

A DICTIONARY OF THE PTERIDOPHYTES OF INDIA

R. D. DIXIT and J. N. VDHRA

BOTANICAL SURVEY OF INDIA

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**A Dictionary of
the Pteridophytes
of India**

FLORA OF INDIA (Series—IV)

**A DICTIONARY OF
THE PTERIDOPHYTES OF INDIA**

R. D. Dixit and J. N. Vohra



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FOREWORD

The Flora of **India** is being published in four series. The 1st is the main Flora of India being published in the form of Fascicles ; the 2nd deals with analysis of the flora of different States, the 3rd with the floras of Districts and the 4th, with other publications.

Pteridophytes form an interesting and conspicuous part of our natural flora, and in certain habitats like moist shaded hill slopes or open places on forest fringes in Arunachal Pradesh, even as the dominant vegetation cover. Pteridophytes attracted several naturalists in our country, but, few critical revisionary accounts are available. In fact, for an ordinary botanist it is sometimes difficult to state with precision how many genera, which genera and how many species occur in the country.

Scientists who have used the Dictionary of Flowering Plants and Ferns by Willis or A Dictionary of the Flowering Plants in India by Santapau and Henry know how useful such dictionaries are in providing precise and succinct information on genera of plants.

A *Dictionary of the Pteridophytes of India* was conceived about two years ago during a discussion with the authors of the present volume ; fortunately Drs. R. D. Dixit and J. N. Vohra willingly came forward to prepare such a work.

The present work is slightly more elaborate than the work of Willis or Santapau and Henry. Due to the smaller number of genera involved in the work, the authors could provide short descriptions, type species, distribution and illustrations of selected taxa, still keeping the volume handy.

It is hoped that the work of Dixit and Vohra prepared at considerable effort and critical evaluation will be found useful not only by Pteridologists, but, all interested in natural flora and vegetation of India.

Howrah—711103

9th April, 1984

s. K. Jain

Director
Botanical Survey of India

P R E F A C E

In the past few decades the number of genera in Pteridophytes has increased enormously due to new discoveries or bifurcation or splitting of existing genera, as a result of intensive research that has been taking place all over the world and the renewed interest that the subject has generated in recent years. The need for a dictionary of genera occurring in India with brief descriptions has therefore long been felt, particularly since after the publication of "A Dictionary of the Flowering Plants in India" by Santapau and Henry (1973).

The dictionary contains generic names in alphabetical order followed by etymology wherever available, family names within brackets, reference to Beddome's Handbook (1883, 1892), and to the type species, number of species in the world, as well as in India, world distribution, habit and diagnostic characters of the genus.

One or two examples mainly of endemic or common species, with their distribution in India, and uses if any are given under each genus. This is followed in brackets by the name given by Beddome in italics with page number wherever it differs from the accepted name. If the generic name is same as given in Beddome, reference to Handbook is given in the beginning, after family name. In such cases this reference is usually omitted in the examples cited.

The genera are listed under currently accepted names in bold letters, cross references to other names are also given, which appear in roman letters.

In all 191 genera (Fern-allies 10, Ferns 181) belonging to 67 families have been recognised against 98 genera of ferns by Beddome (1883) from British India, Ceylon and the Malay Peninsula, of which 6 are of non Indian distribution and 16 genera are merely treated as synonyms at present. The six dominant families of ferns as regards the number of genera given in brackets are : Polypodiaceae (27), Thelypteridaceae (21), Athyriaceae (14), Hymenophyllaceae (12), Hemionidaceae (6). 47 of the genera are illustrated with line drawings.

Grateful thanks are due to Dr. S. K. Jain, Director, Botanical Survey of India for suggestion of the subject matter and constant encouragement during the period of work. Thanks are also due to Dr. N. P. Balakrishnan, Deputy Director, Botanical Survey of India, Allahabad for the facilities. Our thanks are also due to Dr. V. S. Agarwal, Editor of Publications and Sri S. C. Pal, Publication Officer, Botanical Survey of India, for their help rendered during the course of its publication.

Botanical Survey of India
Allahabad
24th March, 1984

R. D. Dixit
&
J. N. Vohra

FAMILY NAMES OF THE INDIAN PTERIDOPHYTES

Acrostichaceae	Hypudemataceae
Autiniuptcri daceae	Hyp olepidaceae
Adiantaceae	Isjctaeae
Anemiaccac	Lindsaeaceae
Angioptcridaeae	i LOrpariopsidaceae
Antrejpnyaceae	L DX Dgrammaceae
Aspidiaceae	Lytopadiateae
Aspleniaceae	Lygodiaceae
Atbyriaceae	Marattiaceae
Azbillaceae ..	Marsileaccac
Blechnaceae	M onach DS oraccae
Bolbitidaceae	NephrolepidacBae
Botrychiaccac	Oleandraceae
Cheilanthaceae	OnDcleacBae
Christen seniaceae	Dphioglossaceae
Cryptogrammaccae	Dsmundaceae
Cyatheaccac	Parkeriaceae
Davalliateae	Pcrancmataceae
Dennstaedtiatcae	Plagiogyriaccae
Dicks oniaceaeB	Platyneriaceae
DicranDptcri daccac	PolypDdiaceae
Dipteridaceae	Psilotaceae
Drynariacsae	PteridacEae
Dryopteridacsae	Pteridiataeae
Elaphoglossaceae	Salviniaccac
Equisetaceae	Sthizaceaeae
Glichcniaceae	Sclagincllaccac
Grammitaceae	Sinopteridatcac
Qymn Dgrammitidaceae	Sten Dchl aenaceae
Helminth Dstachyaceae	Tacnitidaceae
HcmionitidaccaB	Thelypteridaceae
Huperziaceae	Vittariaceae
Hymenophylliaccae	Woodsiaceae
Hymen Dphyllupsi dateae	

The above families are mainly recognised after Pichi-Sermolli [197D, 1977, 1982) and Ching [1978, 197B a).

ABBREVIATIONS

E	English
FNI	A review of the ferns of Northern India by C. B. Clarke [<i>Trans. Linn. Soc. Lond. ser. 2, 1 : 425-619. t. 49-84. 188D</i>].
FSI	<i>The Ferns of Southern India</i> by R. H. Beddome, IB S3. Higgin-Botham & Co., Madras.
H	Hindi
HANDB	<i>Handbook to the Ferns of British India. Ceylon and the Malay Peninsula</i>, 1BS3. Thacker Spink & Co., Calcutta.
LT	Lectotype
M	Malayalam
S	Sanskrit
Santh	Santhal
Syn	Synonym
T	Type
Tain	Tamil
*	Nomina genera conservanda
NE	North-East
SE	South-East
Trop	Tropical

A DICTIONARY OF THE PTERIDOPHYTES OF INDIA

A

Acrophorus Presl (Peranemataceae).

T.—*A. ndosus* (Bl.) Presl

Species 2, 1 in India. SE Asia to Fiji.
Terrestrial; fronds quadripinnate; sori medial, on the Veins or at the apex of a short side vein with small, round receptacle, indusium reniform. *A. paleolatus* Pic.-Ser. (Syn. *Leucostegia nadosa sensu* field. HANDB. 54. t. 26) abundant in Eastern India and Eastern Himalayas.

AcrDrumohra (H. Ito) H. Ito (Aspidiaceae)

T.—*A. diffracta* (Bak.) H. Ito

Species 5, 2 in India. Southern Asia.
Terrestrial; fronds tufted, bipinnate, first pinnule of all pinnae except the ID west anadruidous, rachis more or less zig-zag; veins free; sori multi-seriate on either side of the costa. *A. diffracta* (Bak.) H. Ito and *A. hasseltii* (Bl.) Ching are distributed in Eastern Himalayas.

Acrostichum L.—Derived from the Greek akros=highest, stichos=order. (Acrostichaceae) HANDB. 44D.

LT.—*A. aureum* L.

Species 3, 2 in India. Pantropic, along the coasts. Fronds pinnate, coriaceous; veins anastomosing, upper pinnae fertile. *A. aureum* L. is abundant along Indian coasts; rhizome vulnerary, used in healing inveterate ulcers in China and applied as paste to wounds and boils in Malaya.

Actiniopteris Link—Derived from the Greek aktin = rays, pleris = fern (Actinopteridaceae) HANDB. 197.

LT.—*A. radiata* (Sw.) Link



A. radiata

A. radiata [Sw.] Link, FSL. t. 124 (Syn. *A. dichotoma* Forsk. HANDB. 197) distributed throughout India in dry, rocky places and old depleted buildings; plants are used as styptic and anthelmintic; fronds chewed for sore throat and rhizome boiled to cure dandruff in West Indies. (H.—*Marpankhi*, S.—*Myursikha*).

Actinopterys Wall. ex Hook.
(Schizaeaceae).



A. digitata

T.—*A. digitata* (L.) Wall. ex Hook.

Species 13, 1 in India. Madagascar, tropical Asia to Polynesia. Terrestrial; fronds tufted, simple, grass-like, spirally arranged; fertile segments 5-18, digitate, arising pinnately from the apex of sterile fronds. *A. digitata** [L.] Wall. ex

Species 3, 1 in India. Africa to Asia. Terrestrial, in dry rocky places; sterile fronds small, tripartite to the base and each part once or more dichotamously, the segments linear; fertile fronds taller. *A. radiata*

Hook. [Syn. *Schizaea digitata* (L.) Sw. HANDB. 452. t. 279] extremely rare in North India, Meghalaya, Kerala. Some authors treat it under *Schizaea* Smith.

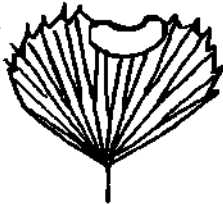
Acystopteris Nakai (Athryiaceae).

T.—A. *JBonica* (Lueruss.) Nakai

Species 2, 1 in India. Japan, Taiwan, China, Vietnam, Java. Terrestrial ; fronds tufted, up to 1 metre long, tripinnate, both the surfaces Covered with white lax hairs ; veins simple or forked ; SDri medial Dn the lower veins, indusium small, membranous, subquadrate, deciduous. *A. tenuiseta* (fl.) Tagawa [Syn. *Cystopteris setosa* (Bedd.) Bedd. HANDB. 71. t. 35] occurs in Sikkim Himalayas.

Adiantum L.—Derived from adjuring = dry (Adiantaceae). HANDB. B2.

LT.—A. *capillus-veneris* L.



A. venustum

Species 2DD, ca 26 in India. Cosmopolitan. Some cultivated in gardens and also as pot plants for their ornamental foliage. Terrestrial ; fronds

pinnately decomposed, rarely simple pinnate ; sori along the veins protected by reflexed marginal outgrowths serving as indusium. *A. capillus-veneris* L. occurs throughout India ; fronds used as demulcent, expectorant, diuretic, emmenagogue, tonic, febrifuge; whole plant steamed for small pox cure in California (H.—*Hansraj*). *A. caudatum* L. is distributed throughout India ; used in skin diseases, diabetes, cough and fever [S.—*Mayursikha*). *A. hinulatum* Burm. occurs all over India ; used in fever and erysipelas (H.—*Kali-jhanti* ; S.—*Hansavati*). A.

venustum D. Don DCUTS in Eastern Himalayas ; used as tonic, resolvent, expectorant, diuretic, emmenagogue, astringent, emetic and in scorpion sting (H.—*Sunraj* ; S.—*Hansapadi*).

Aleuritopteris Fée, see *Cheilanthes* Sw.

Alsophila R. Br., see *Cyathea* Sm.

Amploptaris Kunze (Thelypteridaceae).

T.—A. *prolifera* (Retz.) Copel.

Monotypic. Tropics and subtropics of the old world. Terrestrial ; fronds creeping, more than one metre long, pinnate, buds producing long secondary fronds common in the axils of the pinnae. Abundant in open wet places. *A. prolifera* (Retz.) Copel. [Syn. *Goniopteris prolifera* (Retz.) Roxb. HANDB. 296. t. 153] common throughout India in hills as well as plains, generally found on the banks of rivers and ponds ; the fresh tender fronds are CDDked as vegetable curry in Darjeeling district Df West Bengal.

Amphinuron Holtt. (Thelypteridaceae).

T.—A. *opulentum* (Kaulf.) Holtt.

Species ca 15, 3 in India. East Africa to Polynesia. Terrestrial ; fronds with fewer and larger pinnae, deeply lobed, short acicular hairs present on the lower surface; basal veins always from cDStule ; SDri usually near apices Df veins, sporangia without glands. *A. terminans* (Hook.) Holtt. and *A. opulentum* (Kaulf.) Holtt. are distributed in South India. *A. immersum* (MDore) Holtt. (Syn. *Lastrea immersa* Moore, HANDB. 234) occurs in Assam.

Anemia Sw.—Derived from aneimon = naked (Schizaeaceae) HANDB. 453.

T—A. *phyllitidis* (L.) Sw.

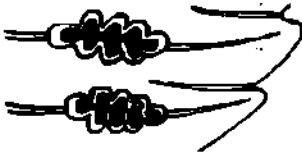
Species 9D, 1 in India. Trupical and subtropical, chiefly American. Terr-

Angiupteris

estrial ; fronds dimorphic, ternately divided, terminal ones sterile and the basal ones fertile, branched, without lamina. *A. tomentosa* (Sav.) Sw. (Syn. *A. wightiana* Oardn. FSI. t. 66) rare in South India.

Angiopteris Hoffm.—Derived from the Greek *angiu* = open, *pterus* = fern, (Angiopteridaceae) HANDB. 45B.

T.—*A. evecta* (Forst.) Hoffm.



A. evecta

Species *ca* 111, 12 in India. Madagascar. Tropical Asia, Polynesia. Terrestrial ; handsome large fern, stem massive, not woody ; fronds bipinnate ; sori near the margins, 7-12 sporangia in each group, united. *A. evecta* (Forst.) Hoffm. occurs throughout India, Dn swampy forest floor, moist slopes near water falls and on rocky ground ; the massive stem is cooked and eaten by the tribals of Assam ; an intoxicating drink called *ruchshi* is also made out of it ; the stem is also widely used as a base for transporting orchids. Some authors prefer to recognise all species as one.

AnisDcampium Presl (Athyraceae).

T.—*A. cinningianum* Presl

Species 2, 1 in India. Tropical Asia. Malaysia. Terrestrial ; fronds tufted, pinnate, herbaceous, veins anastomosing with free included veinlets ; sori dorsal, on veinlets. *A. cumiagianum* Presl [Syn. *Kephrodium otaria sensu* Bedd. HANDB. 267. t. 137] is widely distributed from Assam to South India.

Anisogonium Presl, see *Dictyodroma* Ching

Arachniudes

Anogramma Link — Derived from *anu* = upward, *grumma* = line (Hemionitidaceae).

LT.—*A. leptophylla* (L.) Link

Species 7, 1 in India. North and South temperate. Terrestrial ; fronds small - to large, tufted, simple to tripinnate, with decurrent incised pinnules, membranous ; sori along the veins, exindusiate. *A. leptophylla* (L.) Link [Syn. *Gymnogramma leptophylla* (L.) Desv. HANDB. 382. t. 220] is distributed in Western Ghats and South India.

Antraphyllum Kaulf. [Antrophyaceae] HANDB. 4D1.

LT.—*A. plantagineum* (Cav.) Kaulf.



A. Dbovatum

Species 40, 7 in India. Tropics and subtropics of the old world. Epiphytic ; fronds simple, widening gradually from the base ; sori spreading along the veins. *A. parvulum* Bl. [Syn. *A. reticulatum* (Forst.) Kaulf. var. *parvulum* (Bl.) Bedd. JIANDB. 403] is rare in Eastern Himalayas and Meghalaya. *A. ubovatum* Bak. (Syn. *A. latifolium sensu* Bedd. HANDB. 4D4) occurs in Eastern India and Eastern Himalayas.

Arachniodes Bl. [Aspidiaceae].

T.—*A. aspidioides* Bl.

Species *ca* 50, B in India. Tropical and subtropical Asia. Terrestrial or epiphytic ; fronds tripinnatifid or more compound, pinnules usually rhomboid and aristate ; sori dorsal or subterminal Dn the veins. *A. aristata* (Forst. f.) Tindale (Syn. *Lastrea aristata* Moore

AraiostBgia

HANDB. 229) distributed in Eastern Himalayas to South India.

*AraiostBgia Copel. (Davalliaceae).

T.—A. hymenophylloides (Bl.) Cupel.

Species 12, ca 7 in India. Mostly Himalayas to South China, Taiwan, 1 in Malaysia. Epiphytic or terrestrial; fronds ovate, pinnately decompose, finely dissected, thin; sori terminal on the veinlets. A. polcbra [D. Don] J. Sm., distributed in Eastern Himalayas and South India.

Arthromsris (Moore) J. Sm. (Polypodiaceae).

T.—A. wallichiana [Spreng.] Ching

Species 10, 9 in India. N. E. India, China to Taiwan, Burma, Thailand. Terrestrial or epiphytic; fronds impapinnate, lateral pinnae articulate to rachis, lanceolate; veins anastomosing; sori solitary or plural, between main veins. A. wallichiana [Spreng.] Ching [Syn. *Pleopeltis jugfandifolia* (D. Don) J. Sm. HANDB. 358. t. 21D] is abundant in N. E. India as epiphyte to lithophyte.

ArthroptBris J. Sm. ex Hook. [Nephrolepidaceae].

T.—A. tenella [Forst.] J. Sm. ex Hook.

Species 2D, 1 in India. Did world tropics, Australia, New Zealand. Epiphytic; rhizomes long twining, stipes distant, articulate to a short phyllopodium; venation free; sori indusiate, round, in a single row between costa and margin, terminal on veinlet. A. palisotii (Desv.) Alston (Syn. *Nephrolepis ramosa* Moore, HANDB. 284. t. 145) reported from Kerala, Tamil Nadu.

Aspidium Sw., see *Tsctaria* Cav.

Asplenium L. (Aspleniaceae) HANDB. 137.

T.—A. nurinum L.

Species 55D, ca 82 in India. Cosmopolitan. Terrestrial and epiphytic; fronds

Athyrium

small to large, simple to pinnately compound; one sorus is produced on the basiscopic side of each veinlet. Many hybrids and polyploids recorded. A. adiantum-nigmi L. is distributed in N. W. Himalayas, it is bitter, diuretic, laxative, useful in ophthalmia, diseases of spleen, jaundice, produces sterility in women (E.—*Black-spleenwort*). A. trichomanes L. is distributed in N. W. Himalayas and South India; used as laxative, expectorant, leaves smoked for cold (Tarn. *Mailhkondei*). A. nidus L. [Syn. *Thamnopteris nidus* (L.) Presl] a common epiphyte of the old world, occurs throughout Indian mountainous regions; used as depurative and sedative in Philippines (E.—*Bird Nest Fern*). A. rutamoria L. occurs in Kashmir; leaves used as cure for ricketts in Kashmir and as diuretic in North Carolina; rhizome anthelmintic; astringent.

Athyriopsis Ching [Athyriaceae].

T.—A. japonic! (Thunb.) Ching

Species 5, 1 in India. Tropical Asia, China, Taiwan, Japan, Korea. Terrestrial; fronds pinnate, pubescent; veins free; sori linear, commencing near the midrib and not quite reaching the margins. A. japonic* (Thunb.) Ching [Syn. *Diplazium japonicum* (Thunb.) Bedd. HANDB. 180] is distributed in the Himalayas, Eastern and Southern India. Some authors treat it under *Linnathyrium* Koidz.

Athyrium Roth [Athyriaceae] HANDB. 161.

T.—A. filix-femina Roth

Species 8D, ca 38 in India, Cosmopolitan. Terrestrial; fronds tufted, vascular strands in stipe at the base 2, uniting upwards into a single U-shaped strand; lamina simple to bipinnate; veins free, rarely anastomosing, polymorphic in soral character; sori elongate along the veins, indusium mostly present. A.

Azolla

spinulosum (Max.) Mild, is distributed in Eastern Himalayas at higher elevations.

Azolla Lam. [Azollaceae).

T.—*A. filiculoides* Lam.

Species 6, 2 in India. Tropical and subtropical. Aquatic; heterosporous fern. Two leaves present at each node. Leaves alike, bilobed, posses-

Azolla

sing a small cavity at base, harbouring the blue-green alga, *Anabaena*; sporangia produced in globose bodies known as sporocarps which may bear megasporangia or microsporangia; the megasporocarps contain only one megasporangium bearing a single megaspore. *A. pinnate* R. Br. occurs throughout India in ponds and ditches. Nitrogen fixation by *Anabaena* in *Azolla* may be important in rice cultivation.

B

Bslvisia Mirb. (Polyodiaceae).



B. spicata

the Himalayas, Eastern to Southern India.

T.—*B. spicata* [L. f.)
Mirb.

Species 15, 3 in India. Africa, Sri Lanka, Malaysia to Polynesia. Epiphytes ; fronds simple, entire, coriaceous ; veins reticulate; sporangia confined to narrow apex of leaves. *B. spicata* [L.f.) Mirb. [Syn. *Gymnopteris spicata* [L.f.) Presl HANDB. 432] epiphytic on tree-trunks and branches, widely distributed in

Blechnidium Moore (Blechnaceae)
HANDB. 133.

T.—*B. melanopus* [Hook.) Moore

Monotypic. Tropical Asia (India, Taiwan). Terrestrial ; stipes black at base ; fronds pinnate, pinnae linear-oblong, falcate ; veins anastomosing, forming large arched, areoles, ultimate veinlets free ; sori close to the base, continuous, not reaching the apex of the pinnae. *B. melanopus* (Hook.) Moore is distributed in Meghalaya. Some authors treat it under *Blechnum* from which it differs in anastomosing veins.

Blechnum L.—Derived from the Greek name for fern. [Blechnaceae) HANDB. 13D.

LT.—*B. orientale* L.

Species 220, 1 in India. Cosmopolitan. Terrestrial ; fronds large, 1-1.5



B. orientale

bladder complaints in India, Polynesia and as diaphoretic, aromatic, aperative in Philippines.

Bolbitis Schott—Derived from the Greek *bolbos* = bud, referring to



B. semicordata

m., pinnate, tufted, linear, sub-CDriaceous'; sori in long continuous line close to the midrib. *B. orientale* L. distributed throughout India; fresh fronds used as poultice for boils in Malaya; rhizome used as anthelmintic in China, eaten during scarcity of food in Malaya, as cure for intestinal worms,

BDtrychium

small buis borne on the apical part of the fronds in some species (Bolbitidaceae).

T.—*B. serratifolia* (Mert. ex Kaulf.) Schutt

Species 85, ca 5 in India. Pantropical. On rocks or epiphytic on trees near streams; fronds simple. Dr. pinnate; veins reticulate, forming areoles without free included veinlets; fertile fronds long, stalked and contracted. *B. hetemulita* (Presl) Ching [Syn. *Gymnopteris flagillifera* Bedd. HANDB. 433] abundant in the Himalayas and Eastern India. *B. virens* (Hook. *SL* Grev.) Schott var. *virens* and *B. semicordata* (Moore) Ching occur in Eastern Himalayas.

Botrychium Sw.—Derived from Greek botrys = a bunch (Botrychiaceae) HANDB. 469.

LT.—*B. lunaria* (L.) Sw.

Species 4D, 9 in India. Cosmopolitan. Terrestrial; sterile fronds foliaceous, pinnatifid to decompose, the



B. lunaria

Brainea

fertile ones pinnate with several spreading branches. *B. lunaria* (L.) Sw. occurs in the Himalayas at higher elevations; used as vulnerary, antidy-senteric and for healing cuts and wounds (E.—*Moonwort*) *B. virginianum* (L.) Sw. occurs in the Himalayas and S. India (W. Ghats); fleshy rhizome is used in cuts and bruises by American Indians, (E.—*Rattlesnake fern*). *B. ternatum* (Thunb.) Sw. is distributed in the Himalayas; plants vulnerary; rhizome used as antidysenteric in China (Chinese—*Yin-Tkhuch*).

Brainea J. Sm.—Named after C. Braine (Blechnaceae) HANDB. 395.

T.—*B. insignis* (Hook.) J. Sm.

Monotypic. Eastern Asia. (S. China, Burma, Thailand, Malaysia). A large terrestrial fern, fronds pinnate, tufted; fertile ones linear, acrostichoid. *B. insignis* (Hook.) J. Sm. rare in Eastern India, in open places.



B. insignis

Campteria Presl, sec Pteris L.
Cephalomanes Presl (Hymenophyllosideae).

T.—*C. utrivirens* Presl

Species 10, 1 in India. Madagascar, Malaysia, Taiwan. Terrestrial; fronds polystichous, pinnate; veins coarse; cells large and with relatively thin wavy walls. *C. javanicum* (Bl.) v. d. Bosch (Syn. *Trichomanes javanicum* Bl. HANDB. 44. t. 21) is distributed in Eastern India.

Ceratopteris Ad. Brongn.—Derived from the Greek keratos = horn, pteris = fern (Parkeriaceae) HANDB. 123.

T.—*C. thalictroides* (L.) Ad. Brongn.

Species 5, 3 in India. Africa, Madagascar, India to Polynesia and Japan,



C. thalictroides

S. E. Asia, W. Indies, Tropical America, Southern U. S. A. Aquatic; fronds pinnately decomposed, dimorphic, the fertile fronds linear, longer, proliferous in the apical region, more finely divided than the sterile; veins anastomosing; sori along the veins occupying the entire lower surface

protected by broadly reflexed margins. *C. thalictroides* (L.) Ad. Brongn. is distributed throughout India up to an altitude of 100 m; it is common during rains in tanks, ditches and swamps or even on dry ground; fronds used as poultice in skin complaints and in China as toxic and styptic; fresh leaves used as vegetable curry.

Teterach Willd. (Aspleniaceae).

T.—*C. otticinarum* Willd.

Species 3, 2 in India. Africa, Asia, Europe. Terrestrial; fronds pinnatifid to pinnate, rarely simple, subcoriaceous; veins anastomosing, obliquely only towards the margins; sori oblique. *C. umrinarinum* Willd. [Syn. *Hemidictyum teterach* Beed. HANDB. 194. t. 95] common in North-West Himalayas; used as diuretic, astringent and in infirmities of spleen.

Ceterachopsis (J. Sm.) Ching [Aspleniaceae].

T.—*C. dalhousiae* (Hook.) Ching

Species 2, 1 in India. Himalayas to W. China. Epiphytic; fronds tufted, deeply pinnatifid throughout, herbaceous; veins free, sub-flabellate; SDH copious, on all the lobes in two rows. *C. dalhousiae* [Hook.] Ching (Syn. *Asplenium alternans* Wall, ex Hook. HANDB. 142. t. 72) is distributed in the Himalayas.

Theilanthes Sw.—Derived from cheilos = lip, anthos = flower, referring to the fructifications occurring on the margins (Cheilantheaceae) HANDB. 88.

T.—*C. micropteris* Sw.

Species 180, no 25 in India. In all tropical and warm temperate regions.

ChBilanthopsis

Mostly xerophytic, terrestrial; fronds tufted, bi- to tripinnatifid; veins free; sori marginal, confined to vein endings, protected by reflexed margins. *C. tenuifolia* Sw. distributed throughout India; a preparation from the roots is prescribed by the Santhals for sickness due to witchcraft or evil eyes. (Santh.—*Dodhari*). Some authors treat Asian species under *Aleuritopteris* Fée.

Cheilanthopsis Hieron. (Woodsiaceae).

T.—*C. straminea* (Brause) Hieron. ex Copel.

Monotypic. E. Himalayas, W. China. Terrestrial; fronds small, tufted, bipinnatifid; veins free; sori terminal on the veinlets, submarginal, indusium derived from the margins of the fronds. *C. straminea* (Brause) Hieron. ex Copel. occurs in E. Himalayas.

Christella LEV. (Thelypteridaceae).

LT.—*C. parasitica* (L.) LEV.

Species 51, 21 in India. Did world tropics and subtropics. Terrestrial; fronds pinnate; pinnae lobate to crenate; veins anastomosing; sori indusiate, club-shaped glands present on sporangial stalks. *C. parasitica* (L.) LEV. occurs



C. arida

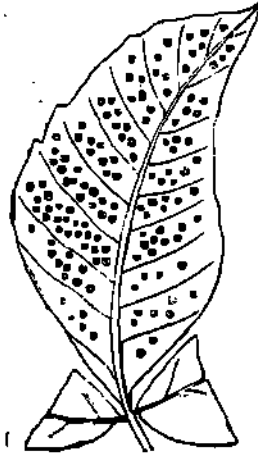
throughout India in a variety of habitats such as around permanent source of trickling water, on forest floor and man made clearings in exposed places.

Christensenia Maxon (Christenseniaceae).

T.—*C. aesculifolia* (Bl.) Maxon

Monotypic. N.E. India to W. Malaysia. Fronds palmate; veins anastomosing; sori circular. *C. aesculifolia* [Bl.] Maxon (Syn. *Kaulfussia aescul-*

Cibotium



C. aesculifolia

ifolia Bl. HANDB. 462. t. 287) is distributed in Assam, Arunachal, Meghalaya; extremely rare.

Christnpteris Copel. (Polypodiaceae).

T.—*C. sagitta* (Christ) Copel.

Species 2, 1 in India. S-E Asia to New Caledonia. Epiphytic; sterile fronds sub-triangular, trilobate or 4-lobate; veins anastomosing; fertile fronds much elongated, contracted, tripartite, segments linear, strap-shaped; sori acrostichoid. *C. tricuspis* (Hook.) Christ [Syn. *Gymnopteris tricuspis* (Hook.) Bedd. HANDB. 434. t. 263.] is endemic to Sikkim, extremely rare in occurrence.

Cibotium Kaulf. (Dicksoniaceae) HANDB. 24.

T.—*C. chamissui* Kaulf.

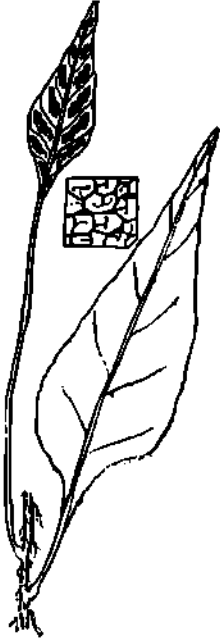
Species 10, 2 in India. Tropical Asia, Central America, Hawaii. Terrestrial; fronds arborescent, tripinnate, stipe and rachis densely soft hairy; sori marginal. *C. assamicum* Hook. and *C. barometz* (L.) J. Sin. occur in E. India; rhizome used as tonic and given for lumbago in China and used as vermifuge in Annam; the stems are used as tonic and styptic.

Colysis

Colysis Presl (Polypodiaceae).

LT.—*C. faemi*Dnitidea Piesl

Species 3D, 8 in India. Africa to New Guinea, and Queensland, north to



C. pedunculata

China and Japan. Terrestrial; rhizome creeping; fronds simple, digitate or pinnate; veins anastomosing, forming areoles; sporangia linear, between main veins. *C. hemionitidea* Wall, ex Presl (Syn. *Pleopeltis hemionitides* Moore HANDB. 358. t. 2D2) with simple fronds is widely distributed in E. Himalayas to Southern India. *C. elliptica* (Thunb.) Ching having pinnate fronds is distributed in Eastern India. *C. pedunculata* (Wall, ex Hook. & Grev.) Ching (Syn. *Selliguea hamiltoniana* HANDB. 39U) occurs in Eastern India and Eastern Himalayas.

Coniogramme Ffe (Hcmionitidiaceae).

T.—*C. fraxinea* |D. Dan) Fée ex Diels.

Coryphopteris

Species 21, 13 in India, old world tropics, Hawaii, Mexico. Terrestrial; fronds simple pinnate to tri-pinnate;



C. fraxinea

veins free, ending into hydathodes; sori non-indusiate, linear, along the veins. *C. fraxinea* (D. Don) Fée ex Diels common in North-Western to Eastern Himalayas.

Cornopteris Nakai (Athyraceae).

T.—*C. decurrenti-alata* (Hook.) Nakai

Species 12, 5 in India. Tropical Asia, north to China and Japan. Terrestrial; fronds bipinnate; veins free, pinnate, soriferous towards the base of the lower branches. *C. opaca* (D. Don) Tagawa [Syn. *Leptogramma opaca* (D. Don) Bedd. HANDB. 379] is distributed in the Eastern Himalayas and Eastern India.

CoryphoptBris Holtt. (Thelypteridaceae).

T.—*C. viscosa* (Bak.) HDIM.

Species 3D, ca 2 in India. North-East India to Samoa. Terrestrial; rhizome erect; fronds pinnate; veins free; sporangia short-stalked, glands near annulus not present. *C. hirsutipes* (Clarke) Holtt. [Syn. *Nephrodium gracilescens* var. *hirsutipes* Clarke FNI 514] is distributed in the Eastern Himalayas.

Crepidomanes

Crepidomanes Presl (Hymenophyllo-
psidaceae).

T.—*C. intramarginalis* (Hook, et
CIBV.) Presl

Species 20, S in India. Madagascar to
Japan and Tahiti. Usually epiphytic ;
fronds 2-5 cm, pinnatifid, margins
thickened ; involu-
cres 1-4 to a frond,



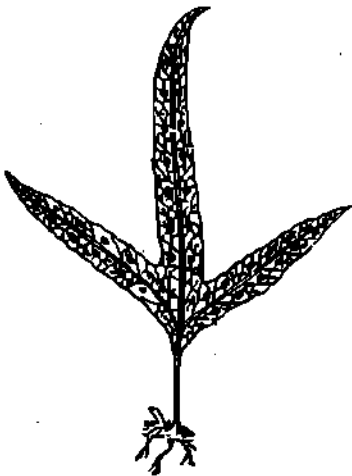
C. insignis

sub-cylindric, sunk, receptacles prD-
truding. *C. intramarginulis* (HUDJC. et
Drev.) Presl (Syn. *Trichomanes intr-*
amarginale Hook, et Drev. HANDB.
41) is distributed in SDuth India, *C.*
insignis (v.d. Bosch.) Fu [Syn. *Trich-*
omanes bipunctatum var. *insigne* (v.d.
Bosch.) Bedd. HANDB. 42) is distri-
buted in North-West Himalayas.

Crypsinus Presl (Polypodiaceae).

T.—*C. niunmalarius* Presl

Species 4D, ca 13 in India. New Guinea,
Indonesia, Malaya, Philippines, India,
Japan. Epiphytic ; rhizome creeping ;



C. Oxylobus

fronds slightly dimorphic, simple to
pinnate; veins anastomosing; sori CD-

CtanitDpsis

mpital. *C. hastatus* (Thunb.) Copel.
(Syn. *Pleopeltis hastata* Thunb.
HANDB. 352. I. 2D5) is distributed
throughout India in the mountainous
regions. Pichi Sermolli [Webbia VDI.
28. 1973) transferred a number Df
Indian species into *Phymatusurus* Pic.
Ser. Many authors still prefer to
treat Indian species under *Crypsinus*.

Cryptogramma R. Br.—Derived from
kryptos = hidden, gramme = line
(CryptDgrammaceae) HANDB. 9B.

T.—*C. acrustiuhuides* R. Br.

Species 4, 3 in India. Europe, Asia,
(India, China, Japan, Siberia), North
America. Terrestrial ; fronds tufted,
3-4 pinnatifid, dimorphic, the fertile
frond narrower and larger than the
sterile one ; Veins free ; sori sub-
marginal. *C. crispa* R. Br. is distri-
buted in the Himalayas at higher
elevations.

Ctenitis (Christ) Christ ex Tard. et
Christ (Aspidiaceae)

LT.—*C. submarginalis* (Langsd. et
Fisch. ex Willd.) Ching

Species ISO, cu ID in India. PantrDpic,
north to China and Japan. Terrestri-
al ; fronds bipinnatifid to decom-
pound, stipe and rachis ctenitoid ;
veins free, short multicellular hairs
un raised upper surface of axes ; sori
indusiate, dorsal on the veins. *C.*
apiciflura (Wall, ex Mett.) Ching is
distributed in Eastern Himalayas. *C.*
scabrusa [Kunze) Ching (Syn. *Lastrea*
scabrusa Kunze HANDB. 263. t. 125)
is endemic tD South India. *C. mani-*
purensis (Bedd.) Ching (Syn. *Phegop-*
teris manipurensis Bedd. HANDB.
Suppl. 83) is distributed to Eastern
India, and Eastern Himalayas.

Ctenitopsis Ching ex Tard. [Aspidia-
ceae).

T.—*C. sagenioides* (Mett.) Ching

Species ca IS, 2 in India. South-East
Asia. Terrestrial ; fronds large. 2-3

D

Davallia Sm.—Named after Edmund Davall, a Swiss Botanist (Davalliaceae) HANDB. 58.

LT.—*D. canariensis* (L.) Sm.

Species 41), ca 7 in India. S. W. Europe, Canary Islands, Madagascar, Tropical and subtropical Asia, Pacific. Epiphytic ; fronds decompound, lobes finely dissected with the minor axes decurrent, winged, glabrous, coriaceous ; veins free ; sori terminal on veinlets. *D. griffithiana* Hook, occurs in Eastern India. *D. bullata* Wall, ex Hook, is widely distributed in E. Himalayas, Eastern and Peninsular India.

Dendroglossa Presl (Polypodiaceae).

LT.—*D. normalis* Presl

Species 5, 1 in India. India to South China and Malaysia. Terrestrial ; rhizome scales clathrate ; fronds simple, dimorphic, the sterile lanceolate, broader, entire ; fertile ones linear to filiform ; sori occupying the whole area on each side of the costa. *D. minutula* Fée (Syn. *Gymnopteris minus* Mett. HANDB. 43 D. t. 259) is distributed in Eastern India. *Dendroglossa* differs from *Culysis* by dimorphism of the fronds only.

Dennstaedtia Bernh. (Dennstaedtiaceae) HANDB. 24.

T.—*D. flaccida* (Forst.) Bernh.

Species 7D, 1 in India. Pantropic, ranging north to Japan and U. S. A., S. America, Australia, New Zealand. Terrestrial ; rhizome dorsiventral, hairy ; fronds large to huge, pinnately decompound ; veins free ; sori marginal, protected by a cup formed by the fusion of indusium with the

lobe Df leaf margins. *D. scabra* (Wall, ex Hook.) Moore, is distributed in the Himalayas and Eastern India.

Diacalpe Bl.— Derived from *Dia* & *kalpe*, meaning a vessey (Peranemataceae) HANDB. 18.

T.—*D. aspidioides* Bl.

Monotypic. Tropical Asia. Terrestrial ; fronds large, tufted, tripinnate, segments of pinnules oblong-cuneate, lobed, decurrent ; veins free ; sori median Dn the anterior lower veinlets. *D. aspidioides* Bl. is distributed in Eastern Himalayas and Meghalaya.

Dicranopteris Bernh. (Glsicheniaceae).

T.—*D. dichotoma* [Thunb. ex Murray] Bernh.

Species 1D, 1 sp. 8 varieties in India. Pantropic Terrestrial ; young parts



D. linearis

of plants protected by branched hairs Df various forms, scales lacking ; veins aL least twice forked ; sporangia 8-15 or more in each sorus. *D. linearis* (Burm. f.) Underw. forms thickets in open sunny situations throughout mountainous regions Df India ; rhizomes are used as anthelmintic in Annam ; fronds are used for asthma in Madagascar ; fluid extracted from fronds shows antibacterial properties ; stipes are used for preparing school pens.

Dictyocline B MoDre [Thelypteridaceae).

T.—D. **griffithii** Moore

Monotypic. Eastern India to Japan. Terrestrial ; fronds subdeltoid, pinnate ; veins anastomosing forming 3-4 rows of areoles, all auriferous. D. **griffithii** Moore (Syn. *Hemhntis griffithii* Hook. f. et Thorns. HANDB. 415. t. 245) is distributed in Eastern India.

Dictyodrama Ching (Athyraceae).

T.—D. *heterophlebia* (Mett. ex Bak.) Ching

Species 5, 1 in India. South-East Asia. Terrestrial ; fronds pinnate with pinnatifid apical part, herbaceous, rachis villose and fibrillose throughout; veins free, pinnate but anastomosing near the margins ; sori diplazoid, not reaching the edge. D. *heterophlebia* (Mett. ex Bak.) Ching (Syn. *Anisagonium heterophlebium*. Bedd. HANDB. 191) is distributed in Eastern Himalayas and Southern India.

Didymochlaena Desv.—Derived from the Greek *didymos*= double, *chlaena*=clock; referring to double indusium (Aspidiaceae). HANDB. 199.

T.—D. *sinuata* Desv.

Monotypic. Pantropic. Terrestrial ; fronds large, bipinnate with pinnate apex, pinnules many, close, articulate, subsessile, subdimidate, rounded at apex ; veins free ; sori on veinlets. D. *truncatula* (Sw.) J. Sm. (Syn. *D. lunulata sensu* Bedd. HANDB. 199. t. 99) is distributed in Eastern India.

Diphasiastrum Holub (Lycopodiaceae)

T.—D. *complanatum* (L.) Holub

Species ca 3D, 3 in India. Cosmopolitan. Terrestrial ; main stem creeping, repeatedly dichotomously branched, leaves 4-whorled, partially dilate, arranged in three parallel planes and

are dimorphous or trimorphous, opposite and decurrent ; spikes distinct from the sterile branches, terminal. D. *alpinum* (Wall. ex Hook. et Grev.) Holub is distributed in Sikkim Himalayas. D. *complanatum* (L.) Holub is widely distributed from Eastern to Southern India. D. *wightiamim* (L.) Holub occurs in South India.

Diplazinspis C. Chr. [Athyraceae).

T.—D. *javanica* (Bl.) C. Chr.

Species 4, 1 in India. India to China and Taiwan, Malaysia and Polynesia. Terrestrial ; fronds pinnate ; veins remote and free, about half-way to the margin, then divaricately branching and uniting to form areole without free included veinlets ; sori elongate. D. *javanica* (Bl.) C. Chr. (Syn. *Allantodia javanica* Bl. HANDB. 196. t. 97) is distributed in damp places in Eastern Himalayas and Meghalaya.

Diplazium Sw. (Athyraceae). HANDB. 175.

T.—D. *plantagineum* (L.) Sw.

Species 4DD, ca 21 in India. Tropical and North Temperate. Terrestrial ; fronds simple to bipinnate ; veins anastomosing ; sori mostly elongate. D. *travancorium* Bedd. is endemic to South India. Morphologically the distinction between *Diplazium* and *Athyrium* is less evident ; but both are cytologically distinct, n=41 in *Diplazium* and n=4D in *Athyrium*.

Diptaris Reinw.—Derived from *di*=two, *ptaris*=fern [Dipteridaceae) HANDB. 334.

T.—D. *conjugata* Reinw.

Species 8, 1 in India. Asia, north to China and Taiwan, Polynesia. Terrestrial; fronds large, more than 1 m high, fanelliform, bipartite into two nearly equal broad-cuneate portions which

Doodia

are palmately and dichotomously divided ; veins reticulate ; sod small, scattered. *D. wallichii* (R. fir.) Moore is distributed in Eastern India and Eastern Himalayas.

Doodia R. Br. — Named after Samuel Dandy, a British Botanist (Blechnaceae) HANDB. 137.

LT. — *D. aspen* R. Br.

Species 11, 1 in India. Sri Lanka to Australia, New Zealand, Hawaii. Terrestrial ; rhizome obliquely ascending, densely scaly ; fronds tufted, pinnate to pinnatifid in apical part, pinnae reduced in the basal region, auricled, coriaceous, margins sharply serrated ; veins anastomosing ; sori indusiate, often confluent. *D. dives* Kunze is distributed in South India.

Doryopteris J. Sm.—Derived from the Greek *Jury* = spear, *pterus* = feather (Sinopteridaceae).

LT.—*D. palmate* (Willd.) J. Sm.

Species 35, 3 in India. Tropical and subtropical, mostly American. Handsome terrestrial Fern; stipe and rachis shining brownish-black, lamina deltoid, deeply pinnatifid, cut down nearly to the rachis into 3-4 pinnae on each side; Veins free ; sori along the margins. *D. cuncular* (Langsd. et Fisch.) Kuhn (Syn. *Pellaea concolo?* Langsd. et Fisch. HANDB. 1D0. t. 52) is distributed in South India.

"**Drymoglossum Presl**—Derived from *drymos* = wood, *glossa* = tongue (Polypodiaceae) HANDB. 41D.

T.—*D. pilaselloides* (L.) Presl

Species 6, 2 in India. Madagascar, Tropical Asia, Malaysia. Epiphytic ; fronds dimorphic, the sterile ovate to orbicular, entire, fleshy ; fertile ones linear-elliptic ; veins reticulate ; sori occupying the whole lower surface. *D. piloselloides* (L.) Presl is distributed

Drynaria

in South India. *D. heterophyllum* (L.) Trimen (Syn. *D. piloselloidis* var. *beddomei* Clarke HANDB. 413) is distributed in Eastern Himalayas.

Drymotaenium Mak. (Polypodiaceae).

T.—*D. miyDshianum* (Mak.) Mak.



D. miyDshianum

in Arunachal Pradesh.

Drynaria (Bory) J. Sm. (Polypodiaceae) HANDB. 338.

T.—*D. quercifolia* (L.) J. Sm.

Species 2D, 3 in India. Africa, Asia, Fiji, Australia. Large epiphytes ; rhizome creeping, thick, fleshy ; fronds dimorphic, the sterile small, sessile and close to rhizome collecting humus, the large fertile, stalked, pinnatisect ; veins reticulate ; sori CDmpital, round. *D. quercifolia* (L.) J. Sm. [HANDB. 347. t. 195) is distributed throughout India; rhizome bitter, astringent ; fronds used in phthisis, hectic fever, dyspepsia and cough and in Malaysia used as poultice on swellings ; the decoction of the plants is used in typhoid fever by Vaidyas. The fluid extracted from the fronds show antibacterial properties. [S. — *Ashavakatri*). *D. mullis* Bedd. and *D. prDpinqua* (Wall, ex Mett.) J. Sm. are distributed in the Himalayas.

Dryoathyrium

Oryoathyrium Ching (Athyriaceae).

T.—*D. boryanum* (Willd.) Ching

Species 8, 1 in India. Asia. Terrestrial ; fronds large, bipinnate ; veins free ; sori on the veins in a single row on each side of pinnules near the midrib. *D. boryanum* (Willd.) Ching [Syn. *Lastrea boryana* (Willd.) Bedd. HAN DB. 266] is distributed throughout India in the hilly regions.

Dryopteris

***Dryopteris** Adanson [Dryopteridaceae).

T.—*D. filix-nus* (L.) Schott

Species 15D, ca 31 in India. Cosmopolitan. Terrestrial ; fronds bipinnatifid to decomposed ; veins free, forked ; sori reniform. *D. spars** (D. Don) Ktze. is widely distributed throughout India ; the rhizomes of the most of the species possess anthelmintic properties.

GymnDcarpium

each side of the costa. *G. medialis* (Bak.) Sledge (Syn. *Polypodium parafiticum sensu flsdd.* HANDB. 3D2. *pro parte*) is distributed in South India.

GymnDcarpium Newm. [Athriaceae).

T.—*G. dryopteris* (L.) Newm.

Species 5, 1 in India. TrDpical Asia. Terrestrial ; fronds tripinnate, lamina thin, green; veins free ; sori submarginal. *G. dryopteris* (L.) Newm. [Syn. *Phegopteris dryopteris* (L.) Bedd. HANDB. 293] is distributed in North-West Himalayas.

GymnDgrammitis Griff. Derived

Gymnogrammitis

from gymnos=naked, gramma=writing ; referring to exindusiate sori. (Dymnogrammitidaceae).

T.—*G. dareiformis* (Hook.) China ex Tard. et C. Chr. ⁱ

MonDtypic. N. E. India to S. China. Epiphytic ; fronds 15-30 cm, 3-4 pinnate, darea-like ; SDFJ exindusiate, extending beyond the margins of the segments. *G. dareiformis* (Htjuk.) Ching ejj Tard. et C. Chr. (Syn. *Polypodium dareiforme* Hook, HANDB. 316) is distributed in the Himalayas and E. India.

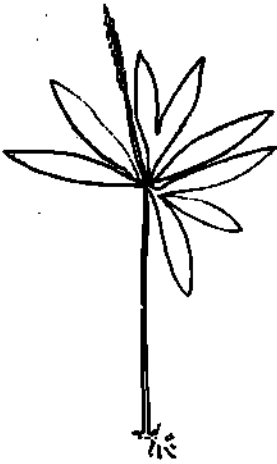
Gymnopteris Bernh., see *Hemionitis* L., *Leptochilus* Kaulf.

H

Halminthostachys Kaulf. Derived from *helminthos*=worm, *stachys*=spike. (Helminthostachyaceae) HANDB. 467.

T.—*H. zeylanica* [L.] Hook.

Monotypic. Sri Lanka, India, Formosa, S. China, Phillipines, Polynesia, Australia and New Caledonia. Terrestrial.



H. zeylanica

ial; rhizome dorsiventral, sterile segment of frond palmately divided; veins free, fertile segment arising from the base of the sterile frond or adnate for a short distance to one of its divisions; sporangia globose, on sporangiophores. *H. Zeylanica* (L.) Hook, widely distributed in India; the young fronds and fleshy rhizomes are cooked and eaten during scarcity of food in Gorakhpur, Garhwal and Assam; the fronds are aperient, intoxicant, anodyne and used in sciatica; young leaves are used as salad or cooked as vegetable in Phillipines; tender stalks eaten like asparagus in Malaya; rhizome used in dysentery.

catarrh, sciatica, malaria and also as tonic and mild aperient.

Hamionitis L. (Hemionitidaceae) HANDB. 413.

LT.—*H. palmate* L.

Species 7, 1 in India. Chiefly in Tropical North America, 1 in Tropical Asia. Terrestrial; fronds simple, cordate-hastate, the sterile forming basal rosettes and the fertile long stalked; veins reticulate; sori covering the whole lower surface. *H. urifuliu* (Burm.) Moore is distributed in South India; the fronds are used in the treatment of aches and as vermifuge. (Malyalam—*Mayal Cheliyan*; E.—*Rabbit ear fern*).

Histiuptaris (Agardh) J. Sm. (Dennstaedtiaceae).

T.—*H. incisa* [Thunb.] J. Sm.



Species 7, 1 in India. Pan-tropic and South temperate. Terrestrial; rhizome long, creeping; fronds bipinnatifid; veins anastomosing; sori exindusiate, marginal, continuous, protected by reflexed margin. *H. incisa* (Thunb.) J. Smith [Syn. *Litobrochia incisa* (Thunb.) Presl, HANDB. 12D. t. 62] is distributed in Eastern Himalayas to Southern India.

Holcosorus Moore (Polypodiaceae).

T.—*H. bisulcatus* [Hook.] Copcl.

Species 3, 1 in India.

H. bisulcatus

Borneo, New Guinea. Epiphytic ; rhizome scales non-clathrate ; fronds simple, linear-lanceolate ; gori oval, exindusiate, interrupted on either side of the midrib. *H. bisakatus* [Hook.] Copel. rare in Arunachal Pradesh.

Humata Cav. -Derived from *honwtus* =humid. (Davalliaceae) HANDB. 46.

IX—*H. DphioEliMBriBH* Cay.

Species SO, 4 in India. Madag^{car}, Tropical Asia, Eastern Himalayas, China, Japan, Polynesia. Epiphytic ; fronds deltoid-ovate, pinnate, lower pinnae deeply pinnatifid ; veins free ; sori gubmarginal, terminal on veins. *H. repens* (L. f.) Diets [Syn. *H. pedata* (S. 5m.) Presl] is distributed in Eastern Himalayas to Southern India.

Huparzia Benin.—Named after Huperzil |Huperziaceae).

T.—*H. sefanjo*. (L.) Bernh. ex Schrank etMart.

Species ca 400, IS in India. Cosmopolitan. Terrestrial or epiphytic ; stems erect to sub-erect, isodichotomously branched ; leaves and sporophylls nearly isomorphous ; spores pitted. *H. hamiltua* Ji [Spring] Trev. Occurs throughout India. *H. Ternlcvu* [Hook. et Grev.] Trev. is distributed in South India. *H. aemta* (Thunb.) Trev., a polymorphic species is abundant in Uje hills of Eastern and Southern India.'

Mymenophyllum Sm.—Derived from the Greek *BynMB*=mcmbra, *phyUon*=lcaf. (HymenDphyUaceae) HANDB. 28.

T.—*H. tubridgense* [L.J Sm.

Species 2D, 3 in India. Trap, and S. temp., Europe, Japan. Terrestrial or epiphytic ; fronds pinnately compound, lamina one-celled, margins toothed, involucre bivalvate. The plants occur in considerably moist places. *H. funbridgense* (L.) Sm. [Syn. *H. neesii* Hook. HANDB. 35. t. 17] is distributed in South India. Recently the genus *Hymenaphyllum sensu lato* has been split into 34. genera.

Hypodematium Kunze (Hypodeniataceae).

T.—*H. crenanım* [Frost] Kuhn

Species 3, 1 in India. Africa, China, Japan, Philippines Malaysia, Burm?. Terrestrial ; fronds 3-4 pinnate, deltoid, herbaceous ; sori medial on the veinlets. *H. crenatmn* (Forsk.) Huhn. (Syn. *Lastrea crenata* Forsk. HANDB. 258) occurs in the hills throughout India.

Hypolspis Bernh.—Derived from the Greek *hypo*=under, *IBpu*=scale. |Hypolepidaceae)

T.—*H. tenuifolia* (Forst.) Bernh.

Species 45, 1 in India. Pantropic, South to New Zealand & 5. Africa, North to Japan. Terrestrial ; rhizome villous ; fronds large, up to 1.5 m long, tripinnate ; son protected by reflexed lobes of the margins. *H. punctata* (Thunb.) Mett. [Syn. *Phegopteris punctata* (Thunb.) Bedd. HANDB. 2*5] is distributed in the Himalayas from Chamba to Bhutan and South India.

I

Idiogramma Ghosh [Hemionitidaceae),

T.—I. microphylla (Hook.) Ghosh

Monotypic. Eastern Himalayas, China.
Terrestrial ; rhizome creeping, clothed with trichomes ; fronds quadripinnatifid, stipes glossy, filiform, fragile, lamina herbaceous-pellucid; veins free; sori oblong, terminal. *I. microphylla* (Hook.) Ghosh [Syn. *Gymnogramme microphylla* [HDDIC.) Bcdd. HANDB. 384. t. 221]. occurs in Eastern Himalayas, Meghalaya.

Isoetes L.—Derived from ἴσος=equal, ἔτος=a year ; referring to the plant having the same appearance throughout the year. [Isoetes].

T.—I. fcmstrbL.

Species 75, 9 in India. Temperate and tropics of the world. Aquatic or terrestrial ; stems short, leaves awl-shaped, 1-nerved, ligulate ; heterosporous, outer leaves bear megasporangia and inner microsporangia. L. corumandellam L. is common throughout India, except in drier regions.

H

Kuniwatsukia Pic.-Ser. Named after Kunio Iwatsuki, a Japanese Pteridologist. (Athyraceae)

T.—**K. enspidata** (Bedd.) Pic.-Ser.

Monotypic. Tropical Asia. Terrestrial ; fronds pinnate, pinnae numerous.

linear-lanceolate from broad **base**, shallowly lobed, coriaceous ; veins free, 3-4 pinnate ; sori at the base of veinlets. **H. enspidata** (Bedd.) Pic.-Ser. [Syn. *Lastrea enspidata* Bedd. HANDB. 232. t. 119) is distributed in Eastern India.

Lastrea Bory., see Ctenitopsis Ching ex Tard., Drynathyrim Ching, Hypodematum Kunze, Kuniwatsiikia Pic. Ser., Lastreopsis Ching, Metathelypteris (H. ItD) Ching, Dreopteris Holub, Parathelypteris Ching, Pseudocyclurus Ching, Pteridrys C. Chr. et Ching, Thelypteris Schmid., Trigonospora Hultt.

Lastreopsis Ching (Aspidiaceae).

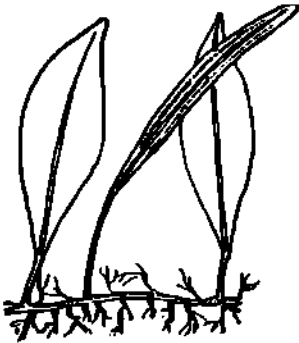
T.—L. recedens (J. Sm. ex MDDre) Ching

Species 25, 1 in India. Cosmopolitan. Terrestrial ; fronds large, 3-4 pinnate, stipe and rachis villous ; veins free, forked ; SDH terminal. L. recedens (J. Sm. ex Moore) Ching (Syn. Lastrea recedens J. Sm. HANDB. 26D) is distributed in South India. Some authors include this genus under Ctenitis C. Chr.

LBrnmaphyllum Presl (Polypodiaceae).

LT.—L. spatulatum Presl

Species 5, 1 in India. Himalayas, Thailand, Japan, S. China, Philippines, Malaysia. Epiphytic ; fronds



L. camosum

dimorphic ; veins anastomosing with free included veinlets ; CDenosori,

paraphyses peltate, clathrate L. carndsum (Wall. ex J. Sm.) Presl [Syn. Drymoglossum carnosum Wall, ex J. Sm. HANDB. 411) is distributed in Eastern Himalayas.

Lepidogrammitis Ching (Polypodiaceae).

T.—L. drymoglossoides (Bak.) Ching

Species 5, 1 in India. Burma, India, China, Japan, Vietnam. Epiphytic ; fronds lanceolate, slightly dimorphic, sterile ones little broader than fertile fronds ; anastomosing ; sori in a single row on each side of the midrib. L., substrata (C. Chr.) Ching (Syn. Pleopeltis rostrata Bedd. HANDB. 345) is distributed in Eastern Himalayas and Meghalaya. Some authors treat it under Lemmaphylluni Presl.

Lepisorus (J. Sm.) Ching (Polypodiaceae)

T.—L. lineare (Thunb.) Ching



L. ofudus

Species ca 5D, 2D in India. Africa, India, Burma, China, Japan, Malaysia to Philippines. Terrestrial or epiphytic ; fronds simple, entire ; veins forming areales with free included veinlets ; sori in a single row on either side of the midrib. L. lineare (Thunb.) Ching (Syn. Pleopeltis linearis (Thunb.) Bedd. HANDB. 346) is distributed in the Himalayas, Eastern and Southern India. Some authors treat it under Pleopeltis Humb. et Bonpl. ex Willd.

Leptochilus

LeptDchilus Kaulf. [Polypodiaceae]j.

T.—L. axillaris (Cav.) Kaulf.

Species S, 4 in India. Malaysia, India, Burma, Thailand, IndD-China, Philippines, New Guinea. Epiphytic; fronds dimorphic ; veins anastomosing ; sori exindusiate, covering the whole lower surface. L. axillaris (Cav.) Kaulf. [Syn. *Gymnopteris variabilis* var. *axillaris* (Cav.) Bedd. HANDB. 43 D] is distributed in Eastern and Southern India.

Leptogramma J. Sm.—Derived from leptus=slender, gramme=ins. (Thelypteridaceae) HANDB. 377.

LT.-L. totta (Willd.) J. Sm.

Monotypic. South Africa, India tD Malaysia, China, Japan. Terrestrial ; fronds pinnate, villous ; veins free ; sori exindusiate, medial, elongate. L. totta (Willd.) J. Sm. is distributed throughout India in the mountains. Some authors treat it under Thelypteris Schmid. or Stenogramma Bl.

Leucostegia Presl—Derived from IBUCDS=white, stegus= cover (Davalliceae) HANDB 48.

T.—L. immersa Presl

Species 2, 1 in India. India, China tD Malaysia and Philippines, New Guinea, New Hebrides, Polynesia. Terrestrial; rhizome bearing scales and hairs ; lamina decomposed, deltoid, pale green ; veins free ; sori submarginal. L. immersa Presl is distributed in the Himalayas, Eastern and Southern India ; the young fronds are CDoked with potato and eaten with rice in Darjeeling district of West Bengal.

Lind5aea Dryand. ex Sm.—Named after John Lindsay, a worker on ferns. (Lindsaeaceae) HANDB. 72.

LT.—L. guianensis (Aubl.) Dryand.

Species 2D0, 21 in India. Pantropic, South Africa, Madagascar, South China, Taiwan, Japan, Malaysia, Philippines, New Guinea, Australia,

Lunathyrium

Tasmania, New Zealand, Tropical America, West Indies. Rhizome terrestrial, cpithelic, creeping; fronds usually small, decomposed ; veins free or anastomosing ; sori indusiate, submarginal, margins not reflexed. L. odorata Roxb. is one of the common species occurring throughout India in the mountains.



L. odorata

Lithostegia Ching (Aspidiaceae).

T.—L. fueniculacea (Hook.) Ching

Monotypic. India to S. W. China. Terrestrial ; fronds 4-5 pinnate ; veins free ; sori indusiate. L. faeniculacea (Hook.) Ching (Syn. *Diacalpe foeniculacea* Clarke HANDB. IB) is distributed in the Eastern Himalayas.

Litobrochia Presl, see Histiopteris (Agardh) J. Sm.

Loxogramme (Bl.) Presl—Derived from Luxus= oblique, gramme=line ; referring tD elongate and oblique sori. (LoXDgrammaceae) HANDB. 392.

LT.—L. lanceolata (Sw.) Presl

Species 40, 7 in India. Mostly Tropical Asia aJid Polynesia, also Africa, Japan, Mexico and Central America. Epiphytic ; fronds simple ; veins anastomosing ; sori exindusiate, elongate, oblique, on either side of the midrib. L. involuta (D. Don) Presl is common throughout India, in the mountains.

Lunathyrium Koidz. (Athryiaceae.)

T.—L. pycnusDrum (Christ) Koidz.

Species ca 20, 2, in India, Tropical Asia, mainly Japanese. Terrestrial ; fronds decomposed, hairs articulate and the rachis groove not open to admit the

Lycopodiastrum

groove of secondary rachises. *L. allantoides* (Bedd.) Ching [Syn. *Athyrium thelypteroides* (Michx.) Desv. HANDB. 164] DDCWS from Kashmir to Bhutan.

Lycopodiastrum Holub ex Dixit
(LycDpDdiaceae).

T.—*L. casuarinoides* (Spring) Holub ex Dixit

Monotypic. Tropical Asia. The plants are differentiated into fertile and sterile part with bunches of strobiloides. The main stem stiff and Up tD 2Dm long. Mature leaves monomorphic, scale-like, spirally arranged. *L. casuarinoides* (Spring) Holub ex Dixit is distributed in Eastern India.

Lycopodium L. [Lyi;DpL>diceae]

T.—*L. clavatum* L.

Species 4D, 3 in India. Cosmopolitan. Main stem wide trailing, branches heterD-dichotDiTious, ascending, leaves spirally arranged ; strobili terminal, spores reticulate. *L. japonicum* Thunb. is common throughout India in the mountainous regions ; the plants are diuretic, antiseptic, used in rheumatism and diseases of lungs and kidneys ; the spores are used in pharmacy as water repellent and protective dusting powder for tender skins, in the compounding of pills and in the preparations of suppositories ; the spores are highly inflammable and under the name Df "vegetable bristone" have been used in the manufacture of fireworks and for producing stage lightening in theatres ; extracts from plants are

Lygodium

made into a paste and used as kidney stimulants ; the plants are considered as biological accumulators of Aluminium ; plants smoked with *Selaginella rupestris* for relief of headache ; decoction used as diuretic and antispasmodic in South Africa.

***Lygodium** Sw.—Derived from *Lygndes* = flexible ; referring tD the twining habit of the plants. (Lygodiaceae) HANDB. 453.

T.—*L. scandens* (L.) Sw.

Species 4D, 11 in India. Tropical and subtropical, Africa, Madagascar, India, Sri Lanka, Malaysia, Philippines, S. China, Japan, New Guinea, Australia, New Zealand, Polynesia, Tropical America, Eastern United



L. scandens States. Terrestrial ; rhizome creeping, stipe and rachis slender, twining ; rachis bearing short primary branches, each bearing a pair of secondary branches ; sporangia in double row. *L. fUxuDSiim* [L.] Sw. occurs throughout India ; young shoots are used as leafy vegetable ; plants are used as expectorant ; rhizome boiled with mustard oil and locally applied tD carbuncles and in rheumatism, sprains, scabies, ulcers, eczema and cuts. (Assamese—*Chepti-dhekia*, *Chirkli-dhekia* ; Bengali—*Lata-dhekia*). *L. circinatum* (Burm.) Sw. is distributed in Andaman and Nicobar Islands ; stipes chewed and externally applied against snake and insect bite. Roots and leaves applied tD wounds in Indonesia.

M

Macrothelypteris [H. Ito] Ching (Thelypteridaceae).

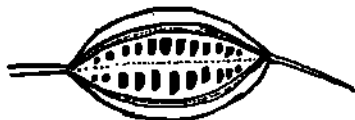
T.—*M. oligophlebia* (Bak.) Ching

Species ID, 2 in India. Mascarene islands to Hawaii, China, Malaysia, Australia, Polynesia. Terrestrial; fronds bipinnate to tripinnatifid with adnate pinnules; veins free, branched; sori small, sporangia bearing capitate hairs near annulus. *M. urnata* (Wall, ex Bedd.) Ching [Syn. *Phegopteris ornata* (J. Sm.) Bcdd. HANDB. 294] is distributed in the Himalayas, Eastern and Southern India.

Marattia Sw.—Named after J. F. Maratti, a Tuscan Botanist. [Marattiaceae] HANDB. 45D.

T.—*M. alata* Sw.

Species 6D, 1 in India. Pan tropic and in South Africa, New Guinea, New Zealand, Hawaii, West Indies. Large



M. fraxinea

ferns, stems stout, erect, radial; fronds 2-3 pinnate; veins free; sporangia fused into a synangium. *M. fraxinea* Sm. is distributed in South India; used as a remedy for ankylostomiasis in South Africa.

Marginaria Bory (Polypodiaceae).

LT.—*M. pulypudiuides* (L.) Tidestr.

Species ca ID, 1 in India. Tropical Asia. Epiphytic; fronds decompose; veins anastomosing, peltate scales present on the lower surface. *M. monil-arpu* [Bory ex Willd.] Nayar et Kaur is distributed in Eastern

India. Some authors treat it under *Pulypodium* L. or *Pleopeltis* Humb. et Bonpl. ex Willd.

Marsilea L. (Marsileaceae).

T.—*M. qualrifolia* L.

Species 6D, 14 in India. Tropical and temperate, mostly Australia and South Africa. Plants aquatic or amphibious, heterosporous; leaves cruciform, consisting of two contiguous pairs of opposite leaflets; sporangia in sporocarps borne at the base of the leaves. *M. minuta* L. occurs throughout India except in Kashmir; plants are used in cough, spastic condition of leg muscles, etc. and also in sedation and insomnia; the leaves and sprouts are cooked as vegetable and sold in the market.

**MattBUccia* Tudaro (Dnocleaceae)

T.—*M. struthiuperis* (L.) Todaro

Species 3, 1 in India. Europe, East Asia, China, Japan, North-East America. Terrestrial; fronds bipinnatifid, dimorphous, fertile contracted, pinnate; veins free; sori covering the whole lower surface. *M. orientalis* [HDDk.] Trev. (Syn. *Struthiuperis orientalis* Hook. HANDB. 2D. t. 9) is distributed in the Himalayas and Eastern India; young fronds are steamed and used in salad or as vegetable in the United States.

Mecodium Presl ex Copel. (Hymenophyllaceae).

T.—*M. sanguinolentum* (Forst.) Presl

Species IDD, 9 in India. Pantropic and S. temperate, Himalayas and S. China. Epiphytic; fronds pinnately compound; involucre bivalvate. *M. polyanthus* (Sw.) Copel. [Syn. *Hymenophyllum polyanthos* Sw. HANDB.

Msringium

3D) is widely distributed in the Himalayas, Eastern and Southern India. *M. levingei* (Clarke) Copel. (Syn. *Hymenophyllum levingei* Clarke HANDB. 36) occurs in Sikkim.

Mcniscium Schrcb., see *Pronephrium* Presl

MBringium Presl (Hymenophyllaceae).

T.—*M. meyenianum* Presl

Species 60, 4 in India. Africa, Madagascar, India, Burma, Taiwan, Sri Lanka, Malaysia to Philippines, New Zealand, Fiji, South America, mostly in New Guinea. Epiphytic ; fronds pinnately compound ; involucre obconic. *M. denticulatnii* (Sw.) Copel. (Syn. *Hymenophyllum denticulatum* Sw. HANDB. 34) is distributed in Eastern Himalayas and Meghalaya.

MBtapolypodium Ching (Polypodiaceae).

T.—*M. munmeiense* (Christ) Ching

Species 2, 1 in India. S. E. Asia. Terrestrial ; rhizome slender, creeping ; scales clathrate ; fronds pectinate, pinnae 3D-5S pairs, straight spreading, herbaceous ; veins once forked ; sori without paraphyses. *M. manmeiensis* (Christ) Ching is distributed in Sikkim.

Metathelypteris (H. Ito) Ching (Thelypteridaceae).

T.—*M. gracilescens* [Bl.] Ching

Species ca 12, 3 in India. Tropical, Asia, Malaysia, China, Japan. Terrestrial ; fronds pinnate ; veins free ; SDH indusiate. *M. flaccida* (Bl.) Ching (Syn. *Lastrea flaccida* Hook. HANDB. 244) occurs in the Himalayas and South India. *M. gracilescens* (Bl.) Ching (Syn. *Lastrea gracilescens* Bl. HANDB. 234) is widely distributed in the Eastern Himalayas and from Eastern to Southern India.

Microsorium

Microgonium Presl (Hymenophyllaceae).

T.—*M. cDspidatum* [Willd.] Presl

Species 12, 3 in India. Africa to Tahiti and Burma, Indochina, Sri Lanka, Malaysia, New Guinea, Queensland. Epiphytic ; fronds minute, simple lobed ; involucre elongate, receptacle extruded. *M. motleyi* V. d. Bosch (Syn. *Trichomanes motleyi* v. d. Bosch, HANDB. 36) is distributed in Andaman BL Nicobar Islands. *M. bimarginatum* v. d. Bosch (Syn. *Trichomanes neilgherrense* Bedd. HANDB. 37) occurs in South India.

Microlepis Presl—Derived from the Creek *micro*=small, *lepis*=scale ; referring to the small indusium. (Dennstaedtiaceae) HANDB. 62.

LT.—*M. polypodioides* [Sw.] Presl

Species 45, ca 10 in India. Did world tropics, mainly Asiatic, China, Japan, New Zealand, Madagascar. Terrestrial ; fronds small to large, pinnate to compound ; veins free ; sori intramarginal, indusium half cup-shaped. *M. strigosa* (Thunb.) Presl is distributed in Himalayas and South India. *M. platyphylla* (D. Don) J. Sm. occurs in the Himalayas, Eastern and Southern India.

Microsorium Link (Polypodiaceae).

T.—*M. irregularis* Link

Species 60, ca 13 in India. Did world tropics, Africa to Polynesia, China, Japan, New Guinea. Epiphytic ; small to large, scales clathrate ; fronds simple ; veins anastomosing ; SDH exindusiate, round, scattered, superficial. *M. membranaceum* (D. Don) Ching (Syn. *Pleopeltis membranacea* D. Don HANDB. 355) is distributed throughout India in the hilly regions. *M. zippellii* (Bl.) Ching (Syn. *Pleopeltis zippellii* Bl. HANDB. 357) is known from Himalayas and Eastern India.

Dleandra Cav.—Referring tD its resemblance to Oleander. |Dleandraceae) HANDB. 285.

T.—*D. neriifDrmis* Cav.

Species 4D, 4 in India. Pantrupit, mostly Asia tD Polynesia, a Few in America and Africa. Stems slender, creeping or bushy ; fronds simple, jointed tD phyllopodia on the stem ; sofi near the midrib, indusium reniform. *D. neriiforniis* Cav. is distributed in the Himalayas and Eastern India ; stipe emmenagDgue and rhizome used in snake bite in Philippines.

Dnychium Raulf.—Derived from Dnychiun=a little nail-like fertile segments of the frond. |CryptDgramma ceae) HANDB. 95.

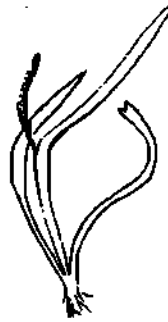
T.—*D japonikum* (Thunb.) Kunze

Species ID, 8 in India. China, Japan to India and New Guinea, West Indies. Terrestrial ; fronds tripinnate Dr more compound ; veins free ; sori along the margins. *D. aumtum* Kaulf. is distributed in Eastern Himalayas, Assam and Plains of Bengal. *D. japonicum* Kunze occurs in the Himalayas from Darhwal to Arunachal Pradesh and Meghalaya ; juice of crushed leaves prevent falling of hairs.

•*phioderma* |B1.) Endl. (DphiDglos-saceae).

T.—*D. pendulum* (L.) Presl

Species 2, 1 in India. India to Taiwan, Malaya to Philippines, Sumatra, New Guinea, Australia, Polynesia, Hawaii, Madagascar. Epiphytic ; fronds up to 2 metres long, pendulous, ribbon shaped ; veins anastomosing ; fertile segments stalked, single, rarely forked. *O. pendulum* |L.) presl |Syn.



D. pendulum

Some authors treat it as a subgenus of *Dphioglossum* L.

Ophioglossum pendulum L. HANDB. 465) has recently been reported from Andaman and Nicobar Islands ; however its occurrence in the main land of India is doubtful ; spores given to babies at birth tD purge mecD-nium in Hawaii.

DphiogloS5ijm L.—Derived from Dphios=snake, glussa=tDngue. (DphiDgbssaceae) HANDB. 4S2.

LT.—*D. vulgatum* L.

Species 3D-5D, 14 in India. World wide, tropical and temperate. Terrestrial ; sterile frond simple ; veins anastomosing ; fertile stalk simple, arising from the sterile ; sporangia placed in two lateral rows, partly immersed. *D. reticulatum* L. occurs almost-throughhuut India

D. reticulatum from the plains to hills up to 21 DO m ; the fresh fronds are eaten as vegetable curry.



Dreopteris Holub (Thelypteridaceae).

T.—*D. limbosperma* (All.) Holub

Species 3,1 in India. Europe, East Asia to North-West America. Terrestrial ; rhizome suberect ; fronds simple pinnate, pinnae lobed little more than half-way to costa ; lower pinnae

Osmunda

slightly auricled at the acroscopic base only ; lowest very small ; SDri submarginal, indusia, spores with perispore forming reticulum. *D. elwesii* (Bak.) Holtt. [Syn. *Lastrea elwesii* (Bak.) Bedd. HANDB. 239] is endemic to Sikkim.

Dsmunda L. (Dsmundaceae) HANDB. 447.

T.—*O. regalis* L.

Species ID, 5 in India. Worldwide, temperate and tropical. Terrestrial ; rhizome without scales ; fronds dimorphic, pinnate to bipinnate ; veins free, simple or forked ; fertile pinnae distinct, brown, without lamina. *D. cinnamomea* L., young fronds eaten in Eastern United States, particularly by S. Appalachian aboriginals. *O. claytoniana* L., fertile fronds intercalary ; distributed in the Himalayas and Eastern India ;

Dsmunda

rhizome used as adulterant for male fern in America. *O. regalis* L., fertile pinnae terminal, occurs through-



D. regalis

out India in the hilly regions ; fronds used as tonic, styptic and also for rickets in England.

P

Palhinhaea (L.) Franco et Vase.—
Named after Prof. Palhinha, a Portuguese Botanist. (Lycopodiaceae).

Monotypic. Tropical Asia. Terrestrial ; rhizome subterranean, producing arborescent lateral stems with solitary strobili. *P. cernua* (L.) Franco et Vase., a common polymorphic species distributed in the Himalayas and Eastern India.

Paradavallodes Ching (Davalliaceae).

T.—*P. multidentatum* (Hook.) Ching

Species 4, 2 in India. Nepal, China. Terrestrial or epiphytic ; rhizome creeping, clothed with reddish-brown scales ; fronds tripinnatifid, pubescent ; veins simple ; sori indusiate, solitary, dorsal at the apex of the veins. *P. membranulosuni* (Wall, ex Hook.) Ching (Syn. *Leucostegia membranulosa* Wall, ex Hook. HANDB. 5D) is distributed in the North-Western Himalayas and Nepal. *P. multidentatum* (Hook.) Ching (Syn. *Leucostegia multidentata* (Hook.) Ching HANDB. 5D) occurs in the Himalayas.

Paraleptochilus Copel. (Polypodiaceae).

T.—*P. decurrens* (Bl.) Copel.

Species 2, 1 in India. Malaysia to Philippines and India, South China, Polynesia. Epiphytic ; fronds dimorphic, sterile fronds shortly petiolate, oblanceolate ; fertile fronds contracted, long stipitate. *P. decurrens* (Bl.) Copel. (Syn. *Gymnopteris variabilis* Bedd. HANDB. 429) is distributed in the Eastern Himalayas, Eastern and Southern India.

Parathelypteris (H. Ito) Ching (Thelypteridaceae).

T.—*P. glanduligera* (Kunze) Ching

Species 1D, 2 in India. South-East Asia—

Japan to Malaysia and Philippines, New Caledonia. Terrestrial ; small ferns ; fronds' bipinnatifid, pinnae deeply lobed, basal acroscopic lobe enlarged ; veins free ; sori indusiate, sporangia without glands. *P. beddonii* (Bak. ex Hook, et Bak.) Ching (Syn. *Lastrea beddomei* Bak. ex Hook, et Bak. HANDB. 239) is distributed in South India. *P. glanduligera* (Kunze) Ching occurs in Eastern India.

**Pellaea* Link—Derived from *pellis*=dark coloured ; referring to the colour of the fronds. (Sinopteridaceae) HANDB. 98.

T.—*P. atropurpurea* (L.) Link

Species 80, 3 in India. Tropical and subtropical regions, mostly in South America and South Africa and its islands, ranging south to New Zealand and north to Canada. Terrestrial ; fronds pinnate or more compound, rachis dark and shining, pinnae uniform, coriaceous ; veins free to rarely anastomosing ; sori marginal and protected by reflexed margins. *P. buivini* Hook, is distributed in South India. *P. nitidula* (Wall.) Bak. ex Hook, et Bak. occurs in North-Western Himalayas.

Peranema D. Don—Derived from *peri*=around, *nema*=thread ; referring to the thread-like stalk of the sorus. (Peranemataceae) HANDB. 22.

T.—*P. cyathoides* D. Don

Species 2, 1 in India, Burma, China, Taiwan, Sri Lanka, Malaysia. Terrestrial ; fronds 3-4 pinnate, harsh, bearing scales and hairs ; veins free ; sori solitary, borne on a slender pedicel. *P. cyathoides* D. Don occurs in Eastern Himalayas, Eastern and Southern India.

Phaneroplebia Presl, see *Cyrtium* Presl

Phlebodium

Phlebodiuin (R. Br.) J. Sm. (Polypodiaceae).

LT.--P. aureum (L.) J. Sm.

Species 1D, 1 in India. Chiefly Trpp. American, 1 in Asia. Epiphytes; fronds deeply pinnatifid., margins thickened and notched ; veins reticulate, areoles without free included veinlets ; sori round, large, on either side of costa, median. P. aureum (L.) J. Sm. occurs in Nilgiri distt. of Tamil Nadu.

Phegopteris (Presl) Fée—Derived from phegn5=beech, pteris=fern ; meaning thereby beech fern. (Thelypteridaceae) HANDB. 2B8.

T.—P. pDlypadioides Fée

Species 4, 1 in India. North Temperate and Boreal regions. India [N. W. Himalayas), China, Japan, Taiwan, K.Drea, North Europe, Caucasus, North America, Canada. Terrestrial ; fronds bipinnatifid, stipe scales with marginal acicular hairs, none on the surface ; veins free ; sporangia bearing short acicular hairs. P. connecting (Michx.) Watt. [Syn. P. vulgaris Mett. HANDB. 29D) is distributed in Kashmir at higher elevations.

Phlegmariurus (Herter) Holub (Huperziaceae).

T.—P. phlegmaria (L.) Sen et Sen

Species 2D, 2 in India. Cosmopolitan. Epiphytic ; stems tufted, pendulous ; leaves and sporophylls heteromorphous ; strobili terminal. P. phlegmaria (L.) Sen et Sen (Syn. *Lycopodium phlegmaria* L.) is distributed in Eastern and Southern India. P. phyllanthium (Hook. SL Am.) Diail (Syn. *Lycopodium phyllanthum* Hook. tic, Am.) occurs in Southern India.

Phymatopteris Pic.-Ser. (Polypodiaceae).

T.—P. palmata (J. Sm.) Pic.-Ser.

Species 61, 1D in India. Asia to Mala-

Phymatosorus

ysia. Epiphytic; fronds large, uniform, simple to pinnate, chartaceous, glaucous or bluish-white beneath ; veins anastomosing, drynarioid type, lateral veins distinct ; sori single rowed. P. crenato-pinnata (Clarke)



P. stewartii

Pic.-Ser. (Syn. *Polypodium crenato-pinnatwn* Clarke, FNI 99. t. 42) is distributed in Eastern Himalayas. P. ebenipes (Hook.) Pic.-Ser. (Syn. *Pleopeltis ebenipes* (Hook.) Bedd. HANDB. 363) occurs in the Himalayas. P. stewartii (Bedd.) Pic.-Ser. (Syn. *Pleopeltis stewartii* Bedd. FBI 2D4) is found in Eastern Himalayas.

Phymatosorus Pic.-Ser. [Polypodiaceae).

T.—P. scolopendrina (N. L. Burm.) Pic.-Ser.

Species 12, 4 in India. Trap. Asia. Epiphytes ; fronds large, pinnatifid, coriaceous ; veins anastomosing ; sori seriate. P. scolopendrina (Bl.) Pic.-Ser. (Syn. *Pleopeltis phymatodes* L. HANDB. 366) occurs in South India. P. lungissima (Bl.) Pic.-Ser. (Syn. *Pleopeltis longissima* Bl.) is distributed in Eastern India.

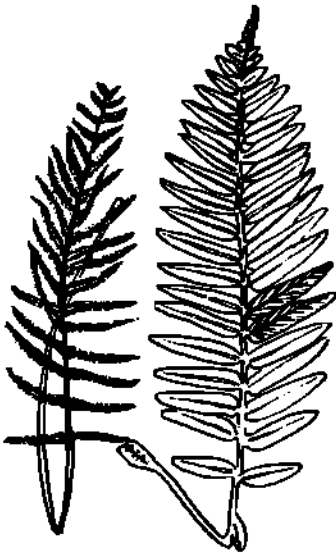
Pityrogramma Link (Hemionitidaceae).

T.—*P. chrysophylla* (Sw.) Link

Species 40, 3 in India. Mostly in Tropical America, a few in Africa, Madagascar and Samoa. Some of them naturalized in all warm lands. Terrestrial ; fronds tufted, stipe dark, shining, lamina pinnately decomposed ; veins free ; sori exindusiate, along the veins, lower surface covered with pale white waxy powder. *P. culdmelanos* (L.) Link, a native of Tropical America is a weed in Tropical Asia. It is widely cultivated as ornamental pot plant ; plant decoction is used for kidney trouble in Philippines ; tea prepared out of the frond is used as a cure for flu, hypertension, fever and cough in Trinidad (E.—*Golden Fern*).

Plagiogyria (Kunze) Mett.—Derived from the Greek plagios=oblique, gyros= circle. (Plagiogyriaceae) HANDB. 127.

LT.—*P. triquetra* Wall, ex Mett.



P. rankanensis

Species S3, 16 in India. India to Japan and New Guinea, mostly in China ; also in America (Mexico, Jamaica,

Cuba, and South to Bolivia). Terrestrial ; fronds densely tufted, dimorphic, stipe dilated at the base bearing aerophores, sterile fronds pinnatifid to pinnate ; fertile fronds longer than the sterile ones with their lateral pinnae contracted almost without lamina ; sori submarginal, almost confluent at maturity. *P. euphlebica* (Kunze) Mett., *P. scandens* Mett. (Syn. *P. pycnophylla sensu* Bedd.) and *P. rankanensis* Hayata [Syn. *P. adnata sensu* Bedd.] are distributed in Eastern Himalayas and Eastern India.

Platycarium Desv.—Derived from the Greek platys=broad, kerus=a horn ; referring to the fertile fronds resembling broad horn of the elk. (Polypodiaceae) HANDB. 445.

LT.—*P. alciconie* (Willemet) Desv.

Species 17, 1 in India. Mostly Africa, Madagascar, Malaysia to Australia, a few in South America. Large epiphytes or lithophytes ; fronds of two types : (1) normal fronds short, stipitate, dichotomously forked, subcoriaceous, stellately pubescent (2) scale fronds sessile, persistent, very broad, becoming dry and brown ; sporangia in specialised areas of the normal fronds. *P. alcornie* (Willemet) Desv. (Syn. *P. wallichii* Hook.) is distributed in Eastern India (E.—*Stag's horn fern*). A few species are cultivated in the gardens for their gigantic ornamental foliage.

Pleocnemia Presl—Derived from pleos=full, knemia=rays, referring to the venation. [Aspidiaceae) HANDB. 223.

T.—*P. leuzeana* (Gaud.) Presl

Species 19, 1 in India. Burma, South China, India to Malaysia, Philippines, Polynesia, Australia, New Zealand. Terrestrial ; fronds bipinnatifid, vascular strands in the stipe more numerous than *Tectaria* ; veins

anastomosing, forming narrow costal areoles without free veinlets; sori round, on free or anastomosing veins. *P. wintii* Holtt. (Syn. *P. leuzeana sensu* Bedd. 228. excl. t. 117) is distributed in Eastern Himalayas and Eastern India.

Pleopeltis Humb. et Bonpl. ex Willd., see *Leptochilus* Kaulf.

Pleuromanes (Presl) Presl (Hymenophyllaceae).

T.—*P. acuhim* (Presl) Presl

Species 3, 1 in India. Himalayas to Polynesia. Epiphytes; rhizome creeping, filiform, fronds bipinnatifid, rarely tripinnatifid, lamina with thickened edges, hairy, glaucous, sometimes with pale-bluish-green powder on the lower surface; sori on basal adaxial segments of the pinnae, indusium tubular. *P. pallidum* (Bl.) Presl (Syn. *Trichomanes pallidum* Bl. HANDB. 41) is distributed in the Eastern Himalayas.

Pneumatopteris Nakai (Thelypteridaceae).

T.—*P. callosa* (Bl.) Nakai

Species 75. 2 in India. Africa, South-East Asia to Hawaii. Terrestrial; fronds pinnate, at least basal pair of pinnae much reduced, surface of lamina more or less pustular, short capitate hairs often present on fronds or sporangia but not spherical glands; veins free to anastomosing; sori usually indusiate. *P. truncata* (Pair.) Holtt. [Syn. *Nephrodium truncatum* Presl, HANDB. 2BD] is distributed in South India. *P. truncata* var. *loyalii* Holtt. occurs in Darjeeling.

Polybotrya Humb. & Bonpl., see *Egenolfia* SidiDtt

Polypodiastrium Ching (Polypodiaceae)

T.—*P. argutum* (Wall.) Ching

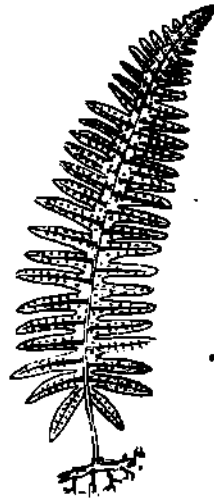
Species 8, 1 in India. Tropical Asia.

Epiphytic; rhizome scales reddish-brown, clathrate; fronds bipinnate, lateral pinnae sessile and articulated to rachis, basal pinnae free, middle adnate, upper confluent; veins anastomosing, forming uniseriate areole near costa with included free veinlets, exterior ones free; sori superficial, paraphyses triangular, peltate, clathrate. *P. argutum* (Wall.) Ching (Syn. *Goniophlebium argutum* Wall. HANDB. 323) is common in the Himalayas at higher elevations.

Polypodioides Ching (Polypodiaceae).

T.—*P. amoena* (Wall.) Ching

Species 15, 5 in India. Tropical and subtropical Asia. Epiphytic; rhizome scales fuscous-brown, iridescent; fronds pinnatifid; veins anastomosing.



P. watii

uniseriate, areole along lateral costae; sori single. *P. subaitioena* (Clarke) Ching [Syn. *Goniophlebium subamoenum* (Clarke) Bedd. HANDB. 317] is distributed in Eastern Himalayas. *P. watii* (Bedd.) Ching [Syn. *Goniophlebium niponicum* var. *watii* Bedd. HANDB. SUPPL. 90] occurs in Manipur.

PDlypodium

Polypodium L. (Polypodiaceae)
HANDB. 3D2.

LT.—**P. vulgare** L.

Species 7D, ca 6 in India. Tropical Asia, Polynesia, mostly in Tropical America, a few in North Temperate regions. Epiphytic; fronds pinnatifid or pinnate; veins once forked or anastomosing; SDH on the acroscopic side of the forked veins of terminal on the free veins in the areoles. **P. subauriculatum** Bl. [Syn. *Goniophlebium subauriculatum* (Bl.) Presl, HANDB. 322) is distributed in Eastern India. The limits of the genus need further study. Recently majority of its Indian species have been transferred into genera **Phymatopteris**, **Phymatosorus** **Polypudias-trum** & **Pulypudiudes** by various workers.

Polystichum Roth—Derived from puly=many, stichos=order (Aspidiaceae) HANDB. 2D1.

T.—**P. lonchitis** (L.) Roth.

Species 135, ca 26 in India. Cosmopolitan. Terrestrial; pinnate or decompound; veins free; SDi indusiate, dorsal Dn the veins. **P. atkinsunii** Bedd. is distributed in Eastern Himalayas; **P. semifertile** (Clarke) Ching (Syn. *P. acuhatum* var. *iemifertile* Clarke, HANDB. 2D9) also occurs in Eastern Himalayas.

Pronephrium Presl (Thelypteridaceae).

LT.—**P. lineatum** (Bl.) Presl



P. lakliimpurensis

Species ca 7D, 7 in India. Tropical Asia, China, Japan, Malaysia to Fiji, Australia. Fronds simple pinnate with entire or slightly tobed pinnae, basal pinnae not reduced;

Pseudodrynaria

veins anastomosing; sori spreading \pm along the veins. **P. lakhimpurensis** (Rosens.) Holtt. (Syn. *Meniscium cuspidatum* var. *longifrons* Clarke, HANDB. 4D1) is distributed in the Himalayas and Eastern India. **P. thwaitesii** (Hook.) Holtt. occurs in South India.

Prosaptia Presl (Grammitaceae)
HANDB. 55.

LT.—**P. contigua** (G. Forst.) Presl

Species 2D, 4 in India. Tropical Asia and Polynesia. Terrestrial; fronds pinnatifid to pinnate; veins free; sori immersed and open towards the margin. **P. alata** (Bl.) Ching [Syn. *P. emersoni* Presl HANDB. 56.) and **P. contigua** (D. Forst.) Presl are distributed in South India.

Pseudocyclosorus Ching (Thelypteridaceae).

T.—**T. tylnides** (Kunze) Ching

Species 1D, 4 in India. South-East Asia. Terrestrial; fronds pinnate; veins always free; sori medial on the veins. **P. fakilubus** (Hook.) Ching (Syn. *Lastrea calcarata* var. *falciloba* Hook. HANDB. 237) is distributed in Eastern Himalayas and Eastern India. **P. repens** (Hope) Ching [Syn. *Lastrea cana* Bak. HANDB. 238) occurs in the Himalayas.

Pseudodrynaria C. Chr. (Polypodiaceae).

T.—**P. coronans** (Wall, ex Mett.) Ching

Munuiypic. India, China, Taiwan. Large, epiphytes; fronds sessile, pinnatisect with lanceolate, entire segments; veins conspicuous, anastomosing; sori compital in one row between each pair of main veins. **P. coronans** (Wall, ex Mett.) Ching (Syn. *Drynaria coronans* Wall, ex Mett. HANDB. 338) is distributed in Eastern Himalaya and Eastern India; the fronds are used locally for making umbrellas and baskets. [E.—*Bird-nest fern*).

Pseudophegopteris

Pseudophegopteris Ching (Thelypteridaceae).

T.—*P. pyrhorrhachis* (Kunze) Ching

Species 20, 5 in India. Africa, South-East Asia to Hawaii. Terrestrial; stipe and rachis glossy, flushed red-brown; fronds bipinnate with pinnae adnate to pinna rachis; veins free; sori exindusiate. *P. aurita* (Hook.) Ching (Syn. *Leptogramme aurita* (Hook.) Bedd. HANDB. 377) is distributed in Eastern Himalaya and Eastern India.

Psilotum Sw. (Psilotaceae).

LT.—*P. nudum* (L.) P. Beauv.

Species 3, 2 in India. Widely distributed in Tropics and subtropics. Terrestrial; aerial shoots dichotomously branched; sporangia in triads. *P. nudum* (L.) P. Beauv. occurs throughout India but is quite rare. *P. complanatum* Sw. has recently been recorded from Andaman and Nicobar Islands.

**Pteridium* Scop. (Pteridiaceae).

T.—*P. aquilinum* (L.) Kuhn

Monotypic. 1 sp. 2 vars. Throughout the Temperate and Tropical regions of the world. Terrestrial; fronds pinnately decomposed; veins free, except for a marginal strand; sori continuous along the margins. *P. aquilinum* (L.) Kuhn (Syn. *Pteris aquilina* L. HANDB. 115) a variable species is distributed throughout India in hilly regions above 1000 m; rhizome astringent, anthelmintic; decoction of rhizomes and fronds given in chronic disorder of viscera and spleen; fronds are poisonous and sometimes fatal to the grazing animals.

Pteridrys C. Chr. et Ching (Aspidiaceae).

T.—*P. sirmatica* (Willd.) C. Chr. et Ching

Pyrrosia

Species 8, 2 in India. Tropical Asia and Malaysia. Terrestrial; fronds bipinnatifid; veins free; sori indusiate, round, dorsal or terminal on veinlets. *P. sirmatica* (Willd.) C. Chr. et Ching (Syn. *Lastrea sirmatica setisu* B.S.P. HANDB. 243) is distributed in the Himalayas, Eastern and Southern India. *P. zeylanica* C. Chr. et Ching occurs in Eastern India.

Pteris L.—Derived from the Greek pterix = wing; resemblance of fronds of some species to the wings. (Pteridaceae) HANDB. 114.

LT.—*P. lungifolia* L.

Species ca 250, ca 43 in India. Pantropic, reaching New Zealand, Tasmania and South Africa and north to Japan and U. S. A. Terrestrial; fronds pinnate to compound; veins free or anastomosing without free included veinlets; sori marginal, protected by scariose reflexed margins. *P. ensiformis* Burm. is distributed in Eastern Himalaya, Eastern and Southern India; young fronds are eaten in Philippines; frond decoction used for dysentery; leaf juice astringent; root juice used for glandular swelling of neck in Malaya. *P. semipinnata* L. occurs in Eastern and Southern India. *P. wallichiana* Agardh (Syn. *Campteria wallichiana* Moore. HANDB. 118) is known from Himalayas and Eastern India used as light fuel. Some species are cultivated in the gardens.

Pyrrosia Mirb. (Polypodiaceae).

T.—*P. chinensis* Mirb.

Species 10, ca 24 in India. Africa to Polynesia, mostly in Tropical Asia and Malaysia, ranging to New Zealand and South America. Epiphytic; fronds xerophytic, simple, fleshy, covered with stellate hairs; veins concealed, anastomosing with free included veinlets; sori confluent at age. *P. mullis* (Kunze) Ching (Syn. *Niphobolus fissus* Bl. HANDB. 33 D) is distributed

Pyrrosia

throughout India in hilly regions. *P. Diunmularifolia* (Sw.) Ching [Syn. *Niphobolus nummulariaefolius* Sw. HANDB. 334) and *P. adnascens* (Sw.) Ching [Syn. *Niphobolus adnascens* Kaulf. HANDB. 325) are distributed in Eastern Himalayas and Eastern India.

Pyrrosia



P. adnascens

Q

QUBrcifilix Cupel. (Aspidiaceae).

T.—**Q. zeylanica** (Houtt.) Copel.

Monotypic. S.India, Sri Lanka, Malaysia to Polynesia, Formosa, Tonkin, China. Terrestrial ; rhizome creeping, fronds dimorphous, hairy, sterile lamina ligu-

late with hastate base, apex rotundate; veins anastomosing with free included forked veinlets ; fertile fronds with longer stipes; SDi linear, continuous, uniseriate between costa and margin, ultimately confluent. *Q. zeylanica* is distributed in South India.

Salvinia Ség. (Salviniaceae).

T.—*S. natans* (L.) All.

Species 1D, 4 in India. In Tropical and warm temperate regions. Plants small, free floating ; a whorl of three leaves at each node, of which two floating and the third one submerged, many sporocarps are borne as outgrowths from the base of submerged leaf. *S. natans* (L.) All. occurs throughout India in ponds and ditches.

**Schizaea* 5m. (Schizaeaceae) Handb. 452.

T.—*S. dichotoma* (L.) Sm.

Species 3D, 1 in India. Throughout tropics and subtropics, a few in temperate regions. Terrestrial ; fronds



S. dichotoma

erect, simple or dichotomously branched ; sporangia in two rows. *S. dichotoma* (L.) Sm. is rare in South India.

Scleroglossum v. Aid. v. RDS. (Grammitaceae).

LT.—*S. pusillum* (Bl.) v. Aid. v. Ros.

Species 6, 1 in India. Sri Lanka, Malaysia, Micronesia, Philippines, Indonesia, Thailand, New Guinea, Queens-

land, Taiwan. Fronds crowded, simple, with a few stellate hairs ; veins simple or forked, not reaching the margins ; coenosori deeply immersed in two distinct longitudinal oblique grooves, one on each side of the midrib, paraphyses absent. *S. sulcatum* (Kuhn) v. Aid. v. RDS. is distributed in Eastern India.

**Selaginella* P. Beauv. [Selaginellaceae).

T.—*S. spinosa* P. Beauv.

Species 7DD, ca 52 in India. Chiefly tropical, a few temperate. Plants



S. pennata

mostly in damp places, a few xerophytic ; terrestrial or epiphytic ; leaves usually dimorphic, in 4 rows, a minute ligule present at the base of each leaf ; sterile with micro and megasporangia. *S. bryopteris* (L.) Bak., a xerophytic species, occurs in the hilly regions of the country ; the whole plant on being pounded and mixed with sugar is very refreshing and is used as a tonic, sold in the markets of Uttar Pradesh and Madhya Pradesh. (H.—*Sanjivani*, *Sher ka panja*). *S. cataractum* Alston is endemic to South India. *S. pennata* (D. Don) Spring occurs in Eastern India.

Selenodesmium [Prantl] Copel. (Hymenophyllaceae).

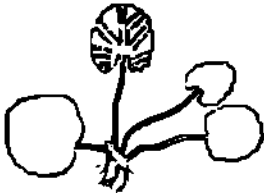
T.—*S. rigidum* (Sw.) Copel.

Species ID, 1 in India. Pantropic and S. hemisphere. Terrestrial ; fronds pinnately compound, cell walls typically thick and coarsely pitted ; involucre cylindrical and receptacle extruded. *S. rigidum* (Sw.) Copel. (Syn. *Trichomanes rigidum* Sw. HANDB. 45) is distributed in South India.

5inBphropteris Mickel (Aspleniaceae).

T.—*S. delavayi* (Franch.) Mickel

Monotypic. S.E. Asia. Fronds small, lamina reniform, cordate at base.



S. delavayi

papyraceous ; veins flabellate, free, occasionally anastomosing near the margins ; SDH paired, scolopendroid. *S. delavayi* (Franch.) Mickel is extremely rare in Eastern Himalayas.

SphaBrocionium Presl (Hymenophyllaceae).

TV-5. *hirsutum* (L.) Presl

Species 5D, 1 in India. Pantropic and S. hemisphere, mostly in Tropical America. Epiphytic; fronds pinnately compound, hairy ; involucre deeply cleft, receptacle included. *S. uiliatum* (Sw.) Presl [Syn. *Hymenophyllwn ciliatum* Sw. HANDB. 33) is distributed in Sikkim.

SphaBrostephanos J. Sm. (Thelypteridaceae).

T.—*S. asplenioides* J. Sm.

Species 12D, 1 in India. Madagascar tu

Tahiti. Terrestrial ; fronds bipinnatifid with many reduced lower pinnae ; veins usually anastomosing, spherical glands often present on the lamina ; sporangia bear spherical glands or setae near annulus on the stalks, a hair Df several cells present. *S. arbuscula* (Willd.) HDIU. [Syn. *Nephrodium arbuscula* Desv. HANDB. 276) is distributed in South India.

*5phenumeris Maxon (Lindsaeaceae).

T.—*S. clavata* (L.) Maxon

Species IB, 1 in India. Pantropic. North tD Japan SL Florida, South tD Australia, New Zealand and Madagascar. Terrestrial ; fronds erect, pinnately decomposed ; veins free ; sori marginal Dr terminal Dn the veins. *S. chinensis* [L.] Maxon (Syn. *Stenoloma chinensis* Sw. HANDB. 7D) occurs



S. chinensis

throughout India in hilly regions ; used internally for chronic enteritis in Mauritius.

Stegnogramma Bl.—Derived from stegnDS= cover, gramme=line. (Thelypteridaceae) HANDB. 38D.

T.—*S. aspidioides* Bl.

Species ca 15, 3 in India. Warmer parts Df the old world, a few"species in Tropical America. Terrestrial ; fronds pinnate ; veins free or anastomosing ; sori exindusiate, along the veins, sporangia copiously setiferous. *S. aspidioides* Bl. HANDB. 38D is distributed in Eastern India.

Stenochlaena J. Sm.—Derived from the Greek stenos=narrow, chlaena=cloak ; referring to the narrow involute margin. (Stenochlaenaceae) HANDB. 421.

LT.—*S. scandens* [Sw.] J. Sm.

Species 5, 1 in India. Africa to Polynes

Stenochlaena

sia. Terrestrial, large, climbing ferns ; fronds dimorphic, pinnate ; veins anastomosing, forming single row of narrow areoles on each side of the



S. palustre

Syngamma

costae ; fertile fronds linear ; sori confluent. *S. palustre* [N.L. Burm.] Bedd. is distributed in Eastern and Southern India.

Stenoloma *Fig.*, see **Sphenomeris** Maxon

Struthiopteris Scop., ssc **Matteuccia** Todaro

Syngamma J. Sm.—Derived from syn=to unite, **gramme=line**. (Hemitidaceae) **HANDB.** 384.

LT.—*S. alsimifolia* J. Sm.

Species 2U, 1 in India. Malaysia to Fiji. Terrestrial ; fronds tufted, pinnate, pinnae 7-14 on each side, coriaceous, densely covered with fine velvety ferruginous hairs ; veins anastomosing ; SDH along the veins. *S. vestita* (Wall.) Underw. is distributed in the Himalayas.

T

TaBnitis Willd. ex Schk.—Derived from *taenia*=a fillet or ribbon. (Tae-nitidiaceae) HANDB. 410.

T.—T. *pteroides* Willd. ex Schk.

Species IS, 1 in India. Sri Lanka, S. E. Asia, Malaysia, Queensland, Pacific. Terrestrial ; fronds pinnate ; veins anastomosing ; sori linear on each side of costa, submarginal. T. *blech-Doides* [Willd.] Sw. is distributed in South India.

TapBinidium [Presl] C. Chr. (Lindsacaceae).

T.—T. *puraatum* (Cav.) C. Chr.

Species 17, 1 in India. South India to Malaysia and Polynesia. Terrestrial ; rhizome dark with reddish bristles ; fronds pinnate, pinnae linear-lanceolate ; veins free ; sori submarginal, one to each tooth. T. *pinnntuni*(Cav.) C. Chr. (Syn. *Microlepia pinnata* J. Sm. HANDB. 54) is distributed in South India.

Tectaria Cav. (Aspidiaceae).

T.—T. *trifoliata* (L.) Cav.

Species 2D0, ca 16 in India. Pantropic, ranging north to Taiwan and Florida and south to Queensland and South Africa. Terrestrial ; fronds pinnate or more compound, thin ; veins anastomosing, usually with free included veinlets ; sori compital, dorsal or terminal on the veinlets. T. *cuadnnata* (J. Sm.) C. Chr. occurs in Eastern India ; the young fronds used as vegetable curry or as salad ; extract from fresh rhizomes is used for preventing diarrhoea in children in Daijeeling district. T. *deonii* Teijsf [Presl] Copel. [Syn. *Aspidium decurrens* Presl, HANDB. 219) is distributed in Eastern and Southern India. T.

fuscipes (Wall, ex Bedd.) C. Chr. [Syn. *Aspidium subcanfluens* Wall, ex Bedd. HANDB. 214] is known from Eastern India. T. *pulynnirpha* [Wall, ex Bedd.] CDpel. [Syn. *Aspidium polymorphum* Wall. HANDB. 218) is distributed throughout India in hilly regions ; the plants are considered anthelmintic.

***Thelypteris** Schmid. (Thelypteridaceae).

T.—T. *palustris* Schott

Species 4,2 in India. Cosmopolitan. Terrestrial ; fronds pinnate, pinnae deeply lobed, basal pinnae not reduced ; veins free, often forked, acicular and short capitate hairs but without spherical glands present on lamina ; sori indusiate, short capitate glandular hairs present on sporangia near annulus. T. *palustris* Schott [Syn. *Lastrea thelypteris* Desv. HANDB. 241) is distributed in N.W. Himalayas and Nilgiris. T. *confluens* [Thunb.] Morton (Syn. *Lastrea fairbankii* Bedd. HANDB. 24 D). occurs in South India.

ThylacDpteris Kunze ex J. Sm. (Polypodiaceae)

T.—T. *papillasa* (Bl.) Kunze ex J. Sm.

Species 2, 1 in India. Malaysia. Epiphytic ; rhizome slender, creeping ; fronds distant, pinnatisect, membranous ; sori terminal on the veins, immersed. T. *papillosa* (Bl.) Kunze ex J. Sm. is distributed in Arunachal Pradesh.

Triblamma (J. Sm.) Ching (Athyraceae).

T.—T. *lancea* (Thunb.) Ching

Species 2, 1 in India. Tropical Asia. Terrestrial ; fronds distant, simple.

Tricholpidium

linear-lanceolate, chartaceous ; veins free ; sori linear, remote from the costa. *T. lancea* (Thunb.) Ching (Syn. *Diplazium lanceum* Thunb. HANDB. 174) is distributed in Himalayas.

Tricholepidium Ching (Polypodiaceae).

T.—*T. normale* (D. Don) Ching

Species 1, 1 in India. South-East Asia. Epiphytic ; sometimes climbing ; fronds simple, thin ; veins anastomosing ; more than one row of sori, paraphyses umbrella-shaped. *T. normale* (D. Don) Ching is distributed in Eastern India.

Trichomanes Scop., see *Crepidomanes* Presl, *GDDCD* v. d. Bosch, *Micru-*

Trigonospora

Trigonospora Presl, *Micru-trichomanes* [Prantl] Copel., *Selenodesmiam* (Prantl) Copel., *Vandenboschia* Copel.

Trigonospora Holtt. (Thelypteridaceae).

T.—*T. ciliata* (Benth.) Holtt.

Species 9, 1 in India. India, Sri Lanka, South China, Malaya, Indonesia. Terrestrial ; fronds bipinnatifid, lower pinnae not reduced ; veins free, rarely anastomosing ; sori medial, hooked hairs from sporangium lacking. *T. sericea* [Scott ex Bedd.] Holtt. is distributed in South India. *T. ciliata* (Benth.) Holtt. (Syn. *Lastrea calcarata* Bl. var. *ciliata* Wall. HANDB. 235) is distributed in the Himalayas, Eastern and Southern India.

V

VandBoschia Cop el.—Named after R. Van den Bosch, an eminent Botanist and worker on Hymenophyllaceae. (Hymen ophyllaceae).

T.—*V. radicans* (Sw.) Copel.

Species 25, 8 in India. Cosmopolitan. Epiphytic ; fronds pinnately compound, cell walls uniformly thin ; involucre cylindrical or cup-shaped with entire mouth, receptacle long. *V. radicans* (Sw.) Copel. (Syn. *Trichomanes ra-*



V. auriculata

dicans Sw. HANDB. 43) is distributed in the Himalayas and Eastern India. *V. auriculata* (Bl.) Copel. [Syn. *Trichomanes auriculatum* Bl. HANDB. 44) occurs in Eastern Himalayas and Eastern India.

Vittariq Sw.—Derived from *Vitta*=ri-

bban ; referring to ribbon-shaped form of the frond. (Vittariaceae) HANDB. 4D4.

T.-*V. lineata* (L.) Sm.

Species 50, 16 in India. Throughout tropics and subtropics. Epiphytes or lithophytes ; rhizome scales clathrate ; fronds simple, tufted, usually elongate-lanceolate ; veins simple ; sori marginal or intramarginal. *V. sikki-*



V. watti

mensis Kuhn is distributed in Eastern Himalayas, *V. watti* Dixit et Nair is endemic to Eastern India,

W

Woodsia R. Br.—Named after Joseph Woods, a British Botanist [Woodsiaceae] HANDB. 2D.

LT.—*W. ilvensis* [L.] R. Br.

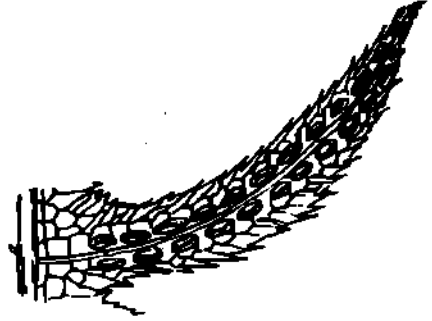
Species 4D, 7 in India. In temperate regions of the world and on high mountains in the tropics, mostly in China. Terrestrial ; fronds small, pinnate or bipinnate ; veins free ; sori round, dorsal or subterminal on the veins. *W. elungata* Hook, is distributed throughout the Himalayas at higher elevations.

Woodwardia 5m.—Named after T.J. Woodward, a British Botanist. (Blechnaceae) HANDB. 135.

LT.—*W. radium* (L.) Sin.

Species 12, 2 in India. South Europe to

Japan, Western North America. Terrestrial ; fronds tufted, pinnate, pinnae deeply pinnatifid ; Veins anastomosing ; SD \bar{d} i parallel to costa. *W.*



W. unigemmata

unigemmata (Mak.) Nakai (Syn. *W. radicans sensu* Bedd.) is distributed throughout the Himalayas and Eastern India at higher elevations.

X

Miphopteris Kaulf. (Grammitaceae).

LT.—*X. serrulata* (Sw.) Kaulf.

Species 5D, 1 in India. Pantropic, ranging north to Japan. Epiphytic ; fronds tufted, pinnatifid to pinnate ;

veins simple ; sori dorsal or terminal on the veins. *X. sikkimensis* (Hieron.) Copel. (Syn. *Poly podium trichomanoides* Sw. HANDB. 3D8) is distributed in the Eastern Himalayas at higher elevations.