offert Hook 1 c Habitu ut S launnae, ab omnibu* affinibus facile distincta, praesertim loins subtus vellere albo nitente obtectis (v s)

^ S CHLOROPHYLL A (Anders Sal Monogr p 138), imentis sessihbus basi nudiuscuhs cylmdncis densiflons, squamis obtusiuscuhs atns longe albo-pilosis, tapsulis oblongo conicis cineieo tomentosis (\elglabiescentibus) subsessihbus, pedicello nectanum vix duplo superante, stylo \alde clongato fuho, stigmatibus integns dmncatis, folns lanceolatis vel oblongo obo^atis mtegernmis supra pure undibus, stipuhs nulhs In America boreah ad fl Saskatchawan pl locis, ad lacum "Winnipeg, etc (Bourgeau), ad Great slave lake (Capt. Pullen) et in White Mountains (Oakes, luckeiman) S discolor p Hook. Fl bor Amer 2 417 S (phyhcifolia) discolor Anders Sal Amer 1 c P 123 p p b phyhcifolia Care> n Gray Man id 2 p 416 S cordata var Mackayana p p Hook herb Anders l c fig 72 Est frutex plus minus altus, ramis castaneo-fuscis glabernmis mtentibus tolia piimo argenteotomentosa, saltern d mum laete vnidia, anguste lanceolata, subtus glauci, aut obo\ato oblon$_0^r$i, subconcolora Amenta mascula vi\ polhcana auiea, foeminea longioLa, exactc c>hndncaet densiflora — Cum nostra S phyhcifolia conduit forma ets oloie fohorum ut etiim hibitu amentorum scssihum sed aiffert folns pihs argenteis plus minus dense conspersis etiam demum subnerelictis, amontis angustionbus et compactionbus capsulis subsessihbus, ^tylo multolon^ion (saapo capsula? longitudinem aequanteet fihfoimi), stigmajinusque elongatis integris Cum S Qnocephala saepe confusa ab ea facile dis jmguitur folns anpustionbus et tenuionbus, amentis tenuionbus, capsul s "revissime pedicellatis et stylo valdc elongato (v s)

P, *vestita*, folns saltern mitio utnnque sed piaecipue subtus pihs argenteis adpressis micantibus tomtntosis, capsulis obtusiascuhs dense villosis

Y, *denudala,* folns saltern demum laete viridibus glabns \cl subtus intense ghucis pihs rans argenteis obsoletis consporsis capbulis e\iclentius pedicelldtis acutiusculis ranus glabiescentibu» Jam monui me specimina Salicis a White Mountains vidisse quse nullo modo nisi folns elliptic lntegemnns, anostia b phyhuiolia lecedunt Nura hujus speciei foima m iximc denudata >

8, *pychnocarpa* (Anders Monogr p 139), amentis brevibus e\imi^ compac tiSjSqmmis item mis, capsuiis sessihbus ovato oblongis obtusissimis dense albo-villosis, stylo longissimo, fol is angustc hncoolatis viridibus subtus fcliucis Ad Cirlton house in America boieah (Boiu^eau) A S chlorophylla exacte habet folia pure \india, discolora, anguste lanc^olata, mtcgeinma, ramo^ fusco picoos, sed amenta omnino ut in no in S Lapponum sessiln compicti densiflora, et capsulae ut in S ghuca sessiles obtusis sim-E dense tomentosde; stjlusautem maximc pioductus Habitu sat singuhns forma'

fi, *pellila* (Anders Monogr p H9t 72), amentis bieviter peiunculatis folus pauus ct paivis biacteatis subdcnsiflons, squinus acutis apice fuscis pilosis, cipsuhs ovato-comcis acutis aigenteo-tomentosis breviter pe/licellatis, pcdicello ncctanum vix duplo supei uitc stjlo elongdto fuho, sti^maubus orasaiuscuhs integris eiectis, loins hti^ul Uis apioe obtusiusculis bdsi longisbime attenuatis maigine integio subiuolutis supra op ice Mndibus tcnuissime puberuhs subtus tomento ar^enteo dpnso micanlibus stipjhs nullis ^ Ad ldcum Wimpeg Amencae scptenti. (Bourgeau) et ID Rocky mountains (Lyall) Pulchcinma foima liutcx non altus, ramis di\isib,piceis, subglducesccntibus gldbeinmis Folia 1 2 pollices lon^a, supra medium 3 4 Jin ldta, bdsin vei^us longissimo dttenudtd, supiacosta et nervis 14 18 albida, ceterum opace vindia, pins tantum breubub et paucis conspersis subcineiascentia, subtus tomento dciibissimo ar^enteo micante pclhta Amenta foeminea pollicana et ultra Capsalae tes»tacese lincam longae, stjlo fldvcscente, sligmatibus fuhis Affinitatis dubiae, q iabi forma, maxime angustifohd \idetur S Sitchcnsis aut velut e S chlorophylld et S sencca composita lohorum forma et indumenio, capsulib brevissime pedicllatis stylo sa.t longo (ut in b niveis') apiculdtis» bene dignoscitur (v s)

58 S FUCIWTA (Anders Sil Monogr p 130 t. 73), amentia sessilibus elongatis erectis dense cyhndraceis, squamis acutiusculis apice atns longe cinereopilosib, enpsuhs e basi ovata longe conico-iostiatis cinoreo puhescentibus bre\iter pedicellatis, pedicello nectanum vix superante, stjlo valde elon^ato cuft> stigmatibub integris divmcatis fulws, folus lanceolato obovatis acutis subcrenulatis glabernmis subtus glaucis vel pillide viridibus stipuhs naximis lanceolato-ovatis serrulatis fulcratis S cordata vai Scemann m Hb Hook

a, *subglauca,* folns margme acuto integernmo utnnque ven^oso stnatis supra obscure viridibus subtus opace glaucis v luteo viridibus demum ngidis vix 2 poll longis supra medium^ 1 p 11 latis mterdum obovatis, amentis fem magnis usque ad *1* poll longis J poll latis crassis, cap* sulis ovato oblongis obtusiusculis In Ameuca aictca occid^ntili (B Seemann Hb Hook) Hue foisan etiam pertinot S nhyhcoides Anders Sil imer boreal 1 c p 1Z3 qua* nonnisi amontis demum folns paucis suffultis, imentis angustib, cap^ulis bre\ibus (se1 amenta vix rite evo" luta ') differt (v s)

P, *subphykcifoha* folns tenuibus brevionbus supra lucide viridibus subtus glaucis margine minute crenulatis fere acunnnatib, amentib angustio nbub et brevionbus capsulis acutiusculis — in Abia boieali onentalj (Stubendorft in h petrop ubi vidi) — Multa haebitatione has iormas a[d] unam eamdemque sppciem retuli prapcipue quum specimma peipauc* tantum examinavi Forma subglauca *qme* fruticulus \idetur subiepens trunco bubterraneo et ramis flagelliformibus insignis, consistentia [et] colore fohorum etiam stipuhs bat magnis modificationi S glaucae dentatae appendiculdtae eximie simile, db omui tdiuen b glauca diffeit

amentis prorsus sessihbus folns t[p]nuionbus etvindibus Fornn subphylicifoha iterum (quae frutex est altioi sed vix biped ills, ramis» erectis piceis nitidis) a vera b phyhcifoha cui tanien habitu lohorum simillima, optime distinguitur stipulis peliolum hrevcm basi dilatatum saepe quadruplo supeiantibus stylo deiuque eumie uon[e]ato et stigmatibus fihformibus A S cordata, capsulis fere sc^silibus et gnseo tomento^is optime distincta (v s)

59 S PHYLICOIDES (Vnders Sal amer boreal 1 c p 123), amentis subsessihbus folus minutis panels suffultis erectis anguste cylindraceis squamis fujvescentibus apice lnluscaiis albo pilosis, capsulis brevilei comcis acutis cmereo ^e Uceis subsessihbus pedicello nectdnum vix supeiaiite styio sat elongato fulvo, stigmatibus interns divancatis fuscis, folns lanceolatis acuminatis mttgris vel crenulatis utiinque glabernmis subtus intense pallidioribus, stipulis anguste lanceolatis, ^ Jn America boreali-occnlentali Aw itcba Bay (B beemann Hb. Hook) — Andtrs Sal monogr p 140, fig 74 1 rutex videtui sat altus, lamis fusco piceis glabns Folia magnitudim et foima variant semper autem supia glabeinma lucide vindia, sublus opace sed laete vindia subglaucescentia it pilisperpusillis rdiiusconspersacostaprominente fuha lineata, in ioima druustifolia longissime acutita, venis rtctangulanter divancatis, margine subunduhto crenulatd vel immo integeriima Amenta 1 2 polhcana, vix 1} lin crissa, dense cyhndracea (si ute evoluta necne nescio) Capsulde semilineam longce, subsessilos, sqmmis fuhis basi involutae, na utS arbusculam baud male Miimlent, stylus fere in on^ituhnem cipsulae productus, stigmita bievia Van it 1 *lafofolia* folns lite lanceolatis,3 4poll longis,medio 1 1J poll latis —*Vaigenhfoha* folns lanceolato lineinbus 2 3 poll lon^is basi ct apice longe acuminatis anqiiahter ittenuatis An status n.orm Uis el amentis non rite evolutis abnormis > Habitu fohorum inter S phjlicifoh im nostram vel S discolorem Amencaj et S coidatam quasi ambi^ui, ab utiaque amentis [to]Pr icillimis et capsulis bre\ibus subsessilibus certe diursa — *3°attcnuata* fuhis anguste lineari lanceolatis 3-7 pollices longis vix \ poll latis subtus conspicue glauciscosti crtssa fulva lucida et nervis lectangulanter percuisis mirgine repandis, stipulis nullis Hab. in Kamtscbatka (^tubendoif) Habitu S rubrae \el b hippophifoliae, sed fohorum glaucedine ad b phylicilolnm potissimum veigens (v s)

60 S MVCILENTA (Anders. Sal monogr p 141 t 75), amentis breMtei yednnculatis folns *2-i* angustis suffultis erecto-patulis gracillime cylyidncis subranflons, squamis obovato-rotundatis glabnusculis paice ciliatis, capsulis anguste conicis obtusiusculis glabemmis lueviter pedicclla^is, pedicello nec-Janum vix aequante, stylo mediocn, stigmatious integris crassiusculis, folns 'anceolalis apiccm vfrsus sublationbus remote et obsolete serruhtis utnn-[f]I[u]e glabernmis subtus glaucescentibus mitio in costa subser^ceis —In Kam Jschatka (Ch imisso) S phyhcifolia Cbamiiso Tininea 6. p 542 rt sine dubio S ph\hcifolige v S arbusculae sat affinis, q nbus congruit ramis stric tiusculis castaneis glabns subnitidis folns ngidis, lanceol itis, non pi ofunde [se]d remote crenatis supra pure vmdibus nitentibus costa fla\a percursi*?, subtus glaucis, sed recedit amentis eximie tenuibus ^ix polhcem longis et 1-2 lin. parum crassionbus, squamis obtusis vel lotundato-truncatis ct capi>uhs gracihbus glabns (v s)

6*. .[s] MALROC\RPA (Nutt. North American Sylva 1 p 83) amentis frucli GUS loliato-pedunculatis erectis, squamis palMdis apice fusconbus lucviter nnc-J*eo villosis, ci, uiis ovito conicis glabns pedicellatis, pcdicello hirsuto nectarium bis suptrante, stylo parvo, stipmatibus divancatis, folns Janct.olaU& acutis Integra glabernmis subtus intense glaucis, stipulis nullis 5 In Vmenca boreah occidental! Hudsons Bay (Burke Hb Hook) — Anders Sal. Doreah-Air.encan 1 c p 1^4 sal monogr p 142 fig 79. Frutex 3-* paldlis, ramis glabns fusco-hiunueis, junionbus ^risco tomentosis. Folia 1 2 poll. «onga, ½ poll lati basi et apice aequaliter attmuata, salfem demum n^uh, [s]upra obscure wndii ne^voso costati subtus intpnse glauca mirginc icuto [s]unievoluto inlt[rt]'i i Vmeuta (iem tantum edque sat nmtura \idi) vix polhce [J]ongiora, ptduuc i *i* a^quilongo folns 3-4 cetens parum minonbus mstructo

insidentia, squamse minutae. Capsulae brunnescentes, 1 J- hn longae, e basi ventncoso conico angustatae acutatae, stylus et stigmata fused fcst hdbiLu nostrae S phyliufohae sat simihs, sed diflert amentis folidto-pedunoulatis, capsulis breviter podicellatis et stylo mediocn, S. podopliyllae e Simna quodammodo similis sed folia utrmque acutissima mtegrd, capsularum pedicello nectanum iere bis supeiante (v. s)

62 S PODOPHYLLA (Anders Sal monogr p 142 f 17), amentis sat longe pedunculatis erectis subdeusiflons pedunculo loins nte evolutis obtecto, squamis fulvcscentibus obLusis apice parce ciliatis^ capsulis ovato conicia glabus bieviter pedicellatis, pcdicello nectanum elongatum vix uuperante, stylo parvo luteo, stigmatibus brevibus bipai titis eiectis, loins linguldto-spdthuldtis apice bre\issime dcumuntis ngidis suprd puie vmdi lucidis subtus intense glaucis, margine undulato dcnatis, stipulis pan is stmilunatis In Sibiria ad Irkutsk (Hb Fiscbei, Petiop) Lst habitu, consisluitia et coloie foliorum S phyhcifolicB sat similis sed (Illicit amentis longe pedunculatis, pedunculo folns cetens bdud mmonbus \estitis His notis ut etiam hahitu S macrocarpae ex America boreih simillima, sed distin^uitur ramulis, rhachi et pedicellis capsulaium glabns et duplo brevionbus, folus plarus marine subundulatocrenuldtis Piaetcreacum S myitilloide ob pedunculum ioiutum, folia subtus intense glduco cinordtd ngida et spithul iU quoa immodo comparand* A S arbusculd lecedit altitudine, folns duplo longionbus, capsulis glabns et stylo parvo Gemmae mediocres, corneas, acutae, glabrae F ha 1 J -2J poilices longa, supia medium sen if ollice ux latioia, subtus colore glauco intenso aequah obducta, costd fla\d elevata et nenis parallehs opace stuata, d mum sat ngida, exsiccatione puie vmdia Amenta (lem tantum vidi) vix pollicem longiiudme excedentia, sat dcnsillora, squamae panae, parussime uhataa CapsulcE 11 hn. longa nino ut in S phylicifoha glabra (S majah Wahlenbg) (v s)

63 S CHLOROSTACHYA (Turcz PI baic dahur in Bull de la Soc. d Nat Mosc 1854 p 373), amentis coaetaneis elongatis subrariflons pedunculatis, pedunculo paucifolidto, squamis parvis oblongo hngulatis obtusis fuhis apice fuscis ciliatis, cipsulis ovato conicis glabus vei tenuissime scuceis breviter pedicelldtis, pedicello nectdnuni duplo superante, stylo producto, stigmatibus subbifidis eiectis folns lingulato lanceolatis basi longe in^ustatis apice subproduclis \. obtusiuscuhs utunquc glabeinmis subtus la,tL ghucis margine integiis v minult dL iifeute scrrulUis ;IH\SIL1JOI ill piope Jikut/k (lure/), in dlpibus t^dnsbdikileusibus (IUIL/),in Sibina onentdh (btubendoiflf m Hb. Pelrop) —Anders, bal mouo$_{D}$r p. 143 fig 78 S pyracauthos Iuicz exsicc. Fruticalus m^diocrisdllitudinis, ramosus, ramis eiectis etiam novplbs glabernmisfusco piceisv testacco-vindulis Folia 1-1 ^ poll longx,vix semipollicc latioia, oblonga obtu^uscula, lanceolata acutiuscula v lin^ulato-obovata, basi angustata dpice paium pioducto obtusiuscula , [land, supia lite viudia, subtus sat intense gliuca costa flava notata Amtnta loins 4) cetens pdrum minonbus suflulti anguste cylmdidcea, lnitio densilloia, n asc *ux* pollicana, fern 2 poll. 1OIL$_{0}$M graciha Squamae angustaa glabrce obtusae Capsulae crdsse conicae, rufescentes, basi ima subpubcrulas, ceterum \ulf,o glabra Sub tnplici occumt foima 1 *condensala,* amentis 1 2 pollicanbus, folns 2-3 suflultis pituli vel mcuiMs, squama fulvis tenuittr barbatis, capsulis glar bernmis rufesccntibus bieviter peditellatis pedicello nectanum, vix duplo superante, stylo brevi sed evidente, stigmatibus cussiusculis fuscis Vanat majoi et minor S aibusoulas similis sed capbulte glabernmaL Gl Tuiozavinow hanc dd S amygdahnam potius itfeit, quacum attamen sat paium commune hdbet nisi amenta glabid. lufescentid condensita — 2° *raiifioia^* amentis brevitei pedunculdtis fulns paivis 1 2 sulTultis valde ranflons polhca* nbus ercctiusculis,squamis fuhis apice obscunoiibus parce birbatis capsulis tenuiter griseo puberuhs distincte pcdicellatis pelicllo netiarium elonj?dtum fere tnplo superante, stylo puvo stigmatibus bifidis, loins parvis tenuibus basi subpelluudis S viganti lividae subsimilis, sed capsulis multo bie\ius pedicellatis stylo evidente — 3° S *tenutpdis,* amentis angusta cylindidceis pollicinbus 1 2 lm enssis erecto patuhs folns parvis *l&* suffultis squamis apice lation fulvescente sat dense et longe baibatis, capsulis ovato-conicis glabns vindibus breviter pedicellatis, pedicello ntctanum dupio superante

stylo pirvo apice subfisso, stigmdtibus partitis, folns oblongis parvis. Qmsi ab arbuscula et S hastata composita' (v s.)

64 S LEPTOCLADOS (Anders Sal monogr. p 144 f 79), amentis sessilibus vix biacteis ulhs suffultis eret to alpiessis anguste cyhndraceis, sq mmis obtusiu&culis apice infuse itis en eieo-pilosis, capsulis brevissirais ovatis gnseo tomentosissat lon$_n$e pedicelhtis pedicellonecianumquatei superante, stylo produito fuho saepius hsso sti^maübus \ artitis patuhs, loins obD\ato hn^u dtis mitgns junionbus pihs adpies^is parcissimis submioantibus mox glabns subtus parum glaucescentibus, stipuks nullis J In Asia boieali ad flum Selenga piopo Verchne-Udinsk (leg lurczamnow in Hb Fetrop) Fiutex videtur mediocns altitudinis, ramis divancitis gracilibus corticc fusLO-piceo nitente obductis Folia vix pollicem longa, supra medium J poll lata bisi angustata mte^trnma, breviter apicuhta, supra stfunte vindia subnitentia, subtus opace glaucescentia, plana, vix venulosa, juniora ddpressepilosmscula, adultd ngidioid et luudp gldbra Amenta (iem tantum udi) pollico Miblongioia, \ix2 lineas crassa, anguste cylindracea, ob pilos squamarum capsulas obtegentes sat cmereo-hirsuta Capsula3 minimse, vix semilineam longae, pedicello et stylo capsula? aequilongis, hoc usque ad basin sappius partito, apice um stigmatibus fuscescente Spocimina tantum peipauca m herb no vidi, quare species mihi non pirum dubn Hibitu quodammodo interb arbnsculam et S. hastatam intermedia, ab utnque timen capsulis longe pedicellatis distincta. Priori certissime maxime iffinis ob foliorum iormam et colorem, ramos piceo-mtentes, capsulas tomentosas et sulum productum ssepissime paititum, sed amenla sessiha, capsulae longp pechcellatae[1] Quibus notis etiam a S chlorostachya tenuijuli differt, cm ceterum sat simihs, sed capsulae mmores magisque pilosae (v s)

65. S ARBUSCULA (L Sp 1445, see Fr et Koch) amentis bre\iter pLduncuUtis folns paucis suffultis anguste cyhndncis densiflons squamis loiunduo obtusis fulvis apice rufescentibus hnsutis, capsuhs ovato-conicis toment sis se&silibus denique bre\issime pedicellatis nectano basin capsule tegente, stylo elongito saepebifido, stigmatibus bifidis, folns lanceolitis acutis vei oblongo-obovatis acummatis serrulatis supra nitide Mndibus subtus pallidionbus vel glaucis ngidis, stipulis nullis 5 [In] alpibus Sueciae, Norvegide, Scotiae ct Europae mendionali-mediae fere totius,per Rossi im aicticam (et septentnonalem) et Sibinam usque in Da\unam, in Gaucaso et deserto bon^dnco (Karelin), in Groenlandia (sec Hornem) — *IT* Mant 1 p 49, Hart forstl Cultur p 390, Anders Sal lapp p 79, Koch Synops ed 2 p 7^6, Godr et Gien. *1 de Fr. 3 p. 140, Hook et Ain but fl ed 7 p 407, Ledeb fl ross 3 p 622, Rink Groenl p 121 — *Iconcs* Reich f 1196-2000 2006 Sal. Wob 55-59 138, Fl D t 1055, Anders Sal hjp f 23, ^al Monogr f 80 — *Exsicc.* Ir H N n 61 Rchb n 727, Bill n 1902, Wimm n 7) 7b Coll Sdl 117-119, Kern Sal austr n 85 88 fcruticulus vulgo humilis, fere omnibus partibus glaber et nitidus Ssepe in formam arbnsculfe minons crescensl Hdmi mfo picei nitidi Folia vana forma, typice pollicem longa vi\ semipolhcem lata, conaceo n^ida, vmdia et discoloia Amenta miscula subsessilia, o\ah oblonga, feminea elongata, anguste cyhndracea densiflora. Capsulae vix lineam long's, basi ciassae, conicae, niftscentes, plu«* minus flavescenti villosaB S phyhcifoliae maxime afhnis e formis altionbus in humifusas et perpusillas sensim transgi editur

a, *erecta,* frutex locis subsyhaticis et subalpinis crescens ssepe 2 3-pedalis, erectiusculus, folns majonbus 1 2 polhcanbus, amentis foins pauuonbus suffultis Vanat 1 *granlh folia* , i-J pedahs, ramis cidssiu&ouli> glabernmis folns margine runcmato-crenatis supra laete vindu us subtus opaco glaucescentibus, imentisdemum valdeclongatis - Reichb n 1198 Kein Herb n 8^ S flavesccns Host Sal p 31 t 101 — 2° *oiahfoh**, sufTruteT 2-pedihs , folns o\ah oblongis \el obovato-ovalibus polhcf* sublongionbus obsolete «erratis supra sdtiuate undibus, amentis angustis bie\ibusque S Waldsteinnni Willd sp pi 4 679, Koch Comment p 52 S arbuscula Wildsteinnni Kern Oest Weid p 20b — 3° *angustifolta,* suffrutex 1 2 pedahs dense ramosus, lamis gracillimis

rubro nitontibus folns lanceoMis vel lancpolato obo\atis subtus saepius gluicescentibus nmentis gracihbus foliatis S prunifolia Sm fl but JII p 10o4 S foimosa Willd sp pi < p 680 S alpma Scop Cam n 1208 t 61 S pulchella ftost Sal p 30 t 98 S coruscans Jacq •uisti t 408 S caimata Sm pi bnt 105J

p; *humiln,* fruticulus saepius depressus tiunco plus minus subterranco ramis saepp ilagclhfoiriii repentibus folns brevionbus rig dis subtus pauns amentis miiio subglobosis loins occultis Vanat 1 *parvifolia* folns icre pollicanbus lanccolato elhpticis argute seirulatis subtus obsole tius glaucis S fo?tida Schl apud IM fl fr } 2% s venulosa Sm fl bnt p 10i5 — 2° *brcttjoha,* fruticulus sdepius sit hunnlis folm o\ ili-ellipticis plus minus serrulatis subtus sncpe sat intense glaucis ^el sul caesns S viccinnfolia Walk fcxs Sm L B t 2341 S myrtilloides V ill delph 2 770 S alpeslns Wulf Host Sal p JO. t 99 100

y, *thymelrmdes* (S thynulcEOiries Scbl) A S aibuscula et glauca descenderc credit Wimmei (Sal euiop p 265) Mihi modificatio subpilosa S aibusculae potius \idetur

06 S HUMIILIMA, amentis scssilibus gracililus aicualis acutis ranflons squamis obovatisobtusiusculis lulvis apice nigncantibus pircp pilosis, capsulis bie vitcr conicis tomento sericoo ljnatis subscssibbus, nectdiio magno emarginato basin capsula3 Tquante, stylo ferp nullo stigmatibus bievibus bifidis vel craar gindtis, folus an$_n$'uste hnccclilis icutis integris vel minutissime serrulatis li tL undibus, sti| uk» elo lgato lincanbus subinde scnnlatis ^ In Ameiic^. aictici J'nnce Alberts sound (Mieschnn^), Rae Ruer (Dr Kae) ot in Libradoi (9) b irbustuloides Anders Monogr p 147 (nomine inciute graeco latino delcndo) tiuticulus humilis subpeddis ramis rufescentibus loin suhpolhcim 1| 2 lineas lati, utrinque attenuiti demum sat ngida Amenta leminea polbcem longi, sat ran flora Habitu omnino S irbuscuhe, ad quam so lubet ut S« fulcrata nd S ph^licifoliam, rece lit amentis sessihbus et conspicue ranflons, capsulis minonbus et angustatis, stylo fere destitutis (v. s)

a, *puberula,* folns praecipue sul)tus tenuiter senceis lajtionbus sat argute seirulatis, stylo evidcntion integro

p, *glabra,* folns utrinque glabns subtus opacis

67 s sciFno"»mrLA (Andois Monogr p 148), amentis sessilibus nrnlis pinis ovili oblonf,is e gemmis sat ma$_o$nis crumpentibus, squimis obovatis obtusis concoh iibu^ seu ipice mfuscalis cihatis capsulis sessilibus conico roslratis pube sencea nneriscentibus ncctano venticm cnpsulaa tegente, stjlo obsolcto fusco sti$_o$mitibus ciassis di\ mentis folns parvis o\ilibus Insi xotundatis vcl subconhtis lnttgemmis ngidis planis subtus pillidioiibus ^ Ad Laptak Tibet (Miachevet l\'mteibo1ton) el ad Dras Himilayae ilt 10000-15000 ped (Thomson) Trutex ut Mdetur humilis, rami crassiusculi, ssepius glaucomoiati Gemmie ovito conn as apicc subincuno productas, saepe irroratas, floralcs sat magnae castineae 1 olia fere pollice longiora $_4$* poll lift vems aicuatis valde dislinctis venulosa pure vindii, subtus pilluhora, demum coiiaceo mdurata/ mai^mc interdum subievpluta Amenta bievia, vix semi p jlliceni lonjn i mast ula Jinecta leminca honzontalitcr excurvata vel rccur\ata cipsuhs basi tenuiter puberulis nectano crasso truncato Haec species Inbitu is reppnti noslrac admodum similis sed differt ramis ghuco irroratis, gemmis mipnis amentis et capsulis omnino sessihbus st}lo vix ullo His ramis et gemmis cum S dapbnoide affinitatem pi sebet, folia autem et amenta aliena (v s in h Hook)

a *glabra,* folns utrinque ^hbiis lacte vindibus.

p, *pubesccm,* folns o\ah elliptici-5 basi et apice rotundatis sed apice nervo mcdio excuirente l)revibsime apiculatis conaceo ngidis utnnque sed subtus densius albo villosis.

08 S OBLONGUOLIA (Trautv Middendorffs Reise I 2 2 p 81), amentis pedun- culah* \~*k* folns suffultis, squamis lanatis fuscis, capsulis senceis

subsessihbus, stylo elongato, stigmatibus bifidis, folns elonpatis oblongis utnnquc angustatis apice basique acutis remote serruhtis denique supia glabns subtus glaucis et ad costam parce puberuhs Hab ad sinum Upkon reg Ochotensis Speeiminibus nulhs a me MSI-, diagnosm auctons hie transcnpsi, cui addit Trautvetter 1 c « specimina crassa quod ad amenta feminea attinet, congruunt cum S aibuscula, nisi quod in us amenta longius pedunculata, folia elongata »

69 S UDESSIS (Trautv in Middend Reise I 2 3 p 81), amentis sessilibus fohis 2 caducis suffullis, squamis apicc plerumque nigns lanatis persistentibus capsuhs ^eneeis breulei pedicellatis, pedicello nectanum vixduplo superante, stylo mediocn, stigmatibus lmeanbus clongitis integiis, folns (nondum prorsus e\olutis) oblongis apice basique acutis lntegeinmisutrinquoviridibu^ mo\ glabns, ramis novelhs subsenceo pubescentibus 3 Prope Udskoi Sibin<e onentahs reg Ochotensis (Exped Midd) Frutex altior Rami adultiores fusci Folia 1 H poll longa, basi apiceque angustata, junioia scncca mox ghbra Amenta minuta, squama* fuscae Capsulae lincam Ionize Hibitu foitassi-. jroxime accedit ad formas quasdam S pliyhciloUne, qude tamen folns subtus glaucis plerumque scrratis, ovarns longiub pcdicellilis, stigmatibus bihdis fdcilhme ab hac distinguuntur (Trautv.j A me baud \isa est.

X S LATIFOLIA (Forbes Sal Wob n 118), amentis subpiaecocibus o\ato-elongatis crassis subdcnsitloris patulo divcrgentibus bracteis vel folns paivis suffultis dcmum subiaiiflons, squamis lmeanbus vel oblongo obovatis nigncantibus pilosis, cipsulis e basi crasse ovata comas mijuscuhs tomento albo flavicantibusdiveigentibus, pedicello ncctanum 4-0 superante, stylo evidente, stigmatibus subconniventibus saepe biddi?, launns cyhndraceis, folns elongato obovatis \el anguste obo\atis bievilei acumin His plerumque sursum serrulato - en nulatis crassissime conaceis supra puberuhs voidide virentibus subtus glauco cams in venis prominentibus molhtei pilosis, stipuhs oblique cordatis brevitei acuminatis In Lapponia subilpnn et Ostrogoihi i SueciT medir (Ipse),M D Badensi prope Pfohren (Biunnci) et prope lilsiit (D Heidenreich) S. Badensis Doll fl v Bad p 819 S nigncans capracformisLacstid in sched p,p S taprea-nigncans (Brunncr) Wimm hal europ p 22b — *Exsicc* Wiuim et Krause Hb Sal n 1J9 Coll n 79 Habitu et tharactenbus inter S ni,ncantem et S Capra3am prorsus media A priori habet folia exsiccatione sat facile nigncantia maiginata, amenta laxiuscula et ranflora, capsulas leutas stylo evidente rostiatas, ib Caprea folia conacei utnnque dense tomento^a latiuscula, amenta crassissima c ipsulas sublineares lon^ris sime pedicellatas Adsunt autem speumina de quibus haesitandum est utrum ad unam alter am ve mento afferantur (v. s)

XX S puiiERULA (Doll H v. Bad p 518), amentis subprascocibus bieviuscu lis oblongis patuhs densidons biacteis paucis sufTultis demum sublaxifloiis sguamis lmgulato-lanceolatis basi fuscescentibus apice nigncantibus paice pilosis , ci])suhs an£,uste conicis cineieo lncinis pube^centi tomentosis, pedicello nectdiium tnplo quidruplove super inte stjlo mediocn, sligmatibus subintogns conniventibus, folns obovato oblnn^is vel ovahbus bievissime apiculatis basi iotundatis supra lncano-vnesccnLibus ^ubtns inn mo-ghuccscentibus exidenter reticulato ramulosi, et])ilis densionbus subtomentosis integris vel runcinato-crenulatis, stipuhs icniioimi-lun His obscure tomontnsis Hab in buecia boreali (in Bottnn) ? in Helvetia (schleich), in M D Badensi inter Plohren et Neudingen (Biunnei) ft an bchut/enplatze piope Tilsit (Dr Heidenreich) S Vaudensis (Schl) Forbes in Sal. Wob n 117 (non Kern) S nibTicans cinerea Wimm Dcnkschr ISoi p 169 S cineieanigncans Wunm Sal europ. p. *Ill — lcones* Sil Wob t 117 — *Exsicc* . Wimm Coll Sal n 74 (S nigncins?) Pnon s latifoiiae subsimihs, sed pnmo obtutu foliorum figuia ctcoloic distinguuntur huic enim gcrmin-i h iu(l cineroa sod flivicanti llbi multo ciasMon, piU ciissioics brcviores Uiioies bpi^si in peduncuhs erases, folia novella multo latiora ovah-subrotunda (Wimm) Tres modificationcs descnpsit Wimmer

a, *pubcrula,* folns lanceolato oblongis, acutis subtus subvire^centibus, cip mlis stylo longo, stigmatibus diverfceiitibus rostratis

p, *laudensu,* folus ovahbus subtus cinerco-glaucis, capsuhs brevionbus stylo mediocn, stigmatibus contiguis

y, nitida, folus ovali-oblongis acutiuscuhs supra niliduhs subtus molhter tomentosis, capsuhs virescentibus passim senceo pubescentibus, stylo mediocn apice fisso, sligmalibus partitis

X X X S LAURINA (Sm Transact of Linn soc 6 p 122), amentis praecocibus sessihbus demum subbracteatis elongato laxiusculis cjhndrlcis patulis, sqUamis oblongo spathulatis fulvis apiee fuscis pihs sat longis albo-hnsutis, capsuhs elongato-conicis longe et molliter scnceis perliLellatis, pedicello nectanum quadiuplo supeiante stylo parvo aut mediotn, stigmatibus bie vibus crassiuscuhs bifidis divincatis, folus mitio tenuibus pelluude rufesccntibus utunque pubescentibus demum ngidiuscuhb obmatis vel ovahoblongis breviter et subobhque acuminatis supra obscuie vindibus subtus glaucescentibus spaise pilosis veL glabns margine integns \el remote serrulato-undulitis, stipulis parvis ovato cordatis tf bilvestns ianus occurnt in Saxonia, Anghd, pute mendionah SueciT et cnca Pttropolm observata, in hortis autem sat frequenter culta Maciostachya ex agro petropohtano — Willd sp pi 4 662 Hartig Forstl Cult pi p 394, Fi Summon 57 207, Hook el Am but fl ed 7 p 405 S bicolor Sm but 1048 S phyhciiblia p launna Koch synops ed 2 p 7o2 Ledeb fl ross 3 p Gil S phyhciloliacaprea Wimm Denksuhr 1853 p 102 —*Icones* Reichb 2004 E. B t 1806 — *Exsicc* Reichb n 2417 Fi H N 8 60 Wimm Hb Sal n 68 Est inter S Tipream et phyliuioliam proisus media, pulchemma etvegcta forma,iarbuscula sat alia, iamis subvimineis lubellis A b CapreL habet gcmmas magnas (saepe glabemrnas var lauietta Hartig), folia obo\ata majora, saepe 3 4 poll longi, 1 2 poll lal I, oblique atummata, ->upra nervis lmpressiusculis inaequaha, subtus interdum elevato-rugosis (var rugosa Haili^), stipulas diutius pcisistentes, amenta magis laxifloia et elongata, squamas pallidiores, capsuli^ attenuato elong nas, longius]>edicellatds et longius villosab, stylo et stigmatibus brevionbus acutatas, a S. phylicifoha coloiem fohorum vancgatum, folia plat luscula supra lucide vnidia, capsulas bn wus pedi-ellatas ct stylo evidente rostratas Kxstat S violacea, in hoi Us culta, a Wimmer pio S pliylicifolia-Lapponum habita, quL mihi vix a S laurina distincta vuletui Ad S launnam foisan etiam referenda est ilia S laxifloia Boir L B t 274(), qux valdc dubia vnletui Capsulae maximam paitcm glabraltfi apice dense albo-luidU,, longissime pedicellatae, pedicello nectaiium 4° superante, stylo valde elongato, stigmatibus bipaitms lacinns filiformibus Folia cxacte ut in vera S launni Videtur quasi e S hastata et S phvlicifoln hybndi, ad S hastata vix m Anglia occiniit Ad Kilhn in Breadalbane lccti dicitur, sed specimuia in P B depiota a D Anderson communicata, nonne in horto ejus culta lbique procieata^— InAbhindl d Schles. Gesellsch f Vat Cult 1861 p 129, novam formam descnpsit ill Wimmer sub nomine S tephiocarpae forsan ex S phylicifoha et cinerea in hoito berolinensi casu oita Quantum e descnptione 1 c data eruoie possum notis tantum peipauci^simis, si ullis, a S liurma (e S Caprea et phylicifoha orta) distingui potest.

X X X X S FRUTICULOSA (Kern Oost hot /eitschr 18G4. p 368) amentis coaetaneis densiflons pedunculatis, pedunculo folus parvis 3 4 mstiucto, squamis ncutis ipicem versus lerrugmeis vel puipurascentibus villosis, filamentis ghbns, loins obovato-lanceolatis acutiusculis supra vindibus subnitidis subtus opace glaucescentibus pnmo senceo-pilosis aduitis plus minus glabiatis venis subtus elevatis ana^tomosantibus rtticulatis m irgine cieuulilo-serratis, stipulis nullis 5 In paite septentiionah m.onlis Platten pi ope Ackeniirthen in lnolis sept, s >lo calcaieo alt o000 hcxaped. (Kern) — Lx Kern Hb bal n. 90 S grandifoh 1 arbuscula Fruticulus humilis ramosissimas I oha 1 *i* poll, longa, supia medium $_4$ prll hta, ba^m vcisus angustata Amenta masc o^dtooblonga — *ohd coloic S aibusculaB sed oonsistentu magniludiut et ncrvatione apeitius S grandifoliam simulant

X X X X X S. MACRORHYNCHA, amentis sessihbus vix bricteatis elongato-cylmducis laxe llexuosis non densiflons obtusis, squamis dcutiuscuhs apice fu c 0-

nbus fere nigncantibus longissime gnseo-villosis, capsulis conico-rostratis elongatis pedicellatis pcditello nettanum usque ad quater supewnte stylo valde elongato fihkimi fuho sligmatibus integris relieve, folns lanceolate basi attenuatis acuminatis subtus pallidioubus glaucis maigine crenatis, stipulis mnnmis an{,ustis acutis ^ Ad St-Petersburg, unde speumina pauca a Sanson lecLa in Hb Le Norm indi et Petrop vidi S phyhcifoha-dapiinoides Frutex sat altus, ramis glabcrnniis piteo rufescenubus Folia (novella) l£-2 poll longa, supra medium fere semipoll lata basi longe attepuata, subpcllucida Amenta feminea 2 4 poll clongata flexuosa, ibachis luita. Capsulae biunnesctnti tcstaceae, longe ccmco rostiatae, 2^ lm longae Est exacte inter S phyhcifoliam et S daphnoidem media a pnou folia vindia crenulata, cap&ulas pedicellatas saltern basi cineico pubeiulas pedicellatas, a S daphnoide foli i acutissime elongita, amenia \ llde piotiacla, capsuhs rostrato procurrentes et stylum eximie elongatum in stigmata Integra divisum habens — Vinat 1° *leiocarpa* capsuhs basi glabeinmis apitem versus puberulis, pedicello nectanum 4 duplo superante — 2° *licbecarpa* capsulis totis tenuiter puberuhs, pedicelio nectanum vix supeiante — 3° *puberula* folns subtus pilis rans puberulis

×××××× S SGHRADERUNA (Willd sp pi 4. p 695), amentis sessilibus bracteis paivis et mmutis suffultis incinis cylindncis densiflons obtusis, squamis obtusiusculis fulvis longe albo pilosis, capsulis ovato conicis attenuato-rostratis molliter stiiteis bievitci pedicelhtis pedicello nectinum subsuperante stylo par\o stigmatibus minimis integris trassiuscuhs, i Ins oblon^o obovatis apite subobliquis pnmo supra Darte puberulis subtus adprts.se senteis costa flava et neivis acutiusculis elevatis, demum ngidis utnnqut glabns subtus glaucescentibus maigine supen re lemote et repando feldiiduloso sor rulatis In Germama et Suecia maxime mcndionali crestere dicitui a me tan turn culta visa — Pers Synops % 602, Hlufl otPin^eih Fl Gcim 2 p 560, Wimm Sal curop p 221 > b discoloi Schiad tx Willd I r H N S bicolor c pubescens Mey Chi hann 404 — Jcone* Reichb Icon 2003, Anders Sal monogr f 90 — *Fxsicc* Ser n 34 52 Wjmm Coll bal n 89 9. VidetuiaS repeuteetS phylicifolia hvbiida A pnore liabet folia adolestentia subtus argentea oblique apiculati et senatuns spaisis, capsulas bieviter pedicellatas et st^lo brevi piaed tas, a S phylicifolia statuiam piotonorem (liuti culus 2 3 pollicans), ramis erectis, folia saepe 1¦ poll longi, supra medium (i 1 lata), demum planiora, supra lucidc \jndia ct subtus glaucescentia, capsulas majores Ut ceterae hjbndae sub duabus occurnt iormis, altera *minor* (subrepens) folns subsern.eis angustionbus et crebnus seirulatis, altera *major* (subphylicifoha) loins mijonbus tenuionbus lsetius vindibus et evidentius gliucis et subintegiis Ha.c major —• S bitolor Ehrh. Arb n 118 sec specim mthent, = Reithb fig 2003 sub S arbuscula, ut etiam Koch Comment p 46

§ 13. *Rigidz s. hastatx*

Frutices mediocres vcl humiles, alpmi vel subiictici, larais tortuosis ramulis gracilibus lusus, glabns *oha ellij tica ^cl lanttohta bievitpi acuta ,'margine vulgo leute senulata, glibra utrinque vindia, subtus pallidiora et nervis ele-\atis anastomosantibus pulchre vcnulosa, adulta ngida dum mauestunt rufes centia Stipulae \ul£,o ma^nx Amenta plus minus coaetanea squamis flavis \el fulvis, apice fuscion \illo albido bubiti^ anthens flavis, capsulis glabns, vin dibus s rufescenlibus, pedicellatis, stylo rostratis

70 S CORDATA (Muhl N Berl Schr. IV p 236 t 6 f 3), amentis sessilibus vel brevitei ,eduncuhtis folns minutis interdmn suffultis, squamis pallidis pilis longis alnis ct molhlms dense villosis, cipsulis ovato tonitis glabLrnmis longe pedicellatis pedicello nectanum 6-8les superante, stylo mediotn, stigmatibus brevibus crissiusculis pleiumque bilobis folns oblongo-lanceolatis basi cordatis (vel sul nngustatis) acuminato cuspidatis &labns luidis nenoso venulosis icute seirdtis, stipulis subtus palldis saepius inarms toidato-lunatis $ In America boreali,aitDionibus medns usque in septentnonales

praecipue onentales — Willd sp 4. p 666, Spr syst 1 p 99, Pursh fl amer 2 p 61o, Hook fl. boreal diner 2 p 149, loirey fl New York 2 p 211 Asa Gray Man ed *2 p. 415, Sal. Wob t 24, Andeis Sal boi amei p 124 , Barratt Sal n 26 Lst species haeccc amencana nostrae S hastdtae simillima, eique codem fere modo analoga ut S nigra S amygdahnae et S lucula nostiae S pentandrae Diflerunt formae t>,picae folns valde ngidis, elongatis, producto acummatis, basi profunde cordatis, acutissime senatis et capsuhs multo longius pedicellatis Duas piaecipue modificationes, vel subspe cies habet primanas

a_f *nqula,* folns e basi cordato jotundata et latissima sensim angustitis cuspidatis margme plerumque piotunde serratis subtus palh li nbus, demutn valde ngidis, stipulis nugnis coidatis, capsuhs longissime pedi- cellatis S ngida "Vyilld spec 4 p G67 , Spr syst Veg 1. 99, Pursh. fl amer 2. p 615, Hook fl boreal, amer 2. p 149, Torrey fl New Yoik 2 p 212 S cordala ngida Asa Gray 1 c Frutex sat altus, 6-15-pedahs ramis rufe^centibus 1 olia 4-6-pollicaiia, 12 poll lata, petiolus 1 1^-pollicans Amenta subpedunculdta — Haec est 1° *lali- foha* folns latissimis elliptico ovatis basi sat profunde cordatis, slipulis maxim is petiolum subaequantibus — 2° *serrata,* folns acute et piofunde incurvato serratis apice longc cuspidatis tst poiissimum S cordata autlorum — 3° *mUgra* folns niaximis tenuionbus mtegiis, slipulis mm >nbus — 4° *breufolia,* folns basi ldtissiiius vix 2 pollices longis subtus valde intense glaucis us S lucidae simillimis — 5° *anqusttfolta,* folns late linceolatis a medio et basi et apice subattenuatis hinc sub- coiditis ill me longius acummatis, slipulis sat quid em magms scd pt- petiolo evjdenter brcvionbus S ngida typica — 6° *myncoides,* folns lanceolatis basi subiotundatis vix cordatis apice longisaime dtuannatis margine tenuiter se^{r}ratis subtus palhde vindibus, stipulis minonbus S myncoides Muhl 1 c p 235 t 6 f 2, Willd sp 4 p 686 Spr syst Veget 1 p 99 Pursh fl amer 2 p 6H, loney fl New-York 2, p 207 Vix aicendum quomodo a priori differunt nisi folns idhuc dngustionbus etvuliro tenuionbus Nonnunquam ad S discolorem d eta'

— 7° *ifstita* rimulis tomentosis, folns no\elli>> senceis, amentis ciassis praecocibus, squamis longe pilosis, stylo haud longo Hab Port Osa$_D^r$e ad fl Missouri (Neuwied)

fi, *angustata* (Anders M^nogi p H9), folns lanceolatis basi anguslit s apice producto acummatis maigme subtihter ^errulatis mitio sublus n I costam albo MIIOSIS tenuionbus stipulis parvis \el mterdum obsolc S angustala Pursh fl 2 p 613, Spi syst 1 p 08, Asa Gray Man ed 2 p 416 A veia S cordatae foima ngida, mednntibus raodificUio mbus angustift ha et mjncoide, nee habitu nee cbaractenbus ullis tate distinguenda Rami si?pe trassiore^ memo tornentosi Formae sequenles notardap 1 *(hscoloi,* folns 4 6 polhces longis eximie angustato acumi- natis mfra medium vix polliccm latis ngidis subtus intense glaucis bre- viter petiolatis, stipulis Jatis lunatis Folia us S Bonplandianae snrilliira!

— 2° *itndula* folus 2-4 poll longis medio vix pollictm latis tenuionbi.p subtus vindulis — 3° *titellina,* coitice idmoium flavcscenle amenta subco ttaneis folns suffultis longissimis eiectis, folns angustis tenuibus subtus pallidis et lu^cato-venulosis Haec inteidum crassa, amentis praeco- cibus sessihuus crassis densiflons capsuhs aut vmdulis aut lufescen- tibus c basi crassa breviter conicis, breviter pedicellatis, stylo brevi In colltctione ditissima Salicum quam ex regionibus fluvn Saskdtth iwan leportavit Bourgeau, 1858, multa specimina hujus formae examinavi, inter se haud parum discrepdntia, sed cwdenter ad t>pum S. cordatae pertmcntia.

X S MACKLNZIANA (Barratt m Anders Mon p 160), amentis brevissime pedun- culatis biacteis paucis et paivis suffullis erecto patulis brevibus squamis minute parcius villosis apice fu^cis, capsuhs conicis glabns longissime pe- dicellatis, pedicello npctanum 10 ics sunciante, stjlo subproducto, stigma tibus brevibus" emarginatis, folns obovato-lanceolatis cuspidatis basi angustatis

subintegns tenuibus subtus glaucis, stipulis fere nulhs vel parvis — S cordita y Mackenziina Hook In America boreah ad Great Slave Lake et Macken/ie mcr (Richards), bi fas essct quidquam de natura huius fonxfae conjicere, facile crederes earn a S coidata et S rostrata esse h\bndam I oha lcie hujus speciei textura et nervatione, obovala et tenuid, junioia pellucido mfesceiitia, sed glabernma magis elongata, basi angustata, apice producta Amenta tamen magis ut in b coidata, bed multo breviora, et capsuas adhuc longms pedicelldtispiaedita Quoad colorein foliorum S phyliciloham nostiam non male revocat (v s in h Hook)

71 S NOVÆ ANGLIC (Anders Sal Monogr p 160) P amentis bievit^r pedun cuhtis bre\ibus o\ ih oblonjis erectis Joins peduncuh sudultis et us pnmo mvolutis squamis obovato rotundatis apice piceis albo villosis, capsuhs conico lostiatis ^labernmis ldete vnidibus vel testaceis bre\itei pedicellatis, pediLollo nectmum inteidum duplo supeiante stjlo mediocn pdllulion, stigmitibus crassiuscuhs intcgris erccto conniventibus folns obo\ato-ohlongis vel ovalibus obtusiuscuhs crebre cienatis utrinquc pure undibusct gldbernmis pnmo exsiccationo mgre«ccntibus adultis ngidis nervoso stnatis kicidis planis, stipul s pirvis vel uullib J In Amenca boieah an^hca a fluv Saskatchawan usque in regiones ad mare glaciale, etiam ir summis montibus petrosis (V in herb Hook et in collect Iiourguini) Hoc nomine ties sequentes format, forsan specie diversas, comiirehendimus

a, *pseudo-myrsimta* (Andeis Sal amer 1 c p 129), frutex paivus 1-3-pedahs, ramis divaucatis, folns I[1]-polhcaiibus membranaceis utnnque eL praesertim subtus pure vnidibus et lucidis venis prominentibus ner-\osis, amentis lateidhbus loins paucis bracteatis squamis albo pilosis, capsuhs fusco testaccis perlicclalts pcdicello ncctarium bis tei\e superante Vanat 1° *cordala,* folns 1^ poll longismedio saltern J poll latis ovdh lanccolatis basi subdistincte cordatis vel rotundalis apice breviter piorluctis margme crebernme serrulitis utnnque et prae^eitim subtus acutissime venuloso reticulatis et lucidis demum subnigncantibus brcviter pctiolatis In Rocky mountains (Diummond, Hb. Hook et Bourgeau) Ha3c £ corditae subbimihs — 2° *hngulata,* folns vix polhce longionbus supra medium -J poll latis basi angustatis apice breviter productis obovato oblongaLis vel hngulatis venis minus piominuhs obscunus hneatis Ad « the grand rapid of Saskatchavan » (Hb Hook) Haec foln S myrsmitidis fere habet —3° tCgMO^s,fiuticulusparvus, ramis adscendentibus, folns sat longe petiolatis ±-\ poll longis supra medium lationbus integiis vel minutissime serrulatis, utnnque glabris, subtus palhdionbus costa elevata sed vix venulosis, amentis crassis, capsuhs rufis- In Rocky mountains (Bourgeau)

P, *pseudo-cordata* (Anders Monogi p 161), fruticulus baud altus, ramis stnctiuscuhs, folns ovah oblungis infia medium parum an^ustionbusbasi subiotundatis apice subproducto acutiuscuhs maigine minute serrulatis utnnque puie vindibus neivoso leticulatis, amentis folns paivis 3-5 suffultis fere polhcdnbus, squdinis atns dense albo-villosis, capsuhs longe lostntis, stylo subdistincto S m\rsimtes curtiflora Aideis Sal amer 1 c p 130 — In America septentnonah ad fl Saskatchawan pupe Fort Pitt (Uouigeiu), piope Jaspeis House (Burke), et dd Fort Franklin , Mackenzie mei (Di Ricliardson) Etiam in Rocky mountdins (Drummond) Videtui S coidatde forma alpestns, eidem formae S hastatae analoga, sed difTeit planius folns et amentis — Modificatio mixime boreal^, ol) amenla inteidum subtermindha ad glaciales acced.ns, omnibus partibus minima cst

y, *myrlillifoha* (Anders Sal amer 1 c p 132), fruticulus humilis superne ramosus, lamis stnctis intricatis foliatis fere ommno ut in MyrtiUo nigro, cui insupei simihs, folns semipolhc^m longis 3-i hneas Htis ovahbus utnnque pillule vmdibus et ghbernmis margine cienulatoserrulatis amentis laterahbus vel terminahhus intprdum ramulos annotinos brevissimos torminantibus ovalibus, folns suboccultatis squamis bie\i-pilosis, cipsuhs bre\iter pedicclatis isete \indibus crasse comcis

stylo brevi et stigmatibus crassis termmatis. — In Rocky mountains, utrmque, locis demissis (v. s in Hb Hook).

72. S PYRIFOIIV (Anders Sal Monogr p 16*2), amentis subsessilibus v breMter pedunculatis folns paucis minutis saepe suflultis, masc. densiflons aureis,fem laxiflons squamis loseis vel testaceis longe albo-pilosis c ipsulis ex ovaLa basi conicis glabernmis longe pedicellatis, pcdicello nectanum 6 8 les supe iante $_f$ stylo modiocn v parvo, stigmatibus bie\ibus crassiusculis ema^gindtis fulvo rufis, folns tcnuissimis pellucidis utunquc puie viiidibus et glabemmis subtus palhdionbus et crebre \enuloso-reticulatis a rotundaia v subcoiddta basi ovatis tcnuissime glanduloso-scnulatis, stipuhs minutis caducis

a, *Irta,* ampntis subfohato pedunculatis, capsulis longissime pedicellatis, •, folns tenuibus subpellucidis cordato ovatis In America boreali ad lacurn Winipeg (in paludibus prope Brochet) et in npa ft Saskatchawan (Bourgeau)

p, *obscura,* amentis subsessilibus vix basi bracteatis, capsulis rufescentibus brevius pedicellatis, iolns demum ngidis ovato-lanceolatis acutms serratis 11n Rocky mountains, vall£c des Arcs (Aug 1858 Bourgeau) Non sine naesitatione permulta has duas ad imam retuli speciem Typica elegantissima est forma sine dubio S pyrolaefoliae asnticae in America analoga, sed ab ea non tantum amentis et capsulis sed etiam foliorum torma et stipuhs bene distincta Frutex sat elevatus, ram is gruihbus castanco-lucidis etiam junionbus glabemmis Folia pollice sublongioia, * poll. lata, juniora subtus pilis paucis conspersa, demum omnino gldbornma! marline ghndulis serrulati Stipulae aut omnino dcficientes, aut mmutae bemicordatae Amenta l£ poll longa squamis ilbo-baibdtis, femmed usque ad 2 poll longi, sat ran flora, capsulis lineam longis stylo pedicello 4 5ies brcviore — Foimi p, obscura, est pyrolaetohae adhuc similior, sed cipsulis longius p dictllatis, obtusiuscuhs, stylo multo production et folns subovalibus differt Potms cum S cordata comparanda, folia autem subtus vindula, i e. concolora, breviora et laliora, et amenta affinilatcm cum vera pynfoha demonbtrant (v s)

73 S ADFNOPHYLLA. (Hook fl bor amer 2 p 146), amentis pedunculatis erecto-patulis obtusis densiflons pedunculo foliis grandistipulatis mstructo, squamis obtusiusculis fusco rufis glabnusculis, capsulis ovato-comcis glabemmis broviter pedicellatis, pedicello cinereo squama multo brevi on, stylo elongito pedicello longiore, stigmatibus erectis emirginatis, foliis subcordatis ovalibus planis ngidis margine argute et subspinuloso serratis aut glabnusculis aut utnnque densissime albo tom(ntosis vel senceis, stipulis magnis semicordatis serratis ^ In Labrador (Dr. Morrison) — Anders Sal bor. dmenc 1 c p 125 Sal monogr p 164 Fruttv &at nmosus, ramis crassis cinereis, annotims vellere dlbido tomeiitosis Gemmai ovato lotunddttE, obtusissimae, albo lanatae Folia brevissime]>etioldta, majora pollicem longa, $\frac{4}{4}$ poll lata, minora glabernma, retioulato venosa, dentibus glanduligens acutissimis serratd Amenta feminea pedunculo polhcan, folns 4-6 glabnuscuhs instructo, pedunculata, 1^ poll, longa, patuld, rhaclns breviter pilosa, squama) basin capsulse dttingontcs ranus pilosae Cdiisulae piceo lufescentes, rugulosae, stylo et stigmitibus fuscionbus. S cordatae nimis affinis, distinguitur amentis longe pedunculatis, folns sohto brcvionbus et lationbus, squamis glabnonbus et capsulis brevitei pedicelldtis (v s in h Hook)

74 S BARCLAYI (Anders Of\ers afWet Aks. Foih 1858 p 125), amentis pedunculatis crasse cylmdncis densiflons acutiusculis patulo erectis, foliis anguste elhpticis stipuhtis suftultis, squamis obtusiusculis atns pilis longis albis senceis capsulis conico-subulatis glabns in stylum longum sensim attenuatis breviter pedicellatis, pedicello nectanum ux duplo supeiaiite, stif?-matibus lacinns reflexis bipartitis, loins obovato-ovahbus vel ldiiceolatis brevissime et oblique apiculatis subserratis supia i>ihs sat longis idi)iessis floccoso villosis v glabnusculis subtus palhdionbus reticuldto venulosis, stipulis ovatis atutis 5 *^{n} America boreali. Foimae foliorum vanant \° *rotundifoha,* folns Dtundato ovalibus, subtus palhdionhus integris vel minute et remote serruldtis In Kadiak leg Barclay (Hb. Hook) — 2° *grandifoha,*

folns late lancoolatis subtus glaucescentibus margine anguste serratis In Unalascha (""schschob) — 3° *angustifohdj* folns anguste lanceolatis tenuibus subconcolonbus interns In Sitcha et Unalaschka (Hb Petrop) — Frutex sat altus, lamis Aaluhs, atns, glabns Folia in forma lotundifolia vix pollice longiora, -f poll lata, in grandifolia fere 2 poll, longa, 1 poll lata, supra obscure vindia et floccosa-villosa, potiolo 1-2 hn longa Amenta tern, lere l-1»-pollicani, podunculus folns 4 8 ngidis paivis insiructus, squamae capsulam ultra medium tegentes, dense villosae Capsulae vindulae, anguste conicae, stylo fere hneam longo fulvescente rostratae S cordalae alfinis, distin guitur folns brevionbus et htionbus, minute serratis, exsiccatione nign cantibus, capsulis subsossihbus, stylo demum multo longion. — Exstant specimina ex Sitcha, quoium capsulae stigmati habent cras^a et mdmsa, nee ahter divert videntur Ah i autem ex eodem locodifferunt folns multo tenuiorbus, suprdomnmo glabns.(v s.)

(3, *lahuscula,*g|mentis foliato-pedunculatis patulis subdensiflons cylindraceis elongltis, squamis fulus oblongis obtusiuscuhs ulloso-barbatis, capsuhs ov ilo-conicis tenuitei tomentosis breutu pedicellatis, pedicello nectanuin ^aldc tenue vix superante, stylo breu, stigmatibus bifidis, folns ovahbus vel obovato^alibus basi subcoiJitis apice brevissime acuminatis supialucide \mdibus subtus pallidionbus acute nervosis e\identer punctatis sat ciebre serrulate petiolo baud glanduligero, stipulis ovato-cordatis Hab. in Ten a nova (de la Pylaie) Inter S. lucidam ct S coidatam quasi media, sed ab utracjue >>at bone distmcta. S. Barclayihuic simillima sed recedit capsulis omnino glabns' (v. s.)

75. S BIGELO^II (Torr et Asa Gray Report of the Botany of Whipples Expedit. p 8.3), amentis sessibb^s nudis adscendenubus \el])dtulis sat densiflons cyhndncis obtusis, bquamis obtusis fulvo-iuhescentibus dense cnspato-albovillosis, capsulis ovato-conicis glabcnimis pedicellatis pedicello nectanum fere quadruplo superanle, stylo subproducto, stigmatibus bieMbus erectis bipartitis; folns ovah-obo\atis \cl cuneato-oblongis integerrimis pubescentibus vel nudis subtus glaucis nigrescentibus exstipulatis. 5 In California, St-Francisco (Bigelow) et Bokara (in herb. Hook) — Anders bal. Amer. 1. c. p. 118. Sal. monogi. p 163. Ebt 1° *lalifolia,* folns obovato-spathulatis obtusissimis subtus s ilte u pnmo gnseo-pubescentibus. — 2° *anqustifoha,* folns lingulato-lanceolatis apiculatis subtus glaucis nudis. Fiutex mediocns magmtudinis Gemmae parvai. *oha 1J-2 poll, longa, supra medium \ poll, lata vel in forma mgustilolia breviora et angustiora Amenta feminea fere 2 poll, longa, conieita, bracteis paucis cilo deciduib suffulta, rhachis dense albovillosa. Capsulae in speciminibusmajoiibus ferelineam longai vindes, m minonbus rulescentes et panje, stylus et stigmata dilutioia Affinitis difficile determinanda I xamencanis sine dubio S. coidatae m iximo affinis; quandam etiam similitudinem cum S Coulten prdebens In herR Hooken aliam formam, cum S humih recurvata forsan affinem, exammavi

p, *fuscw)* (Anders. Monogr), amentis sessihbus breMbus, curvatis squamis obtusissnnis dense albo-lanatis, capsulis comcis glabeinmis longc pedicellatis lufesccntibus, stylo producto, folns obo\ato oblongis supia glabnusculis subtus rulescenti-pilosis In America septentnonali. (Hb.Hook.) Videtur frutex sat parvut lamis glabernmis.

76 S. PADIFOLIA (Anders, in Asa Gray, plants of Tapon in Mem. of the Amer, Acad vol 0 p 451), amentis sessilibus praecocibus gi acilibus flexuosis elongatis squamis concolonbus glabemmis, capsulis subcyhndncis \el o\ato conicis glabemmis podicellatis, pedicello nectanum lcre duplo superantibus, stylo par\o, stigmatibus mtegns brevissimis, folns o^ato lanceolatis cuspidito acuminatis utrinque glabemmis subtus i^laucescentibus margine senulatis 5 In Jiponi.i ad Snnoda leg Williams et Manow Arbor Mdetur sat procera, ramis glilnis castuieis Folia 2-3 poll longi, ad medium 1-1{ P^{o11}* lata, bdsi rotundata sajpius subordata, apice ibrupte acuminata Amenta ieminea 3-3J poll, longa, 2-3 lin crassa, capsulis testappo-ui irlulis lineani longis. — Est species tuandras habitu similis, sed t\pum s hasiaue ie\ocans ct S. eleganti himalayensi sine ullo dubio simillima" (\ s ,

P, *undula* (Anders, 1 c p 4^1), amentis masc brevilei pedunculatis folns paucis suffultis denstflons acutiusculis, rhachi cinereo hirsuta, squamis oblongo bj athulatis palliie testaceis concolonbus ^labns, slamnnbus jallidis, aiitheris sat magnib, folns ova'ibus babi subiotundaiis apice paium pioductis integerrimib ^el serrulatis utiinque glabcrnmis venis anastomo->antibus pulchre reticulatis subtus parum pallidionbus In Japonia ad Yokahama (Williams et Morrow) S hastatae piocul dubio maxime dfini^, scd S pahfoliL foisitin sexus masculus, aqua tameu recedit amentis basi lohatis, loins ovalibus apice parum pioductis remote serratis utnnque \indibub (v s)

77. S MIQUELII (Aridcrs Sal Monogr p 166), amentis breviter pedunculalis elongatib&racilibubsubflcxuobibhaudden Mfloii^pedunculo loins2 o inbtiucto, rhachi piloba, squamis testatcr lenu$_0^r$ineis apice subfuscioul us obtusiusculis, capsulib Miidibus felabeinmib linean co^icis obtusiubculis peditellUis, pedi cello ncctanum subulatum parum supeiante, stylo piod^to flivo ^tigmatibus bihdis lacmus lubcis erectiusculib, loins lanceolatis basRttenuatis apice acu tiuscuhb supri laete undibus acute neno^is lucidis subtus pillidionbus neivoso reticulatis margine h md proiundp bed evidenter glanduloso serrulatis ngidiuaculis, stipulis tcnellis *5* In Japonia, ad Nagasiki (Oldham, 1862, n 551) Aibor videtur hmd parva, rami crassiuscuh, glabornmi toha juniora $_4$ poll longa, \ poll, lata, utrmque glabemma subtus fere glaucescentia Amenta 9 *1*\ *6* poll longa, in ramuhs condensata, flexuosi squamis basin capsulae tegentibub, cipsuhs fere lincanbus \indulib basi rufescentibus. Habitu S fragilem qurdimmudo refeierib, sed ad lypum S babtatae sinedubio pertinet ob iolia ngidiuscula venulosa, amenta subfohata, squamas pilosas, capsulas stylo rostratas subpedicellatas

p, *vulpina* (Andeib in AsiGiay Plants of Japon 1 c.)$_7$ amentis *g* cjhndraceis subflexuosi^ densiAons babi folns paivis2J sufl"ultis squimib acutiuscuhs apice nigncantibus et subcalvescentibus ceterum pilis sat longis rufo ferrugineib hirbutis, stam palhde flavebcentibus loins junionbus obovatib pr<fibertim bubtub \ellere tenui rufescente piloso et facile caduco obtectn adultis pollicanbus obo\ato-elhptici:> supra obscure vmdibus costa albescente excepta glabernmis subtus palhdioubub pulclnc venulosis margine sat piofunde berrulatis exsiccatione nig icantiDUb In Japonia Quod huic foimaL bingulare, sc squamae rufo-pilosae etiam in amentis superiorlbus S Miquelu obseivatui, dum amenta mlerxora gn^eo hirbuta Lonspiciuntur >

78 S ELEGANS (Walhch Catal pi Ind onent n 3699), amentis foilito pedunculatis, masc densiflons tenuibus pallidis fem. gracihbus demum laxis subpendulis anguste cylindiicis icutiusculib, squamib parvis flavib tldbnusculis capsulis conico oblongib glabeinmis parvib obtusis bievisbimc pedicellatib' pedicello nectanum paivum sub«fiquante, stylo subnullo, stigm itibus bipar'titis, loins oblongo-elhpticis aigute senulatis laete vmdibub subtus intense glaucib pulcbre venulosis demum ngidis utrmque glabernmis -Jin Jndiaonen tali supenon alpestn, in lcgionibus Himalensibus ut ad Baltal (JaLquemont), Kimaon (R Bhnkwoitb) Himalijabor occid , reg temp alt 6000-9000ped (Thomson^ et Niti, Oarhwal 11100 ped (Strachey et Winteibottom), in Nepal pi 1 cis (Wallich) — Andeis Journ Linn boc 1 c p 51 ^ Kamaonensib Lindl in Wall Catal n 3701 S denticulata Anderb Act Holm 1. c p 481, Keise Pnnz Waldem p 119, t 89. trutex v arbuscula, lami valde dnancati, piceo atn, nitidi, nonnunquam s>ubca3rulescentes tolu brevitei petiolata, vulgo l-i; pell longa et \ 1 poll hta, ovato elbptica v oblongo Ianceolata, regulanter scd minute senata, supeme laete vmdia, subtus ut in S tnandra caeruleo-glauca venis stnata et reticulata, utiinque klibemma, adulta ngida, ut foh 1 S m>itilloidis Amenta folns 4 5 nic e\olutit> buflulta, masc graoilia laete flavesc ntia, I 1-L poll longa, densiflora, femniea graullima, 2 5 poll lon^a, angustc cjlindnca icutiubcula, pnmo erecia, demum laxe patula vel immo subpendula, bquamet babin tapsuldc super intes, obsolete pu be rulae Gapsula lmeai iconic , tenuis, basi lulvo rulebcens apicem versus vii 1 lula et atteni ita bed obtusa, stylus feic nullus, stigmata 2 mi-

nima, emarginala, apice capsulae non multo latiora Species nitidissima, dlpestns, S hastatam folns reticulato venulosis, rigidis, et capsulis glabernmis rufescenti undulis non male revocans, ut etiam folns suis parvis elhpticis b myrtilloidi subsimihs, ab omnibus autem bene distincta

p, *Goianiana,* magnifudine altion, folns majonbus magisque elongatis apicem versus subattenuatis feie lanteolatis margme acutius serrulatis basi aequaliter angustatib subtus mtensius caesio-glaucis Hab m Nepalia (Wallich 1821), in alp himalensibus (Hofmeister) S Govanma Wall Cat n 3699 S Himalensis Klotzcb in berb due Waldemar S denticulata Himalensis Anders Act Holm 1 c p 482 S elegans Himalensis Anders mon Statura procenon, tenuitate fohorum et amentorum a typica S elegante quodammodo differt, sed charactenbus omnibus cum ea eximie congruit (v s)

79 S. BHAMNIFOLIA (Pallas fl ross 2 p 84), amentis peduncuhs termmahbus et lateidhbus semipollicanbus 2 -*y* folns mstructis inhxis erectis crasse cylindncis elongatis, squarais fulvo-piceisobtusiuscuhs glabns apice \illo albo barbatis, tapsulis ovato-conicis rufe^centibus glabeinmis bieviter pedicellatis, pedicello neclanum subsupuante stylo parvo, stigmatibus mimmis mtegns, loins oblongo obovatis basi subatienuatis brevitei acuminatis margme inflexo senatis utrmque giaDernmis luciais, stipulis sat magnis semiovatis In Sibiria baikalensi (herb Lecleb) Pall rf ross ed mm p i67 Gmelm fl sib p l 1591 2-j f I/ * *™ ff ross 3 p 612' Dubid forma.de qua quod voluerunt Gmelm et Pallas non liquet Specimma quae ipse vidi a Ledebouno sub hoc nomine desuiptd quasi a S hastatd et S myrsmitide composita videntur A priore nabent folia obovata pure vindia Pt sublucidd magna crebre reticulata, amenta sat crassa, squamas apice barbatas, et capsulas ruiescentes, a postenore amenia subterminalia, pedunculum sursum nudiusculum, folia ngida acute seirulatd. — Quam dhds S ihamnifoha msenptam in heibanis varns vidi, a Hooker et Arnott sub hoc nomine desenpta et depicta, di versa est, et a me S fuscescens appellata (v s.)

80 S PYROLJEFOLIA (Ledeb fl alt 4 p 270), amentis sessihbus basi biacteis paucis minutis surtultis elongatis laxiflons. squamis testaceis apice fusuonbus longe albo pilosis demum glabiescentibus, capsuljs anguste conico-at enuatis glabernmis pedicellatis, pedicello nectar mm tei quateive suppiante, stylo elongato, stigmatibus bifidis recurvatis, folns orbiculatis vel ovato ellipticis glanduloso senatis tenuissimis pelluudis utrmque gldbns subtus pallidion bus v giaucescentibus, stipulis orbiculatis basi cordatis lobis rotundatis J In Aossid seplenlnonah (tena Samojedorum), in Sibiria altaira et buka lensi inquc Davuna — Ledeb fl ross 3 p 613, Turcz Cdtal baikal n 1036 Prutex non altus, subdepiessus, rami castanei v vindes. nitentes etiam junioics gldbeinmi *oha adulta 2 pollices longa et fere eddem latitu dine, subtus nonnihil palhdioid costa venisque arcuatis reticulato connexis flavicantibus pulchre venulosa, marline crenulata v obtuse glanduloso-ser rata Stipulae fulns subsimiles Amenta mascula erectiuscula, pollicaria de mum 2 pollices longa, i poll lata (apsulae basi pallidiores, ceterum vindes v rufescentes, inteidum recurvatse stigmata brewa, cruciata, subfusciora Congruit cum S. hastdta prdesertmi amentis, squamis cmereo-barbatis capsulis vindibus et glabns, lohorum textura et nervatione notis tameil allatis abunde differt (v s.)

a, *alnoides* friiis ovato elhpticis petiolo costaque flavis. S alnoides Schan gin et bieveib in Pall n nord Be.tr 7 p 347 349, Georgi Beschreib d Russ R 3 p. o p 1340 S coryhfolia lurcz pi exsicc a 1830.

p, *orbtculata%* folns orbiculatis, pptiolo costaque flavis.

γ, *sdbulosa,* folns oibiculatis subcordatis petiolo costaque in vivo laete iosei& — S sabulosa Tuicz pi exsicc a 1830 ledeb icon 476

31 S HASTATA (L sp 144)), amentis subcoaetineis plus minus pedunculate densiflons folns parvis saepius suffultis fem diutius persistentibus, squan»s spathulato obtusis apice luscion pilis cnspis longe albo hirsutis, capsulis ex ovata basi subulato-comcis ^labjis pedicellatis, pedicello nectanum duplo

longionbus, stylo elongato, stigmatibus bifidis, folns ovato ovahbus v. anguste lanceolatis subtus pallidionbus venoso rcticulatis, stipulis semicordatis lectis vel obsolcus J In bcis hunoidis et ad nvulos praecipue alpinos et subalpinos feie totius Luropae (in orientah ranssima), Rossiae usque in Davunam (sec Ledebour, nulla certa specnnina inde vidi), Himalayae (Jacquem Thjms alt 6 9000 p), etiam in iegionesmagistemperatasdescendit ut in Danu, Supcia austiali etc In Asia sepientnonali onenUli formis S pyro laefohde, in Asia mendionah, Himalaya etc S elegantis (sed b hastata lbi adest), et in America formis S cordatae repi aesentan videtur — Willd sp pi 4 p 661, Koch Gomm p 42, Anders Sal lapp p 48, Sal monogr p 170, Ser Ess p 58, Fr Mant. 1 p 48, Wahleng suec p 666, Lange Darisk il ed 3 Hartig, Forstl Cult, p 392, Wunm Sal europ p 83, KochSynops ed 2 p 752, DC fl p 5 p U8, Gren et Godr H Fr ed. 3 p H7, Hook etArn bnt ed 7 p 410, Gaud fl hely 6 p 22o, Bertol fl ital 6 p 313 (sub S nigncmte), Ldnge ct Willk fl hisp p 230, Icdeb fl ross 3 p 612, Trautvetl Middendoris Reis 1 2 p 8 1J3. S berrulata Willd sp 4 p 6b4 S. mahfoha Sm bnt 3 p 10^3 Willd sp 4 p 076 S elegans Host fl austr 2 6)2 S Pontederae Vill Delph 3 p 76b b Pontedciana Loisei gall 2 p 343 S viburnoides, cnintha et cerasifolia Schleich Cat et Lx&icc S tenuifolia Sei Exsicc — *hones* Wahlenb lapp t 16 f o, Anders Sal lapp p 11, Sal monj$_b$M , Reichb f 2011, Sv Bot 719, Sal wob t 3o J6,E 13 t l617,Harligl c. t 111 (35h),H D 1213, Host Sal t 97 — *Exsicc* Pr H n 3 5J Keichb n 9i6 ber n 8o, 89 Wimm H Sal 71, 72 Coll sal n 82, 8J Kern H Sal n 0193 Fjutex typice 3 > pedahs, ranns atiofusus glabns, annotinis gnseo flivicanti tomen tosis Folia foima et ma^nitudine vana, vulgononnihil longioia (Juam lata, c basi ovati vel immo subcoidita ovali lanceolata, supra saturate vmdia, sub lus pallulioia et venis distinctis pulthie et crcbre reticulata Stipule ovatobemicuidatae, petiolo saepe subduplo longiores Amenta initio ob squamas villosas longe aigenteo stncea, mascula ldete flivo aurea, anthens riibescentibus, ieminea ebngata et sal rantloia, s^ua nis barbatis, capsulis glabernmis pallide vnentibus aut rulescentibus, stylo pedicelli fere fongitudine fulvo, stigmatibus piccis —Tres potissimum moditicationes evidentiores distingui pdssunt *

a, *vegeta* (Anders monogr p 172), irutex magrutudinc mediocn, folus Idtibsimis ex cordata basi subrotunditis vel otdlibus subabrupte acumi natis crebie serratis stij>ulis litib suffultii>, amentis piaecoubus bracteis paucis suffultis S histata Willd S milifoha Sm S viburnoides Schl Oocurnt praecipue in regionibus mferalpinis aut planitierum Major aut minor

B, *subalpma* (Andeis 1 c), frutex migmtudine altion saepe fere orgyah folus ovato vel obovato ovahbus ellipticis vel elongato lanceolatis utnn' que aculatis margine tenuiter spirulatis, stipulis paivis non raio omnino defiuentibus, amentis subcodetaneis folns paucis *H* parvis suffultis S berrulata Willd S cerasifolia Schl In regionibus alpinis Major et minoi, latifolia et angustifoha

•y, *alpettns* (Anders 1 c), fruticulus non raro subrepens diffusus, ramis valde torulosis folus tcnuionbus parvis lanceolatis immo subhneanbus subintegns ranus stipuldtis, amentis codBtdneis brevibus staminibus |)al hde stiacnineis, capsulis saepe crassis ruhs et condensatis pedicello nullo subsessihbus Haec est S hyperborea Anders Sal lapp p *A* f 12, quam pnmo hybndara e S hastata et tnandra habui Cfr Wimmer Denkschr d Schles Gesellsch 18a3 p 1 bo 1, Sal. europ p 86 In plamtiebus ele-"vatis alpium

X ' *vindula* amentis prorsus sessilibus, capsulis e basi crassu conicis, tenuissime subpuberulis, breviter pedicellatis, pedicello nectanum non multo superante, stylo valde produUo, folus elhptico lanceolatis vel obovato rotundatis tenuissimis supra obscure vindibus subtus sat intense glaucis margine crenulato-undulatis In Sibina orientah (Stubendorff fib Petrop) S. hastata alpestns vindula Anders. 1. c. Habitu foliorum

S phylicifoliae sat similis sed folia latiora, tenuiora magisque venulosa Capsulae quam in s hastdta crassioies Amenta raagna (2 } pollicana) exacte sessiha' ^

«

82 S GLABRA (icop 11 earn 2 p 2oi), amentis subcoaetaneis fohato-pedun culatis stuetis elongitis, squamis initio pilosis demum pubescentia deusa glabns obovato ellipiius apice yix mfuscatis, capsulis a crassa ovata basi conicis vel subulatis glabemmis pedicellatis pedicello nectanum fere duplo superante, st^lo elongato stigmatibus bilobis, folns ellipticis obovatisve crenulato serratis glabns lucidis subtus glaucis comceo ngidis, stipulis nul hs v subreniformibus 5 In subalpims Geimamae mendionilis sc Bavanae" et Austnae, Italia? septcntnonahs, non tamen in Lapponia iossica, ut in Ledeb fl ros>s 3 p 612 dicitur — Kocb Synops ed 2 p 7S2, Kern Weid Oesti 1 c p (113) *U)* , hcilr fl \ M Oestr p 254 Hartig Jorstl Cult p 394, Wimm Sal europ p 81 S coruscans Willd sp 4 p 681 S Wul femana Wdld sp 4 p bbO, Host fl austi 2 p bo2 — *Icones* Sturm H 2^ Reichb 2011 (12?) Host Sal <b 96 Sal wob t 48 — *Lcrsicc* Wimra Hb Sal n 78-79 Kern Hb Sal n 97-104 Fiutex 3*pedalis, omnibus pai-tibus, squimis floruiu forsm exceptis glabemmus Folia 1 J-polhcaiia, J-[1] poll Uta supra quasi olto nitid4, subtus lapte v ii ldia demum vald(ngida, utnnque \enis regulanbus pill dionbus pulchie ^tiiatis Amenta 1 3 pollicana eiecta aut patentia Cap^ulae vindulde aut mfescentes Unca longiorcs A S hislata, cui a Koch in Gjinment p /|3 subjuncta distingmlur arnentis longionbus foliatis, squamis glabns, cipsuhs ciassionbus folns majonhus subtus plus minus niUiise glaucis \i\ nticulal) ve^|osis Habitu S phylici fohae non dissimilis, sed letediL imentoium const) uctione tota alia A Ber toloni in fl it 10 p 313 S nigiicantc subunUi etiam a Kemcr in eidem tubu cum ca disposita — Variat 1° /ati/"oiia, folns ovah ellii»ticis usque id 3 pollices longis — 2° *angmlifoha,* folns obovatis ^ lantcolatis 1-ji poll longis basi longc attenuatis facilms nigncantibus — Huic m iximc cognatae, bi non ejus potius modificationes sunt

p, *uatxgifolm* (Andeis monogr. p 17^), squamis dutius senceis elon gatis, capsuhs basi crassionbus brevius pedicellatis, stylo fusco, stigma tibus integris, folns junionbus suotus senceo aigenteis demum glabns supia parum nitidis migis elongatis lacile nigncintibus — S cratTegi-foha Bertol m Desv jouin bol 3 p 76, fl it 10 p 313 In Apenninis ad Tambura et in monte Cenis (ex Reichb IC n 3012 b glabra cenisi i folns stipulis ornatis elongdtis) Ltiam in Austria

P, *subqlabra* (Anders [1] c , S subglabia Kerner Die Weid Oestr p 237), amentis coaetaneis laxis pedunculo foil ito squimis concolonbus e vindi flivis spaisim pilosis capsulis ovato-conicis glabns pedicello nectanum duplo superante stylo elon^ito sligmatibus patuhs bilobis crassiusculis, folns suhrotundis vel ellij ticis serr itis adolcscontia in ner-vis subtus pubescentibus idultis glabcniinis >u]ri nitidis subtus glau-cis dura marcescunt ni$_{ft}$ricintibus ramulis jumonbus puboscentibus cor-tice flavescente tectis In rupibus cilcareis Austnae infcrions 2200 p. (Kerner) etnm in Cannthia lecta f^itur S glabia nigricans (Kern) Wimoi Sal europ p 229 (ura S nigncinte con^ruit rainis crassius-culis opice albo tomentosis, folns tenuionbus minus niiidis squamis florum ob^cunonbus, statura altion Magi" autem S glabram' omnibus partibus revocat

-y, *laxijlorn* (Anders 1 c .S laxifloraKtrn Hb Sal n %),amentis iem bre-Yiterpedunculalis patulo inectis vel excurvitis elongatis nriflonsanguste tylmdraceis, squamis tenuissimis fulvo fuscescentibus obovato spathulatis nervosis vix pubescentibus, capsulis brevibus ovaio eonicis obtusiu--culis pilis ians brewbus parcissime compressis bieviter pedieelhtis, pedicello piloso nectanum leie t lplo superante, stylo brevi lulvescente, stigma tibus brevissimis luscis hciniis erectis, folns rbovatis brevissime acumi natii* supra lucide vnidibussubtus subglaucescentibus mugineserruhtis Hab in Aschenthal in Tirol (Kern) S glabra grandiloha Kein A ven S.gUbra uoa recedit oisi ameiHis ^rauhoubub nidgis ranflons, capbuhd

brevionbus subobtusis pihs ranssimis subpuberuhs, stylo brevion et squamis fuscionbus S fruticulosae jam descnptae maxime est aifinis

8, *stenostachya* (Anders I c , S stenostachya Kern Oestr bot Zeitschr 1864 p 188), araentis coaetaneis pedunculatis anguste cyhndraceis erecto patuhs, pedunculo folns parvis 3 4 suffultis, squamis oblongis obtusis apice fuscionbus villo longo canescente barbatis, capsuhs conico subulatis glabns vindulis pedicellatis, pedicello nectanum duplo tnplove superante, stylo elongato gracili, stigmatibus bipartitis lacinns divcrgentibus, folns obovatis acutis utnnque glabemmis supra laete vin dibus nitidis subtus caesio-glaucis margme serratis, stipulib parvis semi remfonmbus — Ad bonnewendgech in Tirol (Kern) S hastatam con-jungit cum S glabra et S nigncante, ct hybnditate ex us ortam verosimile est A S. nigncante et S glabra amentis longionbus, villo squamarum canescente (neque candido) et stipulib multo minonbus differt (Kern.) Forma, in horto berolmensi culta (cfr Wiram Sal eu rop p 218, S phyhcifoha Willd enum h berol p 1003) huic quidem sat similis sed differt imentis pedunculatis lncurvatis ranflons pedun culo foliib paucis parvisque inbtiucto, capsuhs anguste conico subulatis basi cum pedicello albo senceis, squamib j)dllide fulvis apice haud ni^ns bieviter albo baibatis

e, *MuhtMioferi* (Andeis 1 c ? S Mielichhofen Saut in Regensb Flora 1849 p 662), amentis lateralibus folns paivis suffultis masc ovah oblon gjs densiflorib squamis bast fulvcscentibus apice subnigncantibus,'an thens \iolaceis, ftm elongato cyhndraceis subdensiflons rhachi hirsuta squamis pallidis plus minus albo hirsutis, capsuhs conico subulatis gla bernmib, stylo elongato, folns supra lucidis sdtuidte vindibus subtus laete \el palhde vindibus subnitentibus In alpibus austnacis passim sat frequens (Kern) — Vanat 1° *lad folia* folns ovali-oblorgis v obo\a-tis basi rotundatis apice breviter acuminatis I i poll longis fere polhcem latis costa fulva basi subpubescente elevata subtus notatis — 2% *angusti-folm,* folns basi apic^que subaequahter attenuatis Ionge acjminatis 2-Z \ poll longis semipollicem latis margine crenulato serratis Jam pndem a bautero cum S punctata (S myismitoide *br)* compardtd fuit haec foima dp qua sane nescio quibus nolis a S glabra typice differat nisi loins <'eic concolonbus, I e subtus haud glaucis tenuitate et forma S myrsinitiden quidem haud male revocanb, ab omni S nigncante luculentej divcisa

X S CHLOROPHANA, amentis pedunculatis erecto-patuhs cvhndncis subran-flons pedunculo folns 2 4 parvis instructo, squamis obtusis spathulatis apice fulvo Ionge villobis, capsuhs conicis acutis glabernmis longe nedicel-latis pedicello nectanum 4-5 superante, stylo elongato fulvo, st]gm$_{at}$,bus integris crassiuscuhs, folns obovato lanceolatis basi attenuatis apice plus minus acuminatis inflexo-serratis utrinque gldbernmis subtus pallidioribus reticulato venulosis pnmo pellucido rufescentibus demum ngidis obscuio vindibus — In Silesia ad Peterstein et in Gesenke (Wimmer) S hastata-Silesiaca Wimm Denkschr. 1853 p 16> H v Schles ed /$_p$ 201 Hb Sal n 48 Aperte ex S hastata et S Silesiaca liybnda Folia vulgo ut in S bilesiaca obovata, pnmo pellucida et demum obscure vmdia, sed etiam ut in S hastata pure vindia subtus subglaucnscentia argutius serrata demum ngida Amenta ut m S hastata pedunculata, sed folns tantum parvis et pau-cis suffulta Cipsulae pedicello quam in S Silesiaca breviore sed stylo lonffiore praeditas, acutiores, vindulae (v s)

p, *hebecarpa,* capsuhs hie llhc pubescentibus, folns late o^ahbus subtus puberulis

X X S SGHRENKIANA (Anders Sal monogr p 179), amentis foliato-pedunculatis erectiuscuhs subranflons, pedunculo subpolhcan folns 2 4 cetens aequah-bus instiucto, ibachi glabra fuscescente, squamis concolonbus apice satuiatius iulvis obtusiuscuhs parce cihatis v glabiiusculis, capsulis ovato-conicis ob-tusiuscuhs glabemmis rufescentibus Ionge pedicellatis, pedicello squamam 5ies supeiarte stjlo palhdion mediocn, stigmatibus integris capitellatis fus-

cionbus, folus obovato-lingulatis basi attenuatis margine crenulatis utnnque glabernmis supra saturate vindibus subtus pa-um palhdionbus \enis crebre anastomosantibus imprests venulosis, stipulis nulhs J In teira Samojedorum Asiae arcticae occidentdhs in regione s^lvatica (Schrenk) S hastata var inundata Schrenk Siber Reise d d Tundr e Samoied 2 p 522 (S hastata-myrtilloides) Fruticulus trunco subterraneo, lamulis gracillimis fusco piceis Folia subpollicaria supra medium fere semipollicem lata Amenta mascula pallida, gracilia, fere tenuia, vix pollicana, capsulis anguste comcis rufescentibus, pedicello longissimo stylo perbrevi, stigmatibus minimis S myrtilloidem aemuldt statura humili, folus obovatis obtusis integris, amentis tenuibus squamis glabnusculis capsulis longissime pedicellatis rufesceotibus sublineanbus, stylo parvo et stigmatibus mtegns, S hastatam vero folus venulo reticulatis (saltern superne) serrulatis, amentis £ elongatis straminеis, etc (\ *)

3° Macrostylae

Capsulae saepissime sessiles, stylo producto integro vel bifido rostratae

§ 14. *Prumosz s. daphnoides.* — Arbores vel frutices admodum elati, ramis tenuibus saepius glauco-irroratis. Gemmae magnae, acutae Folia lanceolato-elongata, vulgo glabra et subtus glauca. Amenta sessilia, crasse cyhndnca, ob squamas longe pilosas aureo vel cinereo-villosa. Gapsulae sessiles plerumque glabernmae (m hybndis subpedicellatae, hirsutae), stylo elongato rostratae. — Prumosae Koch Comment, p. 22, Kern. 1. c. p. 51.

83 S DAPHNOIDES (Vill Delph 3 765), amentis sessihbus minute bracteatis crasse cyhndncis densiflons mcano vel aureo-pilosis, squamis acutiuscuhs apicem versus atratis longissime villosis, capsulis ovato comcis glabns sessihhus, nectano basin capsulae superante, stylo elongato, stigmatibus crassius culis erecto patulis mtegns, folus oblongo lanceolatis longe acummatis adultis glabernmis supra nitentibus subtus plerumque glaucis acute serratis, stipulis semicordatis dcutis, gemmis magnis conico-rostratis, ramis saepius glauco irroratis *5* In convallibus subalpinis, in pldnities cum fluvns descendens per ltdliam bo^ealem, Helvetiam, Vallum alpinam austro-occidentalem, in paludosis Germanise septentnonalis et alpmae mediae, Norvegiae australis, Sueciae mediae, in Rossia media, per Sibinam prope Samarkand (ex Bunge) et in regione Amurensi — Koch Cotnm p *26,* Synops ed 2. p 745', *r. Mant 1 p 46, Wimm Fl v Schles ed 3 p 182, Sal. europ p 4, Kern Weid Oest 110, Hartig *orstl Cult p 416 t 43 (46), Reichenb IC fl. geim bO2 f 12^3, Godr et Gren Fl de Fr J p 130, Bertol fl ital 10. p J10, Gaud fl helv 4 p 228, Ledeb fl loss 3 p 602, Bunge Reliqu Lehm 1 c p 496 S bigemmis Hoffm Germ 2 p 260, Sal t 32 S praecox Hoppe in Sturm D fl 7 25, Willd sp pi 4 p 670 Spr byst Veg 1 97, Porbes salic Woburn t 16, btr Lss p 55, Mdximovicz Fl Amur 1 c p 212 S Pomennica Willd sp 4, Spr 1. c 98, Reichb ic p 1254 S cinerfca Sm M. but 3 p 1063, Engl bot t 1897, Host Sal p 8 t 26. 27, Salic Woburn t 129 — *Fxsicc* Ser 96 Reichb 569 Wimm 28 37 Coll Sal 2-5 Billot J957 53 IT Hb norm 6 54 Kerner Hb Sal 38-42- Schultz n 153 Arbor mediocns vel frutex saepe sat altus, ramis post 2 5 dnnos rore caesio absiergendo obtectis Gemmze fere semipolhcares, stipulis pleiumque stipatae Folia 1 4 pollices longa, J-Ji poll lata, basi subiotunda, apice longe atuminata. supra lucide glabernma^ subtus glaucescentia, costa et \enis semirectaogulanbus flavidis percursa, demum ngidiuscula Amenta ex apice prim am florentid, sub anthesi Jonge pilosa, mascula fere bipollicdrid lucide aureo villosa, feminea cras^e cyhndnca, l-3-pollicaria, apice subincurvata cinerea, demum ob capsulds subcompressas stylo luteo rostratas evidentiorps vindula l*ormae vulgatiores sunt 1- *latifolia folus bis quaterve lonpionbus quam latis ob'ongo lanceolatis abrupte acummatis,**

stipiilis semicordatis (S. cinerea Willd. et Lk.). Haec est : *discolor* (foliis subtus glaucis, rigidioribus),vel *concolor* (foliis subt'is pallidius viridibus, tenuioribus), vel *hir.svla* (foliis etiam adultis incano-velutinis), nonne quadammodo a S. viminali progcnita ? Prope Petropolin indagavit amiciss. Koernicke. — 2° *angustifolia,* foliis quadruplo-quintuplo Innginrihus quam latis obverse lanceolatis supra medium lalioribus et abruple in acumen tenue productis, aut exacte et anguste lanceolatis, aequaliter attenuate-cuspidatis. (S. Pomeranica, S. praecox.) H*c est : *discolor* (fol. subtus glaucis, rigidis), vel *concolor* (fol. subtus pallidc viridibus, tenuioribus). Utraque variat preeterea ramis caesio-irroratis vel lusco-piceis dcnuriatis immo vitellinis, amentis cinereo-vel aureo-pilosis. — Specimina indica, qua? .Jacquemont in summa valle Jumnath el ad Barehatta legit, ut et Hook, et Thomson ad Simla, recedurit amentis magis excurvatis; stylis multo longioribus, foliis magnis subundulato-crenatis. Formam suecicam quam ill. Wimmer sub nomine « S. pulclira » Sal. europ. p. 7. descripsit a vera S. daphnoide nullo modo distinguere valen. S. dapbnoidem cum S. acutifolia aperte conjungit. (v. s.)

$, acutifolia (S, acutifolia Willd. sp. pi. 4. p. 668), amentis omnium praecocissimis vix bracteatis crasse cylindricis, capsulis subsessilibus, stigmatibus erectis, foliis anguste lanceolatis longissime et suboblique acuminatis, stipulis lanceoLao-acuminatis. In Itossia orientali asiatica ct europaea et in Kuropa boreali (fere semper culta?) — Koch Comment, p. 22; Synops. ed. 2. p. 743 ; Fr. Mnn,t. I. p. 46; Hook, et Arn. brit. fl. ed. 7. p. 30f»; Lcdeb. fl. ross. 3. p. 601;Hartig Forsil. Cult. p. 416; Bunge Reliqu. Lehm. 1. c. p. 496; Reichb. p. 12">5; Sal. Woburn. t. 25. S. violacea Andrews, in Rees cycl. n. 33; Sal. Wob. t. 49. Sv pruinosa Wciidl. Reichb. Excurs. 1046; Wimm. Fl. v. Schles. ed. 3. p. 183; Sal. curop. p. 9. S. caspica Kortor. S. daphnoides p angustifolia.Weinm. pi. pctt-op. p. 96; Doll 11. bad. ed. 2. p. 49^?— *Exsicc.:* Fr. H. N. 8. 58. Wimm. n. 8.). Coll. Sal. n. 1. Korn Hb. Sal. n. 42. A S. daphnoide vix notis u'llis certis distinguonda, eiusque forma m;igis oricntalis forsan sus-^)i can id a' quadanmiodu ul S. rctsmariniiulia ad S. vepentem. t'.itius tamen cillta crcscit, radices longissimas profert et ramos hahct multo tenuiores subrtendulos vel curvatos subvimineos s.Tpissime intonsius glaucos. ficnimae angust'ores et longiores. Folia saepius subtus latius viridula, semper multo angtistiora ct longius attenuato-acuminata. Amenta breviora magisque curvata, capsulao etiam longior^s et angustiores. Pra3cocius floret, terrain arcnosam libcntius amans. (v. v.)

84. S. JNSLGNIS (Anders, journ. Linn. Soc 4. 13. p. 47), amentis sessilibus e gemmis magnis erumpentibus basi nudis, masculi9 crassis squamis atris flavescenti-pilosis, femineis laxe erectis elongato-cylindricis acutiusculis squamis atris obtusis glabriusculis, capsulis breviter pedicellatis conicis tenuiter puberulis, stylo parvo, stigmatibus integris crassiusculis erectis, foliis lanceolatis plus minus serratis glabris vel sericeis rigidis subtus glaucescentibus, slipulis semicordati« acutis persistcntibus. 5 In Asia mcridionuli : Kaschmir, rep. temp. alt. 6-8000ped. (Thomson), ^rbor V. frutex sataltus; rami validi, fusco-ghuccscentes. Gemmae aculae, castancsc, magnas. Folia 2-3 poll, longa, i poll, lata, ulnn.jue a^qualitcr attuiniata, gla^duloso-serrata, supra viridia, costa voRisquo dilutius lineatis., Stipulfc saipe longe cuspidataa. Amenta mascula **1-poll.** longa, ovato-pblonga, pilis squamarum longis pulchre aurea. Amentafeminea bracteis pa.ucis sumilla. aoutiuscula, 2-pollicaria, oh squamas aterrimas el glabriuscula.s fusca: capsuUe ansuste conic*, rostratae, demum glal^r£scentes, fulvo-viridulse, pedicello nectanum superante, stylo parum producto sed conspicuo. — Variat : Hirsuta, ibliis anguste lanceolatis, 3 poll, longis, moriio vix ^ poll.)atis, utrimjue sed subtus densius cincreo-villosis submicantibns, marline obsolotius sinuato-scrruJatis, ramulissuinrnis griseotomentosis. — Ex habitu hæc species proxime ad S. daphnoidem accedit; differt autem amentis femineis longissimis et laxis squamis atris nudis, capsulis puberulis distinctius pedicellatis et stylo brevi, quibus ad typum S. capreæ vergit! Ob analogiam etiam ad hanc retuli formam hirsutam, quum cogniturii sit etiam S. daphnoidis existere modificatio item mollis. (v. s.)

85. S. IRRORÀTA (Anders. Ofvers. Wet. Akad. Forh. 1858. p. 117), amentis con-

fertis sessihbus peruhs maximis pioeo glaucis pnmo bricteatis, masculis subrotundis aureo villosis, femineis erectis vel pitulis elon^dtis densiflons cylmdncis, squamis apice fuscis obtusisbasi el medio pilis cinereis longis villosis, capsulis conicis glabeinmis vindulis obsolete pedicellatis, pedicello nectanum vix superante, stylo mediocn, stigmatibus breussimis integris v. bihdis, loins lanceolatis utnnquo gldbcrnmis vindibus minute serrulatis, ramis glaucoirrontis *5* In Mexico novo (Fendler n 812) Arbor sat elata, ramis \ahdis glabernmis lusto piteis passim intense glaucis Gemmae maximae rotundatae *olia lanceohto lingulata, polhcem longa supra medium •} poll laia, petiolus bre\is flavus Amenta in ramis valde conlerta, mascula ob pilos squamarum aureo villosa, fcininea 1 \ poll longa, pnmo ob squamas nigrescentia, demum ob cipsulis evidentiores vindula, capsuli-. lineam longis, stylo et stigmitibus fulvis Maximam cum b daphnoide habct affinitatcm, sed distinguitui amentis condensuis, gemmis lotundatis, squamis obtusis, capsulis mm(nbus distincte pedicellatis, stylo brevion apiculatis, ct folns tenuionbus etangustioiibus (v s)

X S ERDINGERI (J KcrnerVerh d zool bot Gesellsch.m Wien 1861, p 243), amentis femineis sessihbus biacteis paucis vel nullis suffultis cyhndncis dcnsiflons, squamis ovatis acutiusculis basi fenugineis apicem versus atratis longisbime villosis, capsulis vnidibus pilis senceis adpiessis spaisis obsitis pedicellatis, pedicello nectanum aequante vel subsupeiante. stylo tenui mediocn sligmatibus integrui ercctis conniyentibus, folns obovato lanctolatis abrupte acunnnatis scnatis pnmo subtonuntosis subtus rugulosis venosis demum glaboinmis — In Austria inferiori ad Wien et Krems S superdaphnoldes-c lprea A Keiner Hb Salic n 46 47 48 S caprea daphnoides Wimm Sal europ p 203 Lst sinef'ullo dubio inter S daphnoidem et s capream omnino mtei media, ut ab us hybnda diutui A priori hibd lamos bubeicctos tonaciores, folia tenuia elongito attenuata, proisus vnidii, subtus demum glabia ct supia lu ide vindia,, nonnunquam etiam subtus glnicescen tia, marline subinde acutp serrata, petiolo basi dilatato gemmam magnam acutam implectente, mienta feminea cylindnci longe sencea, capsulas vindul is altemntas, passim glabrescentes, stylum elongatum AS capiea habet foha breviora supra medium latiora, venis su])ra immersis subtus elevatis liigulo'-d lumora tomentoso-incana, maigine undulato cicnata, capsulas evidentei quanquam breviler pedicellatas, lineis paucis apicem versus tenuiter et adpresse pilosas — S Koeinick I, huic valde affinis, capsulis habet densissime sublanatas longiu* pedicellatas et lolia ngida glabernma nitida, a S daphnoidp et > phyliciloha (liunna) forsdn hybnda — S Hunganca A Kern (Oest bot Zeitschi 1864, p 9) a S Frdingen differre dicitur (spccimma nulla vidi) guminihui glabenimislongiuspcdicellatis et folns lationbus ellipticis, adultis glaberrunis, quibus itaquo magis ad S capream appropinquatur (v s.)

X X S KOSRNICKEI. amentis sessihbus eloDgato cyhi^dncis subincupvatis d,^nse et longe senceis bractcis paucis basi sufTultis squamis bisi rufescentibus apice acutiusculo nigncantibus ilbo pilosis cai)suhs conicis ar^cnteo senceis pedicellatis pedicello ncctanum quadruplo supeiante, slylo mediocn, stigmatibus integns patulis, folns lanceolUo-o\alibui> utnnquo glabiis subtus sat intense gliucis clcvato nenosis supia nitente virulibus margine crenatoserratis, stipulis gemmis ma^nis brevionbussubpersistentiBus ^ Ad Petropolm (Koernicke) Irutex sat lltus ramis subvimineis, castaneis, nitentibus Folia 2-3 poll longa I 2 poll lata Amenta mascula vix pollicana aureo pilosa, feminea 1} ? polhcarid cinerea —Difficile sane est dictu, cuinam maxime sit affinis Hinituet ch iracU nbus intpr S phylicifoham (ldunnain) et daphnoidem cxactc nicdn I'noii cst similis folns demum ri^idis, subtus glaucis, supia nitide vnidibus medio lationbus, bicvitci dcuminatis, marline ssspe undulato cren Uo scrratis, amentis g^aoihbus capsulis sat longe \ edieellatis et albo senceis molhbus. A s daj.linoide habet consistentiam et saepe etiam figuraP et ghbntiem loliorum stipulas sit magnas et acutas, geronaas maKnas incurvatn apirulatas, amenta ommno sessiha, mascula aurea, feminea densifloi a, sUlum elongatum et stigmata patula Integra Sed diñert capsulis longe pedicellatis, senceis Praeterea 5 Lrdmgen haud absimiiu-,

quae tamea folia habet breviora, ruguloso-venulosa, juniora mollia, amenta angustius cyhndnca, capsulas subsessiles, pilis rans seriatim apicem versus et stylo brevion rostratas (v s)

a, *angushfoha,* folns lanceolatis basi apiceque longe attenuatis, stipuhs semilunatis apice recurvatis. Haec inteidum hirsuta, folns sat dense pilosis incurvis

p, *lati/oha,* folns ovato ovahbus nitentibus, stipuhs sat magnis vel nulhs — Haec interduni cnspata, folns profunde serratis

86. S COULTFRI (Anders Ofvers Wet Ak Forh 1858, p 119), amentis omnino sessihbus bracteis 2 3 cito deciduis suffultis erectis cyhndncis densiflons, masc aureis squamis fulvis pilis flavidis longissimis dense villosis, capsulis , folns oblongo-lineaubus latiusculis sQpra obscure vindibus costa et nervis impiessis albidis ceterum glabm obscure vindibus subtus vellexe densissimo lucido argenteo tomentosisintegus margmatis, stipulis nullis 5 In California (Dr Coultei) Aibuscula ramis sat crassis anpulatis tomento denso gnseo fulvescente obductis, stnctis &tmma° magnae, iotunrlato ovatae,obtusiusculae. gnseo tomentosae Polia 3 poll longa, pollicem lata, bisi et apice brewter sea aequahter attenuata, supra obscure vindia, subtus argenteo sencea, mollia, subangulosa, demum ngida, petiolus brcvis Amenta mascula e gem mis magnis eiumpentia, omnino cyhndnca,ob squamaium pilos longos et den^issimos nee non stamina subproducta pulchre auieo-nitentn Species valde distmcta sed dubiae affinitatis S djscolorem cum S lanata (mediantibus S Hookenana et S spec osa) in senem naturalem quodammo io connectit (v s)

87 S LASIOLEPIS (Benth pi Hartweg p 335 et lierbar), amentis sessihbus nudis confertis erectis hirsutissimis squamis subiotundis torn en Lo densissimo et brevi obtectis capsulas fere occultantibus, filamentis basi mhma connatis, capsulis acutis glabernmis \indul s basi pedicellatis, peelIcello nectanum bis superante, stylo mediocn, stigmatibus crassis btevibus erectis integris, folns lanceolatis e basi angustata sensim lationbus acut s supra glabernmis subtus ferrugmeo glaucis margine subserrat s 5 In California,ad ripam fluv Salinas et (armel prope Monterey (Hartweg n 1%^ (167) in Hb Benth et Hook) —Anders Sal boreal Amer 1 c. p 118 Pulchernma species, inter Sahces pruinosas et Capreas quodammodo ambigua. Arbor dicitui 20-J5 peddlis, rami crassiuscuh, atn, novelli apice pirce tomentosi Gemmae parvae, petiolo tnplo quadruplo\ e breviores, atrae Folia 3 4 poll lunga, supra medium saepius semiuncia latiora, supra nitida et obscure vindia, subtus glauca, integumento ferrugineo evanido saltern secus nervos demum rehcto colorata Amenta omnino sessilia, perulis magnis mitio gnseohirtis cjlindrdcea, densiflora, ddscendentid, subflexuosa, in ramulis arete condensata tpre opposita, vel immo quasi subverticillata, squamae atrae apice rotuudatap basi angustatv, pilis palhde stramineis senceis (in <^), vel cinereo albidis (in O) densissime obsitis stam aurea squamas tnplo superantia, filamentis basi plus minus connexis, anthens minutis Capsulae squamis supra medium obtectae, vindulae, anguste corneas, pedicelloetstylo flavescentibus, stigmatibus fuscionbus (v s)

§ 15 *Micanfesseu Viminales.* — Arbores vel frutices alti, regiones campestres temperatas vel meridionales mhabitantes, ramis vimineis flexihbus. Folia elongato-lanceolata, Scfipms subtus argenteosencea et micantia, margme saepe revoluto mtegra vel denticulata, costa flavida subtus elevata. Amenta elongato-cylindnca, densillora, staminibus aureis, capsulis conico-rostratis, saepissime tomentosis, stylo rostratis, valvis dehiscentia excurvatis. — *Vinunales* Koch Comment p 27; Fr Mant. 1. p. 60 (non alns), Kern. 1 c. p 48

88 S viMiNALis (Linn sp. pi p 1448), amentis sessihbus bracteis vix ulhs suffultis elongatis cyhndncis erecto-patuhs densiflons, femineis demum

subflexuosis, squamis obovatis vel oblongis acutiusculis fusco-fulvis apice obscunonbus doiso pihs stylo brevionbus villosis, capsulis ex ovata basi conico-rostratis tomentosis sessilibus nectano hnean ovarn basin superante, stylo elongato cum stigmatibus filiforraibus indivisis vel fuscis excurvatis fulvis, folns lanceolato hneanbus longe acuminato-attenuatis supra obscure vindinus impresso-neivosis subtus argenteo-micantibus costa prominente lulvescente margine subrevoluto integerrimo repandis, stipuhs lanceolato-hneanbus petiolo brevionbus mox caducis 5 In omni Sibina a Kamtschatka, regione Amurensi et Ajanensi, etc., in desertis Songanae, etc., per Rossiam omnem, arctica exrepta, usque in Euiopam totam late dispersa. Etiam in America colitur. — Willd. sp pi 4. p 706, Koch Comment p. 29, Fr Mant 1. p. 61, Wahlenb fl suec. n. 1128, Lange Dansk Fl ed 2. p 657; Koch Synops ed 2 P- 46, Wimm. fl v Schles ed. 3. p 192, Sal europ p 36; Hartig Forstl Cult. p. 398, Kerner Weid. Oestr. p 211, Doll Fl bad p. 494, Ser. Ess p. 3i, Uiud helv. 6. p. 260, DC fl fr. 3 p. 297, Gien. et Godr fl. fr 3 p 131, Sm. but. 3 p. 1070 , Hook etArn fl. bnt ed. 7. p 402, Loud arbor 1549, Langc et Willk. fl hisp. p. 228, Sm. fl. gr<ec. 2 p 253,Gnseb Spic. rum. p 344, Ledeb. fl alt 4 p 265, fl. ross. 3. p. 605; Tiautv in Mem de la Soc. des Nat de Mosc 8 p. 373, Bunge in Mem pres. d l'Acad de St-Pétersb 7. p 4%, Maximow. Fl. Amur 1 c. p 242; Asa Gray Man. ed 2. p.4h. S longiioha Lam. fl. fr. 2. p. 232. S virescens Vill. Dauph. 3 p. 785. - [cones. Hoilm Sal. t 2. f. 1 2. t 5 f. 2 e f, Sv Bot. 211, Fl D 24 ? ^ A eiC hl ; ; T 12 F 48J K f t 1898, Host Sal X, W^5. H ^ * 1 c t 36; Sal Wob. t. I33.7EWIM Ehrh arbor n 69, Ser. 25 43 74, FnesH.n. 1. 64, Billot n. 1%8, Kernel Kxsicc n. 70, Wimm Hb Sal. 126. 127, Coll. n 101-103, Lcefe Sal bnt n. 23.24. Arbor mediocns sed saspissime frutcx sat altus, cultuia ct amputatione ramis stnctis viigatis cito crescentibus tenacissimis et foliatis pulchernma, in usum hominum frequentissime usitata. Folia e longinquo pulchemrne argenteo-micantia ob tomentum tenue saepe evanidum adpressum in pagina lnlenon, linean-lancpolata, saepe 6 8 polhces eloHgata, attenuato-acuminata, marline subundulata. Amenta mascula aureo-flavidd, mitio longe villosa, oblonga pollicana, staminibus pallide flavis ; leminea longioid demum flexuosa, squamis minus villosis, capsulis lined longionhus basi CMSSIS Fiequentissirae culta non parum ludit : fiutex nunc ramis subtorulosis abbieviat»s (silvestus) vol longissimis et urgatis, vel arbor trunco modice crasso, folns lationbus v. angustionbus, basi rotundato-lationbus vel angustato attenuate, supra apice pubescentibus vel nitide glabenimis, subtus intense aipenteis \el obsolete tomentosis, stipuhs in ramis vegetionbus angustis vel saepius plane nullis, amentis lemineis elongato-cylindncis vel linean-abbieviatis (v abbieviata Doll fl bad. p 495), stylo mtegro vel ranssime fisso, stigmatibus mdivisis vel partitis lacinns rectis vel flexuoso-divicancatis. — Ex Asiae boreahs regionibus medns loisan pnmitus in Occidentem avecta, lbi maxime ludit Huic terrarum parti peculiares videntur modificationes scquentes ad S Smithlanam quodammodo acccdenles et ad earn saepe etiam relatde.

p, *splendent* (S splendens Turcz pi. exsicc. 1829), fohis utnnque fere aequahter senceis sed subtus pulchemme argenteo-micantibus nlaniusculis integernmis, armntis elongatis mcurvatis, squamis subconcolonbus, capsulis attenuato-ioslidtib. — S. viminalis ; Turcz. fl hair Hau i,r in Bull de la Soc. de Mosc 1854 p. 380 - Vanat 1° *Sonaarica* Ia TMs testaceis tomento levissimo caduco albatis, folns elongatis ncidis supra cmereis vel pibs ranssimis adpressis subglabrescentibSs, subtus omnitum maxime argenteis, e basi vulgo latiori longissime acutatis Nunc latifolia (folns 1 ½ poll latis), nunc angustifolia (folns ¼ poll latis, saepius exstipulatis), quam in Songaria ad ripas fl Ilu et Ajagay, le Schrenk (Hb. Petrop). Forma latilolia quoad folia habilum S Smithu£« omnmo [illegible]iens, capsulis attamen omnino sessilibus ab ea diffeit E S stipulan recedit colore lohorum lntensiss-me argenteo. Forma valde sineularis. cujus tantum specimina exarninavi. — 2° *breufoka*, ramis vulgo glabns te«taceo-vindiDus, folns planis supia opacis saepe senceis suDtus intense argenteis, costa et venis obsoletis basi angustatis ariice vulgo non longe attenuatis, squamis capsularum ferrugineis In Sibina « inter Zyljman et

Kolwapi (Schienk Reise d d Tundrpn Saraȯjodens, n 2521), prope Irkutzk, et Wcd(nskija id Solengam, Wercknenshinsk et ad nvulum Kaja (lib Petr) Coloie folioium op ice cmereo ct folus bie\ionbus subobtusis singulans torma e terns Samojedoium s Smithiaiitp subsimilis, sed tolia ran gin e licvoluta et subtus intense et adpresse argentea

Y, *Omelmi* (S Gmelim Pill fl ross, 2 p 153), amentis sessilibus brevibus ingustis dtnsifloris subbractcilis, squiims rufo-fuhis apicc lation rotundalo-truncato subluscionbus barbatis capsulis bre\e et crasse o\atis obtusiusculis dense albo-tomentosis sessilibus nectano basin capsulae superante, stylo valdc producto, stigmitibus int gns aut bifidis, folns anguste oblongis acutis basin Aeisus attcnuitis lntegernmis supri incanis subtus argenteo-sericeis aut utnnquc senceo-albis slipuhs parvis mox deeiduis — Lcdpb fl ross 3 p 606 (synonym i all it i Mlde incerta[1]) Specimina dosenpta id Petropohn legit Sanson (Hb Lenomiandi) — Vanat 1° *vestita,* loins siltem junionbus utnnque den e ct m lliter albo ^ tllosis subius aigentco 1 natis oblusiusculis, lmrMis insigniterlulvescentibws Jn Altai et ad Wolgam Hum S Gmclini Gcorgi Bcschr d Russ Reich 3 S. p 13 37 —*Trufescens* (lurcz exsicc) araentis angustis, cipsulis squamas vix excedenhbus subo\alibus stylo subito apiculatiS folus ingustis supri medium sappc sublationbus suj ncmercis demum glabresccnlibus In Alt u, Iikut/k, Selen^i, Angira *(*um subvar supra allila bicvilolu ccihssime *dh\e* congruit sed foimi amentorum et capsuldium fere abend Habitu a ^ r a S viinunli non paium recedens ef ad S acumiridtam accedens, formd sine dul)io luxunans at cujusdam[9] raihi siltem mceitum An hue peitment s sciotmi Pill fl. ross *I* p IS[7]* mihi non liquet (quae foisan foimi accidentalis amentis serotims folns suffultis) Piaeteiea sub nomine S Gmelim in herbanib vanas lor mas vidi, etiam modidcationera S Lapponum

X S snpi LARIS (Smith bnt 1069), amentis sessihlms sat lonf.is crassis et villosis basi biacteis piucis suffultis, squamis fulvis acutis apico obscunonbus fnils sligrniti subaequantibus \illosis capsulis ovato-conicis brevissime pedicr Uatis, nrctino ovmi basin sdepius supprante stylo elongato, filamcntis indivibib fulvis loins elongito-lanceolaiis bisi srpius *itu* nuatis longe acunnnatis integns et iepando undulitis subtus tomento snbmtido MX adpicsso obtectis, slipulis lanceolatis acuminatis petioluni sape acquantibus In I uiopa media passim, ex Angln in Gcrminu buieah (Silosia, insula Noidernay) intioducti in horlis baud i iro culla alias (ut in Austria, Livonia et Dania) aut lnquiliud facti mt cum aflinibus connnutata — Willd Sp pi 4 p 708, Koch Comm p 2P, Synops cd 2 p 7M> Hartig*oistl (ult p 3Q8, Wimm Sal euiop p 184, Hook ctArn but fl od 7 p 402, Hook fl scot, p 286, Loud arbor 3 l&>0, Linge Dansk fl ed *1* p e^Iodcb fl. ross. 3. p 6O0 S longifoha 9 Host tab 63 S Hostii Kern Weid (Estr 1 c p 217 (S superviminahs cinerea Txsicc n 71-72 Wimmei ids Smithianam rehtd[1]) b vimiridlis stipuluis Fr Mant 1 p 61 S viminalis ciprea 1 stipuhns Winmi I lora 1849 p 42 S vinnnilis das\clados Wimm Denk^chi 1853 f) 63 — *Icon<6 T* 13 t 1214, Reichb 1240,11 D 2668, Ml Wob t H2, 130 (S macrohiipulacca) A vora S viminah vix tult (listmguitui nisi procentatc parlium puseitim foliorum et stirularum, quae praecipue 111 iamb vegetis conspicuis >»d in alns non raio defiuuntur lohaetiam subtus minus irgenteo-micantia, sed nngis opace et minus adpresse sencca, quire hybnda a b cinoiei a qmbusdam hLbetur Rami saepissimo dense mcano tomentosi ita ut foimis angustilolids b ddsyclados non male refcrant Quomodo vero sit judicandi ad s Smithianam ceite praibet tnnsitum (v s)

p, *vestila,* folns usque ad 6 8 polhce»> longis subtus \ollere donsissimo lutescentc mcano vestitis, ramis ciassis dense tomontosis, stipulis magnis acutissimis — Hib ad Petropolin Oui^ *>ub luc nomine ex vanis paiti bus Sibinae (ut biikilensis, altaicae et ex l)avuna Fl rosjs) in herharns as^erv itds viderc Iicuit dd tormas sequences ssepibSime pertinent, et ad S Smithianam adhuc evidentius transeunt

X X S SMITHIANA (Willd Tnum Horti Berol 2 p 1008), amentis sessilibus basi bracteis paucis \el fere nulhs fuffultis densiflons pilosis, squamis apice saltern nigiescentibus jnlis albidis micantibus vel cinereis longe villosis, capsulis ovato-conius albido-tomentosis pedicellatis, pedicello nectariiim et saepe etiain squamam a^mj intibus stylo flavido elongato lostratis, stigmatibus brunneis integns \cl l>i|aititis eiectis vel divaricalis immo conlortis, folns oblon^o lanceolatis. icuminato cuspidatisraargineplus minus undulato cienitis supra obscure vmdibus venis impiessis sublus tomento sulscnceo argenteis vel denudato-obscuns venis molliua tomentosis, stipulis reniformi semicordatis — Proles a S ,yiminali et Capreis vains sine ullo dubio hybnda ldeoque eximie pol^morpna, per omnem huropam mcdiam sat \ulgo culta, lbique nunc quasi mdigena 1 icta adbuc ma^is ludens Foima* fere innumeras a vauis ^uctonbus vaiiH mterpretatas vinisque denoniinationibus appellatas nupemme LXimia sigacitate in Sal euiop a Wimmcro quisi nionograpluce tractatis, sed me judice ut diversas immeiito propositas, sequenti modo disponere studui, do synonymis ad un imquamque juste pertinentibus baud paium duJ)ius, quia spccimmi potius quam formas descupserunt auctoi es

a, *sencans* (S_sen cans rausch pi select ex Kern Weid Oestr, p. 216 et Hb Sal n *Id),* $^{an}Y^{ntl}Y^{lon}G^{at(}M^{lindri}$cis demum subpendulis, squamis ovah sublanceolaiis. basi iuhtscentibus lon^e pilosis capsuhs conicis mollitei scruus puiicellatis, pedicello nectanum aequantc vel immo bis bupuante, slylo sti^miU SAJ ius bifida jquante, loins subtus tomento ai$_n^r$entPO seuoco micantibus $_C$osta fulve&ccnte m irginc subintegns supra glabnusculis obscure yuidjbus lanceolalis infra basi sajpius iationbus ianns vimineis \ul$_e$o glabns — In Iuiopa potissimuni media usque ad SiKcnni borealcm (scmpci cultuia quasi indigena facta ut viJetur) bpecimina nulla ceiti e Rossia asiatica vidi S Smithiana Koch iie^r bot" Zeit 1820 p 27() Sjnops cd 2 p 74b, Hook et Am bnt fl ed 7 p. 402, Hirlm skand fl ed 9 p 177, Iedeb. fl IOSS J p 606* Harlig Foistl C ultuipl p 398 S Smitlnama a nitens Godr et Oren! fl fi 3 131, Loud aiboL 3 l')C0 S mollissimi Sm bnt p 1070 1 n t Io09 S lanceolati lr Nov ed 2 p. 283, Mant 1. p. 61, Summa p 56 b alfinis p capraformis Gi en et Godr 1 c p 133 S longifolia Host Salic t 62 (p p) S capita viminalis Wimm Sal europ p 178 S viminahs-camea Wimm. Fl v Schles 1845 Nachtr Regensb. Fl 1840 n 3 Dcnkschr 1853 162 —*hones* Reichb f *\1A* (2^9), Sal Wob 134, HartiJ n 40, Tl Dan 2J>1 — *Lxsicc* Wimm n 12,74, 118 119 141 Coll n 160 161 16o 168 1 eef n *It.* 2b 28 Fr H N 1. pi 63 In formamaibuscula majons vel saltern eximie diffuse vel arbor is minons vulgoexciescit, ramis (excisis) Mmmeis tenacibus testaceo-Miidibus e\cellens Polia e bisi subiutunda sonsim lanceolato atlenuata, recte aj lculata, 3 5 polliccs longa, saepe ^-7 poll lata, forma et mdumento non parum \aiid, nunc subtus densissimt ar^entco micintia mine ommno denudita, supra obsruie vnidii sed glabra et sublucida' venis obsolete mipressis , slipuldu utpluiimum mcdiocres,. somiovatae Amf nti crassiuscuJa, m iscula ovah oblongi, 1 2-polhcaiid h t^ aurea fommea cyhndnca, + -| poll crassi, capsuU fere 2 lm longae vmdilutescentes Quoad folia vanit pn teioa 1 *lattfolia,* folns 4 6-pollican bus intia medium 1 l£ poll 1 itis supia ob^cuie vindilus (S sencans Tauscti) Haec est vel *\islita,* folns ngidiusculis subtus vellere flavesceriti aibo densissimo obtectis e basi ovata longissime attenuato-acumi natis (formam luxunantem amentis 3-pollicanbus passim ol»servavi) ^e! *moths,* loins mollionbus subtus tomento ar^enieo quasi scuccis basi non late ovatis indi ULenuafo lanceolatis (ioinu Jere tynica vulgatior culta S SmiLhinicL ipsissima'), vel *glabiata,* foluv. denlum'subglabns mtentibus — 2° *anqnstifoha* iWimrn), fohisbisi attenuatis apite longe ncuminatis supia demum gl ibrtKis planiusculis, mai^inc obsolete itpjndoseiratis Occurntetiam \cstita mollis et glabrata — 3« *subobscuia,* folns subtus minus lucide tomentosis scd opacis f(ie brunnescentibus nervis ideo acutius prominentibus stnatis et margine evidentms crenatis s Mmmalis cmereaWimm Hb. Sal n 23.24. Coll. n 170-175 S. cmerea-

viminalis Wimm Sal eur p 141 (ex cjtat sed cum S holosencea sequente coniuncta!) Leefe n 27 29 30 32.33. Est nunc *major,* fohis 2-4 pollicaribus sat anguste lanceolatis fere aequaliter attenuatis, nunc *minor,* fohis 1 3 pollicaribus vulgo supra medium lationbus subtus saepissime vindiusculo-denudatis (Quasi e S viminali et aunta procreata ideoque = S aunta-viminahs Wimm Regensb Fl 1848, p 319 1849 p 42, Denkschr 1-85 p 163, Sal europ p 183 p p Hb Sal n 11. 12 (135) — 4° *serotma* amentis breve sed distincte pedunculatis, pedun culo foil is parvis mstructo Hanc formam sine dubio accidentalem m Bdhusia et prope Holmiam Sueciae legi

(3, *velutina* (S velutma Scbrad ex Koch et specim ong), amentis sessilibus demum subranflons, squamis acutiusculis nigns cinereo pilosis, capsuhs cmereo tomentosis pedicellatis, pedicello nectanum bis (terve) superante, stylo brevi, stigmatibus emargmatis folns lanceolatis acuminato cuspidatis argute seirulatis subtus incano tomentosis arcuato nervosis, stipuhs semi ovatis ramis plerumque breviter cmereo tomentosis — In Angha Germania, Suecia et Rossia sed ubique ranssime et singulatim cresceris S holosencea Willd Berl Baumz 458 (vix Sp pi 4 208), Koch Comment p. 34, Synops ed 2 p 748, Fr Summa, p 5o, Hook et Arn bnt fl ed 7 p 403 Loud arbor 3 1o51 S cinereaviminalis Wimm p p S lancilolia Doll fl bad p 112 S Michehana Forb Sal Wob t 125, loud arbor *I* 1552 —*hones* Reichb icon. 1226 Hartig Forstl Cult p 400 t 112 (37[1]) Leefe n 34 Ex omnibus hanc potissimum a S cinerea et viminali procreatam conjicerem Apnore hribpt ramos cmereo-tomentosos diviso divaricates crassiusculos, folia breviora supra medium latiora, supra ohscunus vindia lmpresso nervosa, subtus opace incano tomentosa, margine aut sat argute crenulata aut fere integernma, amenta demum breviora et crassiora, mascula teretiuscula, a S viminali formam foliorum, ramulos subvimineos et capsulas

— Vanat *ferruginea* (S ferruginea torb hort. wob t 128 Anders, dpud Sm F B t 2665), amentis brevibus, capsularum stylo et stigmatiDus brevibus, folns anguste lanceolatis saepe supra medium lationbus utnnquc demum feie omnmo dcnudatis et obscure ferrugineis, ramuhs di\ancitis glabnuscnlis tenuibus — Leefe n 36 Loud arbor 3 1552. b viminah-cineiea Wimm Lxsicc n 87 Passim in Germania et Anglia obvia Hanc forsitan a S viminali et aunta hybndam haberes A priori habet folia angusta elongata tomento parcissimo submicantia et amenta, a postenoic amenta breviora, capsulas longius pedicellatas, stylum breviorem, ramos graciles saepius glabros Haec lÜque esset S fruticosa Doll H v Bid p 515, at diificillime a S sencante subobscura mmore distinguenda

y, *acummata* (b acuminata Sm bnt 3 p 1068), amentis crassis curvatis 1J 2-polliCdnbus ob squamas nigras acutas et longe villosas pilosis, capsulis sublanatis vel stngoso tomentosis pedicellatis, pedicello necta num his superante, stylo pioducto fulvo, stigmatibus filiformibus divan catis, iohis usque ad 4 b pollices longis supra medium con^picue lation bus supra opacissime puberulis obscure vmdibus plains subtus molhter et tenuiter senceis, demum nudiu&culis pallidionbus margine subrepando crenatis, stipuhs reniformibus acutis •— In 1 uiopa media passim bpeumma (semper culta?) vidi ex Anglia, Geimania Galha (prope Nantes, a Dr Jordan communicata) et Rossia media (ad Petropohn) Loud arbor 3 1553, Doll fl bad p 513, Ledeb fl ross 3 p 606, Sal Wob t 131, Leefe n 37 S caprea-dasyclados Wimm Denkschr 18^3 p 163 S Calodendron Wimm Sil europ p 187 Hujus formje sine dubio maxime evoluta modificatio, patentiss me hybnda Characternbus inter S capream et viminaleui optime media, ramis validis (saspis sime) densissime mcanis nigrescenti tomentosis, magnitudine foliorum et amentorum insignis et peculians. — Huic sine dubio affinis si non cum ea identica S dasyclados Wimm Regensb Fl 1849 n 3, Fl v Schles 1857 p 191, folns ex ovato rotundaia basi elongato lanceolatis usque ad 6 pollices longis et ultra, subtus pnmo tomento sat conspicuo

cinereo-micantibus, demum obovato-lanceolatis plus minus denudatis, stipulis mediocribus, amentis ut etiam ramis densissime fusco-villosis. Wimm. Hb. Sal. n. 7. S. acuminata Lange Dansk. Fl. ed. 2. p. 658; Hartig Forstl. Cult. p. 398? Fr. Summa p. 56. H. n. 2. 59. S. longifolia Host p. p.; Wimm. Sal. europ. p. 42. (sed quae sub hoc nomine ex Tilsit mihi benigne misit Dr. Heldenreich specimina ad S. rubram exacte pertinent). E Silesia et Dania specimina vidi. Formae notandae sunt : 1° *glabrescens* : foliis 3-4-pollices longis, medio latioribus, demum utrinque glabratis, adultis subtus sublividis, margine profundius crenatis, ramis adultioribus g'abriusculis. S. acuminata Patze, Elk. et Mey. fl. v. Preuss. p. 135. E Koenigsberg communicavit cl. Patze. — 2° *virescens:* foliis lanceolatis longe acuminatis, grosse crenatis, utrinque demum lucide glabratis. Specimina e Silesia dedit Wimmer. Etiam e Petropoli in herb. Lcdcb. vidi. — 3« *cinerasccns :* foliis 2-3 poll, longis, supra medium latioribus, utrinque cinereo-sericeis, demum supra glabris, margine subintegris, ramulis glabris. Hue etiam pertinet S. cinerea, quam prope Ajagus legerunt et sub n. 1963 divulgaverunt Karelin et Kiriloff.

89. S. OBSCURA, amentis sessilibus tenuibus patentibus bracteis nullis suffultis, squamis acutis atris apice pilosis, capsulis ovato-conicis sessilibus paryis tenuiter puberulis, stylo medioeri, stigmatibus brevissimis integris erectis, foliis anguste lanceolatis planis vel initio marginibus subrevolutis integris vel remote denticulatis supra obscure yiridibus cosla cinerascente subtus opace glaucis vel rufescentibus aut tenuissime puberulis aut glabris, stipulis nullis. 3 In India orientali, ad Sikkim, reg. temp., alt. 9-14,500 ped. (Dr. J. D. Hooker). — Frutex ditTusus, ramis obsolete cinereis glabris, annotini's tomentosis. Folia 2-3 poll, longa, ad medium vix ^ poll, lata, supra costa cinereo-tomentosa percursa, juniora subtus villosa submicantia. Amenta feminea 1-1 ^ P°[11]- l°[n]£[a]> [a]»S[uste] cylindrica. Capsulae vix lineam longae, breve conicae, in stylum sensini attenuate, demum glabrescentes, subtestaceae. Quoad structuram amentorum S. viminali ita affinis ut vix ab ea characteribus ullisdiffert nisi omnibus partibus minor et brevior. Folia autem iis S. longiflorae sat similia, colore opaco subrufescente marginibus aut integris aut remote denticulalis. Differt autem amentis exacte sessilibus. Specimina tantum perpauca examinare licuit, quare mini quod ad affinitatem obscura manet. (v. s.)

90. S. SIKKIMENSIS, amentis sessilibus e gemmis magnis ei-umpentibus basi nudis crassis ovato-ovalibus curvatis fulvo-gnseo-villosis, squamis atrofulvis obovato-cuneatis dorso pilis fulvescentibus sat longe yillosis apice inaequali dentatis, capsulis sessilibus conicis gnseo-tomentosis in stylum piceum ad basin fissum abeuntibus, stigmatibus fuscis subbifidis divaricatis, foliis ovato-lanceolatis supra glabris subtus pilis subcupreo-micantibus dense villosis. *5* In Sikkim Indiae orientals, reg. temp. alt. 9-14,000 ped. (J. D. Hooker). Arbor non alta. Rami crassi castanei, glaucescentes, angulati. Folia (novella tantum vidi) integernma, vix pollice longiora. Amenta (reminea) vix pollice longiora, basi pcruhs magnis opacis atris circumdata, apicem versus angustiora. Cajisulae squamis occultatae, conicolineares. Nectarium basin capsulae attingens. Stylus capsulae fere longitudine, ad basin usque partitus, ita ut laciniaj subdistantes conspiciantur; stigmata excurvata, angustiora. Characteribus plerisque squamarum et capsularum cum S. Daltoniana, mediante forma crassipili, congruit, sed differt : amentis omnino sessilibus, crassissimis, brevibus et fulvescentibus villosis, basi perulis magnis inclusis. Gemmis et ramorum colore ad S. daphnoidem accedit, sed recedit foliis, capsulis earumque squamis! (v. s.)

91. S. DALTONIANA (Anders. Journ. Linn. Soc. IV, n. 13. p. 49), amentis pedunculatis foliis bracteatis longissimis flexuosis subdensifloris gracilibus, squamis elongato-lingnlatis fulvo-testaceis apice crenatis v. emarginatis capsulas ultra medium tegentibus tenuiter pilosis, capsulis primo sericeis demum subglabris conico-rostratis sessilibus tenuibus, stylo densissimo bipartito fusco stigmatibus filiibrmibus divaricatis integris v. bifidis flexuosis. K>m[s] lanceolatis iategris vel minutissime glanduloso-serrulatis planis supra demum

glabratis subtus cupreo-velutinis — *5* In Sikkim Indiae orient , leg temp alt. 9000 14000 ped (J D Hooker) Aibor hdud cxcelsa, ramis atris glabns, rdmulis parcissiuic pubciulis Joha 1-3 poll longa, ad medium pollice vix latiora, supeine obscure vmdid co^ta venisque paiallelo-arcuatis impressa, subtus cosid subelcvatd Amenta (femined) eiecto patemia, demum 4 6-polh cana, Idxiusculd, acutata, subdensiflnia, peduneulus folns 3 5 cctens duplo minonbus ba^i rotunddtis instructus, squamae apice lation ant sat profunde emaigmatae aut liiaequahtei denticulatae Capsulde fusco rufescentes, e basi conicd in sty)urn sensim attenuate Stylus piceus valde elongatus, usque ad basin fissus sti$_h$mata divancato-intncata I st nulli formae Salicis simihs nisi S enostacbyjp, amenlis longissinns et laxis squamis spathulatis denticulatis, capsulis angustis et stylo longo bipartito peeulians (v s.)

p, *crasstjulis* amenlisciassis elongato ovalibus densiflons breviler pedunculdtis loins parvis suflultis, squamis late obovitis enidrgin itis vel dentatis, capsula sinnii cineieo-pubeiuh, slylo integro mediocn, stigmatibus exeurvalis, folns lanc^{u}olato oblongis subtus lerrugineo tomentosis — In Ind a oiientali Sikkim reg temp alt 9000 14000 ped (Dr J D Hookei) (uni S Diltom iru consult IITC foimi singiikris folns obscure vnulihus, supia {,ldbns, subtus saepius cupreo velutinis, amentis bieviter pc duneulatis, squamis apice multo lationbu-, divisis, capsulis spssilibus sublnrsutis, stylo proaucto Sed differt folns minonbus (1 1J poll longis), amentis mevibus pollicanbus, valdt, densiflons, squdnns obovato lOtundatis fusco-fulvescentibus, stylo subintegio et btigmdtibus vix filifoimibus — Specinnna pauca eaque non pldne evolutd in herb Hookm txamind\i quae n ndijudicair possum, ulrum status sit tantum ju\enilis S Daltonidnae,an forma ad S Sikkimcnsem aperte ti msi tona quae lumen amtntis sessilibus fulvo-hiisutis cl gcmnns maximis slatim dignosoitur (v s)

92. S ERIOPHYLLA (Anders Journ Linn. Soc IV 13 p. 48), amentis breviter pedunculatis treeto-patcntibus mgustc c\ lindncisdensiflons, pedunculo loins parvis ct paucis instructo, squami^1- obovato-rotundatis dense villosis, capsulis icssilibus obtusis tomonto albescente lanatis ^iiiamas supeiantibus, stylo pio jTundc bipartito, stigmatibus bifidis erectiusculis luscis f)lns lanceolatis acutis supia obscure vindibus m rvis impiessis subiugosis subtus vollorc argentco fere corrugatis dcnsissime tomentoso lanatis nervis elevatis stnatis margme undulato-sinuatis, stipuh*-semiovato coidatis acutis 5 In Indiaorienlah Khd sia, leg temp all 4 5000 ped (J D Hookei et Thomson), etiam m collectione Jdcqutmontii Pdnsus vidi sed tantuinspccimma mdnca S p->ilostigma Anders Act Holm 18i0p 4% Fiutex sat altus ieie fdcie S \iujinalis hami foliati lusci, plabn vel novelli tomenlosi Folia exactc lanccolata 2 ¦-4 poll longa, ad medium semipolhccm lata, bievissime petiolatd Sijpulae in ramis vegetis et junionbus subcord itde pctiolum multo supciantes Amenti misc pollicirid angustc cjlindnca, squamae obtusissimc, castanco fulvescenles, longius albo villosau btamini 2 pilosa, anthens parvis aureis Amenta fere 1¡-2-polhcana, subflexuosa. Nectanum porrectum angustuni fapsula vix semibneam longa, obtusissima, stylo iusco, stigm itibus testxctis r st ntei species Sahcum maxime notabilis foliorum longitudine, foima et indumento S vimmalem latifoliam vel etiam S ^mithidnim simulans, dislin$_o$nutui autem amenlis pedunculatis, squamis lotundalis et Cdpsuhs* minutis subglobosis (v s)

93 S EHIOSTACHYA (Wall Cat pi Ind orient, n 3704), amentis longe pedunculatis pelunculo foliato, squamis • bovato rotundatis pilosiusculis, capsulis sessilibus ovato conicis piirnocinereo puboiuhs demum partim glabratis luscopiceis anguldtis, nectano basin cap-oilae attingentt stylo bipartito, stigmatibus mtegris longis, loins lanceolato ellipiicis. acutiusculis integiis ulnnque spaise pilosis subtus vix glaucis *o* In Nepaha ad Gossam Than (Wall) — Anders Act Holn 1850 p 493, Journ Linn Soc IV, 13^ $_p$ 45 Arbor vel frutex altus, rami cinerascentes vel rufescenti glaucesccnles, gUbernmi Stipulae mediocres Folia 2 *l*± poll longa, poll lata basi apieeque subaequahter attenuaU,maigme obsolete serrulataetlpvissimeundulata, supra costacineiascente **ceterum glaberuma fusco vindia, subtus Iparum pallidioia pilis brevibbimis**

ad costam conspersa Amenta feminea li-2-pollicana,patentia, curvata, subdensiflora, pedunculus pubescens folns 4 6 inStructus squamae ful\o cista neae Capsula brevis pnmo sat dense albo-villosa, demum cahescens Jusco picea Stylus clongatus, fusco castaneus, profunde bipartitus, stig uatum facinisB filifoimes Distincta species, ex Indius S 'Daltonianae proxima, a qua tamendiflert amentis brevionbus et crassionbus, capsulis du[lo majonbus basi crasse °vatis folusquo vellere cupiescenti omnino orbatis, subngidis Etiam S daphnoidi qu (lun$_{mo}$do aflmis, sed distinguiiur lmentis longe et foliato pedunculatis, eapsulisque initio saltern albo tomentosis. (v s)

94 S LONGIFLORA (Wall sec specim m Herb Hookei), amentis pedunculatis gracillimis laxe penrlulis densiflous, pedunculo folns pdrvis 2 3 mstructo, squamis Jusco tc^taceis obtusis glabns \cl sparse pubesccritibus capsulis scssihbus uasse o\atis acutis paivis ^labeinmis stylo ieie nullo, stigmatibus partitis ereetis, folns anguste lanceolatis acutis suprd obscure vindibus gla-Lns subtus opace tonientellisintegemmis — 5 In India onentali (Wall) in Sikkim, teg temp alt. %00 ped (J D Hookei) —Anders Jouin Linn soc 1 c p iO Aibusculi 10 pedahs, rimiihs ^libus fusco-nigueantibus, divin catis Foha minora olliptiua subtus glaucescentia, majoia I^{1} 1\ poU longa, vix i p^ll l^^{ta}, subtus iut lomento bieMssimo sublenuf,meo submolhd autoranino denudau opaci glabra Amenta 9 adulta 2-4-polhcdiia, an^ustc cylindiica subtiexuosi, squama3 semilinea longiores Capsula ex ovata et crassa basi bievissime conica, 4» l$_{In}$ longi, lere omnino sossilis, clabia, vi ridi biunnescens Stylus obsoletus, stigmatis lacinns divancatis Ob' fabncam amentoium S eleganti ob loimam loliorum ieie s DaltoniancE bubsimihs a pnundiflert folns lntcgernnns ar^ustc lanctolatis, capsulis cidsse ovalis a posteriori stylo nullo, stignntibus bievibus Folia mterdumsubtus opace inla-brescentia, us S myitilloidis non dissunilia (v s)

95 S THUNBERGIANA (Blume ex bub reg bcrohnensi), amentis sessihbu* ebracteatis eiectis brevibus cylindncis, squamis acutiusculis supeine atro-fuscis albo pilosis cipsulas in\olvcntibus capsulis minutis ovato cunicis albo-villosis sessilibus noctano an^usto elongito basin capsulae superantc, «« tylo longissimo capsuhm fere duplo supei mte lulvo, stigmatibus bievibus integus erectis, folns oblongo elliptius latenbus uctiusculis supra medium paullo lationbus apice brcvissime acunnnato subobliquis margine tenuiter sed sat anguste seirulatis supra obscure vindibus parcissimt pubciulis subius glaucis pihs subldcteis praescrlim in neivis elevatis micanlibus spaise senceis, stipulisparvis —Specimon c Japonia d eel Blume comm in heib Berohnensi descnpsi S. alba Ibunb fl]ap p 2i sec Blume Species valde sin^ulari* charaelenbus jnter S daphnoidein el Smithianam quasi medid, longitudine styli exnnfe ab omnibus diveisa 1 olid us S Scnn$_{n}$^{r}ednd. haud absnnilia, 2 [poll lon^i I poll lata Amenta feminea pollieana, condensata ramis sub adpressi, squdmis atus, pihs albis, et stylis productis fulvis mnum in modum Vdnegata (v s)

96 S KORM-NSIS, amentis scssihbus bicvissimis cylmdnco o\ ibbus densiflor^ patuhs,rhdcbilongiusrulescenti pilosi, squamis ublon^o ovilibus obtusis fusco piceis ghbnusculis subglobos •> dlbo-hirlis s(ssilibus, siylo elon^ato fusco stigmdtibus brevibus bipirtitis, folns elongato laneeolatis basi ittenuatisanice longe cuspulatis lenuibus utiinquc glibenimis subtus opacis subtflauecstcn tibus margine serrulatis — In oia boreali peninsul L Korea (SehliDDenbacb) Singulans species valde dubiae affinitatis Folia 2 2', poll 1 $_{nffa}$ vix$_{Sem}$inol licem longa et fere omnino ut in s fragili dut S JBabjloniea, sed angustiora et tenuion Amenta vix semipolbcem longa, ebraueata, capJulis condensate gnnuhhimibus, pilis setifurmibus hirtis et stylo longo apiculatis quum S. purpuream turn b viminalem simulans Plonbus masculis nicoenitis non adtnbumS puipure<e ducere audeo Aliam etiam ex peninsula Korea vidi speciera Saheis, sed Untum folia Sunt us S puipuiea. similia lanceolata, mtegra, glauce^centia, sed polhcana tantum et basi pilis eonspersa (v s)

97 S MULTIFORMIS (Doll fl v Bad p 50b), amentis breviter pedunculalis erectis cylindncis densiflons flavido-villo^is bracteis paucis suffultis, squamis ftxlvis obtusis longe flavo pilosis, capsulis ovato-conicis tomentosis bessilibus$_{a}$

neclano basin capsulae superante, stylo elongato, stigmatibus hneanbus bi fidis pilos squamarum aequantibus, loins elongato lanceolatis acummatis re mote et repando serrulatis vel integns saltern junionbus subtus tomento molh idpresso raicantibus supra lucitfis, stipuhs ovatis — In Germania me dia, Gallia, Dania et Suecia maxime austrah Culta et sihestns Inter S tnan-dram et S viminalem media *i* pnore (ad quim S Irevirani evidentissimum praebet transitum ita ut hanc formam wx a S undulata distinguas) habet folia supra pure vindia longe acuminata, infra medium laliora, subtus non raro demum glabrata laetius vindia, amenta bricteati laxiora, et squamas fulvas, et a postenore folia subtus saltern adolescentia tomento tenui subargenteo micantia, amenta crassius et densius cyhndnca flavo pilosa, capsulas tomen-tosas sessiles et stylo elongato apiculatas A S undulata id S hippophae-loham formae \anae itaque senem plane contiguam efficiunt, quas hoc modo proposuit ill Wimmer (Sal europ p. 140)

a, *Tretirani* (S Treviram Spr. pug 1 p 61), amentis cylindraceis coae-taneis loins sufiultis, squamis ferrugineis leviter pilosis hngulatis, cap-suhs breviter podicellatis conico-subulatis glabris punctulito scabns aut pubescentibus stylo mediocn stigmatibus subrevolutis, fohis lanceola-tis supra nitidis subtus opace palhde aut pubescenti vindihus ^ In Silesia et Bohemia S hippophufolia Wimm et Grab M *s*\\ 2 363 S hippoph y lejocarpa et S undulata (J lanccolata Koch Syn 64o, Har tig p 44 S undulata Porbcs Sal 13 S tnandra viminalis $_a$ hippo-phaifolia Wimm Denkschr 18i7 p 157 — *1 cones* Forbes Sal H Rei-chenb D Fl. 2062 (ex Wimm) — 7 *xsicc* Wimm Hb Sal 113 115 Coll 249 251 Frutex 4 iOpedahs, ramis virgxtis, ramulis nitidulis, no vellis glabris aut levissime puberulis Stipulae semicoidatae Folia 3-5 poll longa, 5-12 lin lata, saepe minus facile a folns S rubra? disceinun tur, sed hums supra magis mtentia Amenta cylindiacea graciha flo nbus paullulum distantibus Ijpoll longa, 4 hn lata Stamina gemma vel teina, gemma saepe augentur inflantuique, sedsemper stenlia sunt, interdum re augentur quidem sed mox collapsa tabescunt Hujus formae vanetas est ranor germinibus senceo-pubescentibus, amentis longis gracihbus (Hb Sal 113 Coll 249) $_7$Wimm

P *hippophaifoha* (S hippophaifolia ihuill fl pir 514 515 sec Koch), amentis f(mineis cylindraceis coaetaneis in pcdunculo mediocn bncteatis squamis hngulatis fulvis paene pilosis, capsulisbrevitcr pedicdlatis pubes' centi vel subtomentoso-canis parvis ovato conicis, stylo bievissimo, stig-matibus partitis di\ergentibus, folns hnean-lanceolatis attenuato acumi natis margine reflexo serrulatis subtus pube levi canescente fugaci textis ^ Hab circa Pansios, in Hannovena et Bohemia et pi locis culta S virescens torb Sal n 7, Luud arboi 3 1531 S alba hippophaifoha Sei Ess p 84 S tnandia viminalis c polypbylla Wimm Denkschr. 18->3 p. 157 —*txsicc* Fr H N 10 59 Wimm Hb Sal 114 Ser. Exs 44 A praecedente differt quod fiutex omnino humilior et tenuior, folia minora angustiora minus longe acuminata minute quidem sed evi' denter serrulata, novella subtus tenuissime velutino-pubescentia, le\iter cana, amenta paullo tenuiora et brtviora, capsule mmores senceo-canae sunt In folns adultis pubes plerumque evanescit

T, *molliswma* (S mollissima Ehr Beitr 6 101), amentis femineis oblon-gis crassiusculis spissis, squamis ferrugineis dense villosis oblongo obovatis subtomentosis, capsulis sessihbus hirto tomentosis brevibus ovatis, styl) mediocn, stigmatibus longis bipntitis reflexis, folns elon gato 'anceolatis margine subreflexis obsolete serrulatis supra sordide vi-rentibus levissime puberulis subtus tomento tenuissime adpresso lutes-cente tectis — In Germania Gallia Dania et Suecia mend — Willd sp pi 4 p 707, Koch Comment p 28, Synops 647, Reichb Excurs 1035, Gren et Godr fl de fr 3 p 127, Fr Mant 1 62, Summa Veg Scand p 56, Lange Dansk fl ed 3, Loud arboi 3 155, Host t 45, Fl D t 2604, Ehrh Aibor 29, Ser n 59, Kr H n 1 65, Wimm Hb Sal n 116. Coll. n 252 S. vimmalis-vindib Ehrh. Pflanz. Verzeichn.

27. S. puberą Koch apud Boenningh Prodi S hippophaefolia viminahs Wimra in Janresb d. Schles. Ges 1848 p 24 S. amygJahna-vimmalis Wimm Reg Fl. 1848 15. S. tnandra-viminalis-mollissima ibid 1849, p. 39, Denkschr 167, Mcy Hannov p 501

§ 16. *Nivex s. Glaucae.*

Frutices, ramis torulosis divancatis, legionum alpmarum et arcticarum mcolze. Folia vulgo molliter \el opace ullos)-tomentosa Amenta densiflora vulgo lateralia, capsulis sessilihus, sUlo producto vel bifido

A. *Lanat,T_m*

Frutices saepc alti, ramis crassis fustis Folia o\ah-rotundata vel late lanceo lata, subtus leticulaio-nervosa Amenta scsiha subterminalia, squamis apicu atns, capsulis conico-iostiatis \ulgo glabernmis, anthens post anthesin flavis — Chrysanthae Koch Comment, p. 52 _ Chrysanthos Fr Mant 1. p 45

98 S LANATA (L sp pi p. 1446, exel p), ampntis sessilibus terminalibus hirsutissimis crasse cvlindr.es erectis, squamis acutiusculis atns pilis aureis \e\ cinereis Mllosib ; capsulis ex ventneosa basi conico subulatis subcompressis glabeinmis sessuiDus, noctano basin capsulse attini<ente stylo elon Uo tenui, stigmatibuserecfs hhformibus integ/is, folns sùbcoidatoW.bus vel late lanceolatis yilgo Integi.s plus minus lanatis venis subtus piominentibus scrobiculato reticuiatis, sti[)ulis magnis semicordatis glaudul jso-serratis Juxta toirentes et in nemonbus alpium ut in Succva et Norvesn alpestribus in Scotia rarior, in Rossia et Siberia arctica fere tota inter 69½ 73½ lat. — Wahl suec p 658, Fries nov Mant 1 p 47, Koch Comment. p 63, Willd sp pl 4 p 688, Wimm Sal europ p 2, Ledeb fl ross 3 p 616. S lanuginosa Pall fr. ross 2 p 83 S chrysanthos Vahl Fl dan t 1057, Willd sp pl 4 p 704 S caprea Fl D t 245? (aut S caprea sed perstma!) — *Icones* Ledeb icon fl ross t 480 (?), Anders. Sal lapp f 3, Fl dan 1057, Wahlenb fl lapp t 16 f 1, Fl D. 1057,Sil wob t 77 — *Lxsicc* Fr H n 8 S9 «Lst facile pulchernraa Salix in Succia ne dicam in mundo toto»(Wahlbg) Frutex biorgyalis, ramis iamulisque crassi<cinereo-fuscis, cano-villosis Folia typice tomento albo denso utnnque obtecta, nffido conacea, rotundato ovalia, basi subcordata, 2-3 poll longa]J 2 poll lata, subtus piaecipue ^enis suruposorugosa, sipulismagnis Gemmse miximae,atrae, hirsutae Amenta 1 3teiminalia, congesta, 3 4 pol[1] longa, \ poll crassa, mascula pili^ aureis vel in legiombus minus fngidis cinercis squamarum insignia (unde duae formae chrysantha, quce typica, et cinerea quae in regionibus inferioribus fiequentior) Gapsulae 2-3 lineas longae, vindulae vel pallidae. (v v)

a, *latifoha*, folns rotundato-ovalibus coriacoo-ngidis donsissime 1 inatis demum tamen supra interdum glabiescentibus — Vanat 1° *rnajm*, frutex 12-orgyahs, folus basi nunc cordato ovatis nunc attenuatis tomento albido lucido oblectis Haeu in Lipponia subalpina frequentior— 9° *minor*, fiutex humihoi, folns ovali rotundatis vel late lanceolatis saenms sordide tomentosis In Scotia, in Lapponiae alpibus summis frutex exstat humillimus depressus, ramis ultimis supra terram arrectis frlnsparvis et minutis nunL dense lanatis nunc fere ghbiatis et perpaucis subelongatis in^tructis haec ad S vagantem amentis transitum præbet 5t forsan S. n 361. t 8 fig. f. in Linn fl. lapp s depressa L Suec. n. 899.

3? *angushfolia*, folns plus minus lanccohtis tenuionbus plerumquc cineicolanatis interdum glabratis et subinde glanduloso berratis amentis \\i\aocinereo pilosis,. Haec ad S Haitmannianam, quoe a s! lamta cum S hastata proueata, aperte transitus

9. S RICHVRDSONII (Hook. Fl bneal amer 2. p. 147 t. 182), amenti* sessilibus teimmahbus villosis erectis crasse cylmdriois obtusis. squamis atns acutiusculis pilis argenteis sat longis villosis, capsulis cornco-rostratis glabns vel minutissnne cinereo puberulis sessilibus, st\lo elongato rufescente, stigma-

tibus bievibus bipartitis divancatis folns glabns lanceolatis phni* utnnque vindibu* nervis parallelis hneatis subtus pillidionbus s ghucis integris v margine subrevoluto dense at minute glanduligens, stipulis anguste lanceola Us dcutis 5 *[11] Ameiica septen'nonali piope Fort I rankhn et Mackenzie river (Richardson) S lanata amcnciria Anders Ofwers Wet Ak. Forh 1858 p lln Prutex parvus, lamis undiquo div ricatis enssis torulosis griscotomentosis habitu oninino S lanatae minoiis fjabrcscentis, a qua tamen diffeit stitura humihon, folns [1] \\ poll lonpis, ad medium 3-9 lm latis, omnino plims nee nervis ullis magis ele\atis scrobicnlatis glabemmis, sub nitichs I tiam ex ea forma (a S hastita et b lanata hybuda[9]), quam sub nomine S Harmanniana proposui, distmguitur folns glabns planisque, amentis brevionbus et ciassioiibus acutiusculis teimmahbus, capsuhs omnino sessihbus stylo valde elongato et tenui! Lst tamen procul dubio S lanatae forma analoga imencana cu|iis ex Lapponn \e\ Sibirn nulla& formas folns am argustis, glabns et glauccsccntibus praeditas vidi (v s)

a *latifoha* folns ovali-ellipticis, margiijo fere omnino integris

p, *angusttfolia* folns anguste lanceolalis margine plerumquc anguste glanduh$_c$eris

100 S BARRATTHNA (Hook fl boreil amenc 2 p 146 t 187) amentis teimmilibus et lat lalibus magnis villosis cnssissimis erecto-patulis nudis, squamis atns obtusiusculis longe all)o pilosis, capsuhs magnis conico-rostiatis cano senteis denum pillidionbus subnudis sessihbus vel pedicello minimo n»»ctanum vix superante subpedicellitis shlo elongato fulvo, sligmatibus bipartitis divnricalis luhis, loins ovih oblon^is acu|iuscuhs basi cordatib tenu ssime glanduloso-serrat s pnmo iitrinque argpnteo pilo^{c}is demum saltern supra ghbns \induhs stipulis saepp nmgnis semi o\atis ^ Prope Port Franklin Ameiicafsubaicticae (Richardson, Douglas) S lanataBarrattiana Anders Sal boreal Amer 1 c p 119 Irutex non altus ramis divaricatis torulosis \ahdis glabnusculis vel tomento albo ^ obscuie biunneoobductis I«olia 2 3 poll longa, ^ ^{L} poll lata Amenti ciassissima, 2'-pollicana, mascuh femineis bre\ior i, pihs squamarum fulvis subaurea Estprimo inter S lanitam (f S Ldpponum, quales in Europa nascuntui, evidentissimc media easq e indubie connectens A S lanata etS Richudsonn differt autem ca suhs senceis ct folns, a S Lapponum amentis valde trissis subtermina libus capsuhs conico elongatis folns glanduloso senalis Affinitatem quan- (1 un cum S cordata certissime habet, et ob id nostrae Hartmannianae analoga (v s in h Hook)

a, *latifohaj* folns o\ahbus basi distincte cordatis supra glabrescentibus vindibus

p$_t$ *angustiloha* folns lanceolatis utrinque icutatis basi obsolete cordatis margine vix glandulosis utnnque molliter albo-senceis

101 S HookaRTANA (Barratt in Hook Fl bor-amer 2 p 145 t 180), amentib sessihbi s iolns A el bracteis paucis sufTultis crasse cyhndncis densiflonse ectib hirsatissimis squimis fuse -atns apice rotundatis longe et densi^sim lanatis capsuhs coincis glabernmis longe rosliatis pedicellatis, podicello breu necldimm vix bis su[Liante, styb pioducto pehccllo longion rufpscente sti$_n$matibus Iineinbus integris erectis, foil s late obo\atis p c rotundatis ngiJiu^culis undulaLis \e\ remote subserralis supia obscure vindibus demum glabiatis subtus tomentoso-lanatis, stipulis late seminal is ^ In Amenca soptontnonah prope catai ictns magnas fluvn Saskitclnwin (Dou$_n$'h) —Anders Ofveis Wet Akad I ^ i«$_{)8\ p}$ ^q F$_{rute}$x non iltus, sed lobustus, ramis cia^sis otscure tomentosis 1 olia 2-2 \ poll longa, 1 1 i poll 1 it i, forma et indumento us S Capieae sat similia, supra ob cuie vindia, costa tantum albo tomentosa, suhtus molhter tomentosa, pctiolus] *2* lin lon^us, gnseo tomentosus Amonti mascuh I 2-pollicana squamirum pihs senc(O flnicantia amenti femin a lon^iora sed angustiora, squamis gnseo pilosis cipsuhs obscure Mridibus, exsiccatione rufescentibus, lin^im longis — (um S cordata congruit capsularum forma et colore, ceterum b lanatim, S Capream vel S hastatam e nostratis habitu et characte-

nbus simul ie\ocans. rson paium cum S Barclay 1 et S. adenophylla habe commune, species altamen bene distincta (v. s. in h. Hook).

X S HARTMANMANv, amentis plerumque laterahbus (subterminahbus) anguste cyhndncis densillons erecto patulis basi nudmsculis, squamis pilis cmereis barfcatis, capsuhs conico subulatis glibemmis breviter pediccllalis, pedicello nectanum \ix duplo superante, stylo productc, stigmatihus bifidis cruciatim dnancatis, folns basi et apicc plerumque aequahtcr attenuatis late lanceolatis Milgo integris glabns *y>e*\ hn^utis reticulato \enulosis stipuhs saepius magms acutis serratis In alpibus Sueciae boreahs, ut in Jemtlandia Lapponia Lulensi et Tornensi, etc haud frequens S lanata-depohta Wahlenbc fl suec n 650 et Fr. Mant 1 p 47 p p. S subhastata Laest mscpt Anders" Sal lapp p 21 — Haec forma inter S. lanatam et hastitam, quarum in societate cie^cit, exacte media et ab us hybnda, sub duabus potissimum occurrit formis

a, *sublanata,* folns lationbus subintcgns, pilis rans husutis, amentis praecocibus ciassioiibus subinde nonnulhs terminalibus.

j3, *subhastata,* loins angustionbus basi apiceque attenuatis subsenatis utnnque saltern domum glabratis supra saturate siibtus pilluiius vinchbus vel glaucescentibus, ament.s sempei infra apicem ramuh laterahbus magis serotims demum fohis paivis suffultis - Utraque forma amen a b lanatd differt capsuhs bieve pedicellatis, shlo bievion, stigmatibus bifidis (amentis laleialibus), el a S hastata amentis nudis, crassis long,us cineieo-pilosis, capsu is ^at btevc pedicell itis, stylo tenui loncion, fohis majonbus, minus ngulis, sub.ntegns, grossius ncnosh (\. !)

B *Vdlosx.*

Frutices mediocres, ramis tenuionbus. Folia linceolata, mlegra nems et < osta subtus ele\atis hneata. Amenta sessiha, squamis apice atns, aiithens post antbesin fhMS, capsuhs conicis, tomentosis. — Fngidae Koch Comment p. 53 (cum pi. ahis)

102 S. SPECIOSA (Hook et Am. Bot, of Beechey Voy. p. 130), amentis sublateialibus omnino sessihbus vix bracteitis crasse cylnidiicis valde elongate sub-Hcxuosis densissime argenteo \illosis, squamis acutiuscuhs apice nigns pihs (apsuhs superantibu^ fldMLinlibus hiisutis, capsuhs ovato acuminatis sessilibus lanato-senccis, st^lo longiv>imo, stip:malibus erpctis hneanbus saepissime mtegris, fohis oblon^o lanceolatis vel fere obo\itis acuminatis mtegernmis supra obscure undibus sublus petiohsque velleie densissfme ccqudli niveo-tomentosis, stipuhs persistentiba** hneai 1 lanceolatis i>uhuUtis\e membruiaceis pet olo lonpoiibus, ramis lmatis *$* In America arclica occidentah pi jecipue ad htora mans glacially usque ad I'ear lake — Hook fl bor amcr' *2* p 145, Seem Bot Voy Herald p 40 t 10, Anders Ofvers af Wet* Ak Forh 1858 p 119 Frutex elatus, ramis Vcihdi«, densissime fl-uescentilanatis Foln adulta *i-k* poll longi, 1 1] poll. lata, aut e basi anffustata supia medium ldtiora inde b^e^e acummata (ut in S icummata v cinerea majon) aut e bisi lition et subrotundata sensira ot lonfrissimc attenu itn Inn ceolata (feie ut in s Smillnana), subtus tomerlo densisMmo Lomnjotn niwa" Amonla mascul 11 I ^ poll longa, eximic fl nescenti villosa. staminilm^V, vPIS feminea *1 b* polhcana imps ar^enteo villosa, capsuhs]j]in 1^ Jv\d ilivo Notis certis diffi lllirae a S Lapponum distingmtur sed hahTtn valde iliena, omnibus p .rlibus cst vegetioi et lobustior, foha vellere densissime compute obtecta, ita ut ncivi m consp.cm, amenta pih, squamaruin Iongissimis eximie villosa, stilus magis productus fihformis (vs.)

3, *Alaxensn,* fohis plains longius acumimtis et basi longms angustatis subtus navo-toLneiitosis supia obscuie jmdibus d> iiervos anastomosantes lanatos pulchie albo-aieoldtis — In AUxa Amenta occidentah-boreahs (KosUlsky)

Y, *Ajancnsis,* ampntis m ramuhs brevibus subterminahbus mollite** flavopilosis nonnihil angustionbus, fohis obovato-spathulatis apiculo brevi

oblique terminate —Prope Ajan Asiae boreah-oiientalis Rossicae (lilinR) Ab ill Regel cum S Lapponum conjuncta, S speciosae vero ut forma analoga certi^sime as^ocianda, folns magis obo\atis et amentis angustionbus bubtermmalibus ab ea parum remota

§7 *Trautiettermna,* amentis sessilibus, vix bracteis suffultis erectis elon gato cjlindncis basi ranflons squamis fuscis obtusiuscuhs alb8-villo sis capsuns crasse conicis albo-lanatis brevissime pedicellatis stylo nullo stigmatibus brevibus fuscis partitis excunatis folns lin_niilitm basi longe attenuatis apicem versus lationbus obtu«iuscuhs suprd \in-dibus glabns subtus lomento denso argenteo obtectis plains maigine integns In lapidosis humidis subalpinis reg baicalensis (lurcz herb) S. Gmeliniana Turcz Exsicc S Lapponum p p Jurcz Cat. baical Dah 1 c p 387 S. Baicalensis Turcz Exsicc S limosa p p Trautv in sched. Est sine ullo dubio S speciosae maxime affinis sed ab ea notis allatis lecadens Frufex mediocns videtur ramis ^alldlusculls fusco-castaneis, glabns Folia 2 poll longa, supra medium ux aemipollicem lata, subtus tomento argenteo adpresso micantia' Amenta fere bipollicana 3 hn crassa Capsulae parvae, breMssime sed evidenter pedicellatae ct stylo nullo praeditae Habitu S. Helvetica etiam simihs ab ea facile rece dit ameutis nudis (v s)

e, *chrysea,* amenlis multo angustionbus magisque ranfiVis subpatuhs maspuhs eleganter rhryseis, feminois polhce brevionbus, capsulis brevio nbus sed in stylum attenuato-rostratis, stigmatibus longionbus divan catis, folns tomen o aureo lucido decso obtectis — In Sibina, ad'h kutzk (StubendorfT)

103. S. LAPPONUM (Linn, sp pi 1447), amentis sessilibus fructifens subpedun culatis basi bractedlisdensiflons crasse cylindncis squamis acutis nigns, pilis capaulis brevionbus hirsutis, capsulis conicis tomentosis sessilibus, nectano basin capsulae attingente, stylo elongato fulvo, stigmatibus hneanbus bifidis, folns elongatis elhpticisve acuminatis margine subrevoluto integerrimis vel obscure sinuato-serrulatis supra obscure vindibus floccoso-vel senceo-villosis rugosis subtus vellere albo dense tomentosis venis parallehs subrectis elevatis, stipulis obsoletis 5 Locis paludosis et hunrdis in Lurop<e facile totius alpibus (maxime mendionalibus Hispanide Italiae et GrcEcidD exceptis nee in Pyreneis obvenit), in Transilvinid, provincns medns et septentnonahbus Rossiae, nee in Sibirid (conf ad praeced), vixque in America arctica occumt species haecce — Fr Mant 1 p 59, Koch Comment p ^4, Sjnons ed *\l p 757, Anders Sal lapp p 22 Ledeb fl ross *1* p 617, Gren ct Godr fl -fr 3 130 p p , Hartig Forstl Cult p 388, Trautv M6m de la soc de Moscou 8 p 288, Wimm Sal euiop p 38 S arenana Willd ^p. pi 4 p 689, Ledeb fl alt 4 278, Hook et Am Bot of Becchey Voy. p 120 Trautv 1 c p 287, Sm E Fl 4 p 204 S limosa Wahlenbg fl lapp p. 265' suec n 1124 S nitens Gilib Exerc phytol p 408 S lacteaBiay Denksch d. Regensb bot Gesellsch 2 43 S lcucophjlla Willd Bed Bdumz, Bessei Enum p 77 S Huartiana Smith L Fl 4 p 203 S glauca Sm E B t 1810 S gliucophylla Bess Enum n 12>l S Su Jetici Host Sal p 28 —*Icones*-Wahlenbg fl ldpp t 16 f. 4 Anders 1 c f 4 Reichb t 121b Hartig 1 c t. 108 (35) Sal Wob t 69-70, 72 73 L B 1809 2586 Hort Wob 93 (S subilpina Schi) — *Exsicc* Fr H N 7 >8 Jrutex elegantissimus ramis torulosis fusco nitentibus castdneo-testaceis, junionbus cinereo tomentosis Folia lypice 2 *i* poll longa, medio vix pollicem lata, utnnque fere scqudliter attenuata, margine Integra saltern parte supenore subrevoluti, costa crassa fulvescente, nervis supra impiessis subtus elevdtis re_b'ulanter hnedta, rigidi Amenta e gemmis magnis castaneis, mascula pulchre aurea, feminea cmcrascentia, 1 2-pollicdna, capsule lineam excedentes Fohorum forma eximie vanat quum magrntudine et forma turn indumento i<xstant format perpusilla folns ovali rotundatis vel hnean lanceolatis (S gmphdlioidcs Schl), utnnque vellere densissimo tomentosis (S marrubufolia Tausch) \el denudatis et \mdibus (S Daphneold Tausch) *cd semper sordidis In Scotia folns bre-Monbus magis acutis, supra obscure et opace cinereis, subtus lineato tomentosis insignis In Rossiae mediae (Livoniae, Curoniae) paludibus fngidis bdepius

glaucescit. In Sibiiise alpibus tomento multo densiori folia rigidiora et alba habet. In sudetis et montibus Silesiae saepius glabrescit et, cum S. Silesiaca immixta, habitum hujus speciei obtinet. (v. v.)

3, *Helvetica* (S. Helvetica Vill. Hist. d. plantes d. Dauph. 3. p. 785), amentis breve pedunculatis foliis parvis suffultis, o cylindraceis elongatis subflexuosis, c? brevibus antheris subroseis, squamis ovatis acutiusculis stramineo-fulvis sursum nigricantibus sericeo-villosis, capsulis subsessilibus conicis obtusiusculis albo-lanatis, stylo mediocri aut longo apice producto, stigmatibus bifidis, foliis cllipticis supra nitidulis subtus incano-tomentosis niveis.— S. Helvetica Hegetschw. Fl. d. Schweitz n. 2846; Gaud. fl. helv. 2. ed. 6. 267; DC. fl. fr. 3. 291. 343; Wimm. Sal. europ. p. 89. S. arenaria (Helvetica) Willd. sp. pi. 4. 692. S. Lapponum Kocb Synops. ed. 2. p- 658; Gren. et Godr. fl. p. 3. 139. p. p.; Bertol. fl. ital. 10. p. 323. S. nivea Seringe Ess. p. 51, Saules n. 67-69. S. tomentosa Host Sal. p. 28. f. t. 93. — *Exsiccala:* Reichb. n. 1628. 1630. 2520; Ser. Saules n. 67, 68; Wimm. Coll. Sal. n. 98; Kern. Sal. austr. n. 80-81. Hab. in alpibus Helvetiae imprimis meridionalis et Delphinatus, etiam in alp. Tirolens. (ex Wimm.) — Est ita S. Lapponum et S. glauca intermedia forma ut nunc huic nunc illi speciei synonyma dicta sit. Cum S. glauca communia habet : amenta foliis paucis parvisque suffulta 9 laxiuscula, squamas pallidiores fulvescentes tantum apice fusciores, capsulas molliter albo-lanatas stylo vulgo subbifido fulvescente apiculatas, sed adhuc magis cum S. Lapponum congruit ramis torulosis testaceis vel rufescentibus, foliis elongatis basi angustatis, novellis e pube inaequabili subaraneiformi leviter canescentibus, quod intcgumentum in adultioribus nonnunquam manet, subtus semper lana subfarinacea aequabili tomentosa lutescenti-nivea obtectis, venis curvulis parallelis in tomento delitescentibus. — Est irutex humilior alpibus Europa3 centralibus pecularis et in iis ad veram S Lapponum se habens ut S. grandifolia ad S. Silesiacam, ut S. sericea Helvetia;, S. pyrenaica Pyrenaiorum et S. villosa Americas arcticaj ad S glaucam Lapponiae, vel ut S. speciosa Trautvetteriana in montibus Altaicis vel S. speciosa in America arctica ad S. Lapponum, itaque ut forma parallela nunc seorsim describenda, nullo modo autem onginfi diversa. (v. v.) « . , . , »

104 S. BOGANIDENSIS (Trautv. in Midd. Reise 1. 2. Bot. p. 154), amentisses-silibus° ebracteatis densifloris rectis patuhs brevibus, squamis nigns Ss dense ctlonge albo-villosis, capsulis ovato-conicis senceis sessilftus Sctorio Sn c a^X tegente, stylo clongato, stigmatibus, bwbu, bifidis, foliis lanceolatts itrinque attenuatis, apice longe acummatis medio tenuis-S irrulatis supra irlabris subtus opace vinduhs pilis rans conspersis, !*IZihs* angustis. *Zn* Sibiria arctica ad fl. Boganida (Middendorf). - Trautv. I. c. tab. 2, 3; Ledeb. fl. ross. «. p. 616. Frutex humilis, ramis castaneis glabeiTimis, novellis pubescentibus. Folia 2-2^ poll, longa, fere semipollicem lata, basi apiceque acutata. Amenta feminea .luniora dense albo-villosa, demum µollicaria, densiflora. Capsulse tenuiter pubescentes, testacea?, lineam lone*. acutiusculifi. Forma dubia? affinitatis aut S. Lapponum aut S. Songarica! magis affinis. A S. Lapponum differt folns medio acute serrulatis, utrinque glabris, angustis, longe acuminato-cuspidatis, stigmatibus bifidis; *;i* s. Songarica foliis yix glaucescentibus, stylo valde elongato. Ob pilos in tbliorum pagina inferiori visos argenteos quasi S. viminali affinis ; sed vix in regionibus tam arcticis crescunt forma? ad nunc typum pertinentes. Folia etiam plana, colore flavicantia, denudata, angusta. Amenta brevissima. (v. s. in h. petr.)

105 S. CANDIDA (Flugge sec. Willd. sp. pi. *h.* p. 708), amentis sessilibus demum foliis minutis suffultis erectis subgracilibus, squamis fulvis apice fuscioribus spathulato-obovatis piiis albis hirsutis, capsulis breve conicis dense albo-lanatis pedicellatis, pedicello nectarium elongatum fuscum saltern duplo superante, stylo elongato picco, stigmatibus fuscis brevibus emarginatis ilivaricatis, foliis lanceolatis vel lineari-lanceolatis rigidiusculis acutis apice obsolete crenulatis supra ramulisque floccoso-subtus densissime niveo-tomenlosis marline tenui revoluto, stipulis ovato-lanceolatis deciduis. .5 In Ame„

nca boreah onentah sylvatica usque ad re$_0$[r]iones vere septentnonales — Pursh Am. 2 p 608, Richards Append p 37, Hook ft bor-Amer *2* p M4, Torrey fl New York 2 p 204 t 117, Carey in Asa Giay Man ed 2 p 413, Sdlict Wob t 91 S mcana Michx M Amer 2 p 225 s tomentosa sdirad herb S nivea Sm herb Frutex 4-6|edalis, ramis rjfescent bus mitio saltern niveo tomentosis Folia 3-4 poll longd, J poll lata, basi subiotundata, apice brevitcr producta, margine revoluto Integra vel obsolete, sinuala, costa «upra sulcata subtus lutea elevata. Amenta pollicaria, mascula longius villosa, ob fihmenta flava et antheras mgncantes discolora femmea cxacte cylindnca, capsulis \ix lineam longis — kst species vere amencana ex europ«fiis forma et indumento fohoium S incance subsimilis Exstant foimae S humiltm folns subtus m<anis non male simulantcs, qua tamen amentis, evidenter retedunt Specimen in herb Lenormandi vidimus amentis 9 fohato pedunculalis, capsulis longius pedicellatis, stylo brevion et folns supraulabrissuhtus molliter lacteo tomentosis insane, numaS mean i et S. pedicelldii hybnda[9] (v s et c)

a, *tvmentosa,* folns supra ^alde rugulosis ibique floccoso tomentosis subtus tomento intenso niveo lacteis

P, *denudata,* folns supra glabrescentibus subaequahbus subtus tomento ranon vel obsoleto fere vircscentibus vel etiam glaucescentibus

106 S LiESTADiAN v (Hirtm Skand 11 ed J p 237), amentis sessihbus bracteis paucis vel nullis sufTultis densiflons elongatis crassiusculis, squamis apice dtns gnseo pilosis, cnpsulis comco rostritis acuiiusculis albo villosis pedicel atis, pedicclIo nectdrium bis terve superante, stjlo elongato, stigmatibus bifidis Acinus lineanbus divaiicatis, lolus laiiceolatis vel obovato oblongis supnplus minus pilosis subtus gnseo tomentosis secus neivos molliter sub lanatis marginc crenulatis, stipulis pan is *5* In legionibus httorahbus Sueua* septentiiOiiilis (in Norvejiae Saltalem sec Fiies) et in Lapponia mlenori svlvatici U subalpina haud infrequens S canescens Fi Nov Mant 1 p 58, Bot Not 18'iO p 183, Suinma Ve$_h$' Sc p 5G, Anders. Sal lapp p 28 f 5 S limosa cmerascens? Wahlenb fl suec p 663 — Arborea vel frulescens, ramis glabns, novellis albo hirsutis, iolus et amentis quum habitu turn charactenbus inter S Lanponum ct S C/ipreas intermedia vel ut jam autumavit Laestadius, ab us hybrida, his formis praecipue ludens

% *cancscens,* folns elongato lanceolatis fere obovato spithulatis mitio mol-'liter tomentosis, demum supra glabntis subtus in co^ta \enisque saltern tomento is, amentis crasse cylmdncis, capsulis majusculis s ciprea-lapponum (Last) Wimm Sal europ p 192 — Vanat 1° *subcamea* folns 2-3 poll longis supra medium J poll latis supra plants Idete \indibus subtus molliter canescentibus nervoso lineatis, maigine opace crenu latis, capsulis lastius albo villosis, squamis basi fcrruginus Hab m Lap ponia Pitensi et loniensi pi locis — 2° *sublapponum,* fohis 1 J 2J poll longis supra medium J J poll latis utnnoue attenuatis longius acuminatis supra obsruie \nidibus ner\is impressis subtus adpiesse tomen tosis opace unereis HPC interdum folns lanceolato-hneanbus vix \ poll latis, gnseis — In Lipponia lornensi, S Lipponum valde simihs (v v)

p, *opaca* amentis brevionbus, folns obovato-oblongis brcvius acuminatis supra opacM — Vanat 1° *subemerea,* folns supra medium evidentius la tionbu^, mtle acuminatis supra planis subtus gnseo-tomentosis S. emeieo limosa LcLst S canescens Ldpstadiana Fr Bot Not S cmeiea Lapponum Wimm Sal europ p 193 Hab prope urhem Pitea Suecia? septentnonalis — 2° *subaunta,* fol obovatisbasimagis attenuatis apice brevius acuminatis supra punus viridihus nervis impressis rugosis, sub tus palhdionbus S lapponum aunta Wimm Denkschr 185* p 166, sal europ. p 194, Coll Sal p 220 2206 Han m Norrlandia suecicL pi locis, in Helvetia (Thomas, Hb wmdob) et m Sudetis (Siegertex Wimm) Haec certe a typica S Laistadiana valde recedit folns multo minonbus subtus rugosis glaucescentibus, amentis brevibus anguste cylindiaceis densiflons, sed formis innumeris intermediis inter se conoexa3 videntui, quare hanc non separare vellem E Lapponia Umensi specimina \ldi a

Dr Angstrom nnssa qua? aut ad hanc formam aut id hjbudam e s Lapponum et s nigncante procreatam pertinent Cum hac congruunt amenus scssilibus folio uno alterove minimo sutlultis capsuhs. subsessilibus vel breviter pe Jicellatis tomentosis conico subulatis stylo pioducto flavo, sed cum ilia (vel cum s capita) folus ovali obovatis bisi subiotun ditis ap cc breviter acurainatis supra lucidis onspicue nervosis, subtus pirce tomcntosis, costa nevisque dilutionous elevatis eisiccatione nigio maculatis (v v)

X S TAUSCHIANA (Sieb Cat 1821 sec Wimm), amentis scssilibus fere ebracteatis elongato cyhndncis subdensifl)ns basi laxiflons erecto curvatis eras siusculis obtusis squamis oblongo obovatis obtusis lusco ferrugin is pnmo villoso barbatis demum villo obliterato subnudis, capsulis cornco lanceolatis cano tomentosis (vel glabris) pedicellitis, pedicello nectanum bis quidruplove supeiantc si>lo fuho stigmmbus filiformibus luteis bifidis, folus o\ah vel oblongo ellij ticis sub apice litioubus bieviter oblique acuminalis pubciuhs subtus cancscentibus nwgine reflexo interns vems lectis subp rallclis ole vans auturono •aepe denudatis vmdi rufescentibus — b. bilesiaca Lipponum Wimm *1 1849 p 44, Sal europ p 195 S Lapponum Silesiaca Wimm. Donkschr 18)3 p 16' Hb Sal i31-U3, Coll 214 219 t> torrentusi, b mullio'landulusa s sphenogym S sphenocarpa Seiythrophleba et S al lpila fausch exs (teste vvimm) bub dupl CL occunit forma 1 *sublapponum* amentis crassiuscuhs tere bipolhcinbus, capsulis ovato-conicis clongatis ciassiusculis incano tomentosis (basi nudiuscuhs) pedicello nectanum bis terve supprmte breviter pedicellatis stylo mediocn shgmatibus obscunonbus squama acutiuscuUs brevius villosis folus longius petiolitis basi subiotundatis 3 4 pollicanbus supra medium polh e lationbus subtus m\eo tomentosis nervis et costa fulva prominentibus Fst b lapponum habitu similis, sed diflert capsulis pedicellalis, stylo multo brtvion, etc — 2° *suhsilcsiaca* capsulis brevionbus, basi crassiuscuhs, omnmo glabernmis obscuie wndihus ppdicello nectanum quadruplo superante pedicellatis stylo nedicello apquifongo rostratis fulvescente, stigmatibus fere dilutionbus folus brevionbus subdenudatis Vix a S Silesiaca d ffoit nisi stylo valde elongato et foliorum neivis elevatis lineatis mcanis, consistentia densionbus — In alpibus Silesi«E hie mde pissim parentibus immixtd tormit, certis itavaga inter S Silesiacim et S Lapponum mteimedia, ut ab us certe proles hybnda sit enata (v v)

XX S HLTERi(Kern Oestr bot Zeitschr 1866 p 370) amentis fetnineis cylindraceis densiflons pedunculatis pedunculo loins integiis seiiceis 3 4 obsito, squamis spathulatis acutiuscuhs tulvis ap cem versus fenugineis pihs rectis longissimis dense villosis, capsulis conicis tomento brevi opaco albido demque rarescente et cancscente vestitis pedicellatis stylo mediocn crasse purpurISccnte, stigmatibus bifidis erecto patuhs, folns ellipticis v obovit s basi cu neatis breviter aculis margine remote crcnato serntis basin versus mtegei nmis adolescentia canescentibus adultis supra glabrescentibus saturate sed pure viiidibus et nitiduhs subtus cano-virentibus tenue et molhter tomen toss, stipuhs rariasimis J [In] consortio parentum in salicetis alpinib vallis tnolensis Selraen (6000 p) specimina amentifera ad ruulum alpinum prope Kals (Pustherthil) cuca 7000 p legit cl Hute- b b istata x helvetica ex Kern Frutex ad 2 ped altus lamosus, ramuhs cano pubescentibus adultis glabratis cortice fusco castaneo obteclis Folia 30 >0 hn ^5 2o hn De ongine hujus stir pis nulla manet dubitauo Certe e bahce haJRia et b Lapponum Helvetica connubio oita est Habitus inter paientes optime medius folia late margine crenato serrata, supra parce vindia, S hastatam simulant et indicant, vestitus fohomm autem et germina tomentosa onginem ex S Lap ponum Helvetica osleudunt (v s)

X X X S ^PLRIA (Willd e Schlcich Herb et Txsicc), amentis bieMter pedun culatis folns paucis suffuUis erectis densiflons cjhndncis squamis fulvis aj ice fuscionbus acutiuscuhs pilosis, capsulis conicis attenuate guseo-tomentosis se^ihbus stylo elongato flavo, stigmatibus brevibus bifidis, folus lanceolatis basi angustatis apice acutiuscuhs supra glabernmis viiidibus subtus pnmo senceis demum denudato-opacis costa flava percursis margine plus minus

acute senatis In Hehetiaet Tiroli. — Hegetschw n 248, Kernel Heib Sal n 83 S nivea F sufconcolor Ser Lss p 54 S Helvetica £ spuna Gaud Helv 6 P 26Q S Lapponum aibuscula Wimm 1863 p 163, Sal europ p 264 S hehetica myrsinites Kein. 1 c Omnibus b Lapponum ita similis, et vix ab ea. ullo modo dislinguenda sit, nisi amentis brevionbus et compac - tionbus, folns paucis suffultis, sed praecipue rolns multo dunonbus, magis glabratiset margine sajpe aut argute seiratis S mjrsirntidem revocat folns ugidiusculis venis ele\ itis reticulatis sub tomento lucidis, stylo capsularum subviolacco, mihi autem a S arbuscula ongincm hdbcie potius \idetur « Alia foi ma Herb Willd n 18253, quam bchleichei S th \mela3oides inscrip sit, a S arbuscula et glauca descendere vidctur, quod hoc loco monuisse satis est, quoniam e speciminibus praepositis ies nondum satis constat » Wimmer Sal europ p 265 Quantum ex speciminibus qu<e udi hanc foimam vix a typica S arbuscuia distmguere valeo (v v)

C *Seticex*

Frutices s^pe humiles, legiones alpinas summas et arcticas amantes. Folia elliptico-lanceolata, mollia, Integra Amenta foliato-pedunculata squamis fulvis vel apice obscunonbus, anthens pnmo rufis demum fuscis, capsulis ovah-oblongis senceo-lanatis, st)lo luteo vulgo bifido

107 S GLAUCA (L sp 1446), amentis foliato-pedunculatis cylindncis crassius-cuhs subdensiflons squamis acutiusculis vel obtusis fulvis dp ice fusuonbus longe albo-villosis, capsulis ovato lanceolatis obtusiuscuhs dense m\eo tomen-tosis vix vel breviter pedicellatis, pedicello nectanum subaequantp, stylo pro-ducto saepissime bifido, atigmatum lacinns divaricatis, folns elhptico-Ianccо-ceolatis saepius utnnque seuceo-villosis subtus obsolete glducescentibus areolato venulosis integiis ^ Locis ulgmosis m alpium campis et in conval-libus alpium etsummo septtntnone Amenca3,?ibinae et Lapponiae arcticae per regiones omnes bo real es et alpinas, demque in Alpibus Helvetia? ct Galliae adjacentis — Wahleab suec n 1123, Fi Mant 1, p 44, Summa p 57, Koch Comment p V), Synops ed 2 p 757, Hartig toistl Culturpfl p 388, Gaud helv 6 t 272, Gien et Godr fl fr 140, Bertol fl it 10 p 325, Willk Lgc fl hisp p 231, Ledeb fl ross 3 p 618, Hook et Am Bot of Beechey Voy p. 129, Middendoif Reise 1, p 26, Rupr Fl Samojed p 53 RinkGroenl p 122, Anders Sal bor Amcnc \a — *Icones* Wahlbg fl lapp 264 t 16 f 3, Fl Dan 1056, 1058, Andeis Sal lapp f 21, Reichb f 1214 Sal Wob t 68, 74, 93 — *Exucc hr* Hb n 3 >2 Reichb n 2014-5• Kern Hb sal n 84 Bill n 1961 fcrutex statura et partium fere omnium forma eximie vanabilis, typice diffusus et ramo&us, ramis rufo fustis mtidis Folia biuneialia semipollicem lala, utrinque sed subtus densius pihs longis molliter sencea, nervis arcuatis in maiginem intogeinmum subundulatum excurrentibus, sa^pe exsiccatione nigriLantia Amenta scrotina ramulos breves foluferos terminantia, masculao\dh cylindnci, anth(ns pnmo pulchie ru'escentibus, demum fuscis, ieminea basi subabrupta, capsulis lineanbus pulchre et dense villosis In convallibus et sylvjs subalpin s hutex condit plu-> quam orgyalis, in campis alpium eximie depressus et exiguus, pollices tan turn paucos altus (\ v)

a *sencca* folns pihs argenteis plus minus dense conspersis exsiccatione etiam ^UuA-nneis nee nigiicintibus consistentia dension suhngidis v moll bus Variat 1° *grandifolw* folns ldtissime ovah ovatis sa3pe sti pulatis S lanatam quodammodosimulatpraecipuefoima Joins ngidionbus — 2° *oiahfoha* folus o\ah rotundatis vel ovato-o\alibus 1 2 poll longis, mterdum stipulatis —] *lanceolata* typica, folns plus minus elliptiu)-lanceolatis S sencca Vill Delph 3 p 782 t 14 f 27, Willd sp pi 4, p 088, Ser. Exsicc n 58 — 4° *angustifolia,* loins anguste lan-ceolatis longitudine lititudinem Nextuplo et adhuc magis superantibus Habitu S Lapponum

p, *pullata,* folns supra glabrescentibus subtus plus minus villosis et glauus tenuibus vulgo nigritantibus Variat ovalilnlia et in^ustifolia utfoinia praeced ns Ad S Amandr fnnsions

•y, *vtrescens,* folus saltern demum utnnquc glabratis ngidiusculis sublus integris glaucescentibus Ad S Wichurae iransiens — Vanat 1° *latifolia,* folus 2 3 poll longis, 1 poll latis — 2° *tenuifoha,* fol ^ 1} poll longisnunc ovahbus, nunc anguste lanceolatis v omnino hneanbus

5, *alpma,* fruticulus subrcpens, ramis apice idscendentibus, folus brevionbus aut densissime villosis aut subglabrcscentibus, amentis facie subterminahbus ^Igo crassis, capsulis interdum minus d^nse tomentosis — Ad S aicticara \ergens S glauca p mauocaipa Iedeb II alt '* p 281,Ledeb fl ross ic t 468 L maciocarpa liautv M6m de la soc de Moscou, 8 p 292 S mel inolepis Ti iut\ 1 c p 293, est modificatio squamis apice atns, stylo mtegro

X S GLAUCOPS, amentis brevius pedunculatis sat longis Iatiuscuhs subianfloris, squamis acutiusculis lusco fulvis pilosis, capsulis comcis acutiusculis demum subglabrescentibus bieviter sed distincte pedicellate, stylo pioducto vulgo integro saepe autem sat profunde bifido sti$_o^r$matibus hrevib is fuscionbus, folus lmgulato lanceolatis basi attenuatis apice bi eviter acuminatis integemmis supra plus minusve villosis subtus glaucescentibus demum rigidis, stipulis subpersistentibus lanceolato hneanbus — Sub duabus occurnt modificationibus

a, *villosa* loins molhonbus supra sat dense subtus parcius villosis, amentis angustionbus S villosa D Don sec Hook Fl boreal americ 2 p 144 n 3, Seem Voy of Heiald p 39 54 s ^lauca villosa Anders Nord Amer Pil p 12'/ S cordifolia Hook Fl boreal inner p 152 p p (non Pursh) In omni America septcntnonah usque ad fl baskatchaw an crescere dicitur

fl, *glabresccns,* amentis crassis vulgo multitlons folus ngidionbus supia sparse pilosis demum glabns subtus sat intense glaucis In Rocky moüntains copiose legit Bourgeau

Forma villosa S glauCcE nostidp ex oibe vetere ita est similis ut earn vix separas'-em nisi capsulis multo acutionhus minus dense lanalis et stylo integio raonitus, quam autem glabrescentem appellavi longius diktat et S chlorophvllfim (c typo S phylicifoln) non parum revocat, folus gla bns supra lucidis et neivosis subtus glaucis reticulatis amentis multo brevius pedunculatis et capsulis distinctius pedicellatis Ad S desertorum manifestissimum praet)et transitum

108 S DESCRTORUM (Richards Append p 371), amentis breussimis^emipolh canbus) subglobosis densiflons, squamis roseo pallidis dense albo villosis, capsulis ovato conicis albo lanatis se-silibus, stylo bipartito lu«co folus an rfuste oblongis iigidis subtus plus minus albo tomcntosis suh$_n$'laucescentibus costa prominente flava et nervis elevatis subscrobiculaiis supra interdum vmdibus sublucidis — Hook fl boreal amer 2 p 151 n. J() S glauca debertorum Andeis 1 c p 127

a data, lrutex 4 5 pedahs ramis subsimplicibus crassis rufesccntibus, folus basi subangustatis supra glabns venis modice impressis subtus demum glabrescentibus, amentis semipolhcem longis — Rocky mountains (Drummond)

p, *strxcta* frutex 2 3 pedahs, ramis stnciissimis, folus elhptico lanceolatis polhcanbus supra tenuiicr senceis subtus dcnsius liuanis reticulato venu losis, amentis J poll lonjis — Prope fl Saskatchawan (Bourgeau)

Y, *fruticulosa,* ramis e tiunco subleiraneo erectis, folus ' poll longis 11 hn latis anguste lanceolatis utnnque acutatis apice subobliquis subtus dense senceis integernmis, amentis ob folia ramufoium fulcrantia occul tatis ovato rotundatis — In re$_0^r$iombus Amencae septentnonalis, ut ad Fort Hall, in Rocky mountains.

109 b LINGDLATA, amentis lonpssime foliato pedunculatis tenuibus bievibus curvatis subdensissimis, squamis fulvis vcl fuscis hnean oblongis obtusiusculis glabnuscuhs vel pihs paucis et brevibus conspersis capsulis parum brevio nbus, capsulis ovah-oblongis obtusis albo tomentosis sessihbus nectano

brevi basin capulae superdnte, stylo subnullo v bifido, st gmatum launns fuscis di\diicatis, foil s dnguste obo\ato don^atis vel hngulatis supi i ^labns subtus tenuiter tomentosis integris exsiccitione subni^ncantibus ^ In America boreali occidental!, ad Alaxa (Kostalsky) Humil s, e tiunco subten meo assurgunt iami glabn, in formara arbusculde minons divisi, MX pcdilcs, dense foil iti I oh i 1-1 ; poll longa, super medium J 7 poll lata Amenta vix 7- ' poll longa, MX 2 lm crassa Habitu valde peculian forma et indumento foliorum indubie ad typum S glaucse pertinens sed amentis perangustissimis et capsulis globoso ovalibus S reticuldtam sat evidenter relerens (v 7.)

110 S. PYRENAICA (Gouan ill 77), amentis serotinis longe et foliato-pedunculatis, masculis pollicanbus subincurvatis, femineis anguste cylindncis laxius cuhs et laxiflons squamis rufescentibus obtusis vcl apice rotundatis parce pilosi>, capsulis ovoideo conicis rufo test iceis tonuiter gnseo-pubescentibus breviter pedicellatis, pedicello glandula subbievion stylo integro vel ranus bifido, stigmatil us bifidis, folns ovalibus vel obovato linguhtis supra vindibus et parce pubescentibus subtus gl mcescentibus et pilosis demum gWbratis nervis subtus prommuhs margine intPgro cihatis J In lcgione alpma Pjre naeorum — Willd sp pi 4 p 6%, Dub} Bot gall 426, Lap abr 600, Gien et Godr fl ii 3 p 141, DC fl ir 3 p 292, Trautv Sal fngid p 290, Hartig Forstl Cult p 390, Willk et Lange fl lusp p 231, Wimm sal europ p 94 S cihata DC 1 c p 293 — *Icones* Clus hist 1 p 8^>, Trautv Sal fngul t 4, — *Fxsicc* Lange n. 157, Billot ^55 Iruticulus humihs, depressus, trunco vahdo, lamis giacihbus flabelldtim adscendentibus, torulosis, castaneis lucidis Folia vix polhce longiora, suora medium \ poll latiora, aut obovato-ovaha aut subspathulata, apice subproducto non laro subobliquo, tenuia et fere diaphana, demum rigidiusculd et glabrata Amenta mast pollicana, feminea 1 j unciam longa S glaucae, quae in Pyie naeis non crescit, forma analoga vel modificatio geogiapbica eadem feie ratione se ad S glaucam ut b Lapponum helvetica ad vaam S Lapponum babens Ab ca haec diffcrt statura valde macuori, ramis tlabellatim adscondentibus, fohis junionbus tenuibus subdiaphams pilis longis dlbis adpie^sis et ciliatis, subtus intensius glaucis, brevionbus et lationbus, amentis longius pedunculatis pedunculo rami instar fohato, squamis rotundato ovatis brunneis, capsulis distinctius pedicellatis bievionbus multo tenuius pubesccntibus ita ut b-unneo-testacttC adparcant, st^lo pleiumque indi\iso fusco api culatis — Folia adulta ri^iJiuscula A b arbuscula recedit folns lntegemmis pubescentibus, tenuibus et ciliatis, nee non capsulis basi crassionbus, stvlo interdum diviso, stigmatibus semper crucians, a S caesia stammibus duabus, stylo producto, folns majonbus vindibus S ovataSer (= S Pyrenaica Non c-gicaFi) folns senuiaiis, amentis bre\ibus et bie\iter pedunculatis, styloque abunde distinguitur, at ab ill Wimmer cum Inc conjungitur[1] S cordifolia amencana, quam ohm S Pyienaican forma credidimus, vix a formis folns tenuionbus nigncantibus S villosse est distinguenda (v s)

111 S REPTANS (Rupr Flores Samojed cisural p 54 t 3), amentis laterahbus longe pedunculaiis ovato cylindncis folns suftultis subdensiflons, stjuamis glabratis margine ciliatis testaceis, capsulis ov ito conicis tomentosis sessihbus, stylo brevi sii^matibus bifidis divancatis, folns ovato ellipticis ranus subcorditis mtcgerrimis utnnque senceo villosis demum gldbrescentibus subtus glaucoscentibus lnferionbus apice rotundatis supeuoribus acutiusculis, stipuhs ellipticis mtegernmis apice iectis $ In parte onentah ins Kolgujeu non longe ab ostio fl PesUchanka (Rupr) — Ledeb fl ross 3 p 619 Affinitas difficile extucanda Cum S glauca potissimum a Ruprecht comparata, sed diversa ramis humitusis radicannbus, folns parvis subcordatis (8 lin longis, 6 hn latis), stylo integro, etc Cum S ovata magna etiam simihtudo ut etiam cum S sarmentacea, a pnon diflfert folns subcordatis subtus glaucis et lntegemmis, a posteriori amentis brevibus, capsulis crassiusculis sessililms et tomentosis — s ovahfolia etiam rccedit folns glabcmmis costato nervosis, capsulis plerumque glabns, violaccis,, plus minus pedicellatis

112. S SUBCORDATA (Anders Sal boreal -amer 1 c. p 128) amentis laterahbus folns suffultis patuhs cylindncis densiflons, squamis oblongis obtusis fuhis

apice fuscionbus paice pilosis, capsulis ovato conicis senceis sessilibus, nectano basin capsu i superante, stylo elongato mtegro, stigmatibus bifidis integns di\ancatis fulvis, folns lotundatis v ovalibus basi cordatis vel sub angustatis utiinque glabns subtus pallidionbus acute venuloso reticulatis margine integns vel minute glanduloso denticuldtis majonbus stipuhs acute serruldtis ornatis ^ In Rocky mountains Amende septentiionahs Fiutex parvus ramis erectiuscuiis nitidiscastaneis, gemmis magnis Folia idultd saipe bipoUicana, feic eadem latitudine, orbiculan-o\aha, longe petiolata (petiolo flavo lucido), costa et nervis acute prominentibus reticulata Amenta subpol hcana, crassiuscula Capsulae fere lineam longae —Est quasi inter S glaucam et S. coidatam intcimedia A priori amenta et capsulas dense senceas sessiles habet, a posteriori folia glabiata, margine ^landuloso-serrulata, crasse cona cea, sUlum integrum elongatum — loha nnnora et juniora us S cordifohe Hook "(quae est modilicatio s arcticae) simiha sunt, sed vulgo basi latiora et subcoidata Hue lorsin etiam pertinent 1° speumina a Bourgeau d 24 maji 1861 ad fl Saskdtchawan piope Gailton House *:olleota, quae dutem (sat juvenilia') nonnihil recedunt capsulis ovato-conicis, stylo subnullo, stigmatibus integns, folnsque lanceolatis, acutis et aigute seiratis, quibus notis ad S (lucidam) argutam arcedunt, et 2° specimina nonnulla a De la Pylaie ia Terra Isova collecta, quae (j m defloratal) attamen differunt squamis villosobarbatis , capsuhs (jam matuntate dehiscentes) brevissime pedicellatis, folnsque subtus intense glaucis, maigine ai^ute et inflexo serratis (v s in h Hook)

X S AMANDiE, amentis pedunculo brevi folns 2 3 mstructo pedunculatis breYiuscuhs. subdcnsiflons patulis obtu*is, squamis fusus pellucidis acutmscuhs Daice pilosis, capsulis ovato conicis obtusiusculis plerumque albo-villosis pedicellatis pcdicello ncctarium duplo-quadruplow superante, stylo producto intearo, stigmatum lacinus dnancatis, folns late lanceolatis aut utiinque pilosis aut supra ^labnusculis subtus densius tomentosis demum denudatis tenuitate facile ni^i icantibus etcrebemme albo-punctatis margine tenuiter et remote serrulatis In Lappoma feie omni, m Pinmarkia (Fries) et Hcrjedaha fThedeiiiusl. S glauca pullata Fr Not 1840 S nigncanti glauta Anders[1] Sal 'lapp p 75 S gWn.gr.cans W.mm Flora 1849 p 46 , Denkschr 1853 P 172 Est a S glauca ct nigncante, quas inter semper crescxt, certfssime hybnda, et ei nsfornus in Lappoma frequentiss.ma A S Sa habet toSmhabUum, folia adolescentia pallide v!ndia et molliter sen- ^ amenta ql.afa, rapsula's obtus.usculas albo lanatas et stigmata bipart.ta, Ts' mmcante staturam fere arbons pans, fol.a latiora et breviora, tenmLte fee[6], e mgrescentia, marg.ne serrulata, amenta*Jo* »'If """ribus suffalta et capsuhs brev.ter pedicellatas styloque mtegro ros ratas - Yauat *hebeearpd,* capsuhs latis albo senceis, et *lejocarpa,* capsulis saltern bast subglabrescentibus (v v.)

XX S PARvitouA, folns vix semipolhcem longis basi subrotundatis hngulatooblongis subtus glaucis nervoso lineatis supra glabnuscuhs basin versus serrulatis amentis lorge pcdunculatis ct ranilons squamis dense barbatis capsuhs elongato subulatis basi glaljnsapiccm\ersus albo-villosis longe pedicelldtis, st\lo tenui elongato — Hab in Herjedahd S glauca myrtilloides Wimm' in sched, Wichuia Die Bastaaidbefruchtung p 77 Notdbihs forma quae non a b myitilloide et ghuca sed a glauca et nigncante minon procreata est, nullo medo nisi folns minonbus cdpsulisque glabnusoulis a S Amandse diversa

XXX S. SPISSA, amentis pcdunculatis pilosis patulis incanis crassis cylindncis obtusis densiflons, folns 2 i suffulti^, squamis fulvis oblongis obtusis, enspatopilosis, capsulis e basi crassis^ima ovatis obtusis testaceis tomentosis sessilibus, ncctano basin capsulae superante, stylo brevi fulvo stigmatibus subfuscionbus bifidis launns cruciatim divancaiis, folns tenuibus late lanceolatis basi apiceque dequahter attenudtis utrmqui vindibus glabemmis subtus pal'J dioribus margine tenuiter serrulatis In Songana, in alpibus Alatau (Kirn et Kinl) S alatavica Kar et Kinl in sched Inter S glaucam et pnylicifoham medii amenti priori, folns posteriori similis. tiutex mediocris ramis

et ramuhs crassis divancatis flavcscentibus Folia 1 \ 2 poll longa, ad medium polhcem lata, subnitentia, amenta ?} poll longa, fere semipollicem crassa. Capsulae valde confertae, tenuiter tomentosae, fulvescentes *v.* s)

p, *minor,* folus vix polhce longionbus, amentis -[1] poll longis, capsulis stylo nullo prdeditis. — In bongana (Raiel et Kirl. n[o&] 1966, 1975).

X X X X S. WICHURF, amentis fohdto pedunculdtis erectiuscuhs elongato-cyhn-dncis basi ranflons, squamis testaceis acutiusculis apice fuscionbus parce pilosis, capsulis elongato conicis obtusiuscuhs breviter unereo-tomentosis pedicellatis, pcdicello nectanum fere bis supuante, stylo mediocn jntegro, stigmatum lacinns bre\ibus divancatis, folus lanceolato-obovatis basi angustatis apice plus minus acuminatis utunque [n]labriuscuhs vel parce hirsutis, supra vindibus subtus glaucis, demum sublucidis ngidis maigme repando-cienatis In Lapponia Lulensi et Pitensi, nee non in Dovre S glauco phyhcifoha Anders Sal. lapp p 47 fig- 10, Wimm Denkschr 1853 p. 168. Inter S. glaucam et phyhcifoliam exacte media A S glauca habet staturam humiliorem folia saltern juniora tomentosa etlam adulta pihs paucis derelictis conspersa, latiuscula, amenta foliato pedunculata, capsulas obtusiusculas tomentosas et stigmatum lacmias divancatas Sed a S phyhcifolia habitum, lamos tenues, graciles, rubicundos, folia acuminata, supra demum lucide vm-dia, sublus glauia, margine cienata, capsulas pedicellatas et stylo intogro rostratas (v. v.)

X X X X X S GLAUCOIDES, amentis longe foliato pedunculatis erectis crassis densiflons obtusis, squamis piceo-fulvis apice iotundatis villosis, capsuhs crasse ovato conicis obtusiusculis mcano tomentosis brevissime pedicellatis, pedicello nectanum vix aequante, stylo paivo atio, stigmatum lacinns bre-\ibus patulis iuscis, folus rigid is anguste lanceolatis basi apiceque attenuate utnnque pnmo subsenceis demum glabns nitidis et nervis clcvatis lmeatis margineaiguteseriatisvelmtegemmis S glauco myrsinites Anders Sal lapp p. 78, Wimm Sal europ. p 258 S myisinites glauca Wimm Flora 1849 p. 46 In Lapponia Pitcnsi et Lulensi (Anders }, nee non in Finmaikia (Th Fries et Laestadius) Inter S glaucam et myrsinitidem media. A pi lore habet staturam elatiorem, ramos stnctiusculos, capsulas dense gnseo-tomenlosas et stigmata bifida crassiuscula, a S. myrsinitide ramulos piceo-nitentes, folia ngidissima, pure vindi-nitentia, utnnque venis ele\atis acute hneata, mar ^ine argute serrata capsulas stylo atro integro apiculatas et pedunculum "superne nudiusculum Habitu S myrs\nitoidem valde amulat sed rocedit folus mollionbus non raio plane mtrgns ciliatis neivis minus elevatis,amentis longe foliato pedunculatis ranflons, capsuli« longe et crasse conicis molhter tomentosis stylo bifido pallido apiculatis (v \ )

X X X X X X S ELAAGNOIDES (bchleich Catalog p 25), amentis brevittr pedunculatis folus paucis suffultis patu'is subianflons cylindnciu obtusis, squamis oblongo spathulatis apice subtruncato lationbus fulvis tenuiter pilosis, capsuhs tenuibus conicis apice subtomentosis ceterum glabernmis brevissime pedicellatis, pedicellonectanum\ix aequante, stylo bre\i integro stigmatum la"inns patulis fulvo carneis, folus lanceolatis vel subhngulatis basi angustatis apice acutis aut obtusiusculis pnmo tenuissimc pilosiusculis demum glabnuscuhs subtus palhdionbus integris In Helvetia pi locis — Ser Ess p 91,Gaudin fl heh 6 271, Heer in Hegetschw. Fl d Schw n 2842 S glauco-retusa Wimm Denkschr. 1853 p 172, Sal europ p 2 >9 S glaucae simihs statura autem multo humilion, lamuhs adscendentibus castaneo-piceis glabernmis, folns angustionbus et brevionbus (vix polhce longionbus, [f], *{* poll latis), apice saepius lationbus, sed pra?cipue squamis magnis obovato-lingulatis glabnuscuhs et capsulis tenenonbus maximam partem glabns, stylo integro apiculatis ad S retusam vergit Consistentia autem et hnsutie fohorum nee non tapsuhs saltern apice villosis et colore oinnis fruticuli S glaucam apene revocat. S buufolia Willd Schl herb Kern Hb Sal n. 82, a eel Wimmei hue etiam relata mihi propius ad S glaucam pertinere videtur ob capsulas totas villosas Secundum specimina quasdam, saltern <?, Schleichenana hanc formam ill Kerner pro hybnda a S retusa et helvetica (S Lapponum) habet, at specimina a Kerner divulgata mihi sat parum a S retusa ipsissima

recedere videtur nisi folns subtus tenuiter tomentosis cihatisque, specimina amentis 9 tantum ormta vidi — (v v)

§ 17. *Nitidulx s. Glaciales.*

Fruticuli saepe humifusi regionum arcticarum vel summarum alpiunr Draecimie mcolae, trunco subterraneo, ramis flabellanbus apice adscendentibus et fohatis Folia ssepe conaceo ngiJa, nervis et venis elevatis reticulata Amenta m lamulis annotinis non raro gemmifens fohdtis terminaha Capsulao vulgo subsessiles stylo saepissime iusco et elongato rostratae, squamis concavis basin capsula' involventibus — Formae hue relatae quum habitu turn charactenbus inter se sat diversae, modificationibus tamen innumens mirum in modum multifanam mtei se connexae, quasi multarum aharum tnbuum formae extremae, contractae aut pnmanae aut degeneratae, usque forsan adsenbendae — Chamclix Dumort ex Fr , Fr Mant 1 p 72 p p

a *Myrtosahx* Kern

Frutices mterdum mediocres, vulgo pygmaei, divancato - ramosi Folia ngidissima, coriaceo-Ind^rata, nitentia, punctulata et nervis elevatis stnata, saepe argute et glandulose serrataet marcescentia, persisient.a, vel fulvo brunnea Amenta lateraha vel subtermmaha, pedunciilo non gemmifero apice nudiusculo pedunculata, crassmscula, squamis ap.ee mfUscatfs,TtherrdPefloraUs fuscis, capsuhs comco rostratis, sdepius uolacels, stylo pioducto fusco Glandula ton simplex, antica, purpurea - Myitosahx Kern Weid Oestr p 47

113 S PALLASII, amentis pedunculatiselongatiscrassiusculisdensinons pedunculo superne sat longe nudo inferne folns 2-3 mstructo, squamis atris obtusiuscuhs longe albo-\illosis, capsuhs conicis longe cineieo villosis obsolete pedicellatis, nectano basin subsuperante, stylo elongalo fusco, stigmatibus bifidis laciniis filiformibus elongitis divergentibus folns obovatis apice rotundatis ^el brevisaime apiculatis lntegernmis parcc et molliter pubescentibus demum cihatis subtus plus minus distincte reticulato venosis (v s)

a, *crassijuhs* (S crassijulis liev herb, ex Trautv Sal frigid 1 c p J08) frutexhumilis semipedah^, ramis adultis radicantibus, junionbus adscendentibus annotinis pubescentibus, folns sdepe feie 2-poll supra medium polhce lationbus basi longe attenuatis plains vel margineparum ie\olutis subtus vix pall dionbus obsolelius vcnulosis junionbus subtus senceis demum glabiatis tenuionbus, petiolo semipollican, amentis laterahbus femineis fere bipollicanbus erectiusculis In Kamtschatki pi i0Cls (Mertens, Peters, Rieder, Stewart) et in Unalaschka (Eschscholtz) Est quasi a b ^estlta et S glauca composita Ad S aicticam se habet uti S vestita ad S reticulatam, et forsan cum ea formis specie confluens ab ilia recedit folns nee subtus glaucis nee elevato-reticulatis ab hac fohorum forma et trunco ramisque, ab utraque amentis long/s crassis squamis fuscis et praecipue stylo valdo elongato saepius integro fusco A S arcticae pixcipue magmtudim partium folns molhbus villosis reticulato^enulosis et amentis bene dncrsa — Ludit 1° *oblonaata* fnlns suboblon^'is supra medium modice lationbus pnmo dense villosis — 2° *grandifolia,* fol obo\ato-oblongis molhbus spar e pubescentihnQ% evidentercihatis -3 *obcordata,* fol latissime obovahs * ed retusis tcnuionbus plams longius petiolatis sæpius apice

β, *diplodictya* (S. diplodictya Tiautv. Sal frigid I c p. 307^ frutpx humihs, ramis procumbeniibus annot.nis mox glabns folns elliDticis ulnnquc obtusis vel basin veisus parum attenuatis nunc pollicem long.s et S ? ra il 1 i r ^ nt em lallS ^ t^ dimi dlo eJus latitudmS utrfnque reticulato lmcatis integeriimis subtus vix glaucis demum denudato plabratis, amentis pollicem longis erectis dcnsinons, capsuhs subminonbus stylo gracili apice sdepissime bifido rostratis — Specimina luc desenpta ex sinu Laurentii a Chamisso et a Sujef inter Obim fl et mare *gl* iciale in herbano Pallasn S aictica insciiptd vidi His omnino similia sunt

ea, de quibus, ab Erman in monte ignnomo Scluwelatsch collectis mentionem fecit Chamisso Linnaea 6. p 529. Videtur a S glauca et reticulata typica composila Ab us quas Ledeb sub nomine S aicticae depinxit diversa A piaecedente lecedit non nisi loins crebnus et distinctius reticu lato-venulosis minonbus basi haud ita attenuatis, amentis bievionbus — Haec lormx S Pillasn tantam cum S arctic i habct simihtudinem ut facile earn hujus modificationem maxime evolutim haberes Haec autem folns demum saltern glabernme nitentibus, ngidis at tenuibus, amentis subterminalibus, capsuhs conius saepius rulescentibus et glabeinmis vulgo recedit

114 S AUCTICA (Pallas Fl ross 2 p 86), amentis laterahbus et subteimmahbus pedunculos longos-stnctos foliiferos terminantil)us crectis crassiuscuhs densiflons, s^uamis obovatis obtusis pallidis vel dtns pilo is, capsulis e basi ovata conicis tomentosis glabnsve, breve pedicellatis, peiicellonectanum subsupprante, stylo mediocn fusLescente stigmatibus putitis divancatis, folns ODO vatis o^alibus vel spathulato-1 inctolatis intc$_o^r$errimis vel obsoletissime et re mote seiruldtis demum livigdtis subtu& glauco opd is <5 v 5 In regionibus arcticis quum vctcns turn novi orbis—Ledeb Fl alt 4 p 283, ross 3 p 619; Chamisso Linn«ea 4 p 529 oJO. 540, lidutv Mem de la Soc des Natur de Moscou 8 p 293, Middendorf Rcisc 12 1 p 26, R Br Bot of Ross Voy ed 2 U p 194, Veim Schr 1 40^r>, Hook Fl boreal amer 2 152, Hook et Am Wot of Bee they Vo\ p 129, ochlecht Linnaea 10 p 85, Seem' Voy of Herald p 40 54 55, *hi* Mant 1 p 73, Hornem Plantelanre 2 p. 295 —*hones* Ledeb Icon fl ross t 460 liautv 1 c t 6 H D t 1»488. Sub hoc nomine vanas formas saepe comprehensas inveiiio, quae, forsan inter se diversa ongint diversae, tamen in plensque notis, supra allatis (praecipue amentis fere pedunculatis dcnsiflons erectis, squamis fuscis, capsulis subsessilibus stylo elongato fusco rostratis) sacpius congruunt Pro tempore has omnes hie una ita conjungo

a, *ncrvosa,* frutex humilis ramis bievibus, folns spathulato oblongis basi longe attenuatis apice obtusiuscuhs vel breviter et oblique apiculati" 111-tegernmis supeine impiesse neivosis subtus ghucescentibus costato-reti culatis demum cahescentibus dmentis femineis tenuionbus, squamis acutiuscubs nigncintibusalbo villosis, c ipsulisgldbLiiimis stylo rlongito rufescento —In Kimtschatka ct juxti Ochot/k A priunbus recedit folns mullo nngustioiibus et validius costito lineatis, imontis gracihbus, cdpsulis glahernmis SubvanetdS videtur *cunt at a* (S cuneati Turcz pi Exsicc dnno 1835 Bull de la Soc de Mosc 1^4 p 3*7 I cdeb fl. ross 3 p 623, Middend Reise I. 2 3 p 8 Mi folns supra luude vindulis subtus pallidionlms acutissime nervosis obovatis ipi e plerumque angustatis, cipsuhs bi urines enlibus, stylo l)icvion toto ful$_{Vj}$ Hab in bibirid onentali \idetui quasi S retusae modihcatio major vindula'

P, *Brownei,* folns tenuionbus demum ngidmsculis pi inis\enis vix elevatis parum ru^ulosis demum ghbralis v tiliatis lucidis viiidulis basi apiceque interdum acqualner attenuitis subtus evnlentius glaucis Vanat 1° *obovata,* petiolo plus quam polhcan stipulis sit magnis ornato, folns late ovah-obovatis lero 2 poll longi* pollice] itionbus subtus intense glaucis lntegernmis, imentis elongitis siuimi^ itus rotundatis, caps ilis magnis aut densissime albo-tomentosis aut tenuiter tomentosis, ant denique subglabrescentibus, stylo valde elongato filiformi Hab in Unalaschka, Alexa, etpl locis Americae arcticne —HucS coidifolia Puish fl 2. p 611, Hook fl boreahamer 2 l)2,Trautv 1 c p 298 t 9 *e*\ Iabrador forsitan enam pertinot — 2 *oblonga,* folns spathuldto-oblongis vel oblongoellipticis pollicanbus vix ulLrd semipolliccm latis, amentis brevionbus, capsulis plerumque gnseo tomentosis nonnunqu im denudato puberuhs, stylo elongato S arctica R Br. S arctic 1 forma } Cham 1 c p 541 Haec etiam in Sibina aictica et in insulis Americae sententnonalis *m* lxime arcticis — 3° *fumosa*^ ramis undujue procumbentibus fl ibelliform 1 bus, folns parvis tenuibus obovatis v oblongo lanceolatis planis non reticulatis mtegns pnmo albo villosis demum glabratis, amentis brevibus

S fumosa Tuicz (pi exsicc a 1828) fl baical.-dahur 1 c p 384 S.

phyhcifolia-mijalis Ledeb fl ross 3 612 S divineita (Pall fl
&p pi 4 pp 033? Hab m lapidosis ad torrentem Urcudei (Tuicz),

dorf) etm Labrador ,Hohenackei pi Labral is,8 n Q9 *c)* Sneumina labradoncKS call,carpaa Irautv Sal fxirfid 1 c p 29?) recedKSt tolS vix semipoll.c inbu, obovalo oblong s, basi obtusi? v rotmfdat,s sup,a obscure viridibus impresse nenosis, subtus inasqualitoi ruSosis inteSse daucescentibus, us yacunu uliffinosi pr«,Unlor similibus S w m ? ^ be?centibus ct c ipsul s unereo pubei ulis Nonne hxc potissiu-um s eordifoln Puisli il Amei syt 2 611 > lrautv 1 c p 298 (qua tamen stylo longissimo msi,ffnis udetur')

Y, ***Groenlandicn,*** **iiuticulus pusillus snepe suberectus et ranosus ruins late lanceoluis ipiccm \orsus subhuoiibus pnmo sparse pilosiusculis demum omnino ghbernmis supra lucide vmdibus subtus aut Lctius vuidibus aut intense Uaucisi mdiffino liito^eirimis aut leraote ot obsolete serrulatis,** amentis d.stinctIUS l.ttenah hu. eiecto pallh*, squimis apice atns parciu villosis, c1psuhs uasseovcitis pedicollatis, pedicllo neUanum supcrante, stylo producto Hab prrcpuoin Gronlandn S arttica Fl Dan t 2488 Variat 1- *hebecarpa,* c.psuhs fuscis ^pe tomei to tenui gnseis - 2« *letow pa* cipsulis KhDns subluc.d,s rufescent.bus - -3- *tohfoha* fohisorbiculito ovalilus -4 *angmttfoha* loins hnccol itis i5. *Tacro' carpa,* amentis 2 3-pollicinbus .ol.io cr iss.onbus c ipsuhs longius pedTcellatis magnis - *b pusilla* fiuticulus vix digitihs folns 1%· l,n longis densss.me conleit.s Saliu retus* serpylhtohaj a'naloga A formis dmencams et asiaticis giccnlandic L quo lammodo lecedunt hab tn rn ticuh minons mstar, omnibus paitibus glabnonbus, glaucesceiit bus pt Mrentilms

Typetnia Ipitex bumihs lamis dnisis suberectis apice foliatis folns Ian ceolat!p ipic ct bisi subequahtei attonmtis utimque ltEte vmdibus sub" tusparunipallidiorib is iiitcgeiiimis\cnispiominulis subtus lineatis supra plani^ glabernmis amentis teiminalibus eiectis pnmo gracilibus subran flons demum ciassiuscuhs densiflons, squanns flavis tenuilms apice fuscis paicius pilosis, capsulis ovato conicis senceis subsessihbus, nectdiio basin capsulae subsuperante, st\lo valde elongalo tenui mtegro, sti^matibus bifinis divancatis v ir^olutis In summis Rockv mountains (Bourgeau) A cetens formis huic speciei subsumtis differt fohis angustionbus et longionl)iis sc pollicem et ultra longis, J-J poll latis, ut in S glauca vel S phjhcifolia angustatn, capsulis pallidius vinduhs testaceis et stylo longissimo rostraus

e, *Taimyrensis* (S Tannjrensis Trmtv in Midd Reise I 2] p, 04) amentis prtiecocilius sessilibus biacteis paucis tantum sulTultis, squamis atns obtusis longealbo-villosis, capsulis «-enceis sessilibus stylo elomrato pi eo, sli^matibus bipartitis trectis loins clliplico-obovatis parce pt minute serrulatis demum utnn]iie Jibns subtus glaucis Ad fl· ad 71]° usque ad 74; ELum e\ Iscbu^a (Altu) specimina vidi formam forsm spectantia Habilu Pt cbaiactenbus omnino s sed recedit pr*ecipue imentis prtcocibus folns tantum **Taimyr ad hanc arcticæ, junioribus brac**

JTflUs,l ongistel ensevi osis, folns demum minoribus

S OVATA (Ser Essai d'une monogr des Saules p 99} *bterm.nd.bu. p.duncul ,t.s p U .1» oblonRo-,«? o v l cylinduels den^or obtuse, pedunculo foliis o 4 mst.uct.s squ>mu ohovato oblon" ' obtusmLcd's fulv.s apice obscunonbus ot parce pilosis part in inferiors cansute invo- vcnUb, p i ree co bbus, n<-ctano basin capsulj^aitingente st\lo biel ., artito, stigm tibus

M - " ^ vei ova imis dcuuuscuiis supra glabns subtus p,hs **ilbis** adpressis at longis pnmo villosis demum glabratis sed subul.dt.s orebre et pellucide venuloso leticulat.s remote et tenuiter crenu^tis ^ In Helvetia ubi ad Arolae fontes pr.mum detectafuit

et in Suecidc et i\or\egia3 alpine et subarcticL pi locis — Gaudin fl helv 6 p 274, Sprengel Pugill pi l p 61, Anders Sal. lapp p 81, Hartm Skand Fl cd 9 p 181 S P>renaica Noivegica *i Mant 1 p 74, Blytt JI dowens Nyi Mdgaz i Naturvid 1 B p 322 S arbuscula a Waldstemiana Koch Synops ed 2 p 2o6 (p p.) — *Icones* • ber Ess t 2 Anders 1 c f 24 — *Exsicc* Ser n 112 Fr H n 7 64 — Fruticulus ramis vulgo longe repentibus, qua«i a S glauci et S herbacca piocreata A S glauca mierdum habet folia saltern juvenilia molhtei villosa demum saltern ciliata, amenta Uteraha pUula fohato-pedunculata, capsulas molhter tomentosas et stjlum non raro bifidum, cum b herbacea communia habet folia demum ngida saturate vindia punctulatavenis leticulata margme scpe argute senu lata, stylum nonnumquam mtegium pioductum fuhescentem, et capsulas squamis IOSCIS truncatis basi involut is iufcscentes et glabnusculas A S pyre naica (quacum ib ill Wimmcro conjungitur Sal europ p 94), sat long recedit loins concolonbus tenuiter serrulatis styloque saepissime cum stig matibus fusco (v v)

a, *latifolia,* folns ovatis v obovatis subo\ahbus pollicem longis et ultra

p, *parvifoha* folns anguste ellipticis vel ovato-obovato-spathulatis fere ^ poll longis aut mollitei villosis aut mox glabratis et sublucidis

Y, *macrostachya* amentis subterminalibus pollicem longis praesertim basi subranfions pedunculo supcrne nudiusculo, capsuhs majonbus fuscis tenuitei guseo tomento^is (lacio ad S myrsimtidem)

X X S NoRMANNi,amcntislaterahlusbrevitei peduncuhtispatulo in cur vis elon gato-cylindnus obtusis subdensiflons, pedunculo fohis cetens vix minonbus instructo squamis fulvo-piceis ovalibus apicem versus obscuns obtusiusculis parce pilosis, capsuhs ovatis bre\iter conicis albo-villosis subsessilibus nee tano basin cipsuLc aequante, stylo elongito inttgro fuscesctnte, stigmiUbus apice partitis lacinns pituhs folns elliptico-lanceolatis acutaucuhs tenuibus utnnque glabernmis vel subtus pilis parce pilosis supra obscure vindibus infra pallidionbus integris vel remote et tenuiter incuno serrulatis ^ In Nordlandia ad Skcrvo (La^stadius) et in tinmarkia onentah id Wadsoe (In Fr) S arbuscula polans Ltstad in sched S phyhc folia X myrsinites milu Singulans forma, sat mignam cum S ovita praebens simihtudinem *biu* ticulus ramis prorcpentibus, parce foliatis loha fere pollicem longa, medu \ ^ poll lata, amenta vix rollicim A S ovata diffeit folns submijonbus vulgo acutionbus basi magis attenuat s et glabnonbus, sed praecipue lmentis elongato cylindncis et capsuhs stv'o sat longo fusco iostiatis Ob construc-tionem amenti etiam S myrsinitidi affinis, sed diffeit folns tenuissimis Ex omni ie$_0$none, ubi haec forma lecti fuit, omnis vera S aibus^culj aufugit IiaquehmceS myrsinitide et b phjhcifoha tenuifoha, qua? lbi haud infrequentissima occurnt (v s)

115 S TENHU, amentis in ramuhs lateiahbus foliatis termmalibus prectis sub densiflons gracihbus an$_G$uste cvlindncis squamis in amentis masculis obo-vatis obtusis v rotundatis atns longe pilosis in femineis acutiuscuhs fulvis, staminibus binis filamentis longis, authens demum fuscis, capsuhs ovato-conicis llbo lanatis sessihbus,nectano basin capsulu supeiinte, st^lo producto fulvo apice bifido, sti^matibus obscunonbus bifidis lacinns erectis, loins linguUtis basi lonpe attenuatis apice acutiusculis nervis ele\atis parallehs lmeitis utnnque ghbemmis vel parcissime ciholatis concolonbus mtegein mis In America septentrionali, ad Cascade mountain, lat 49, alt /000 ped (Lyall) Mcmorabihs forma a nostns b letusa, reticulata et ubuscula quasi composita b rctusas simihs folns hngulatis vix j poll longis supra me-dium 2 hn latis, pinllclo neivosis integeirimis, b reticulataa capsuhs sessihbus, dtn«e Ian ltis, pusilhs, et S arbusculae amentis ramulos lateralcs terminantibus (v s)

116 S VLNUSTA, amentis fohato-pedunculatis erfllflis densiflons, squamis ova-libus subretusis fuhis saltern apicem veisus glabris capsulam iere totam m\oluciantibus, capsuhs ovahbus perpu«-ilhs lanatis sessi'ibus, stjlo elon gito filiformi fu^co, stigmatibus bifidis lacinns divancatis, folns longe petio-

latis tenuibus obovato oblongis vcl obcordatis glabernmis integerrimis nervis distmctiset venulis prommulis anastomosing reticulatis utrinque laete sed subtus pallidius vmdul s $ Ad Sitka Aroenca boreal ramis subpedahbus undiqut piostiat.s d.ffusis Folm VIY et supra medium fere eadem fu.tudine, sat acute nerVosa similia ut etidm reticulatione S leticulata! Amenta fere it in % angustissima^ix lineim crassi et sem.polliccm longi tissime, squamis %e tola involute, scd stylo atro sat longo 117 S MYnsiMTrs (L sp U4->), amenlis hteralibus vel termmiliW IM,. *J* pedunculatis erect.s vel jntul's masculis ovahbus flividi cylnducis basi nudis sutdensifloris pedunculo apice spathulato-obovatis atns dense gnseo iillosis anth^ns demur* capsuhs ovato conies sessilibus rostratis, nectano basin stUo producto fusco, folus Hnceolatis ov ito-lancool it.s bus utrinque re diutius persistenti alpina a maxime borealem, Gallıam occidentalı meridionalem et Pyrenæos, et ın Asia borealı usque ın Kamtschatka per omnem Sibirıam, etıam ın Amerıca arctıca —Willd sp pi 4 p 682, Koch Comment p 60 Mant 1 p 73, Wahlenbjr suec p «, , euiop p 97, Sm E M 4 1<H, Hook ct Am bnt fl frS 296 5 347,Gren ctGodr fl fr 3 141?Gaud fl et Iange fl hisp p 231, Bertol fl 10 p 320 Trautv Mem de la Soc dc Moscou 8 p 114, Midd Reise Rink Gronl P 121 S alpini Scop Cam p. 1208 S Ess 44 S dubia Sut fl hch 2 283 S juhs Trautv 1, c p 3H —*Icones* Fl D t 1054 Vill Dclph t r B 1360 Anders Sal lapp 1 22 Irautv 1 c t 18 Reichli t 1193 94 Sal Wob t 60 - *rxsrec* Fr H N 5 66 Kernel 121-124 Wimm Hb Sal n 72 Coll 120 Fruticulus pedilm, aut eicclus aut deprcssus subrepens, ramis stnctiusculis aut flabcllatim prostiatis tolia brevissime petiolala, J-l poll lata, \ix ultra polhccm longa, forma \aru tjpicc lanccolata conaceo indurati, lucide vindia, concolora, et argute scrrata, utnnque venis prommulis hneata Amenta mascula ovalia bie\ia feminea 1-2-pollicana, ob squamas atras etcipsulas plerumque fusco-feriuginpis stylo elongato piceo lOatratas obscura Vaiiat ma^nopere 1° *latifoiia* folns ovah-rotundatis vel obovatis, aut major stipulis saepc sat ma^nis ornata aut minor, quT minor est S procumbens Forbes ^al Wob t 61, L B t 97^1 Hook ct Am but fl cd 7 p 409 S rctusa With Arr t 31 S Isevis Bnt Fl ed 1 p 482 —2 *anguslifolia,* loins anguste 1 inceolatis saepius obliri falcatis, dut major aut minor — 3° *puherula,* folns plus minus villosn 4° *pcdunculatdj* amentis longe pedunculatis aut sessilifloia amentis fere occultatis — 5° *enocarpa,* capsuhs plus minus albo-hirtis

β, *Jacquiniana,* amentis brcvionbus scmel vel bis quam latin pedunculo ioliato, squamis acutiusculis longe villosis basi mvolventibus, capsulis crasse ovatis dcmum glahratis rufp pedicellatis, stylo tcnui, stigmatibus brevibus erecto patii bipartitis purpureis, folns ellipticis vel obovatis bis lonn latis margme integcinmo cilntis adolescentibus lonel glabernmis lucidis crebre \enuloso reticulatis S Sp pi 4 p 602, Kerner Weid Oestr p 203, Kn?K p 659 S Jacqu.ni Host Synops 529, Salix p 31 p 61, Trautv Mem de la Soc de Moscou, 8 D gnfolia Neilr PI v N Oe^tr p 266 S fusca alpina Scop Cain 2 p 2^ t 01 — *Icones* Reich t 1011 t 109 3i S dasyc Tuxz Exsicc 1822 — *Frl* cnl n UO Sal n 92 Lapponum Tuxz Exsicc — *rXSICC* '. Wirnm *Ho* et Dahuna relata Vanat 1» *majorj* frutex ramis fuscen-

dentibus, folns late lanceolatis pollicanbus vel ultra tcnuionbus 2° *minor,* fiuiex humilis, folns semipolli«anbus glabns \el adpresse villosis obovatis A typica S myrsimtide saepius divert statura multo humihon, ramis piceo atns fl $i_n$elliformil^us, folns omnino integerrimis basi attenuatis, amontis brcvionbus et subinde crassmsculis ISoniie affinitate quadam cum S hastata connexa[9]

X S MYRSINITOIDFS (Fr H N fasc 16 n 62), amcnlis pedunculatis lateralibus folns (gemmifens) suflultis erectis subdensiflons, sqfcnis lanceolalis fuscis villosis, capsulis conico rostratis brcvitcr pedicellatis,] edieello Dcctanum aequante vel paullulum supcrantc, stjlo elongato mtcgio palhdo, folns lanceolatis vel obo\alis pnmo pilis spaiMs subseuceis demum co&ta fere excepta glabernmis nigncantibus et nitentibus margme scrratis, stipulis saepe haud parvis In Finmarkia pi locis, ct m Lipponia feie tota alpina sed rara et passim obua S punctata Wahlenbg fl lapp n 481, fl suec 2 p. 667[9] ti Mant 1 p 51, Anders Sal lapp p 00 b myisinites nigncans Wimm Sal europ p 227 Vanat capsulis plus minus dense gnseo tomcntosis, amcntis vulgo crassionbus, et capsulis fere omnino glabns rulesccntibus ^ el wnduhs, amentis angustionbus Ceilissime e S myrsinitide et nigncantc procreata Ab ilia habet folii saepissime ngida lucida acute ncivosa ct argute serrulata, folu pedunculi saepc gommis oinata amenta feminea erecta subdensiflora fohala, capsulas bieve ptdicellatas, sed as mgncantc ramos crassiorcs, folia tenuiora et facillnne nigrescentia punctis \lbidis ciebernmc conspeisa saltern costa tomentosa, amenta laterally capsulas conicas subsessilcs — Quam formamSahcis Wablenbergius nomine S punctatae/ntel lexent haud bene hquet Specimina sui manu inscnpta vidi quae nunc S nigncantcm borealem sistunt, nunc S myrsinitoidcm, de^cnptio in Hora lapponica melius in hanc quadiat — S Mielichofen fauscb, c Tyroh, hanc etiam non parum simulat, earn autem potms ad S glabram refeirem (v s)

118 S CHAMISSONIS, amentis lateralibus patulis erectis elongato-cyhndncis basi subranflons pedunculo apice nudo folns 2-4 mstructo, squamis fusco atns acutiusculis guseo pilosis, capsulis conicis acutibcineieo puberuhs pcdicclla-tis, pehccllo nectinum bis superante stylo elongato hhloimi integio fuse), stigmatibus paititis divancatis fuscis, folns obo\atis brevissime apiculatib utnnque glabeinmis subtus pallidionbus reticulato nervosis tenuibus subpclluculis margme tenuiter sed acutissime senulatis, stipulis paivis — in sinu S Laurentn (Chamisso) S myrsinites Chimisso Linnaea 6 p o40 Difficile dijudicatu cm speciei maxime sit affinis Cum S arctica habet ramos procuncntes, amenta lateralia eiecta pedunculata, capsulas violaceofuscas el stylum elongatum, sed differt folns argute senuhtis capsulis pedicellatis et longis, quibus ad S phylicifoliam \ergit, sed folioium forma, pedunculi supra nudi, capsularum coloi et stylus afhnititem iterum quandam cum S myrsinitide demonstrant, a qua diffeit capsulis lou_Gius pedicclatis et folns insigniter tenuibus Habitu S fuscestenlem quidem simulat, seu recedit folns serrulatis capsuhsque stylo rostiatis Sine dubio S. rhamni ioliae Hook saepius subsumta' (v s)

119 S PHLEDOPHYLLA (Anders Sal boreal -amer .1 c p 132), amentis in ramulis fohosis lateralibus vel terminalibus Lylindncis brcviusculis densiflons erectis, squamis rotundato-obovatis atns longc albo pilosis \el barbatis, caphuiis ovato conicis fuscis tenuiter puberulis sessihbu , nectano capsulae basin superante, stylo elongato cum stigmatibus partitis divancatis iusco, folns oblongo-obovitis brevissime acuminatis vel apice constneto subohtusis conaceis denique in \enis reticulatim connexis solutis persistentibus integerrimis concolonbus subtus et margme saepissimc pilis longis albis conspersis ccterum glabernme lucidis, nervis parallehs utnnque \al de prominentibus quasi costatis In regionibus maxime arctiois Amencae scptentnonabs octidcnfahs. b buxifoha lrcv herb sec Trautv Mem de la boc des naturalistes de Moscou 8 p 301. S arctica p buxifoha Ledeb 11 ross 3 669 S. retusa Hook, fl boreal -amcr 2 p 153 (p P)> Secmann Voy. Herald p 40 (p p) S anglorum Chamisso Linnaea6 p 541 S myrsmitidi maxime aifinis, quacum congruit folns conaceis nitidis sub lente punetulatis demum persistentibus, squamis atns pilosis et capsulis violaoeis, stylo fusco pailito rostratis. Sed

differt: statura digitali v. polhcari, folns ux -I, poll, longis 2 lin. latis integernmis utnnque nervoso-costatis, tertio anno in reticulura cancellatum ob parenchyma cvanescens solutis, squamis longissimc MUOSO barbatis, et capsulis sessilibus. A S. retusa longius lecedit: folns costatis, squamis barbatis, capsulis tomentosis, stylo producto Cum S aictica parum commune, (v. s)

X S SOMMLRFFLTII, amentis subterminalibus longe pedunculatis ercctis cnssiusculis folii^ suftultib subdensiflons squamis fulvis acutiuscuhs pilosis, capsulis e basi crassa ovato-conicis acutis glabns brevitei pcdicclhtis, nectanum basin capsulae attingonte, stjlo elongato, stigmatibus bifidis divancatis, folns P basi cordata late ovatis acutis crebernme serrulatis pnmo utnnque pilosis deinum lucid is glabrescentibus venis acute elevatis reticulatis maximis stipulis lanceolatis serrulatis ornatis. In Finmaikn onentah ad Nocsseby (Chr. Sommeifelt) Omnino inter S. myrsinitidcm et S. hcrbaceam media, a pi ion habet: folia conacea, margine acutissime serrata, mtentia, subtus nonnihiL pallidiora, denique calvescentia, amenta sublateraln, poliicana, erecta, pcduncuIo apice nudiusculo infixa, a S. herbacca folia basi cordata, suborbiculana, subtub venis crebre anastomosahtibus areolata, capsulas crassiusculas vindulas v. rufescentes, glabras et stylo flavido apiculatas. (v. s)

Q, *rotundifolia,* folds semipolhcem latis longisque utnnque glaberrimc nitidis crebre venuloso-reticulatis margine senatis apice subretusis marcoscentibus subperbisfentibus. In Finmarkia Occident, in Mallsoe (Th. Fries).

120[9] S. OVALIFOLIA (Trautv. Mem. de la Soc. des Natur de Moscou, 8. p. 306), amentis lateialibus fohatis oblongis \el ovahbus subdensiflons, squamis fusco-iufescentibus obo\ato-rolunddlis pilosis et ciliatis basin cipsulae subm-\olvenlibus, capsulis oblongo-lanceolatis squimas tnplo vciquadruplo superantibus clabemmis subbesbilibus, pedicello neUanum vix aequante, stylo distmcto, stigmatibus fuscis bifidis, lacinns brevibus patentibus, folns ellipticis v. ovahbus obtusis glabeinmis vel subtus in costa pihs adpressis sublongis dcmum evanidis hirsutis et ciliatis nervis subincrassatis utnnquo venulosis lntegernmis, subtus glaucis vel pallidius unduhs. A In America arctica occideiitali-boreah piope fretum Behnngi et eliam ad Udskoi, reg. Ochotensis - Ledeb fl. rossf 3. p. 620, Anders, bal. boreal.-amer. 1 .c. p 13 . Si maUrsiL Seeman Voy. of Herald, p. 40. S. myitilloidcs f. 4 Ghamisso Linn^a 6 P 539. S. Unalaschkensis Chamisso 1. c. p. 541. Frutev S i s ramis flabellatim procunentibus, annotinis pnmum pilis indutis, *Sm&bnl,* fuscis. FoliaIpollice vulgo minoravel unguiciilar.a , pctidata, dem™ Stem omnino glabemma vel margine tenuiter c.liata. Amenta MX Sdhcem^onga, elhpt.ca. Capsulae hnea longioies, rufescentes Crescendi H sTiSusa simiLs, sed nervi fohorum jam ad cvtum dneigentes, foha saepe basi latiora et apice subpioducta,multo tenuioia, subtus glaucescentia, et pihs adpressis «altem mitio hirsuta. A S. o\ata recodit capsulis majonbus fflabns et folns obovato-iotundatis, a S. sarmentacea amentis brevibus crassiu&cuhs, squamis villosis, consistcntia et forma, et a cajtens enca S. herbaceam militantibus nervaLionc et colore foliorum subgkiicescente. Vensimilius aut modilicatio maxime arctica S. myTtilloidis aut hybnda a S. myrtilloide et S herbacca tubenda, sed squamis et capsulis benc dignoscenda S. fusee scens ad S. myrtilloulem transitus, capsulas habet longibsime pcdicellatas, pedunculis iongionbus et folia tcnuiora. (v. s)

p, *pubescens,* capsulis tenuiter griseo-pubescentibus petiolis et foliis basi longius hirsutis.

X S OBCORDATA, folns tcnuissimis longe petiolatis aut basi aut apice cordatis integernmis. Hah. ad Sitcha AmencfP boreali-occidentahs S. nostraa venustae ramis et folns \alde similis difTeit .imentis et capsulis. Affinitatem cum S. reticulata monent folia longe petiolata, leticulato-venulosa. (v. s)

121. S. FLRCATA, amentis ramulos breves Uterales fohifeios termmantibus aut subt'erminalibus ovah-oblongis^densiflorib, squamis rotundato-obovatis truncatis castaneo-rufescentibus glabns, capsulis sessilibus ovato-conicis subrostratis glabns mfescentibus, nectari(5 basin capsulae tegente, stylo bipaitito lacinns erectis, stigmatibus integris capitdUs, folus pan is ovah-lanceolatis

vel oblongo lingulatis utnnque glabernmis subtus glaucoscentibus tenuitei crenulatia ^fn Tndld onentali Pindan, Kum ion (Strachey et \\ interbottom, ex herb Hook) & irbuscula Andcis Journ Linn. Soc 4 J4 p 53 Fiu ticulus pan us digitalis Folia \ poll longa, 1 2 lin hta basi aequaliter atte nuata, apice obtuso sublatioia, margine subrevo'uto aut Integra iut quasi undulatim crenulata, supra laete undia, subtus pallide gl lucescentia Amenta masc aut vere apicalia aut lamulo brevissimo laterali loins mmutis et paucis mstiucto pedunculata, vix scmipollicem longa, anthcris magms demum fuscis Amenta femmei saenius lateralia, folns minutis sufTulti, o\ato ovaha, semipollicc breviora Specíes magis charactenbus quam habitu distincta. Foliorum forma S Lindleyanae proxima, sed folia majora subtus intensius glauca, ma-gmc magis conspicue crenulata, amenta long ora saepissime lateraha Stylo bipartite, lacinns trectis cum S Ihom^oniana ct S SerpUlum congruit, ab utraquc tamen differt loins omnino glabernmis subtus intense glaucis, ab ilia praeterea amentisbrevibus densiflons, ab hac amcntis Uterahbus,squamis glabernmis, ramis in fruticuh formim ercctis et mtncatis. (v s)

122 S CUTLEBI (Tuckerm in Sillim Journ 45 p 36), amentis lamulis laterahbus foliifens erectis peduncuhtis angustis oblongo-cyhndncis bre\ibus densiflons, squamis obo\ato rotundalis truncatis lufis apice obscunon \illosis capsulis brewbus ovato conicis ghberrimis hieviter pe licellatis, pedicello nectanum subapquantc, stylo mediocn pii-co, sti$_o^r$matibus ciass'is subpunctiformibus, folns lingulato obo\atis apiculatia utnnque glabernmis subtus elevato ner\osis retuulatis intense glaucis supn acute nenosis lucide vindibus medio supenore obsolete dentitulatis ilultis ngidissimis 5 In summis alpibus Amcnrae boreali onentalis « White Mountains »— lorr fl New-York 2 213 S lhaUrsi • Pursh *tl* Amer sept 2 p 610 Hook Fl borealamer 2 p 1^2, Asa Gray Manual ed 2 p 418 Piuticulus pan us, subdi gitalis, glabernmus, nmis submde elongato repentibus Folia vix pollicem longa, 2-3 hn lata, consistcntia, colore et neivatione fere ut in S arbuscula maxime alpina nostra pumila Amenta J pollicem longa, capsulae vix hneam longae — A S arbuscula recedit folns minimis parte supenore scrrulatis, amentis subteiminalibus et capsulis glabernmis Longius a S retusa distat Si ut fcrunt auctores americarn, floies mascuh staminibus tintum singuhs praiditi sunt; tune affimtis cum S coesia esset, cm etiam ngiditite et glaucesccnlia fohoium non absimihs, sed folia subs-errata et capsuKn ^labrae (v s)

p, *I abradonca*, pcdunculo amenti longe exscrto supemc nud); amentis den siflons anguste cylindncis, squamis oblongis acutiuscuhs densissimc albo ullosis, capsulis anguste conicis fusco piceis, stigmatibus brevibus bifidis, folns minutis aculiusculis — Prope Oakak, Labrador (Hohen pi labrad 1842 n 92c) Tolia 2 hn longa, brevius petiolata Amenta longe pedunculata S Jacquimanae subsimilis, sed folid subtus glaucal

123 S SERPYLLLM(Andcis Lmn soc.v 4 p 14. p 55),amentisin ramulis annotims fohatis terminahbus longius ct distincte pedunculatis, subcla\atis densiflons, masc diandns, squamis lotundato cuneatis atns margine wllosis, filamentis fuscis basi lanatis, capsulis rufescentibus sessihbus glabns squamas mvolucrantes elongalo-ovales atras glabiusculas barbatas apice superantibus, stylo elongato atrobiparlito,sligmalibus fulvis bifidis latinns bre\issimis excurvatis, folns parvis lingulato lanceolatis planisapicem versus utnr qup minuto serru latis cetcrum integerrimis breviter petiolatis subtus palhdionbus ^ In India oriental! Sikkim, reg subilp alt 10000 14COO ped (J D Hooker in herb Hook) S longipes Hook f in herb Ind orient *ruticulus humilis, trunco crassius-ulo, ramis anectis foliosis Folia in ramulis quasi disticnis arrectis pubeiuhs 2 4 polhces longis quasi distiche con len^ata, \ix 3 lin longa, supra medium 1^ hn lata, lingulato lanceolata, glahernmi, subtus subglau cescentia venisque hncata, supra saturate viruha costa impiessa Amenta pollicana,erecta, ihachiscinereo-pilosa,femineadcmum l^poll longa, squamae pihs cnspatis ubiquc hirsute demum denudatas aut omnino ghbra? Capsulaj conic<e, attenuato apiculatao fusco brunneae. Distinctissima est species, crescendi modo (fere ut in Thymo Serpylln), ramis et folns ab omnibus di\eisa

1. Nomen Uva-Ursi vetustius servandum Fide ur (A DC)

Quod ad formam amentorum eorumque partium proxima est S myrsimtes, quam m alpibus indicis quodammodo repraestntat S Lindleyanae subsimilis, chdraclenbus fohorum non male ttiam cum S Bia>i congruit (v s)

3, *pusdlum*, ramulis subdigitalibus, folus \\ hn longis lingulato lineanbus margine subrevolutis (fere ut in Andromeda polifolia), subtus sat intense glaucis, amentis multo brevius pedunculatis, 1 poll longis

124 S. BBAYI (Ledeb fl altaica 4 p 289), amentis in ramulis lateralibus vel terminahbus pedunculatis folus suñultis erectis cyhndncisbrevibus dcnsiflons, squamis rotundato obovatis ftavis brevius insertis, capsulis glabernmis conicis obtusiusculis brevissime pedicelldtis, pedicello nectanum elongatum demum duplo super intc stylo bre\I vel fere nullo, stigmatibus partitis, folus ellipticis vel o\all obo\alispraecipue versus basin aigute den e el sat profunde seintis, serratuns incums acutis glanduligeris J In bibinae altaicae tractu oriental!, in Altai et Kamtschatka — Ledeb fl ross 3 p 621, Ic pi fl Ross, t 449 S beibenfolid Pall fl ross 2 t 82 (ex Ledeb) — Fruticulus prostiatus omnibus paitibus glaber Rami flabelliformes,folia \-% poll longd, supra medium 3 4 hn lata, ngidiuscula, utunque laete vindia, concolon et lucida, demum maicescenti persistentia Amenta fern j \ poll longa, cylin dnca, capsulis rufcscentibus S myrsinitidi maxime dffinis, et inter earn tt S berbenfoli im quasi media Diffcrt trunco subterraneo, ramis flabelhfoimibus, folns minonbus et crebnus grossiusque dentatis, amentis bievionbus, capsulis semper glabi is et stylo iere nullo, us S herbaceae subsimilibus (v s)

Y *berberifoha*, amentis ramulos laterales et terminales terminantibus pe dunculatis ercctis bievibus ranflons, squamis pilis albuhs pnmo longe villosis ovito vel obovato rotunddtis, cipsuhs gliberumis rufescentibus ovato conicis dcuminatis breviter pedicelldtib, pedicello nectarium m^u-stum sed pioductum non multum supeidnte stylo mcdiocn, stitmatibus cruciformi paititis, folus obovatis ipice rotundatib toto maigine profunde nuasi spinuloso serratis mdicesoentibus facile pcrsistentibus In alpibus Sibinae baikalensis et oncntahs, in Dahuiid et Kamtschatka S beiheri folia PaSait ross 3 D 321, Pallas fl ross 2 p 84, Furcz fl bdk A*h 1 c D 392, Ledeb fl TQSS 3 V 021 Icones fl ross t 449 f k WlS sp pi 4 P 683 S ilicifolia Willd herb n 1822^ (Cha-mLn{ Sal Wob t 140 Cum Salicc Biayi, a qua Pallas non distmctam ff^'itafaraSniunctoutS scrpyllifoha cum b retusa etc Vix diflert m^^^^^^^^ol 1S brevionbus et T nul0S0 dmsls, amentis^ SevTorTbus, squami. albo-villosis et stigmauW profundiu, partitis (v s)

b *Retusx* Kerner Wcid Oestr 1 C P 46.

Fru rocui trunco subterranco ramis flabellanbus, annotinis sae* pisgffitas.fflret^nti. ornatis Jolja vulgo^^-elongata, sub-concolora, nervis pdrallchs basi confluentibus lineaU typice Integra, conacea Amenta folns occultata, brevia pauciflora, squamis fulvesccntibus saepe parcius nilosis Glandula ton duplex, antica et posuca Anlhera aurea Capsulae vires rentes vel testaceae, subpedicellatae stylo brevion efr stigmatibus crassis praeditaj. *1* In pnonbus tapsulcE glabiae, in duabus ult tomcntobos

105 S RETUSA (L sp 1445), amentis in lamulis laterahbus fohifens et gcmmi-fens terminahbus ranflons eiectis paullo longionbus quam latis squamis obo vato spathulatis truncatis vtl emarginatis saHem demum glabeinmis flavo-Diceis, capsuh:, ex ovata basi conicis obtusiusculis glabns pedicellatis, pedicello nectanum subduplo superante, stylo brevissimo lulvo, stigmatibus bipaititis lacinus ciassis, folns brevissime petioldtis oblongo-obovatis obtusis vel emu cinatis pluumque integernmis vel basin versus minutissime serrulatis utnn-oue vindibus subnitentibus nervis subtus modice elevatis exsiccatione quasi longitudinaliter lincdtis J In regione alpina Pyrenaeorum, Helvetiae et Austria (ubi v v) in Sibina et Asia septentnonali dubia civis — Willd SD DI 4 684, Koch Comment p 62 Synops ed 2 p 759, Gaud fl helv 6 P *IWi* Ser Iss 84, DC fl fi 3 289, Gren Pt Godr. fl ir 3.

p. 142, Kerner Willd. CEstr. p. 197, Hartig Forstl. Cult. p. 387, Wimm. Sal europ. p 121; Bertol, fl. it. 10 316 Willk. et Lange fl. hisp p. 232, Ledeb fl. ross 3. p. 624 — *Iconcs* Reichb. fig 118o-7. Host Sal 103 Sal Wob t. 139. Hditig forstl Cult (106) J")4 —*lxnccala* Reichb n 954. Bill n 2JG6 Ser. n. 46. Kerner Hb Sil n 31-35. Wimm Hb Sal 82. Col 121,122. Frutex depressus, ramis flabellalim repentibus foliatis Folia seinipollicana, supra medium 4-5 bncas laid, basi longe attenuata apice obtusa subretusa, margine cartilagineo Integra, nervis basi cohajicutibusparallclis peicursa. Amenta serotina lnlti f(ha ramuloium quasi occultd, masculdbreviora, femined semipolhcdiid, tdp*ulis unduhitiel palhde lulcsuntibus glabemmis hneam sujjfongis L modilicaLionibus haud paucis sequentes extiem«e .

p, *Kitaibehana* (S Kitaibeliana Willd. sp.pl 4 p. 683), ramis procumbentirepentibus, folus conspcrsis apico adscendentibus, folns pollicem et ultra longis plus minus elongato-spathulatis, amentis multillons rhachi subpilosa — Hab in regione Pmi, in latenbus alpium magis lrngdtib. — Reich IC f 1187 Sal Wob t 64.

Y? *tcgela,* folus fei[rt] 2 pollices longis basi apiceque aequalibus acutatis utnuque pure undibus subtus vix pallidionbus maigine fere toto lemote semilatis, anicntis 9 polhce longionbus eiectis basi pi<pseilim ranflons, squamis dpioe sul)ietu&o pallidlonbus barbdtis, capsulis pure undjbus evideniiub pedicclldtis, pedicollo nectanuni ieie tuplo superante, stylo pioduUo scmiliiKdm longo flavicdnte, stigmitibus obscunonbus biparlitis, lacinns divdiiLdtis In Carpatlns, 'latra (leg "Wichura) Non pro certo diccre possum utrum forma S retusa? maxime vegeta an S hastate et retustC hybrida censcnda.Cum S. retusa congruit amenLis ramuhs folnfens podunculalis, squamis latiusculis, sed cum S hastdta folas apice pioductis, anientis longis, squamis barbatis, capsuhs evidentius pedicel latis et stjlo producto rostratis Spccimina tamen adsunt eodem loco collectaqui£ folus ct amentis bieuonbus apertius ad S. Kitaibehanam accedere videntur Nonne S. alpigena Kern.?

ð, *scrpyllifolia*$_n$ fiuticulus •salde ramosus, ramis bievibus quasi conglobatis et loliosis panis sa;pius {pollicem longis apice mtngrm, amentis numeiosis intra folia fulciantia scs^ihbus fla\icinlibus, capsuhs bievius pedicellatis cia^sionbus In summis Alpibus, locis lipidosi-* andis, ubi xninimdDi speriem liuticuli exlnbel b sGrp^Uifoha Scop fl cainiol 2 255. t. 61, Willd sp pi 4 (>H4, Reich f US), Sal Wob t bi I$_n$ Austria mfenoie, Tyroli ct Helvetia modińcahones nonnullac hujus tjpi detcttffi fuerunt quis h>bi ida ongine cieatas ucdit ill Keiner, quas attamen parum a vera S ietusd rccedere video Sunt sequentes

X S COTTITI (Lapger in litt'ad A Kciner), amentis pedunculatis laxiflons, pedunculo folus 3-4 mstiucto, squamis emargmatis v. trunedtis vuidi-fiavis pilis sparsis longe pilosis, capsulis conicis glabns vel apicem \ersus pili^ spares vestitis pedicellatis, pedicello nectanum vix superantc, stylo elongato, stigmatibuc bipaitilis patuhs, folus obovatis obtusis vcl acutiuscuhs cienato serratis pnmum uiimqi e subscuceis denique adultis costa exce|)U glabernmis reticulato-venulosis — Kein Oestr bot. Zeitschi., 1864 p 368. b. retusa nigncans Kern. J In (rau dessus Fnbuigensis Helvetia (Dr. Lagger) Fruticulus humihs trunco decumbente \el arcuato-adscendente, larnulis eiectis. Ramuh quamdiu sunt hprbacei albide pilosi, annotini hgnefdcti glabrati et cortice rufescefiti subnitide tecti Gemmae ovatse obtusaB pilosj? l«oha petiolata bis longiora quam lata, adulla solummodo *m* margmc et subtus in ncr\o medio pilosa Amenta feminea coselanea ter longioia quam lata, pcdunculus sicut rhachis albide pilosus. Nectanum simptex. (v. s.)

X X S FENZLIAWA (Kern. Wcid mod CTstr. 1. c p 19")), amentis foliato pedunculdtis gracilibus, bquamis obovalis viridi-Havis domum glabns, lilimentis 2 hbens basi pilosis, nectano duplici inteino duplo majore oblongo, loins obovatis obtusis lato anibitu serratis gldbernmis supra sdturate vnidibus subnitidis subtus opdcisbreviter glaucesccntibus 5 In Alpims austnacis, ad montem Schneeberg pr. Vindobonaiii ad 5500 p , in regione Pini Mughi semel fruticulum

m\enit Kerner S. retusa-glabra Wimm Sal. europ. p. 264 S. supeiretusa-glabra Kem. I. c • Est fruticulus decumbens ramulis adscendentibus fiagi libus glabcinmis. Tolia m petiolo brcvissimo bis longiora quam lata, ner\i secundArn subtus vix elevati utnnque 4-6, a neno modio sub angulis 20-30 adscendentes Amenta mascula 20 30 flora, bis longioia quam latd. Squamae parum cihatae. — Pnmo visu S retusam refert, quocum hgura et neivis fohoium, squarais concolonbusluteo-vindibus truncatis, ueUanoduplici convenit. «ad folia subtus opaca sunt leviter glauco-pruinosa et scrrata, amenU florespluies etmagis confertos gerunt ct filamenta basi pubescunt quibus rebus ad S. glabram, hoc loco frequentem, accedit (Kern.)

XXX S. ALPIGENA (Kem. (Est. bot. Zeitschr 18G4. p. 369), amentis fohato pedunculate cylindraceis laxiflens, squamis oblongo-obovatis truncatis v. retusis longe puosis apicem versus purpuiasiPiitibus, capsuhs comas acutis glabns pedicellatis pedicello neuanum vix supciante, stylo cidssiusculo elongato,stigmatibusl>ipartitis,ldcinnsndtulis,foliis oblongo-oWatis obtusisv acutiu^culis lemotc sei ralis, adultis glabcmmis supra saturate vmdibus subnitidis, subtus ojuicis et leviter glaucescentibus obsolete \enulosis. j In Tnoh sept alpe Langenlhal suma Lisens solo schistaceo alt. 6500 p. mveiiit Kerner, et in Sadaflfriburgensi Helvetia (ottet. Pruticulus humilis tiunco depresso, ramuli^longalis dccumbcniilms Ramul. novelh ut gemmje puberuli, domum ruiescenti-nitidi. Folia ppliolum\ersus anguslata 18 45 mm longa 8-20 mm. lata, pnmo in margine et in nervis subtus pihs sparsis ciliata, nervi secundam utioque latere^ Hi, tenues, utnnque elevati Stipulae nullae. Amenta O 15-23 mm. longa, o 8 mm lata, masculo bieviora, pedunculus sicut rhachis pilosus, folns 2-3 instructus. (v. s)

XXXX & RBTUSOIDES (J. KOT Verh d Zool. bot. Ges. mWien. 1862 p. 1221) trunco depresso fusco biunneo toruloso, ramis decumbcntibus nitidis annotinis mollibus pilosis, folns obovatis biuitrr acuminatis v emaignutis peholum veisus angustdtis 15-20 mm longis U 18 mm latis inle^enimis inaigiae ssepe sparse ciliatis celenim glabernmis concolonbus Ute vnuhbus n_b^diusculis marcesccntibus palbde brunnescentibus utiinque piiupuo autcm subtu^ acute ncnosib, ramis secundarns utnnque 5-7 sub angulo 30 35° adscendenlibus In alpe Goller Austnae inferioris (J Kern). & retusa Jacqumiana Kern. A typica S retusa non differt nisi folns lationbus nenu> bccunddius angulo lation adscendentibus, lamuhs junionbus pilosis.

126 S FLABELLARIS (Anders, act Holm. 18i0. p. 497.), amentis exapicfe ramulorum aimotinorum folns suiTuHis clongato-cylindncis lemincis subdcnsiflons. squamis hnguldto-obo\alis glabcrnmis fulvo piceis, capsuhs subsessilibus ovato-conius glabeinmis, ncctano basin capsulse superantc, stylo mcdiocn, stigraatibus integiis, folns obovato-rotundatis vel sp«itliulatis glabns serrulato-crenulatis utiinque uudibus subtus pallidionbus longc pUiohtis. J In India onentali alpina, in humidis herbosis sub jugis \crsus So>iruin$_f$ alt 4000 mctr. (Jacquemont), ad Kumaon (Wallich), m alpibus himalayensibus (W Hofmeister), Kunawar, alt 15000 ped (Ihomson) —Anders Journ Linn soc. IV. 14 p. 54 , Reise Pi inc. Waldem. p 120. t. 90 S lucida Jacqutmont Voy n. 1600. S. obovata Wall Catal pi. md. n *i698. S rotundifoha Koyle, Klotzsch herb berol. Arbuscula vel fruticulus vix semipeddlis , rami e tiunco ciasso undique sairnentosi lufescentes, glabri; lamuh angulati. Folia scope polhccm longa, apico rotiindata vel ianus acutiuscula, supra ^cnis parallelis evidcntiub stridla, subtus veins pulchie anastomosantibus non elevatis hncati, coridcea Amenta pedunculata folns 4-6 suffulta , masc subpollicana, giaciU, squamis apice subcienulilo, anthens fuhis, feminea fusco puipuiea,squamis cipsulas dimidias te^entibus — Folia \anant 1 subiotunda basi subdildtata s. herbaceaj subumihs. 2° obovata basi angustata apice Sccpe marginata. Forma typica. 3* spathulata basi sen&im el longc dttcnuati, apice subpioducta. S. rctus'sehabftu. — Amenta brevia crassa, in formis mimrais, vel longioia subraiiflora, infoimis elalis. Foima et glabntie c-ipsularum S Lindley in«e ut etiam S oilycuIata3 affinis, dignosutur. foliis majonbus, obovatu-spalliulatis, utnnque vindibus, glaberrimis S. cuneatae (arclic<B loimoj) bimillima ut forsan modifi-

catio ejus himalayensis sit habenda, ab ea ut etiam a S retusa differt folns vulgo multo lationbus, distincte crenulato-serratis, amentis elongato-cyhn dncis, capsulis lusco-brunneis, obsolete pedicellatis (v s)

.127 S LINDLFYANA (Wall Catal pi Ind n 13 697), amentis m apice ramulo rum annotmorum brevibus ovato rotundatis, squamis oblongo-obovatis gla bernmis capsulis duplo triplove brevionbus, capsula brevitei pedicellata conica glabeinma, stylo minuto, stigmatibus inciassatis, folns pan is oblongo-lanceolatis integris vel crenulatis glabernmis subtu* glaucescentibus costa lucida prommcntc *frln* India orient ill supenon ad Gossun lhan id Kumaon (Blmkworth, sec Wallich), Sikkim reg alp. alt 16(00 ped (J D Hookei) ct Daye Kung pass, Kamaon, 17000 ped alt (Stiachey et Winterbottom) — Anders act Holm 18aO p 499, Journ Lmn soc. IV 14 p 06

a, *latifoha* folns condensatis 2-4 Im longis 1-2 lin latis margine fere toto subserrulatis

(?, *miciophylla,* folns \aldc confeitis 1-2 hn longis hneam latis costa 1mpressa piofunde canaliculatis uwginc subintegro revolutis fiuliculus minor, tiunco rcpente, ramis fhbellifoimibus undique breve piostiatis glabns Jolid basi magis angustata, apice obtusmscula, vix semimLlicem lonja, 1 J lin lata, supra lusco vmdia costi impres&a, subtuiPopace ghuccscentia costa flava nitente eximie prominente, ceterum plana, ngida Amenta 2 4 lin longa, ovato iotunddta, obtusa, squamis fusco castanus, nervosis, necUrio producto basin capsulae tegente, capsula basi gibbd, apice attenuata, fusco-castanea L Salicibus indicis alpinis S fruticulosdc quod ad habitum tantum ifhnis, quae tamen amentd habet vulgo ldteralid magisquc elongata, capsulds st>lo elongato bifido praeditas S calycuhta joins obovatis multo ldlioribus jumonbus villosis distinguitur — Quod in 1 uropa3 alpibus S relusa baec in Indiae regionibus editionbus Folia autem in planta himalayensi magis elongata, amenta breviora, capsule rufc&centi-glaucae v glaucescentes

128 S GALYCULATA (Hook fil herb Ind Orient), amnntis terminahbus subsessilibus oblong is bievibus, erectis subdensiflons foliatis, squamis oblongo obovatis fusco castaneis ghbns, capsulis brevissime pedicellatis rufescentibus ovatis ghbenimis, stylo mediocn fusco, stigmatibus bievibus eiectis folns lanccoldto obovatis crenulato dentalis petiolalis subtus palndionbub, junionbus villosis \eins supra impicssis subtus piomincntibus 5 I^{n} India orien tali Sikkim, leg alpina, 14 bOOO ped alt. (J D Hooker}. — Anders Jouiu Lmn soc 4 14 p 55 Fruticulus parvus lamis flabellanbus ddscendentibus Folia plerumque vix polhcem longa, 2 4 lin lata supra medium saepe dildtala aut lanceolatosubrotunda, aut inte^ia aut apicem versus senatuns subdepressis apice mmonbus cienatd, supia obscure vindia, petiolus \ lin longus Amenta mascula ovali-iotunddtd, i< Ins fulcrantibus subocculta, amenta feminea subiotunda, capsulis e\ ovati basi conicis, piceis, pedicello ncctanum glabernmum conspicue supeiante Auctontate HookeiI hanc s eciem, milu dubiam, accepi, inter S llabellaiem et S Serpyllum omnino medidm Congruit cum priori folns nonnunquam obovatis lcre totis cienulato-serrulatis, squamis et capsulis fusco brunneis glabeinmis. stjlo inte$_{0}$ro, cum postenon folns saepius sublanceolatis aut subintcgi is subtus pallidionbus aut apicem versus seirulatis, ab utia<{ue autcm differt folns pnmo pihs longis subtus plus minus hirsutis, amenlis bre\ibus sessilibus Crescendi modo S flabellarem praeterea sat simulat, a qua tamen folioium foima longius distat Stamina in tubum subconcreta, inde nomen! (v s in h Hook)

129 S OREOPHHA (Hook fil herb Ind orient), amentis termmalibus folns> subobtectis minimis 2 9 flons nasc diandns, squimis pallide flavis concavis obovatis glabns, capsulis subsessilil)us conicis glabernmis squamas lingulatas glabras tnplo superdntibus, nectano magno, stylo pcrbrevi, stigroatibus brevissimis integns, loins oblongo-cuneatis vel obovatis apice anguste serratis ceterum integns brevissime petioldlis utnnque pallide vinduhs glabeinmis costa et venis supra impiessis J In dlpibus Indiae orient bikkim reg alp alt 16000 16000 ped (J 1) Hookei) — Anders Journ Lmn. Soc 4 14 p ^7 Fruticulus digitalis vel minor, ramis arcuatis flabellatis, ramulis dense folia-

tis Folia 1 1 -3 lin longa, 1 \ hn. lata, apice serratuns 3-5 profundis subfissa, supra rugulosa, utnnque glabemma, pihs paucis ad basin petioli perbrevis tdntum hirta. Amenta folns occultati, feminca vix 3 lin longa, e flonbus quasi umbellatim confertis globosa, rhachi tenuissime pubeiula, squanns supra medium lationbus apice subvenosis Capsula basi quasi in pedicellum bievissimum constncta, lin. longa, obtusiuscula, castanea, lucens, stigmatibus fuscionbus Haec species ab omnibus facile differt folns obovatis apice tantum acute et sat profunde divisis Est S retusae et seipyllifohae in Europa, S Diayi et S beibenioliae in Asia boreah analoga, quae tamen folns marline toto aut omnino integris, aut spinuloso dentatis exctllunt (v. s. in h Hook)

ft, *secta* (S. secta Hook fil m herb Ind. orient), fruticulus minimus ramis rosulatim confertis intneatis dense foliatis, loins vix hneam longis apice fere eadem latitudine lbique ad tertiam pattern laminae lacinns ponectis acutis sectis utnnque vindibu-> subtonaceis planis impresse venulosis, amentis folns arote absconditis e tlonbus 2-4 compositis, squamis apice subdentatis, capsulis cxacte conicis, stylo MX conspicuo, stigmatibus minimis Hab in cacuminibus ulitissimis alp. Himalayas (Hook et Thomson) Foima omnium, quantum novi, minima est Salix, In altitudinem maximam etiam adscendens. Ut Androsace vel Drabae quaedam caesmtes rotundatas et condensatas in rcgione nivali altissima format, (v. s)

130 S i HOMASII, amentis tcrminahbus brevibus ovalibus pauciflons pedunculo semipolhcari nudo, squamis ohovato-rotundatis piceis apice vix obscunonbus glabns basin capsulae late involvcntibus, capsuhs ovatis obtusis ruiescentibus tenuissime putauilis subglabrescentibus brevissime pedicellatis, pedicello nectanum vix suWrante, stylo lerc nullo, stigmatibus brcvissimis integns, folns rotundato obovatis oblusiusculis aut -.ubretusis supra vindibus glabns subtus palhdionbus obovato neivosis venisque tiansversalibus areolatis pnmo pilis senceis adpressis albo villosis demum glabiatis maigine omnino mtegernmis. J In Helvetia ad Bagne, Valesidi 1802 log E lhomas b retusa var. Ihomasiana Reichb. Cent t ^60 p 16 f. 1192. Pruticulus digitalis, facie foliorum omnino Myrtilli uhginosi, habitu et charactenbus inter S retusam et reticulatam proisus media A S reticulata habet ioha subrotundata vel latissime oblonga, subtus pallidiora et leticulato-nervosa nee non pilis pnmo albo-villosa, amenta peduntulata, capsulas ovatas subsessiles vix sUlo ullo praeditas tenuissime tomentosas, sed a b retusa folia unciaha elongata, mterdum apice letusa, tenuiaet planiora, capsulas subglabrescentes ovatas (v. s).

131. S THOMSONIANA (Anders. Journ Linn boc 4 14. p 54), amentis in ramuhs elongatis annotinis foliatis terminalibus elongatis cylindiicis masculis laxiflons iemineis subranflons, squamis obovato lotundalis atns, apice albohirsutis, capsula globosa longe et dense albo villosa, nectano atro pioducto fere mediam capsulam attingente, stylo producto ad basin bifido, lacnnio piceisdivancatis, stigmatibus bievibus subdivisia fuscis, foln$_a$ lanceolatis subtus incano-ullosis nervis albo lineatis lnrsutis tenuiter et remote seirulatis 5 In India onentali bikkim reg temp alt 10000 ped. (Hookei et Thomson). Fruticulus subpedahs, trunco valido, lamis adscendentibus nitide fuscis Foha lanccolata, vix pollicem longa, iupra medium parum latioia, ¼ poll lata, basi apiceque attenuata, maigine tenuissime revoluta, supra obscure vindia et glabra, subtus incano-hiita Amenta masc 2-pollicana, flexuosa, remotiflora, hlamentis exsiccatione piceis, anthens luscescentibus, ieminea breviora magisque densifloia, squamis rotundatis capsulam mediam superantibus, capsula omnino sessili. Species maxime singulans a cttensJacile distinguenda, S reticulataB ob capsulas globosas minimas et densissime albolanatas subaihnis, sed folns et stylo toto coelo diversa. Folns b. repenti subsimilis. (v. s. in h Hook.)

c. *Herbacex.*

Fruticuli pumih, facie subherbacei, tiunco parvo subtenaneo, ramis brevibus, subdigitahbus, adscendentibus. Folia orbiculana basi apiceque emarginata

v oblongo olliptica glabra, nervis prominulis elevatis reticulata, conaceo-mdurdta Amenta pedunculo gemmifero subtermmali pedunculata, fohis 2-°i suffulta brevia, rdnflora, squimis apice rotundatis, capsulis comco-subulitis rufescentibus, stylo producto rostratis

132 [9] S NUMMULARIA, amentis ramulos folnferos et gemmiferos termmantibus brevibus ranfloiis, squarais coticavis Iruncatis flavis glabns vcl tenuissimc cihatis, cipsulis ovatis ghhns sessilibm, nectano basin capsulae superante, stylo perbrevi fulvo, stigmatibus nitegris crassis erectiuscuhs, fohis orbiculato cordalis utnnque glabernmis nervoso costatis et rcticulato venulosis margine omnino mtogprnrais — 5 *[n Slbina] arctica (ad fl Boganida Middendorf), ct in Sibini altaica, in alpibus ad fl Jschuja (Bunge) S retusa-rotundifolia Bunge Lnum alt p 85, iraulv m Midd Reis 1 p 2 1 p 8, 146, 152 Cst quasi a S rctusi et herbacea (vel polan) composita A pnore habet lamos flabclldtim rcpentes, folia pallide vindia, immo subflavicantia, conaceo-indurata, integernma et parallele costato nervosa, nervis bisi contiguis, sed a S bcrbacea folia latissima et bievia, saepius basi cordata (vix nisi in iorma majorI apice subproducta nee marginata) reticulato venulosa, amenta pcdunculatd, capsulas longe conico rostraUs, rufesccntes (v s)

p, *subietusa,* folns fcie J pollicem longis non raio oblongo obovatis basi cordatis, vems ima basi foln evolutis. — S. retusaiurcz Cat baik 1 c n 1040 — In dlpibus Dahunae

J33 S HERBACEV (L sp 1445), amentis ramulos subbifohos termmantibus o\alioblongis 3 12-flons ranflons fohis subinvolutis, squamis concavis obovato-ovalibus truncalis ^el s| dthulatis subretusis fla\o rufescenti piccis glabns Vel cinereo pilosis, cipsuhs o\ato-comus glabns ^^sessihbus, nectano pedicel lum brc^em subsuperante, st^lo bre\i piceo, ^gmatibus bifidis divaricatis fuscis, folns coidato-oibicul His vel ovahbus ODtusis rclusisve utnnque gla bernmis nitidis cle\ito-reticulato-"\enulosis margine subargute serratis 5 Locis duns apncis summarum alpium totius Luropa? a Sibaudia in Lappoiiiam arcucam, a Jyrenaeis ct Scotia in Transylvaniam, in omni Sibin t I tiam in Amcnci oilcntali in A\ hite mountains —Willd sp pi 4 682, Ir Mint 1 Te^'ahlcnbrT suet n 1118, Koch Comment p 03, S>nops ed 2 p 759, Keinerd ti Wud p 201,Wimmerfl v Schles ed 3 p 194, bal europ p 125, Hartig Forstl cult p 387, Sm E H 4 4199, Hcok et Am bnt fl cd 7 409, DC fl fr J 288, Gren et Godi fl.fr 3 14 3, Willk et Langc fl hisp p 232, Bcrtol fl it 10 317, Ledeb fl ross 3 624, Rink Groenl p 121, Asa Gray Manual ed 2 p ^18 —*Icona* E B 1907 Hoffm Sal t 20. Host t 104 Anders Sal hpp 22 Reich 1152 Hdrti£ 10> (356). Sal Wob 62 S\ Bot 307 Tl I) 117 —*Exsicc* Pi.lib norm T 67 Wimm lib Sal n 7) Keich 953. BJlotn 1064 Kerner Hb Sal n. 36 37 Ab omnibus facillime dignota statura perpusilli sscpe vix prlhcan ramilhstnctis aut flibellitim prorepentibus paicc fohosis fohis oibicuhnbus semipollicanbus creberrime reliculatis serratis vulgo em lrginatis, amentis lirevibus et capsulis glibns Vanat 1° fohis orbiculan-iotundatis, basi et apice plerumque emarginatis, evidentius serrulatis (quaj majo- el minor) et 2° fjlns aut basi attenuitis apice rotundatis et retusis, aut obsolete acuminatis, minus distincte serrulatis

p, *(labrllans,* ramis feic pedal bus longc seipentibus apice foliatis, fohis parvis oblongo-obo\ Ltis omnino mtegenimis aut basi dente uno alteiove obsolete serrul Uis In Ros&ia et Finmarkia arctica ubi nulla S ovahfoha crescit, cui ceterum subsimihs S herbacea Schrenk Rcise 2 p 523.

Y, *subpolarn,* fohis mi^nis dilutionbus supra planiuscuhs subtus hneato-^enulosis vi\ aulcn vcnuloso reticulatis marpme integris, capsulis una altciavc sene pilorum pissim obsitis — In llerjedaha Suecn? (Thed) et I«inmarka occidentali (Ih Fnes) Ad S polarcm transitum evidentissimu n piaebet quum pihs (attamen perpaucis) cipsularum turn fohis planiuscuhs ngidis integiis — Ab omni S nunamulana difTert statura macnori, fohis tenuionbus,ovato-cordatis, apice subproductis, et capsulis elongato rostratis

13 I S. SARMCMACEA (11 Nov Fl suec Mant 1 p 75, sub S retusa), amenta

lateralibus et subterminalibus folns rite evolutis suffultis angustc cylmdncis lanflons erectis, squamis obovatis truncato-rotundatis fulvis apice obscunori glabnusculi^ vel b rbito villosis, capsulis conicis elongatis glabns pedicellatis, pedicllo neotauum bis tcivc superante, stylo clongato intento, stigmatibus bipartitis divancatis fulvis, folns ovatis v obovatis glabns vel mitio pilosis subtus opacis distinctius costatis et venuloso reticulatis margme serrulatis £ In regiono ilpina Norvegiae quum austialions turn boreahs, in Lapponia Torntnsi et m Herjt Jaha Sueciae — *i Nov Mant 2 p. 63 Summa Sc p 58,Hailm Sk H ed Op 182, Anders Sal. lapp p 84 S hablataherbacea Anders 1 c p 51 S letusam ex Alpibus men lion ihbus I uropae in borealibus repraisentat Kst tamen lruticulus subertclus folns sul tus palh dionbus, amentis cylmdncis multiflons et capsulis distinctius pedicellatis stvloque elongato rostiatis distmcta His notis S hastatam alpinam revocat, aqua differt folns apice szepius lationbus et emargmatis, elevato nervosis, crebnus serratis, amentis dcnique macnonbus A S herbacea lecedit folns

6, *roturidifolia* folns orbiculanbus bisi subcordatis planis subintegns, amenta brevibus, sq iam s longms ulloso birbatis, capsulis bievius pedicellatib niagis ovato conicis tcnuiter pubcscentibus, stylo adhuc longion In alpe Anskutin Jemtlandiae in Suecia A S saimenlacea non parum lecedit foliorum foima ct nervatione necnon amentis, siuamis et capsulis, quibus magis ad b ovatam appropinquatur, apcrte autem S herbaceae aifimor

135 S ROTUNDIFOLIA (lrautv *U(m* de l'Acad de Moscou 8 p 30 i) amentis in ramulis foliatis gemmifens terminalibus o\ihbus paucis ct rinfloiis loins absconditis, squamis obovatis truncato rotundatis fuscis c(ncolonbus in masc sat loncc cihatis, capsulis oyuto lanceol Uis glabns rufescentibus brev^sime nedicellalis, pedicello neclaitem subar qu mte stylo subproducto stigmatibus bifidis crassiusculis dnancalis, loins jrbiculdtis emargmatis integunmis glabns inteidum subciliatis venisutiinquc c jstirum instirVdiide prc nnncnlibus. In Ameiica arnica occidental! ut ad sinuin St I lurentn, in pcnnisul i Lnalaschka, etc S polans lupcaipa Chamisso Linnxa 0 p >42 & retusa rotun Stolid Ledeb fl loss 3 p 024 p P Quasi lormaS rctusae maximo lotunch folia illi scrpylhlblicc analoga Sed folia qucC in b retusa et modiCcalioiiibus ems formam elongatam typice habent in hac e contrano maxime lolundata, nefvis multo vahdius prominentibus costataet nsphcata Potius ad s. polaiem referenda sed cap^ulae ahenac' (v s)

136 S POLARIS (W - - - fl lapp n 473), amenlis ramulos tciminales (\ la terales v gemm is concavis ol ovito o^alibus tiuncatis v spalliul itis subre- fl s, sqi SSs^Sr'eswn^ceis vel fuhescentibusgli' rib ^el V,UOSU1IB, caISuhs ovato conicis sossihbus plus minus albo tomcntosi* nectano basin wpsula attinffente, stylo subproducto fulvo-f JScescenLe, sligmalibus bifidis divaiicatis fulvis, folns orbicülatis v o^ ihbus basi vcl apice lationbus cmarfein ms vel obtusis glabLrnmis concolonJus vel subius paullo pallidu ribus utnnque mtidis conacco ngidis pi mis hncato-nenosis obsoletns venuloso aieolatis margine plerumque lntt^cnimis ^ In tota regionc maume iiotica orbis auum \etens turn now (ibi autem saepius s lotundifolia et ahae hanc leprae sentant) — Wahlenb suec n. 1119 Pries Mant 1 p 76, Anders fl bal lapp , Wimm Sal europ p 127, Koch Comment p 04, Iedcb fl ross 4 p G2o, Hook fl lorcahimer *2* p 1)3, Middendcrf Reise 1 2 1 n 3 8 14 25, Mortons in Lmnray Malmgren H Spitzb p 245 m Oh. if 1Jrl Ak loih 1862 p 249 S lieibicea ^ol in Phipps voy etHook Purys -Narrative of Voyage 1827 —*hones* Wahlenbg fl lapp t 13 f 1 Sv Bot 493 Anders 1 c f 28 Reich f 1183 Sal Wob t 0i (mala) — *Locsicc* Fr H N V. 68 S herbaceas ita simihs, ut ab ca MX distinguatur Vulgo giacihor folia habet pnmo tenuia, sed exstant modifiiitioncs foliisplus minusevidenter serrulatis hanc maxime simuhntes itn etnm ut in S herbacci cip ulae non raro observantur sublnrsutae ct folii obsoklms seirulata! Specimini in im markia occidentali, adKiu jad legit cl Dr Ih Fries «S polans cijsulis glbernmis folns (lbiculanbus integernmis » S heibaccam ctS polaiein viden ter coujungentia (v T)

137. S. GLACIALIS (Anders. Sal boreal.-amenc. 1. c. p. 131), amentis in ramulis annotnns laterahbus vel terminahbus foliatis pedunculatis ovato-globosis, squamis rotundatis fuscib glabnuscuhs, staoiimbus palhdis, capsulis ovahbus albo-lanatis sessilibus squamas fere duplo superantibus obtusissimis, *t>lo nullo, stigmatibus sessilibus bifidis fuscis, folns ovahbus vel late lanceolatis ngidis supra obscure vmdibus ncr\oso hncatis subtus glaucescentibus utnnque glabernmis \el ad costam infra subferruginco hirtis integerrimis. J In httore mans glacialis (inter C Barrow et Mickenzie river . Capt Pullcn) S. Uva Ursi Seem Voy of Herald 1. c p p Lst quasi inter S ovaliloliam et S. polarem media, vel pnons forma pusilla A priori diflert folns vix \ polhcem longis 2-3 lin latis, amentis duplo bieviorums, capsulis senceis et stigmatibus sessilibus, a S. polan folns acutiusculis subtus evidenter glaucis, capsulis longius villosis et stylo nullo Fiuliculub parvus vix digitalis est. (v. s)

d. *Reticulatx.*

Fruticuli trunco subtenaneo ramis flabellanbus humo adpressis aut erectiu[c]culis tolia orbiculana, intend, venis subtus elevatis et ciebernme anastomosantibus quasi scrupulosa aut argentco villosa aut glauca Amenta teiminalia longe pedunculata, giacile cyhndnca, squamis rotundatis rosaceis, toro in urceolum lacimatum tumente, capsulis ovalibus, albo-lanatis, stylo bihdo.

138. S. VESTITA (Pursh, Fl of North Amcr. 2. 610), amentis terminahbus pedunculdtis basi subranflons angustt cylindraceis, pedunculo foliato, squamis fulvcstentibus obovatis ciliatis, tapsulis oblongo-ovalibus sessilibus incano tomentosis obtusis, stigmatibus bipartitis fuscisdivergentibus, folns petiolatis oblongo ovahbus. apice gldbns subtus glauco-albesccntibus In Lain adoi, circa lacus maiorcs Amencae borealis, m Rocky mountains et ad oras glaciales mans septcntnonahs Etiam in Altai montibus legg. Schangin et Geblei S vestita Hook, fl boieal.-amer. 2 152. S. reticulata a vestita Anders. Nord. Amer pil. 1. c. p. 133.

OLJ humihor, fruticulus subpedalis e basi decumbente adscendens, ramis tenuionbus, folns ovali-oblongis basi subcordatis supra Ia3te vindibus subtus intense lactcis evidentius reticulato nervosis diutius senceo-pilosis, amentis brevionbus magisque densiflons. —Charactenbus, specimina praecipue altaica si perspicias, ad S reticulatam aperte transit sed habitu iruticis ramosi folns tenuionbus ornati ab ea non parum divcrsa.

p, *erecta,* frutex 2-4 pedalis, ramis stnctiusculis glabernmis cuiereo lucidis apice castaneo-rufescentibus, ramulis annotinis brevissimis folia 2-J et amentum proferentibus, folns polhce sublongionbus dd medium semipollicem latis elongato-oblongis vel late ldnceolatis apice obtusiusculis basi subrotundatis supra lucule vindibus pkniusculis vixnervis impiessis rugulosis, subtus adolescentid senceo pilosis, adultis omnmo denudatis sublacteis costa et nervis palhde flavicantibus percursis lnlegernmis, amentis fere basi'ranflons A typica S reticulatd valde recedit, sed ad earn evidentei adpropinquatui modificatione piaecedente.

139. S ORDICULARIS, amentis longe et nude pedunculatis gracilibus densiflons eiectis, squamis rotundato-obovdtis glabiis fuscis, capsulis ovah-conicis acutiusculis tenuius incano-tomentosis, stylo nullo, stigmatibus fuscis bipartilis divergentibus, folns suborbiculanbus vel obovato-oi biculanbus utnnque gldbernmis supra obscure Mndibus impresse nenosis subtus palhdionbus densissime fusco-nervoso-reticulatis maigmatis longe petiolatis, petiolo saepe plus qunrn pollican J In Kamtschatka et in Ameuca boreah-occidentah ut ad Sitchka et Unalaschka. — Iruncus longissime serpit lamulos subvillosos tadiciformes undique emittens. Rami apice tantum modice assuigunt, ibi folns 2-3 ornati, atn, glabernmi Gemmae fusco-piceae, omnmo glabra^, obtustfi, subadpressae. Folia pollicem longa et lata, supra medium vulgo latiora, apice lata rotundatd haud emargmau, basi lotundata vel obsoletius attenuata, maigine integerrima sed potius s»ubie\oluta, subtenuid, neivis supra valde immeisis, subtus distinctissime fusuo-roticulatis aieolato-rugosis ne vestigio pilorum deiehcto glabemma. Petiolus giacihs, subflexuosus, non raro polhce

. longior Amenta ut in typica, sed vulgo graciliora A formis vulganbus S. ' reticulatae habitu abunde dnersa (v s in h petrop)

140 S BETICULATA (L sp 1446), frutex depressus , ramuhs apice folnfens, amentis terminahbus longtime pcdunculatis densiflons inguste cyhndncis, pedunculo fohato, squamis flavo roseis unicolonbus rotundato obovatis, capsulis ovah-ovatis sessihlms incano tomentosis, nLctano urcp)h laciniati instar basin capsulae cingente eamque saepe superante, stylo brevissimo vel nullo, stigmatibus bifidis fuscis divancatis, folns petiolat s clhptico-rotundatis supra rugosis subtus glauco pallidis reticulato-\enosis integns 5 In regionibus boieahbus et alpinis Fuiopap, et in arcticis et septentnonalibus Asiae et Amencae, m insula Spit/1 eigen ct in Groenlandia — Wahlcnb suoc p 660, Hartm Skand cl 8, AndeLs Sal hpp p 83, Koch Synops ed 2 p. 756, Gaud helv 6 250, Ser Tss p 27, Vili delph 3 779, Godr et Gren fl fr 3. p,142,Bertol fl Hal 10 p 319, Hook et Am bnt ed 7 400, Ledeb fl. ross 3 p 623, alt 4 p 291, Rupi fl samojcd n 26J, Ghamisso Lmnaea 6 p ^42, Hook et Am Beechcyvoy p 130, Seem Herald voy p 40,54, Hook. 11 boreal Amcr 2 p 151, Rink Groenl p 121, M ilmgren Spit/b 1 c p 249 Chamitea reticulata Kernel Weid Oestr p 277 — *Iconw* Host Sal t 105, Fl D t 212, Sv Bot t 5£9, r. B. t 1908, Reichb Icon n 1189, Sahct Woburn t 67. — *Exsiec* Ser Exsicc n 33, Fries n 9 62, Reichb Exsicc. n 1421, Billot Exsicc n 1963 Lst species ab omnibus cetens sahcibus quum habitu turn notis ita distincta, ut Dr Kerner, hujus generis acutisbimus monosrraphus, earn typum generis sui, Ghamitea appellati, proposuit quam opinionem attamen nupcmme deseruit (v s)

α, *tunica*, folns ovah totundatis v elhptico obovatis oblongisve Mipra glaberrimis subtus albido glaucis ngidis — 1° *glabra*, folns utimque glabernmis — 2° *sencca*. loins subtus plus minus argentco-villosis basi subinde glanduloso subsenatis In Luropae et Asiae septentnonahs alpibus frequenteroccurnt, nunc depressus nunc sul erectus, folns rtunc 1 poll, nunc vix ½ poll longis, latitudine maion supra vel infra medium vamnte InTalpitius calcareis Europae mendionahs forma sencea vulgatior

fl *nualis* (S mvalis Hook fl bor Amer 2. p 152), nana, trunco et ramis v?Mlhcânbus fohis 1 2! lin longis elhptico obovatis vel cordato ovatis r t o n T O « ^ m w % e n t i s subquinqueilom In cacuminibus cvhtionbus Rockfrnounta^, Labrador, et "ad oras glaciales Amenc-e, in Islandia e\ SpitzTergen. Inter plantos hgneas maxime pusillas terra adunmeranda I

141 S HETICULOIDES, amentis terminahbus crasse cylindraceis densiflons flexuosis patuhs, squamis fuscis obtusiuscul.s dense albo-villosis, capsuhs conic^^acStis^glabe^nmis sessilibus, stylo parvo sed evidente, stigmitibus Paivis integns eroctmscuhs, folns obovato ovahbus breve acuminatis jumoribus pilis sat longis adpressis subsetireis,adultis glabemmis primo tenuibus demum ngidiusculis subtus pallidis venuhs anastomosantibus crebre ct pulchre reticulatis ^ In alpibus summis Lappomae Lulensis (ipse) et in terra Samojedum (Schrenk) Inter S hastitam et leticulatam aperte ambigit, ab ilia habet staturam subcicctam, ramos glabros fuscos, folu saepe basi apiceaue subaequahtcr attenuata adolesccntia tenuia subpcllucida glabernma subtus palhdiora margine minute et conspicue serrulata, sed praecipue amenta terminaha 1 J poll longa i-4 lin crassa serrulata, squamas villosas et capsulas cia>ernmas corneas rufescentes stylo evidtnti rostiatas et stigmata tenuia palhda, sed a S reticulata staturam humifusam, ramos torulosos annotinos dense incano-tomentosos, folia aut basi aut apicem versus latiora ita ut latitudinem longitudine fere aequant, basin versus snepissimo Integra, juniora pilis sat longis adpressis subsencoa subtus e\identissime reticulata, sed praecipue amenta terminaha dcnsitloia, capsulas sessiles basi ciassas — Specimina nonnulla legi folns migis angustatis diutius pilosis suhtus intensius claucis insignia quae idpertius b hastatam revocant, crescendi modusautem omnmo ut in S reticulata (v v)

C. SAUCES SYNANDR*.

Staminum duorum filamenta in unum plus minus connata.

§ 18. *Incanx.*

Frutices sat alti alpigeni, ramis subvimineis. Folia lineari-lanceolata, supra opace vindia, subtus lacteo-tomentosa. Amenta sessilia, anguste cylindrica, arcuato-flcxuosa, squamis obtusis flavidis, lilamentis plus minus connatis, capsuhs pcdiccllalis, stylo evidcnte praeditis. — Canae Kern 1. c. p. 49.

142. S.INCANA (Schrank Baic. 11.1. p. 230), amentis sessilibus arcuatis gracihbus anguste cylmdncis bracteis suffultis, squamis fulvis rotundato-subcuneatis fere truncato-crenulatis glabns vel tenuissimc cihatis, staminibus basi subconnatis, antheris flavis, capsuhscomco-lanceolatis glabernmis fuscescentibus pedicellalis, pedicello nectanum bis superante, stylo brevi sed evidente, stigmatibus filiformibus bifidis divaucatis, folns lanceolato-lmeanbus acuminalis margine revoluto subdenticulatis subtus adpresse et opacc tomentosomcanis sublacteis costa valida fulvescent(», stipulis nullis. 3 Secus npas fluminum in convallibusinfraalpinisEur.opa3austi.ct mediae ab Italia et Hispania in planitus Silesiae mcndionalis, Danubii ct Rhcni usque in Luxembouig, onentcm versus in Moldau et Balkan. Etiam in Asia minori ad Aradach (Weidemann).—Koch Synops. ed. 2.p. 747; Kernel Oestr.Weid. 1. c.p. 226;Wimmei Fl.Schles ed. 3. p. 192, Sal.europ.p. 25; Willk.etLangc fl. hisp. p. 227; Harti^ Forstl. Cult. p. 400; Gren. et Godr. Fl. fr. 3. p. 128; Gaud. fl. helv. 6. p. 230;»DC. fl.fr. 3.284. S.337; Willk. et Lange fl. lnsp. p. 227. S. ripana Wilkl. sp.4. p. 698; Bert. fl. ital. 10. p. 308; Gnseb. fl. Rumel p. 344. S. lavandulaefolia Lapeyr. abr. p. 601; Ser. Exsic. Ess. p. 70. S. angustifoha Poir. in Duh. arb. ed. 3 p. 29. S. rosmannifoha Gouan hort. 501; Host Synops. p. 529. S. Elaeagnos Scop. cam. 2. p 257. (quam Lamen ad S. bifidam duxit Wimmcr). S. vimmalis Balb. Jaur. p. 165; Sut. helv. 2. p. 28G; Vill. Delph. 4*. p. 785. S. hneans Forbes Salict. Woh t. 89. — *Exsicc.* :,Rch% n. 958. Ser. exsicc. n. 8. Schultz n. 154. Wiram. 81. 94. Billot 6'i5. Puel Hb. fl. Europ. 43. Kerner Hb. Sal. Gl-66.— *Icones-* Host Sal. 58. 59. Reichb. 1247. Sturm D. fl. 25. H. Hartig. t. 113. (37 c). Sal. Wob. t. 90. Frutex sajpe majons altitudinis, folns et amentis a cetens lacile disLinguendus. Folia sacpe 2-5 pollices longa, 1-4 lineas usque ad semipcllictm lata, supra saturate vinuia, nonnunquam tenuissime et obsolete tloccoso-cinerascentia, nervis subimpressis, subtus tomento plus minus denᶜe sublactea. Amenta mascula subpollicuia, incurva, sub anthesi rubella, obtusa, feminea l|-2-poihcana, lanuscula, cap^ulis hneahbus vindulis vel testaceo-fuscis. In varus locis statura et magnitudme foliorum admodum vanat, nunc frutex altus folns valde elongatis aut subtus tomento lacteo villosis, marginibus revolutis (in regione subalpina convallium), aut tenuionbus et lationbus, subtus denuda to-sordid is venisevidentionbus, margine serruJato vix revolutis (in phnitie secus fluvios majores) — nunc frutex humihs loins valde confertis angustissimis (in editionbus alpium). Praeter sequentos quas hybnda ongme ortasplenque censent auctoresduas formas habeo exHelvetiasatmemorabiles non autem flonbus mstructas ut natura earura plane perspici possit. Sub nomine S. arenarwT a. 1826 divulgavit Schleicher specimina quorum alterum folns ornatum medium tenet inter S. Helvetitam et S. incanam. Folia vix 2 pollices longa, obovato-lanceolata, brevissime acuminata, sujna medium vix semipolhcem lata, supraglabemme nitentia, nervis dilutionbusnotata, subtus costa vahda ^ilva percursa, lana opaca lactea obtecta, adolesccntia pilis sat longis adpressis sencea, petiolo sat longo rufesconte, gemmam obtusam sat magnam glabram superante; rami torulosi crassiuscuh castanpo-nitentes Specimen amentis masculis praeditura ad S. Helveticam pertinet Jn alpe supra uibem Aigle in convalli fl Rhodani fruticem ipse 1857 observavi tune (mense sept) tantum folns mntructum. Folia forma et ngiditate omnino S. myrsinitidis, statura et ramificatio fruticis etiam u?t in hac specie, sed indumentum folioium ut in S. incana. Rami undiquedivergentes, rubicundi, glabemmi. Gemmae adpressae, albescentes. Folia pollice longiora, exacte Ian-

SALIX·

lala supra laete viridia, nitidula, subtus lactea costa fulva lineata, margine tenuiter sed crcberrime dentato- et glanduloso-serrulata. (v. v.)

v s WIMMERI (Kerner Regensb. Flora 1852. p- 511), amentis sessilibus brevibus foliis minutis bracteatis vel nudiusculis, squamis basi ferrugineis apico rotundato fuligineo-nigricantibus brevius pilosis, filamentis basi connatis, rnnsulis conicis subcompressis glabris subsessilibus, pedicello nectarium aTmiante, stylo mediocri, stigmatibus efccto-patulis, foliis qblongo-lincari-Kncеolatis saltern juuioribus srcpius utrinque albido-;iraclmoideo-tomentosis Hiiitis supra lucide viridibus subtus albido-glaucis, stipulis obsoletis vel ^riduis gemmis sat magnis saltern basi albido-tomentosis. $ Prope Genevam ma-iiprV in Austria infcriori et Tyroli paucis locis (Erdinger et Kcrner). (KPTH Verb. d. zool.-bot. Vereins in Wien. 2. 61, Nied. Oestr. Weid. p. 230. r fiSa-Hoirm? ex Reut. Catal. pi. Genev. p. 35. S. Keuteii Moritzi Flora d. Q^I-weiz P. 459, a. 1844'. — S. daphnoidi-incana Reut. msc. et herb. S. incana-Snhnoides Wimm. Jahresb. d. schlcs. Ges. 1852. p. G4, Denkschr. p. 158. SF -curop. p. 158; Neilr. Fl. v. Nieder-Oestr. p. 256. — *Exncc. :* Wimm. n--88 Kern. Hb. Sal. n. 43-45. Frutex aut arbuscula us<iue ad 5-orgyahs, ramis'fragilinus, junioribus arachnoideo-tomentosis, adultis glabratis saepe nruinosis. E S. daphnoide habet folia sape 4-pollicaria, margine acute serrata, Spmum supra viridula, iirma," subtus subglauca, amenta pilis fulvescenti-hirsuta capsulas glabras viridulas, tenues, stylo elongato rostratas. A S. anrma'amenta breviora et angustius cyliiidrica, squamas qbtusissimas basi f-l-pscentes stamina basi connata! Capsulas pedicellatas, folia tomento opaco -Item subtus statu junioii obtecta et costa fulva percursa. (v. s.)

sa...

/ on (*rifolia* foliis longissimis oblongo-evl lineari-lancoolalis in acumen a'i *nlnim* Diiductis supra satufato viridibus nitldulis subLus glaucis glabratis, summis tantum arachnoideo-tomentosis (ad S. incanam).

a hrwifnlia fol. linearibus elliptico-oblongis brcvitcr acutis supra sordide virentibus'puberulis subtus aqualiter farinaceo-pubescentibus incano-Lcis (ad S. daphnoidem).

γ, *denudata*, fol. subtus opaci d glaberrimis supra lucidis margine sat acute serrulatis. S. daphnoi dhuc similior.

XX S. SERINGEANA (Gaud. apud ber. to p. ^r. Ess. P. 37 et fl. lielv. 6. p. 251), amentis subsessilibus arcuatis crassiusculis masc^Omo. ^n ris femin ejs c^ u^n cis b racteis suffultii squamis ovali-oblongis obtu is ice obscu (lors o p ilosis ca sulis opace a b- mentosis conico-rostra S pedicellatis, podicella nectal p super te, stylo tenui elongato, sti^matibus filiformibus bifidis rium bis foliis lanceolato-oblongis apice subacuminatis margine undulato divaricatis, um supra l glabre *wn*bu** -ubtus albo-tomentosis subcrenatis ^ipulis semic S s c r e n a t i s acutis. Hab.ad rivulos in conrugoso-venosis^.st oraa roli Garintlliifi et in Silesia austriaca ad valhbus subalpm 13 Helvet nE' ly tur etiam e renæis Catalauniae (Colmeiro sec. Lange). - Koch Synops. ea. 2. p. 747 (S i . S. intermedia); Kerner Weid. Oestr.l. c. p. 222; Hartig Forstl. Cult. p. 401; Willk. et Lan ge fl . nisp. p. 228. S. lanceolata Ser. Ess. p. 37; DC. fl. fr. 5. p. 348. S. holosericea Ser. Exsicc. n. 70. S. Kanderiana Ser. Exsicc. n. 42. S. longifolia Schleich. Cat. S. Smithiana β obscura Gren et Godr. Fl. fr. 3. p. 131. S. canescens Willd. herb. n. 18174 ram. florif. S. incano-caprea Wimm. Regensb. Fl. 1849. p. 46, Denkschr. 1853. p. 159; Neilr. Fl. Nieder-Oestr. p. 260. S. caprea-incana Wimm. Sal. europ. p. 149. S. cinereo-incana Wimm. Regensb. Fl. 1848. p. 33 3? — *Icones :* Reich. I. \Ti\). ser. i. i. —. *JLXSICC.* : Wimm. Hb. bai. - *ak* fauam Kerner ex S. incana et grandifolia ortam credit). Scr. exsicc. n' S' 70 .7J. 72- Kern « H1) - SaL n> 49> 53 - Wimra - Hb. Sal. n. 63. Coll. n. 221- ?«« Arbuscula 3-4-orgyalis, habitu ct characteribus inter S. incatiam et irandifoliamprorsus media, ab utraque autem foliis subtus lacteo-tomentosis S u e t amentis facile distinguenda. Rami fusco-picei, glabri, novclli tomentosi Folia 2-4 pollices longa, *i-V₂* poll, lata, oblongo-obovaU, apice intenlum

1 Nomen vetustius, ideo aliis praeponenduin (Alph. DC)

obliqua, supra demum saturate vindia, subtus costa \ahda et nervis fere rectangulanbus subrugosa stipulae subinde scmiremformes Amenti mascula crassa et brevia, squimic atns et stammibus imabasi coalitis aureis viu^gata, feminea us S grandifohae albicantis simi'hma, sed capsulae multo brevius pedicellatae magisque acutae, in stylum evidentem attenuate (v s)

a, *macrophylla,* folns m^dio evidentiu« lationbu* sc 3 poll longis ultra pollicem latis su! tus dense albido tomentos s — Kernel 1 c et exsicc n 49 S holosencea n 70 et S gemmata n 71 Wimra Txsicc n 61 (forma Col tenuionbus brevionbus integris a Kerner ad S inteimediam rehta, scdfol supri medium evidenter lationbus diversa[1] AdS capream maximc vergens')

p, *angustifoha* (Gaud 1 c) folns angustius lanceolatis utnnque attenuatis apice longius acuminalis 3 4 poll longis vix pollicem latis cdsta crassa subtus piominenlcfuha S holosencea angustifoha Ser Exsicc n 72

Illuslnssimus A Kerner, qui summa dihgentia et sagacitate Sahces Austria) extncavit senem lormarum e S incana ct Sal cibus e tnbu Caprearum piocreatis >el inter eas omnmo intermedias proposuit, scilicet h Senngeana = S incana x Ciprea — S intermedia = S incana x grandilolia — S hircina = S incana x S cmerea — S patula = S incana x S aunta Quum autem omnibus cognitum sit, quomodo species Caprearum inter se connexae sint, ita ut adhuc lncertum quibusdam videatur num mtei severe diversae sint, quum piaetuca b incana folns nunc angustis v latis, nunc lacteo tomentosis v denudatis variat, non pio ceito afhmare audemus has scquentes form as ipsa natura ut specificc divcrsas proponendas et a distmctis specicbus vane protreaias esse

X S INTERMEDIA (Host Salix p 17 t 56 57), amentis angustionbus cylindnos rectiuscuhs cinereis, squamis hngius cmereo-pilosis basi flavis apice brunneo-purpureis, capsuhs tenuionbus tenuius tomentosis, folns elongato-lanceolato linearibus supra \indibus glabernmis lucidis costa albida percursis subtus lacteo tomentosis vel denudato vindulis In horto Vindobonensi a Host culta (ex Garmola[1]) a Kerner in lyiolis australibus et in Austria l^Prion in monte Josefsberg detecta — Keiner Weid Oestr p 224 (S gnndifoha X incana), Lxsicc n 54—S6 Wimm Sal europ p l'>l S incand cincrea Wimm Flora 1849 p 4(, Denkschr 1853 p 159 S subalpina Schl Exsicc Kern (S supragiandiioha X me ma) Oestr bot 7eitschr 1866 p 338 A vera S Senngeana non dillert nisi fblns adhuc angusuonbus, feie hneanlanceolatis ldeoque longionbus, supra sa?pius lunde vindibuś, subtus nervis tenuibus reticulatis, margme profundius crenatis, amentis sordide cmereis et duplo angustionbus .

X X S HIRCINI (J Kerner in htt ad A Kerner), amentis basi bracteis parvis 3 4 suffultis 1J poll longis 2 lin crassis cyhndncis erectiuscuhs, squamis fuscis acutis pilosis, capsuhs tenuibus basin versus glabrescentibus, folns *I* pollices longis supra medium fere poll latis basi attenuatis apice breviter et sub oblique acuminatis supra junionbus sparse pilosis sordide vindibus nervis lmraersis subtus tenuitei lacteo-tomentosis, costa nervisque lateralibus flondis elevatis — Kern (S cinerea X incana) Verz d zool -bot Gesellsch in Wien 1864 p 99 Hb Sal n 58 Wimm Sal europ p 153 Hab prope Wien, ubi nulla S grandifolia adest A priori diflert folns supra sordide vindibus, subtus minus elevato-nervosis et reticulato-rugosis, amentis magis tenuiflons ct capsuhs basi glabrescentibus

X X X S OLE^EFOLIA (Vill Delph 3 784), amentis subsessihbus ba«si paucibracteatis cyhndncis subranflons, squamis oblongo-spathuhtis obtusis flavicantibus apice obscunonbus] arce pilosis, capsuhs oblongo-conicis gnseo-tomentosis pedicelldtis, pedicello nectanum bis quadruplo superante stylo parvo vel obsoleto, stigmatibus crassiusculis subdentatis obscuns, fohis oblongolanceolatis vel spathulatis obsolete sinuato denticulatis vel saltern basin versus mtegns supra cams vel opice \1nd1bi1s subtus incano-tomentosis ruguloso-^enosis, stipuhs semicordatis ad acutis In paludosis alpinis Helvctiae Cymatt prope Bern (Sei), Gallia austiah (Flugge, Villars, Chaix, Lecoq) in Lusitania (Link, Weiwitsph),Hispaniaa Galicia, et Silesia.^-bodr et Grcn Fl tr 3

p l33;Willk etLangofl hisp p 229 S salvi-efblia Brot * Link apud Willd sp 4 P 688*Hartig torstl Cult p 401, Koch Comment p 34, Synops edl 2 p 747 p p (spec elyiohadS intermediamduxit Reiner") S patula Ser ess £ H,GaudinHph 6 049 s Fluggeana NVilld sp 4 p 709, Loisel Gall 2* p 344 S SenngeanaLecoqetLamoitc cat 3o6 S incana-cinered Gren mss S aunta-incana Wimm Fl v Scales ed J p 20 k Sal euroD D 151 — *Icones* Reich f lMgm.Vill Delph t 51 f 28, Sal' W o b T*% *-Exsicc* Sennge n 1 (S oleilol.a non Sm), n 94 (S patula) Wimm Hb n 66, Coll n 22J 226 Kerner (s patula) h Sal austr n 57 CuraS intermedia et b lurcina jam descnptis sat mdubie confluit, snepius autem differt amentis adhuc magis ranflons et tenuibus, squamis totis fulvis, capsulis obtusionbus, folns m igis oborato lingulat s ramisque magis divaucato divisis.

a, *brevifolia,* foliis obovato-lmgulatis obtusis \ acutiusculis vix polhce longionbus ; $ poll latis us S aunta? minons forma similibus pnmo integris dcmum subcrenulatis - HLCS patula Sef 11 99 (S oleifoha n 1 folns majonbus ad longifoham tiansitus)

|3, *angustifolia,* folnsT sublinean lanccolatis acutissimis maigme evidentius revoluto subintegns utrmque dense tomentosis — Haec poiissimum S salvitfiiolia Link

Y, *longifoha,* folns 2 3 poll longis supra medium J J poll latis marcine saepius crenulato serrulatis - Vanat 1- fol.is ngidi.s subtus dense in cams argute venosis s patuh Kein Hb Sal n 57 S oleifoha Wimm Hb Sal p 66 — 2° folns tenuibus subpellucidis H-ec loins tomento densissimo albo lacteis vel tomento opaco denudatis soididis.

XXXX S KERNERI (rrdingcr Verh d zool -not Vereins in Wion 1805 D 78) amentis sessilibus densiflons arcuatis jallidc aureis, squamis oblonco-obovatis apicem versus ierrugineo atratis, filamentis in basi cohaerentibus anthens luteis, folns linean lanceolatis elongitis 8-10 •• longionbus quani latis raargme subrevolutiset minutedenticulat s subtus albo-tomentosis supra obscure vindibus 3 Ininsuhs Hum Danubu, propeKrems (Lrding) s viminahs^incana Kern Frutex sat altus, ramisvirgatisflavescenti-rubescentibus Folia *Z-i* polhces longa, acummata, in petiolum producta, >upra sordide et obscure vindia opaca adolescentia pilis spaisis tecta inde puberula adulta glabra, subtus costa elevata flavicante percursa holosenteo - et diachnoideolomentosa adolescentia subsenceo-micantia, neivis secundirus m utrcque latere 20-30 supra vix conspicuis subtus prominentibus. Amenta mascula polh cana (v s)

14* S BIFIDA (Wulf Hor nor phan p 780 n 1508), amentis miscuhs tenuibus curvato patulis femiiieis elongato cylindncis angustis curvato llexuosis basi paucibracteatis, squamis ovilibus obtusis ijuce 0 scuns tenuitei pilosis, filameLtis ad apicem connatis, anthens flavis capsulis *o*\ ovata basi brevissime conicis tenuiter senccis basi glabiescentibus sebsihbus, stylo elongato fulvo, stigmatibus brevissimis erectis mtegns fusco-purpuieis folns elongato lmearibus ultra medium htionbus supra glabemmis subtus' onacis giducis vel opace senceo-arachnoideo lomentosis costi vdlida lull a percursis margine supenoie tonuiter serrulatis J — Kerner Weid Oestr n 225 Hi/bal n 59 60 S I laeagnos Scop cam 1210? boc Wimm S purDurea-incana Wimm Jahr d schles besellsch t 1, f 1. Denksthr 185^ f 151 Fl v Schles ed 3 p 204, Sal europ p 156, Txs.cc n. 5 S incano-purpurea Neilr Verh d zool bot Yereins I80I p 119, Fl v Nied Oesti p 260

a, *suhncana* <? folns parum supra medium lationbus brevitei acummatis subtus plus minus lacteo tomentosis, amentis brevissirms squamis flavis In Austna (Kern et Winkler) Frutex mediocns ramis subvimmeis glabns Gemmae acutata. Folia 2 3 poll longa, supra medium 7 poll lata, adulta ngidiuscuh, margine feie toto tenuissime serrulata (v s)

p, *subpurpurea* j folns lmean-lanceolaiis longius attenuato-acuminatis glensque nudis subtus pallidius vindibus, summis arachnoideo puberu fs, squamis vindibus apicc adultis S Wichurae Kern exsicc. In Silesia

austriaca prope Bielitz a beato Wichura et nupernme in Austria infer propc Krems ab Erdingero detecta Frutex sat altus ramis stuctis Gemmae intus applanatae toha 3 4 polhces longa, infenora latiora, -J polhc lata, adulta frre ngidiuscula Amenta 1 ^ poll longa capsulis vindiusculis saltern basin versus glabrescentibus A S Pontederana diffeit folns multo angustionbus capsulis glabnusculis, pedicello nullo stylo evidention S pychnoctachyd mdica qude huic similhmd, recedit capsulis omnino glabns, stylo nullo apiculatis, lolus obtubionbus, etc (v s)

§ 19. *Purpurex*

Frutices altiores, mediocres aut pygmsei* glauco vel ol scunus vmdes, ramis tenuibus, tenacibus, glabns Folia elongata, lanceolato lmeana, plus minus integia, glaucescerrtia, saepe sat confertd Amenta anguste cylindnca, squamis obtusis apice fuscatis, stamini gemma, filamentis ranus etiam anthens plus minus connatis, pnmum purpurcis defloiatis nigncantibus, capsulis typice sessilibus senceis, dehiscrntm parum falcatis — Puipureae Koch —Helix *IT* — Semipurpureae et purpureae Kern 1 c p 55

144 S PURPUREA (L sp 1442), amentis sessilibus minute bracteatis cyhndncis gracilibus obtusis densiflons, masculis monandns, hlamentis omnino coa Utis squamis obtusis apice fuscis purpureo atns plus minus cnspato-pilosis caps'uhs ovato conicis obtusis cinereo-tomentosis sessilibus, nectano basin capsulae superantc, stylo nullo, stigmatibusciassis jntegns suberectis, fplns lanceolato linguldtis glibemmis tenuibus glaucescentibus apicem veisuste nuiter serrulatis intcrdum quasi suboppositis, subtus pallidis, sfipuhs obsole tis ^ Secus npas fluviorura, locis uliginosis etc per omnem Turopam usque in Sueciam mcdiam, Asiam onentalem mrdiam ct mendionah septentno nalem Ftum in Persia et Asia minon, ED in America tantum culta — Willd sp pi 4 p 672, Irautv Mem pres a 1 Acad de St Pctersb 3 p 630, Linn Su n 884 Fr Mant 1 p 63,Wimm Sal europ 29, Hartig Forstl Cult p 413, Lange Dansk 11 ed 2 p 6)6, Smith bnt 10J9, Ho<%et Am bnt ed 7 p 392, Godi et Gren Fl fr 3 p 128, Malhieu fl Belg p 486 Koch Comment p 24 Synops ed 2 p 744, Wimm fl Schl ed.3 p 193 KernerWeid Oestr p 272,Bertol ital 10 p 328, Guss Synops 2 p 2 p 624,Willk etLgefl hisp p 227, Sm Piodr fl Graec 2 p 2ol,Gnseb fl Rumel p 344,Ledeb fl ross 3 p 602, Bieb fl taur-cducas 2 412, Asa Grav Man ed 2 P 415 S monandra Horm Sal p 18, Fhrh arbor n 58, Sei *L* p 5, Gaud Helv 6 p 231, Vill Delph *J* p p 767 DC fl fr ^ D 297 S farniolica Host austr 2 64 (androgjna) S flssa WihlenDg laon 2012 *-Icon* Hoflm Sal t 1 f 2, E B t 1185 1343 1388 Fl D 2554 Sv Bot 589, Reichb 1230 >, Ledeb IC fl ross 4r>3,Haitigl c t 44, Sal Wob t 1 *-EX6CICC* I hih arbor n ,l,Ser Exsicc n >4 il (fol terms), 32 (fol dorso senueis), Fi H n 2 5b 57, ^im.mrx Hcr^ bal n 52, Coll n 107 109,KernerHb Sal n 128 131, Kolschy pi pers boreal 1843 n 154 Frutex plerumqus 1 3-orgyali», ramis glaDns, \ulgo vimineis, tenuibus, valde tenacibus interdum autem frutex humiiis, rimis intricato divancatis. Folia breviter petiolati, saepius iti conferti ut inteidum quasi opposita appareant, I 3-pollicana, supra medium -I 1 pollicem lata, basi lon^e attenuata et intogra, apice latiora acuminata ^t sen ita. Amenta in ramulis dense conferta, graciha 1 1-Jpoll longa, 2-4 lm crassa, sappe incurva Squam* obtu^ae, saepe quasi truncates, basi autmargimmispilobae Capsulaa late ovatae, obtusissimae aut breviter conicc, stylus minimus fuvus, stigmata purpureo fusca L modificationibus vanis sequentes praepnmis notandae, quarum duas ultimae forsan subspecies

a, *qraalis* (Gren et Godr Fl Fr 1 c), amentis gracillimis, vix 1 2 hn. crassis, capsulis brevissimis subovalibus S purpurea Sm et auct plei europ

3 *Lambertiana* (S Lambeitiana Stn bnt 1041), amentis crassionbus, capsule ovato conicis, tolns majoiibus supra medium conspicye latio nbus tenuibuslacile nigiescentibus — Willd sp pi '* p 673 Forb Sil

Wob t 3-4, Trautv 1 c p 629 S. Woolganana Borr F B Suppl t. 2651 S pratensis Scop Cam p 252* S oppositifolia, mutabilis, hort Vanat folus 3-4 poll longis, supia medium 1 \\ pOn latis, \el folns \ix 12 poll longionbus, supra medium *• i poll latis, fere obovato-spathulatis

Y, *Helix* (S Helix L sp 1441), amentis crassiuscuhs, folns magis elongatis acummc producto acutatis, margine aut anguste serratis aut submteg is fere concolonbus aut subtus magis glaucescentibus — TrauU 1 c p 632, Willd sp.pl 4.672, Hartigl c t 46,*orb Sal Wob t 2 Vauat folns multo magis angustato-lmeanbus vix 1-3 hn latis longissime cuspidato-attenuatis, ^el iolus } *I* poll longis mgustis ngidis subtus plerumque intensius glaucis

?J} *pallescensj* ramis vindi-testaceis, folns hnean-lanceolatis acutis integris concolonbus utnnque glauccscenti vindibus amentis vix pollicanbus, squamis pallide flavis apiceobscunonbus, glabnusculis, capsuhsoblongo-conicis testaceis minute nubeiulis In provincns caucasicis (Hb petrop) — AS Ledebounani diTert ramis Mmincis, capsulis obtysionbus, stylo nullo rostratis, stigmatibus brevibus, erectis, purpureis — Si S Ledebounana stirps indigena et S purpureae origmana haec lorma inter ambas transitus

ç, *virescens,* folns anguste lanceolatis supra medium parum lationbus inde longe et acutissime cuspidatis et sat argute serratis utnnque puie et lucide vindibus — Kotschy pi Peis boreal 18'i3 n 154 S.hippophaefolii Ledeb fl ross 3 p 601 In provincus micasicis (Hb petrop) — Amenta non vidi, sed color et consistent^ folioium hanr id typum S pur purea. pertinere indubie probant

14J S RIJBHA (Huds fl anM ed 1 p J64, ed 2 p 428), amentis sossihbus oiasse cjlmdiicis obtusis basibracteatis masc sdepe recurvatis, iem arrectis squamis obtusiusculis apicem versus roseo-infuscatis basi et dorso villosis, capsulis e basi ciasse ovata tonicis cineieo-tomentosis scssihbus, nectano elongato basin capsuhc supeiante, stylo evidente pallido, stigmitibusoblongo-hneanbus divancatis, folns subconcolonbus elongato-lancc olatis acummato-cuspidatis margine ₃ubrevoluto repando senulitm adultis plerumque supra *a* abns subtus pilisadpressissenceis submicantibus ^ Ad *n\ns* ct in lous huTnidis Luronae totius mediae usque in Sueciam mediam, in Asia media usque in Dahuna' in piovinc Cautisicis, etc -Willd sp 4 674,Fr Mant 1 p. 63, UngeDans'k fled 2 p 656, Sm H. bnt 1042, Hook ct Arr. but ed 7 D 393 Koch Svnops cd 2 p 745, Gren. et Godr. fl lr 3 p 129, Ledeb 11 ?oss 3 p 603 ˘ S ˉfissaHoffm Hist Sal p 61, Lhrh Dec 3 29, Sei Ess p *SZ,* Hoffm Sal p (>1 *DC* fl fr 5 *W,* Gaud hcly b p i<Jl S mem-branacca rhuill pans p r)lS(sec Koch) s ohvicea 1 huill 1 ((iol lationbus brevionbus) S vncscensVnl Uelph 3 p 385 S concolor Host 11 austr 2 639 S molli&sima Wahlenb fl carp n 10H. S Hoflmanniana, S tenuis, S. fuscata et S elaeagnilbha iTausch (in herbarns) S purpurei uminahs Wimmer Regsb Hoi i 1849 p 40, Denskchr 18>) p HI, Fl v sLhles ed 3 p 204, Mey fl hannovr p r)02 Ncih II Nicd (I sir p 257 — *1cones* E B t 1145, 1344 Host bal t 34,35 Hoffm t 13, 14 Reichb. t U36 Coss et Germ t 29 Hartig, 1 c t. 456 Sal Wob t 4, 5 — *} rsicc* Ser' Exsicc 30 75 Fr H 10 60 Billot n 286 Wiirm Htrb Sal H 86 124. Coll. 230 235 Kern Hb Sal n 77 78 S viminalis-puipuiea Wimra Sal europ p 173-Est sine ullodubio inters \iminalemctS purpui earn media aut ex us hybnda, omnium frequentissima, easdem regiones ic paientes mcolans. Formae numerosae ad duas potissimum leferendde modihcationcs

a ' *timinaloides* (Gien et Godr 1 c), folns sat longe petiolatis lanceolato-hneanbus longissime acuminatis margine subrevolutis subtus saltern initio pihs aigenteo senceis conspersis costa valida flava peiciusis, squa mis ament fern pallulionbus longius villosis, capsulis magis flavescenti-senceisacutionbus, styio e\idention, stigmatibus flavis vel pallide purpureis hneanbus revoluto-dnancatis Frutev altior ramis valdc vimineis habitu evidentei ad S viminalem atoedens, sed ab ea disiincta fol"s adultis planis glaucescentibus etnm subtus nudiuscuhs, amentis cy!m-

dncis, capsulis brevionbuscrassiusculis, stylo brevi et stigmatibus crassionbus Provenit 1° *latifolia,j* folns 2 4 poll longis medio 7' 1 poll latis. Vanat folns supra obscure vindibus glabus subtus tomentosenceo mollibus, stipuhs et gemmis magnis S elaeagnifoha Tausch Kern Weid O^t 1 c p (97) 219 H Sal 74 76 S rubra sencea Koch (Wimm), fohis vel utnnque glabns supra obscure subtus palhdius vires centibus — 2° *angustifoha,* folns 1-3 poll longis anguste lanc?olatis subtus mitio evidentius sencco micantibus — Forma dubia^st S lineans Turc/ amentis fcmineis crasMSsimis, squamis OAall lotundatis, capsulis otali-oblongis, stylo valdc elongato tenui, stjgmatibus divancatis fusus folns longissimis angustissime lineanhus supia opace \1nd1bus subtus argentco-senceis Hab ad fl Selenga Sibmae, et prope Dormick Dahunae (Turcz) utrum ad S viminalem an ad S mbram nanc formam singularem leferam valdc sum dubius

(J, *purpurcoide?* (Gren et Godr 1 c),folns brevius petiolatis anguste Ian ceolatis supra medium lationbus planis maigine saltern apirerr versus plus minus seiratis utrmque glabns glaucesccntibus subtus pillidionbus, squamis apice obtusion fuscion minus pilosis, capsulis cano-ullosis magis obtusis, stylo brevion, stigmatibus crassionbus integris erectis Haec \anat 1° *latifolia,* folns majonbus 2 4 poll longis, supra medium usque ad 1 poll latis, tenuionbus, faciliusnigiescontibus (S subvimina lis purpurea Kern) s viminalis-purpurca, c, Forb^anaWimm H 1848 p. 312 S concoloi Host* S hehuflora lausch S 1 orbyana Sm bnt 3 p 1041 I B 1344 Sal Wob t 5 Keiner 1 c p (99) 221 Hb »^al n 70 S purpureae Lambertiana? analoga — 2° *brevifoha)* lchis breuonbub \ 1J poll longis, medio 3 'o hneas latis, demum ngidis vinduhs & purpureae Hehci analoga, et facile cum S Doniana conlundenda

X S CALLIANTIIA (J Kern Verb d Zool -bot Vereins in Wien 186 > p 44), amentis sessilibus cylindncisdensiflons loins haudsuftultis, squamis oblongo obovatis apicem versus atratis villosis, filamentis usque ad npicem connatis, anthens pumo rubescentibus senus sordide flavescentibus, loins obovato lanceolatis lcuminatis crenatis prima adolescentia utnnque pilis senceis tecti*, adultis glabernmis supra mtidis subtus opacis, stipuhs lanceolatis, gemmis magms 3 Prope Vindohonam (Kern) b purpurea x daplmoides A Kern S subcaprea-purpurea Kern Hb Sal n 141 trutex tiunco erecto, ramis ere tis tenacibus Gemmae flavescentes, conito-iostratae, petiolo parum breviorcs toha ter ct semissi quater longiora quim lata, feie 4 > polhces longa, polliccm lata, neivis secundarns ad marginem decunentiLus utioque latere 14-18 Slipulae sat paivae, curvatai Amenta mascula pollicem longa, florentia fere eadem latitudine, pulchernme aurea — Quum chdiactenbus turn habituintei S daphnoidcm et S purpuream media, at primum ib mvenlore cumS cipreacognaticredita — Nonne hue etiam referendi ests IraunsteinenKern Hb Sal n 143(S supercapreax purpurea Kitzbuchel in Nord tirol Kern)' tolia enim fere ut in S daphnoide sed subtus dense sencea, gemmae ma^nae acutae adpressae, sed amenta feminea subsenupollicana, aensiflora. (v s)

14(). S LFDFBOURIANA 'Irautv Sabcet in M6m de TAcad. de St-Petersb v 3 P 631), amentis bieuter pedunculatis elongato-cylmdncis incurvis, squamis flavescentibus obtusiuscuhs basi et margine pilosis, capsulis conico oblongis acutiusculis sessihbus flavescentibus tenuiter puberulis, ntctano basin capbul P superante, stylo brevi, st'gmatibus flavis erectis bifidis, folns lanceolato-lihncanbus utnnque attenuatis longe acuminatis subintegns glabernmis utrmque concolcnbus glaucis venis prommentibus lineatis ejstipulatis In Sibina altaica et baikalensi, deserto ^oongoro Kirgisico, necnon in Davuna (sec Ledeb) In monte Elbrus pnpc Dei bend (Kotschy pi Pers boreal) — Ledeb (1 ross 3 p f,03 S pallida Lcdeb 11 alt. 4 p 261, Ic fl ross t 454 S vimmalisf lurtz pi exsicc a 1829 (sec Ledeb) S Elbrusensis Boiss Diagn pi orient 12 p 117 (sec specimina quaodam) S. vimmalis? n 1%7 Karelin et KnilofT Ex omnibus Salicis purpurenc lormis haec S rubrje simillima ct loisan ut modifitatio pillida huic subjungenda Difffert autem ramis testaccis dnancato nodulosis, folns tenuiter membranateis apicc saepc

s>ubobliquis concolonbus exstipulatis glabemmis planis, amentis crassionbus, squamis palhdis, capsulis fere glabrescentibus et stigmatibus brevibus. A S purpuiea vera differt ramis non vimineis, art.culatione subfragihbus, Joins valde elongato acutatis subtus concolonbus, capsulis acutis, stylo brevi, etc Folia sjepius J polhces longa, amenta subcoaetanea S tenuijulis Ledeb. fl. alt 4 p 262, Ic fl ross t 45*, quam deinde in fl ross p 603 synonymam habet S purpuieae S Ledebounanae potius subjungenda est tolia apice et basi subaequaliter et longe attenuata, concolora, sed amenta pnmo tenuiora, iere ut in vera S purpurea, squamis apice obscunonbus (v s.)

g, *pruinosa,* ramis ramuhsque pruina caesia sat densa obductis — Ad flum. Oka legit Ku/ustsoff (Herb. Petrop). S acutifoliae habitu subsimihs. Flores non vidi

147 S RossM^ssLFni(Willk mscpt.ohm),amenti9femineissubsessilibus,squamis spathulato obovatis subtruncatis nigns basi ima albo villosis ceterum glabernmis, capsulis conicis vindibus sessilibus stylo evidente sed haud producto, stigmatibus subbifidis, folns lingulatis brevitei acuminatis basi dtteuuatis mtegns vel dpicem versus tenuitei serrulatis utrinque glabemmis supia obscure \indibus subtus CJJSIIS In regno Murciae (Rambla de Nagalte). S purpurea Rossmaesslen Willk et Lange fl hisp p 227 A S purpurea exacte habet lolia, ut, si haec rcspicids, vix dislingui possint, etidm amenta vix 1 \ Iinea crassioia valde densiflora et squamae nigricantes obovatae subtruncatae hanc speciem optime levocant Recedit autem capsulis quae ut in S dlba vel potius S amjgdahna(quibuscum immixta dicitur fcrefoima) vindulac, omnino glabrae, ol)tus«x, stylo parvo apiculatae Auctores citati amenta mascula pedunculo folnto inserta dicunt. (Amenti fem tantum vidi lragmentum et folia)

148. S REGELII, araentis pedunculatis matuntiterecunato penduliscylindncis obtusis fohis paucis et parvis suflultis, squamis oblongo spathuldtis rubicundo flavis infeine sparse pilosis, capsulis ovato-conicis vindi-testaceis tenuUer tomentosis sessilibus, nectano basin capsulae subsuperante stylo sub nullo stigmatibus crassis ercctis obscuns, folus olongato-lanceolatis suhhnearibus'junioiibussubpilosis demum glabemmis apice subobliquis glanduloso. serrulatis utrinque glauco vindibus subtus pallidionbus, stipuhs lancoolatis In Songanaad 11 Ajagus (Schrenk) Forma singulans intra s puipunam et S fraeilem A pnore habet folia (saltern minora) lanceolato linguldta vel ad medium latioia, utrinque glaucesccntia, \ems flavid.s acute stnatis, amenta aneusta cvlindnca squamas peisistentcs, apice subobscunores et capsulas seosilps. breves, tomentosas, stigmata demum bievia, crassa Sed a S uagih lamos fusco vindos, subfragiles, ioliavalde elongata (3-5 poll longa'), subobhqua, repande glanduloso-serrata, juniora pilis adpiessis villosa subnigncantia, stipulas lanccolatas, amenta foliato pedunculata, capsulas Mndulas A S Ledebouiidiia facile distinguitui .imcntis lonpius pcdunculatis, squamis fuscis, stylo subnullo, stigm Uibus obscuns, folns subcrcnulatis, slipulatis, subtus intensius glaucis A s Pallasn a-mentu> pcdunculatis, capsulis sebsilibub, etc (v s in h petrop).

149 S PYCHNOSTACIIYA (Anders Journ Linn. Soc 4 p 44) ampntis sessilibus crasse cylindncis densillons elongatis folns nullis sufTultis, staminibus monadclphis, squamis fulvis obtusiuscuhs apice latiusculo luscionbus basi pilosis, cipsulis sessilibus ovatis glabns, stjlo subnullo, stigmatibus bievibus erectis lufidis, fo'ns lanccolatis obtusiuscuhs basi ano'iistatis planis integen lmis utnnque glabns veljunionbus subtus pra3sertim senceis) In India onentah Giu ckai reg alp, alt 13000 ped. (Ihomson) liutcx lere oigv,alis, rami divanrati, atroviolacei v glaucescentes, lucidi Polia fere 2 poll longa, supra medium vix semiunciam lata, adulta glabrata, utrinque laete viudia, costa dilution venis fuscescentibus Gemmae sat magnje Amenta bracteis minutis suffulta, ohtusa, masc \\ poll longa, squamis fulvo-biunnescentibus pi"s» albis compressis, staminibus auiois, feminea 1 J-2 poll longa, squamis sursum fusco-piceis CdDsula 1 \ lin longa, basi gibba, acutmscula, vindula, stigmatibus tebtaceis. (v s)

p, *alpina(Kb.* Hook), frutex minons altitudinis, ramis giacilhmis valde

divisis llavescentibus, lamulis obscunonbus, loins viz pollice long 1 onbus 2-3 lm Utis scepius utnnque pubescentibus integns vel apicem versus modice seirulatis, amentis (masc) vix semipolhcem longis excurvitis squamis rotundato obovatis fuscis — Hab etiam in Gauckar, reg dip 13 14000 ped alt Species in tnbu sua sat pecuhans, hmc dd S rubram, lllmc ad S daphnoidem accedens A^prion tamen differt foliis non longe productis obtusiusculis mtegemmis, capsuhs gldbns, stylo brevi el stigmatibus ciassis, a posteriori folns, capsulis, stigmatihus et stylo, piaecipue autem stamimbus — Forma alpind a typica non nisi statura humihon, amentis bievionbus, folus magis hirsutis et squamis obscui lonbus re^edit (v. s)

HO s OXYCAUPA (Anders Journ Tinn Soc. *k* p 4[r]j), amentis praecocibus sessilibus valdc elongatis laxe flexuosis subranflons bracteis vcl folns minutis suffultis, squamis fusco-piceis aut fulvis obtusiusculis pilosis, ^taminibus 2, filamentis ad medium conn itis, capsuhs sessilibus conico elongdtis dcutis tenuitcr senceo puberulis, stylo breussimo, stigmatibus brevibus subclavatis, folns lanceolatis acutiusculis tenuibus adultis ngidis glabns iutentibus subintegris subtus glaucescentibus, stipulis parvis semilanccolatis ^ In India oriental!$_t$ ad Kischtwar, rcg temp alt G-11000 ped (Ihomson) Frutex orgyahs, ramis molliter incanis vel glabnusculis rufescentibus *oha 2 3 poll longa, fere polhcem Uta, vcl angustioia et bieviora, aequaliter attenuata, plana, jumora pellucida tenuia, pilis nitcntibus adpressis prassertim secus costam pilosiuscula, subtus opace glaucesccntia, costa flavescente Ampnta miscula ensse cylindrical poll longa, amenta fcminea subarreçta, 3-4 poll longa, acutiuscuh Gapsula fere 2 lin longi, stylo paivo sed evidente Lst ^ /ygostemoni Boiss eximie affinis, differt autem quodammodo amentis mast ulis cylindncis, squamis cineieo-vcl albido-p^osis amentis femineis multo gracihonbus, cipsulis remotionbus exacte sessilibus \alde tenmo ribus, obholetius tomentosis stigmatibus breMssimis erectiuscuhs crassis, folus demum subintegns subtus e\identius ghucis Facie potius S phyhcifoliae v launnde nostiae, amentis etiam ad S Wallichiauam senceam appropinquatur, quae tamen capsulas habent distinctius pedicellatas Pt tenuiores — Vdridt folus dnguste lanceoldtis, subtus glaucescentibus, squamis capsu larum acutiusculis, fuscis , vel folus late lanceoldtis vel oblongis, subtus pal lidionbus, squamis capsulirum rotundatis, flavescentibus (v s in h Hook)

p, *serrata,* amentis (defloratis) 4-^-pollicanbus laxissimis sessilibus, capsulis glabns rufescentibus, folns J poliicanbus exacte lanceolatis cuspidato-productis venis et costd flavescentibus elevatis pulchre et regulanter stnatis subtus sat intense glaucis margine minute sed sat acute glanduloso-serrulatis In India onentah Simla *reg* temp alt 8000 p (Thomson) A praecedente haud parum recedit foliorum forma ct capsuhs glabns, habitu S daphnoidi similhma, sed amentis longis etlaxis, capsulis stylo vu ullo praeditis distmcta (v in h Hook)

Y, *breviuwula,* amentis vix ultia polhcem longis folns parvis suffultis,cap subs tomento senceo tenui subevanido puberuhs, folns an^ustc lanceolatis niaigine saspius remote serruldtis utnnque gldbris subtus opace glaucescpntibus In India onentah Tanskir reg alp , alt. 10-17 000 ped. (Thomson) Kami graciles brunnei Folia 1J poll longa, aut anguste lanceolata aut oblonga, *)* - \ poll lata, utnnque pure ^mdia sed subtus palhdiora, sat distmcte petiolata Amenta femined mterdum valde abbre viata squamis fuhopiceis sparse pilosis, capsuhs 1 \\ hn longis cinereo-testaceis Habitu quodamraodo S. sencocaipamrevocans, amentis et capsuhs S oxycaipae est proxima, ob ea tdmen notis tdm multis usque gravibus divers i ut valde inceitus sum utrum ad hanc an ad alum referenda sit sj>eciem Videtui tamen hujus maxime alpina modificatio, a S divorgente capsuhs glabnuscuhs et a S pyennostachya alpina folus glabus diversa (v s in h. Hook)

h\ S. ZYGOSTEMON (Boiss et Hohenackei in Kotschy pi. pers exsicc 1846 n 135), amentis sessilibus bracteis minutis suffultis crasse densiflons masculis oblongis aureo-pilosis, squamis obtusiusculis saltern apice atro-piceis longe

aureo-vel cinereo-villosis, filamenlis ad ^ coalitis, capsuhs ovato conicis acuminatis cinereo-tomentosis pedicellatis, pedicello nectanum fere duplo superante stylo mediocn, stigmatibus fihtoimibus patuhs, folns late (oknato-) lanceolitis pnmo suhsenceo-villosis demum glabratis leviter crenulato-dentatis stipulis linean lanceolatis glanduloso dentatis, gemmis glabns 5 In Jmonte I lbrub PersiTf borealis (kotschy) — Boiss Diagn pi orient fasc U p 11« Arbor'> Rami subvitellmi, annotmi pubciuh Gemmae sat magnae, casta npj tolia 2 f poll longa, mcdio \-1 poll lata, demum omnino glabiata, I 7^7 ct apice fere ffqualitci attenuata, subtus pallidiora Amenta praecocia, macula 1 ' poll longa, anthens parvis, leminea saepe usque ad 3 poll lonpi mpVuoso-cuivula, dcnsiflora capsulae 2 2*lm. longa. gnsea. Habitu sine dubio typum S caprearum rcfert (jam s grandffolia, aflinem salutavit Boissier Cum us congruit foliorum lorma et indumuito, stipulis, amcntis rrnsculis longe aureo villosis, femmis crasse cylnulncis, capsulis conicis pedicellatis cinereo tomentosis S Medemn maxime simihs Capsulis sit breve pedicellatis, folns tenuibus deraum exacte glabernmis et filamcntis unitis, etc , mox distmguitui — Monendum utspecimina tantum paucafuisse collecta et ea araentis mascuhs divisione ipiculi monstnm' (v s)

s PONTEDLRANA (Schl fit 1809), amentis subsessilibus basi folns paivis bracteatis densitlons incuivatis cylinducis squamis apioe fuscis vel piceis. cineieo pilosis, capsulis ov ito-laneeol Uis albo tomentosis ux \el breve pedicellatis pedicello nectiiium subsupeiante vel eo duplo longioii, stylo mediocn velnullo, Migmatibus ciectis liitegns vel emarginatis obscuns, folns lanceolalis apicem versus pleiumque lationbus demum ngidis utnnque vinlnlis sed subtus evidentius glauus sallem supeine serrulatis,stipulis pbiumnne nersistentibus cordatis — Koch Comment, p 24, Synops ed 2. p 744 5nh hoc nominP vaiiis foimis e S purpuiea et Caprearum s d speciebus hvhndas, online foisan vanas sed mtei SP paium dissimiles et notis certis Hf nllo certo modo distinguendas, compiehendo A b. purpurea habens (lores a cetens parentibus folia, intei eas tamen txacte mediae

d' Grenenana, amentis sessilibus, mascuhs ovalibus brevibus (stammibus 'subductinctis'), fcmmeis cyhndnus crassiusculis incurvat.s, squamis

nicis sericeis, pedicello [illegible] tibus bievibus flavis conniventibus, folns ellipticis vel obovato ellipticis acuminatis undulato-serratis adolescentia utrinque obsolete tomentosis adultis supra glaberrimis viridissimis et nitidis subtus pallide glaucis pilis dispersis puberulis, stipulis lanceolatis acuminatis 5 S purpureo caprea Wimm Denkschr (foliis subtus demum omnino glabris!) 1853 p 152 Exsicc n 16, 53 S caprea-purpurea Wimm Schles Fl ed 3 p 196, Sal p 18eUtroP60PCl16S oleifoha Host *V* Wmimenana Gren et Godr"!. fi I?I P 130 ^ Mauternensis Kerji Oostr Weid 1 c p 261, Hb. Sal n ill RPilh f 1237 bal wob t 4 Hab in Silesia prope Breslau,etc ,in Aultria .nfemn (a s t e r n , etc), in Gall.a piope MontbtUard/semper rarissima Arbuscula trunco vahdo, folns inter S caprtam et S purpuream media, amentis S puipure* similior, sed capsulae villostfl Duas alias species attulerunt ill Kerncr a ^ purpurea cum S caprea auodammodo cumpositas, sc 1° S calhantha J Kern (m lm Hb Sal n 141 = S subcaprea purpuiea) et 2° S Tiaunsteineri A Kern Hb Sal n 143 S calliantham nunc e S. purpurea et daphnoide censet compositam.S Traunsteinen habet folia ngidissima, subtus densissime cinereotomeiitosa, amenta bievia subincurva, haec etiam mihi non parum cum *daphnoide commune habere videtur* (v s)

w *Neilrichn* ((S. Neiheihn Kern Oestr Weid 1 c n 136, 258), amentis cf bievibus o\ato ovalibus, filamentis semi-vel ad connatis, y cvlmdncis densiflom subsessilibus, squamis feirugineis supra medium atratis villo lecto barbatis, capsulis tomento lactescenti-cano tectis pedicellatis conicoacutis, st}lo brevissimo, stigmatibus brevibus o^ conniventibus demum patulis, loins oblongo-lanceolatis utnnque ter attenuato-acutis crenato-serratis subtus glaucescentibus nervis ei ve

acute prominentibus reticulum elegans constituentibus supra nitidis, stipuhs connatis In Austria inferiori paucis locis ad hue observala S Pontevierana Facchini S purpureo grandifoliaWimm Jahresb Schles Gesell 1857, p 6'*, Denkschr. 1853, p 155, Pseilreichfl Nied Oestr p 258. (S subpurpureo grandifoha Kern 1 c et Hb Sal r. 1J9). Ad hanc formam sequens etiam pertinet (raeo sensu) modificatio S ausinaca Host Sal p 19. t 64 65, amentis subcoaetaneis brevissime pedunculatis, masc oblongo-cylmdncis. filamentis vulgo ad ^ connatis, Tolus obverse lanceo latis basin versus plcrumque integris adultis supra vindissimis nervis secundams utroque later e 12 20 S supeipurpureo grandifolia Kern. 1 c et Hb Sal. n 135-138 S Pontederana Bertol fl Hal X. p. 331. S sphaerocephala Kern Oestr bot. 7eitschr 1864. p 240. (S. supergrandifolia purpurea Hb Sal n 140) differt amentis brevibus subglobosis, folus minus acuminatjs, subtus grossius reticulato venosis, stipuhs magnis ornatis Hab ad Innsbruck A S Grenenana quodammodo recedit ha»c found hybnda folns citius glabns, angustionbus, subtus pallidionbus nervis venisque anaslomosantibus magis elevato-rugosis, stylo brevissimo quidem sed evidente, stigmatibus denique patulis S. Siegerti, huic analoga, recedit folus tenuionbus, pnmo teouiter senceis, oblongo obo>dtis, capsule dibtinctius pedicellatis et stylo e\idention

Y, *sordida* (S soidida Kern Oestr Weid 1 c 257), amentis praecocibus sessilibuscylmdncis,squamisobtusissupiamediumdtratisvillosib,capsulis senceo-tomentosis pedicellatib, pedicello nectanum subinde tersupeiante, stylo brevissimo folus obovato lanceolatis etiam adultis supra obscure viudibus opatis puberulis vel obscure glabidtis subtus cinereis lurto tomeh tosis venis secundains subtus prominulis supra impiessis, slipulis semicoidahs, ramulis annotmis velutmo tomentosis. S. subpurpurea-cinerea Kern —S cinerea purpuiea Wimm H v Schles ed 3 p. 195, Jahrb. d Schles. Gesell 1847, Sal europ. p 162, t III f 14 £ f 17 ? S Lapponum var albens Hartig torsi (ulturpfl p. 389 Vanat 1° *Cinerascens* (Wimm), folus Utionbus cinerascenlibus supra puberulis subtus glaucopubesccntibus, autumnalibus oljovato-lanccolatis glabiatis subtus glaucescentibus, capsula acuta, stylo brew Wimm Hb Sal n. 59 Coll. 143 148 Haec S cineiede magis simihs, 2[W] *Glaucescens* (Wimm), folns angustionbus vmdibus aestdte glabratis subtus glaucis, capsula obtusa stylo nullo Hdb in bilesid pauus locis, et in regione Badensi raiior (A. Braun, Mrunner) — Ad S purpuieam propius Wimm Hb Coll. n 10 *J* 100 101 Coll Sdl 142. 144 145 149. t cit f 15 20 Haec potius S Pontederana Koch (non Willd et Vill quae S. hastatae forma) Reichb Excurs n 1041, Doll Fl. Bad p 510, Hartig Forst Cult p.415. t 75t,Bertol 11 it. X 331, Hausm Fl. v In. II n 1670.

č, *dichroa(S* dichroa Dull Flora v Baden, p 511), amentis prtpcocibus, fem cyhndncis squamis acutis apice atratis pilosis, capsqhs ovato-conicis obtusis cano-tomentosis pedicellatis, pedicello nectanum bis supeianle, stylo nullo, folns obovato-lanceolatis supra obscure Mridibus glabns vel levissime puberulis subtus klaucescentibus lurto tomentosis venulosoreticulatis, stipuhs oblique semicoiddtis, ramis annotinis glabns rufescentibus Hab in Silesia, in Austria infenori et in legione Badensi, paucis tantum locis S. purpuiea-aunta Wimm Regen Flora 1849 S aunta purpurea Wimm Denkschr 1853 p 153, Fl s Schles. ed i P 195, Sal europ p 163 S auntoides (subpurpureo -aunta) Kern Oestr. Weid 1 c (135), p 257, Herb Sain 132 S Kochiana Hart p 27. Vanat 1 *Cinerascens* (Wimm), *fohis* cinerdscentibus supid puberulis bubtus glaacescentibus puberulis, demum fere glabns subtus glaucescentibus. Wimm Exsico n 60 (sec Kerner ad S purpuream pertinens) — *1° Glaucescens* (Wimm), folns vindibus aestate glabns subtus minus glabns Haec est a) Folus lanceoldto-oblongis sub apice lationbus phcato apiculatis gldbernmis subtus nervis elevatis subrugosis 9 (Wimm hab Sal 71 134 Coll 151 153 154. 155) Hue sine dubio etiam referenda S Pelontana Prestandr (in fmeo plant rar sicul.

fas 2 p Jl) quara Bertol fl it. X ad S mgncantem duxit, folus valde ten uibus et brevibus subacute serratis insignisl Hab in Silesia' — b) fa- ins margmeundulatis 9 Wimm.Jahrb Schles Gesellsch 1847 t 1 f 7. Coll Sal n 150 S mollissima Reichb Icon 12->0 saltern <? (sec Wimm , sed stvlus productus, stigmata hhformia') Difficilhme a priori dislinguitur, sed ad S auntam aperte vergit folus tenuionbub magis obovatis subcns- natis Ramos tamon habet erectos, amcnti patula angusta capsulas multo brevius pcdiculatas stipmatibus obscuns apiculatas Jllustnss A Kerner, cuius opusculo de Sahcibus austnacis nullum praestantius no\i, S Pon- tederana[1] nomen, ut planeobscurumomnino tollendum csseelicit et formas hvbndas vane procreatas eodem juie ac alias sp esse proponendas E S nurourea el grandifolia ortas cen^et 1 S *austnaca* Host (S superpur JmreaX grandif), 2 S *Neilreichn* Kern (purp X grandif), ct 3 5 *svh rrocephala* Kern (subpurpurea X grandif) — A.S .purpurea et ranrea 1 *S calhantha* J Kern (superpurp X capi), 2) *S Mauter- nensis* Kern (purpurp xCaprea), et }) 5 *Iraumteinen* Kern (subpur nurea X caprca) Praiterea in Austria obveniunt S sordida Kern (sub- nurpurea Xcinerea) et S auntoides Kern (subpurpurea x aunta) S calliantham nunc e S purpurea et dapbnoide ut mihi videtui, jus- tius censet ortam

S SIEGEKII, amentis mascuhs crassiuscuhs cylindncis curvitis, squamis ^natbulatis atns pilosis, filamentis scmiconnatis, capsuhs ex o\ati basi nmco acutis gnseo senceis bievjter pedicellatis pedicello nectanum aequantc, t lo brevissimo, stigmatibus crassiusculis subintogns erecto-pitulis, folns h\ ntro obovatis acuminatis aut pnmo tenuite[1]* senceis demum glabris aut ab OD[illegible] glab[illegible] [1S rufescenti tenui'ms demum ngidiusculis supra obscure Mndulis *im l* K tus nalhdioribus, stipulis angustis In SIICSIJL convallibus oxterioribus sea sum[illegible] alpina S purpurea- e iegionibus humilionbus lm- alpl^t,,r S arboresctns Hartig p 2i Nacbtr p IP (teste W.mm ^ b pur miS «f^siaca W mm jahrcsb d Schles l-esellscb 1847 p 12', l II f 13- pureo silesiaca wimm [illegible] 3 s Sll csiaca-purpurea Wimm Sal ourop 19j fl J ? *tic* n 17 18 % 31, Coll n 126\ *Ut* 1J5-U1 -\andt P 6 J r ^ \ l o l L is basi angustatis nunc pilosis (saltern subtus), nunc 1- *latifoha* ^ ' ^ ^ " L : ? 1 *annustifoha.* folus lat.tudine tnplo quidru- utnnque P ^ ^ ^ 1 ^ . . - , ! * *Ihbia* loins basi attenuatis vel bisi lotun- plove longionbus, q'*^»Ywatabris' stigmatibus erectis pailitis - Difficil Satis -*Vlijocarpa* ^nosutui Td quam so omnino ha^et ut S Silesiaca lime a S Ponlederana d g»os^ U1 aa ^d re VH1 dia, amenti augustioramagis a d grandifoham,folia a u ^ " ^ ^ fusco-iufescentes eyidenlfus rentes ambigua (v s)

c n ,,,PM, .mpntis bieviter pulunculdtis folus pauus ct minimissuf- Xf^s eton«lS^cvlihSrrs gracdibus^irectis, squam.s obtusis apice fusco- m rDureis^ soarsc m"os s, capsuhs oblongis obtusiusculis sei iceis pedicellatis, SedTcelk^ noctlnum bis'superante, stylo nullo, stigm itibus obscuns erect.s F t s fohis oblongo obovat.s tonuibus plus minus acummat.s utunque glaberrimi supra lucide viridibus subtus glaucis margine irregulariter sinuato serratis — In Posen ad Golicin et Sytkowo , 1851 detexit Ritschel S purpurea-livida Wimm Denkschr 1853 p 154 S livida purpurea Wimm Sal Europ P 170 Hb Sal 01, Coll 1V7 Forma pulcheiimi inK. parentcs *nrUcens* VuUxhumihs, lamis undique divancatisiufescentibus gubemmis StTmilae auumadsint,pctiolumsuperant Folia 1 2 J poll longa, supra medium hXiora lbique saepel 1 J- poll lata, omnino glabernma etlucida us S ^ag1ntls pi S Durpurea similia Amenta feminea fere ut in \agante sed squamae r.?cnores, tapsulae multo breviores pedicellate! Habitu S phyhcifoham etiam ouammodo simulit, qua tamen amentis gaudtt ranflons, capsuhs stylo evi- denti rostiatis, etc (v s)

subiagans, folus obovatis oblique acuminatis junionbus rufescenti-pel- lucidis subtus intense glaucis ngidis, atipuhs ovato-lanteolatis

B *subpurpurea,* folus spathulato-oblongis basi attenuatis apice breviteracu-

minatib 2-3 poll longis supra medium 1 poll latis subtus minus intense glaucis subnigncantibus tenuiter serrulatjs, stipulis nullis vel obsoletis

XXXX S DUBIA, amentis sessilibus'bracteis paucis suffultis cylindncis densiflons, squamis acutis basi ferrugmeis apicem \cisus atratis pilosis, filamentis plus minus connatis, anthens ante anthesin rubcntibus effloratis sordid(flivicantibus, capsulis conico-acutis tomentosis pedicellatis, stylo brevi, stig matibus liiuanbus longis patuli*, folns obovitis lanceolatis basi attenuate apicc bie\itor acuminatis et subserratis adolescentia senceis adultis supra sdturaic \indibus et nitidis subtus intense glaucis, stipulis semi-ovalibus sat magnis — Prope Brtslau <? et inter Gasthng et Lassing Austin infenons, inhortisnonnumquamculta S purpurea nigiicansWimm Denksch 18J5 p r>4 S Vaudensis Kern Weid Ocsti p 263, lib Sal n 144 s purpureo-caprea mss ? Wimm Jihrcsb dei ScMles des 1847 t 1 f (, Habitu S purpureap ramis magis divaneatis, crassionbus; fusco brunnus, nitentibus >olia fere ut in nigncante sed angustiora, minus nigncantia, basin veisus Integra, subtus cvidenlcrvenulosa glauca, sed apicem versus virentia Amenta (tantum mascula \idi) pollitem longa,3 '1 lin crassa,staminibussat longis S Vaudensis Forb Hort woburn t 117 attamen ab ill W immtro eadem ac S pube rula Doll (S cinerea x nigncans) nunc habetur (v s etv. c)

152 S KOCHIANA (Trautv. Sahcet in Mem de TAcad de Saint-Pttersbourg, vol III p GJ2 t 1)$_2$ arncntispedunculo bievised foliato insidentibus mcurvatis masculis cylindncis femineis oblongis demurn lanflons squamis obovatotruncatis vel oblongo- lanceolatis palhdis inferiie pilosiusculis, capsulis demum breussime pedicellatis conicis rostrato acutis tomento paicissime obductis, foil is obovato spathulatis vulgo obtusis utnnque glabernmis subtu* glaucescenlibus acute ncrvosis tenuibus 3 In Sibiria altaica et baikalensi et in Davuna (Hb petrop) — Ledeb fl IOSS III p 602 S Pontedeiana Trautv in Ledeb fl alt IV p 263 (exel synon), Turcz Cat baik n 1024 Quoad habitum intei S purpuream et S mjrtilloidt *ui* fere est media Frutex parum alt us, ram is flavicantibus, glabernmis Folia ovato-elliptica, integernma vel apicem versus serrulata, supra vindia obscure lineata, subtus glauca venis prominuhs stnaia, non raro nigrescentia Amenta subcoaetanea, paucifoliata, mjscula vix semipollicana, feminea oblonga, ciassiuscula 1-1 \ poll longa, arrecto-patula (upul^e linoa longioies (v s)

p, *anquslxfolia,* foln« exacte oblongis basi et apice subsequahter rotundatis, latitudiue tnplo quadruplovc longionbus

Y, *curhflora,* amentis feminus brevibus gracilibus longius pedunculatis, capsulis multo mmonbus (vix j lm. longis) dense albo-villosis, stylo fere duplo longion rostratis Hab arl fl Tschargok (Trautv. flb Peli) Speumina in montibus Riddusk Sibinae collecta, capsulis longius villosis b glaucam quoad amenta feminea quodammodo revocant. (v s)

153 S VOLGENSIS, amentis 9 sessilibus bractois paucis suffultis ovah-oblongis, squamis obtusis nigncantibus tenuiter \1llos1s, capsulis ex ovata basi conico elongatis rostrato produclis tcnuiter pilosis demum glabratis pedicellatis, pedicello nectanum tnplo superante. stylo nullo, sligmatibus crassis bifidis purpurco-atns, loins linean lanceolatis apice ocuminatis integerrimis supia pallide glauco-vindibus subtus glaucis lintio pilis aigenteis adpressis senceis deraum glabratis Hib in Ilossia australi inter Wolgam et Ural, ad fl SarpaetKama S Caspica Pall fl. ross p 74? Irautv balicet p 633, Ledeb fl ross III. p 604[9] Hoc nomine in heibarns varns vanae formae inscriptae, et in hortis cultae Specimina quae examinavi quod ad amenta optime sed folns parum cum diagnose congrueiunt, et speciem sistunt intei S purpuream et S angustifolum quodammodo mtermediam A b purpurea babet folia glaucescenti-vindia, squdmas diutius persisientes supra medium atras, stylum nullum et stigmata crassa erecta, atro puipuiea Sed a b angustifoha ramulos gracilesut in formavitelhnaiubicuiula, foliadnguste linedri ldnceolata, ngida, subtus saltern et mitio tota pil's adpressis senceis albida, capsulas elongato-conicas Ab utraque differt capsulis pedicellatis. Locus itaquc in systemate mceitus, et sic forsan semper mauebit' (v. s. in h. petr)

a vediceUata, **folns looge et anguste lmeanbus subtus tomenlo adpressis rhicantibus, amentis brevibus, capsuhs longissime pedicellatis, pedicello necUnura 4° superante. — In montibus uralensibus a Lessing lecta** (v s)

β, *longifoha,* fob is ddhucangustionbus 2 3 pollices longis vix 2 lincas latis utnnque glabeinmis, imentis elongatis plus quam polhcanbus ci issiuscuhs, capsubs brevis«ime pedicellatis — Iisdem locis ac piaecedens a Lessing lecta Aperte ad S purpmeam accedit vcl potiusad b lubram, ged folns angustissimis et longionhrus, capsuhsque pubeiubs tt brcviter pedicellatis diversa (v s)

γ S ANGUSTIFOLIA (Willd sp pi IV p 699) amentis subsessilibus fohis paucis suffultis eroctiusculis dnguste lmeanbus dcnsiflous sqn imis lingulatospathuldtis basi ai^cntco pilosis a] ice testdcco subpcllucido D lal>us,stdminibus in singulum monadelphis, cdpsuhs scssi lbus corncis idpicsse senceis squamas feie duplo supeiantibus, sligmihhus sessilibus ^anguineis divergentibus, folus sessilibus angustissimc lmeanbus acutis basi attenuatis mlegns vel calloso denticulate costd subtus pionunente marginibus revolutis senceis vel denudato-glabns rigidis ^ In provincus Caucasicis plunmis, in desertis Kalmukorum mtei Volgam et Uial, m Song m i , in Persia boreali (Kotschy et Buhse) ct (latifolid) m libetid boreali-utcidentah (Hook et Inomson) — M B fl taui -caucas v II p 414,Ledtb 11 ross III p G04 S Wilhelmsiana M. B fl taur -caucas III p 627, Trautv Salicet p 627 S dracunculifoba |Boiss in Kotsuhy pi pers austr n 021, Diagnos pi orient. VII. p 99 Boiss et Buhse herb pers 1 c p 201 — Icones Trautv 1 c t 3. Frute'x humilis, vix 1 J-peddlis, ramis stnctiuscuhs cistaneo-fuscis glabns vel subtiliter tomentosis Folia plerumque 2 hneds lata, usque ad J pollites longa, semper membranacea, venis sti lata Amenta bievissima, mascula subpollitina, 1-2 Im crassa anthens fulvo-aureis,fcmin(avix polhcem longa, capsulis^ hneam longis Ccrtissime al typumS puipureae rekrenda, S Donianap haud parum affinis sod folia migis lineana, amenti eti im angustioid et capsul-e distincte pediccll Uae' Vanat l[u]folus lon[rt]',bsimis pilis irgenteis utnnque obtcctis, o-folus sdltem adultis gldhratis, subtus pillidionbus, *f* folns adultis fere 2polhceslongis, 2-4 hn. ldtis, glabernmis, obsoletissime denticulatis, amentis crassionbus (v s)

3 *microstachua,* amentis brevionbus subrariflons, squamis acutiusculis, P l a K gfitenimispafescentibub, stylo bievi ipicuUtis, fohis sublmea nbus - H a b in Sibina baikalcnsi (herb petropol) S microstachya Turcz Cat Baikal n. 105), Bull, de la Soc de Mobcou, 10J4 II p 377, TraStv Salfcet 1 c p 628 t 4 S. angustifolia p lejocarpd Ledeb fl I 1 c Vixniii glabntie capsularum a ^era S angustifolia diversa

δ S DONIANA (Sm Engl fl IV. p 213, sec Koch Synops), amentis sessibus anguste cylmdricis erecto patulis obtusis fem basi minute loliatis, squamis oblusmsculis apice coloratis vel mlubtatis pilosis, capsulis ovato conicis (tomentosis) pedicellatis pedicdlo nectanum bis superante, stylo perbrevi, stigmatibus brevibus emargnidtispdtulis, loins lineari la/iceoldtis vel lingulatolanceoldtis dLUtis ngidis \enuloso stiidtis subnigncdntibus margine subrevolutis supra nitidis lucide vindibus subtus pleiumque adpresse senceis et palhdionbus vel glaucis semper apicem versus serruluis, stipuhs obsoletis vel lmeanbus -} Loois subandis Germanise praesertim mediae et septenti lonahs nassiin et rara — Koch Syn ed. *1* p 755, bond fl. Hamburg 537, Hartig Forstl Cult p 397, Forbes Sal wob 85, Doll 11 Bid 512 S puipurea repens Wimm Regensb Flora 1845 p 155, Schlesw ed 2. p 205, Neilr Fl v Weid Oestr p 257. S repens-purpurea Wimm Sal europ p 171 S repenti-purpurea Mey fl hannov p 503, Patze Elkan et Meyer Fl prov Preussen, p 134 S parviflora Host Sal p 142 49, Kern Oestr Weid p 271 (forma S repenti v rosmarinifolia? proximal) Herb Sal n 174 — *Icones* E. B t 2599 Sal Wob t 8, Wimm. Jahresber d Schles Gesellsch 1847 t I f 4. t. 3 f 18 Reichb Icon 1233 — *Exsicc* Wimm Hb Sal n 9. 19 54 96 Coll n 236-241 Frutex 3-4' altus, ramulis gracilibus, glaberrime rufescenti-

bus Folia forma vana, typice anguste lanceolata, basi attenuata, supra medium laliora, breve apiculata, Integra, margine revoluta vel apicem versus minute serrulata, supra saturate vindid, costa et venis subrectis lineata, subtus sit intense glauca, denique denudata Amenta mascula sessilia, ovah-cylmdnca, anthens vix nigrescentibus, filamentis basi plus minus connatis feminea polhcana, obtusa, anguste cylindnca, capsuhs vix lineam longis Est mtei b. purpuieam et S. repentem exacte media A priori differt anthens flavicantibus, capsuhs acutionbus inteidum glabns, stylo brevi, folns typice subtus senceis et margine revolutis elevato-lincalis. A posteriori ramis gracilibus rufescentibus, folns tenuionbus glaucescentibus planiusculis, amentis elongato-cyhndnci* densiflons, filamentis semiconnatis A S. Pontederana maxime angustifolia tenuitate et longitudine foliorum et amentorum. (v. v)

a, *latifolia,* frutex majons magnitudinis, folns obovato-lanceolatis utnnquc undibus tenuibus glabns Vanat . folns 2-3 poll longis supra medium pollicem latis, vel obovatis 1-1 \ poll longis

P, *hngulata,* folns obovato-lingulatis basi longe attenuatis 1 -2 poll, longis supra medium -^-^ poll latis supra vmdi-nitentibus Vanat. loins subtus glaucib glabns, vel subtus adpresse senceis.

Y, *linear u,* folns hnean lanceolatis acutissimis vulgo subtus argenteo-senceis (quasi c S rosmarinifolia ct S. puipurea composita).

3, *lejocarpa,* capsuhs glabns vel glabnuscuhs.

156 S DIVERGENS, amentis breviter pedunculatis folns paucis et parvis suffijltis oblongo ovalibus densiflons, squamis obovato-rotundati* lu&co-piceis albo-villosis, filamentis supra medium connate, anthens hbens fulvis, capsuhs mmimis ovato-conicis dense senceis sessihbus, nectano palhdo basin capsulae «uperante, stylo minimo fulvo, stigmatibus crassis integris erectis, folns oblonjris parvis supra glauco-vmdibus subtus palhdionbus \ glaucescentibus senceis s glabns integerrimis 5 In India onentah Kischtwar et Jauschar, rcg alp 12000 ped. dlt (Thomson) S. myncaefoha Anders. Act Holm 1860, p 483, Linn. lourn. Ill p 53 Fruticulus pedahs, rimis eximie divcrgentibus rrimosissimus, ramuh novelh saepe coalescentes Folia in forma sencea £ - * poll longa 2 lin laid, breviter petiolata, apice fere rotundata sed brevissime apiculata, oblongo elliptica, supra glabnusculi, quando gliucescentia eadem longitudine sed adhuc angustiora dpicem \ersus sublatiora utnnque glabemma Amenta pedunculo MX 2 hn longo folns 2 3 cetens dLquahbus instructo pedunculata, ovah-oblonga, masc. \-\ poll longa, feminea mascuhs fere longiora, squamis pallidionbus et minus ullosis capsulas ad medium tegentibus. Capsulae semihneam longae Fst species ceitissime S. co?si P in sua regione omnino analoga. S hastataj alpinae quod ad magnitudinem et colorem pallide flavescentem amentorum masc simihs, sed amentis lemineis cum S. repente potissimum comparanda. Staminibus maximam paitem concretis S. pychnostachyaj ex Indicis affinis, sed distinguitur amentis brevissimis ct capsuhs senceis (v s)

1Y7. S SIDIRICA (Pallas 11 ross.II p.78),amentis femineis subsessilibus bracteis suffultis oblongo-cyhndncisbrevibus,squarais obo\ato cuncati*! apice fusconbus pilosis, capsuhs conicis acutatis argenteo-tomentosis breviter pediceliatis, pedicello nectanum vix superante, stylo producto, stigmatibus brevissimis crassis subemarginatis, folns lanceolatis acutis margine plus minus reflexo integemmis supra opace widibus subtus glaucis utnnque vel subtus plus minus pubescentibus, stipuhs acutis vel ovato lanceolatis acummatis. Hab in Sibina altaica ad fl Tenisci (Pallas), ad urb Tokutzk (Goldbach et Haupt) et in Davuna — Ledeb. fl alt IV p. 287, fl ross III. p 622 S co?sia p pubescens Turc/ fl baical-davur 1 c. p. 394 Species obscurae sane affinitatis, in herbarns aut cum S coesia (formaa glabrae) aut cum S. rosmannifoha (formae pubescenti senceae) confusa. Sub duabus enim occurnt modificationibus 1° *glabrescens,* loins utnnque glabernmis aut pihs brevibus raio conspersis, baec, quae aut brevifaha aut longifoha, nunc S. myrtilloidem nunc S rosmannifoliam glabrescentem simulat, 2° *pubescens,* folns sat longis

basi apiceque acutatis utrinque sed subtus parcius pubescenlibus, nunc S. Friesianum nunc S. versifoliam revocans, sed sine dubio S. rosmarinifoliae magis affinis si non cum ea plane identical (v. s.)

-Q s CCESIA (Vill. Delph. 3. p. 268), amentis parvis breviter pedunculatis fo- 15 liis paucis suffultis ovali-oblongis vel subglobosis densifloris, squamis foliis oblongo-obovatis apice obtuso parum fuscioribus glabris, capsufis ovato-conicis albo-sericeis subsessilibus, nectario basin capsulae tegente vel demum tantum attingente, stylo subproducto, stigmatibus brevibus crassiusculis inlerrris foliis ellipticis lanceolatisveacuminatisglaberrimis **utrinque opace glaucis margine revoluto integerrimis exstipulatis. 5 In summis alpibus Helvetiæ, Tyroli et Galliæ austro-occidentalis rarissima. In Pyrenæis post Lapeyrouse non reperta — Koch comment. p. 59, Synops. ed. 2. p. 758; Trautv. mém. de la soc. des nat. de Moscou 8. p. 305; Hartig Forstl. Cult. p. 390; Wimm. Sal. Europ. p. 100: Gren. et Godr. fl. franc. 3. p. 140; Gaud. fl. helv. 6. p. 254;** S prostrata 'Ehrh. pi. select. 159; Ser/Essai, p. 29. S. myrtilloides Willd. sp. pi 4. 686; Loisel. Fl. gall. 2. p. 341; Forbes Wob. 66. t. 66. — Icones: Vill. 1. c. t. 50. f. 11. Trautv. 1. c. t. 12. Reich, f. 200">. Hartigl. c. t 359. — Exsicc: Ser. n. 23. 57. 64; Reioh. n. 2519; Kerner Hb. Sal. n. 120; Wimm. Coll. S. n. 116.Fruticulus prostratus, ramis erectiusculis2-3-pedalibus intricatis. Folia J-l poll, longa, ad vel supra medium angustiora. Amenta scrotina, mascula holosericea,staminibus fere ad mediumcoalitis, l'eminealongiora et magis cylindrica, capsulis vix lineam longis. Haec species habitum. fere S. arbusculas praesefert sedcolorem S. purpureae, iia ut quasiab iis hybridacsset. Affinitatem cum posteriori praecipue speciraina culta ideoque magis luxuriantia clarius demonstrant, amentis longioribus et foliis obovato-elongatis, iis S. purpureae Forbesianas non dissimilibus. (v. v.)

ft *minutiflora* (S. minutiflora Turcz. pi. exsicc.). Frutex humilis, ramis [illegible] **gracilibus, foliis 3-5 lin. longis basi sublatioribus acute nervosis, amentis vix semipollicaribus. In pratis subalpinis Dahuriæ et in glareosis ad torrentem Kudin, in alp. Alatau ad fl. Sarchau (Kar. et Kiril.) S. cœsia glabra** Turcz. u. uaiuai. *UOLHUI.* i. ^. r. «„.. ,r~ ; . . , ° \——/—. *r.* .• rnss• 4• D 623 A veraS. ccesia europffia non differt nisi statura humihon, foliis minoribus vulgo magis acutioribus vel tenuionbus. (v. v.)

Species dubix.

i-Q ^ PHLOMOIDES (M. Bieb. Fl. taur.-caucas. 2. p. 4KJ. 3. p. («8), amentis i0 Lsiiibūs demum bracteatis vel foliis parvis et paucis suflufe^uamwjahis acSisDilosis capsulis conico-elongatis cincreo-pilos.s pedicellatis, pedicello necaritim 2-4^cs superante, stylo nullo, stigmatibus bifidis orecto-coniii-S S ° o l i i s elliptiSis vel obo/atis obtusis utrinquo canoj-toiDlentosis subtus glaucis demum nigricantibus margine glanduioso-serratis, stipulis semicordato-lanceolatis, gemmis et ramulis mcanis. - Bungc Rehq . j$_{jC}$b$_{m}$. i. $_{c}$. p 497- Ledcb. fl. ross. 3. p. 608; Anders. Sal. monogr. p. 74. S. acuminata pall ff ross. 2. p. 81 (ex M. B. fl.) Hab. in Rossia media Simbirsk et Saratow et australi ad Wolg.im, in provincns caucasicis, ct in Sibiria altaica ad fl. Ob (teste Ledeb.). Haec forma, cujus specimina tantum paucaet varie determinata in htrbariis examinavi, quoad amenta potissimum S. cinereae similis, recedit attamen foliis, quaj ea S. grandifoliae magis simulant. Sunt autem exactc elliptica, basi vix attenuata, exirnie tenuia, subtus sat intense slauca et praesertim secus nervos mollitcr tomentosa, supra lrete viridia sed pilis raris conspersa, 3-5 poll, longa et l-ij-2 poll, lata, margine saepe acute serrata, quibus notis et colore non parum etiam cumS.nigricante congruunt. Adhuc incerta forma, quae forsan melius cum S. cinerea est conjungenda. (v. s.)

160 S. MEDKMII (Boiss. Diagn. pi. orient. 8. p. 100), amentis sessilibus minute bracteatis dense cylindricis elongatis masc. aureo-pilosis, squamis oblongis rufis ^{a}P^{icc} nig^{ri}9^{ail}tibus, capsulls acutiusculis griseo-tomentosi's breviter oedicellatis, pedicello neclarium tis terve superante, foliis oboyato-rotundatis supra opace cinereis subtus molliter cano-tomentosis, stipulis ;,arvis. In Persia australi prope pagum Gere inter Abuschir et Schiraz (cT Kotschy pi. Pers. austr. n. 113 et 9 n. 802). - Anders. Sal. monogr.

p. 75 Difficile saneest dictu utrum a vera S cinerea sit distinctaan ejus tantum modificatio levis. Planta mascula amentis apice divisis abnormis, sed larais crassiuscuhb tomento denso cinereis msignys, femmea quoad amenta hs S. phlomoidis omnino simihb sed xami rufescentes glahn (quare ill Boissier earn ad S capream ut variet. letulit), capsulae forsan brevius pedicelUtae. Folia vix pollicana, obovato-rotundata, apice subemarginata, crassa incano-tomentosa, subtus pallidiora — Specimina amentis tantum femmeis instructa in vanis locis Persiae d Buhse collecta vix ab his distinguere valeo (S caprea Boiss et Buhse Nom. Me'm. de Ja Soc de Moscou 12. p. 201), *et* ad b Walhchianam transitum optime praebent. (v. s.)

Species exclusa.

S AMPLEXICAULIS Bory et Chaub. = (ex Buching. in Steud. nom) Apocynum Venetum L.

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