

**CHROMOSOME ATLAS OF
FLOWERING PLANTS
OF THE
INDIAN SUBCONTINENT**

**VOLUME 1
DICOTYLEDONS**

**VIRENDRA KUMAR
B. SUBRAMANIAM**

BOTANICAL SURVEY OF INDIA

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Flowering Plants
of the
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**Virendra Kumar
&
B. Subramaniam**



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To
Our Parents

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FOREWORD

Recent advances in molecular biology have opened up unusual possibilities for the construction of molecular linkage maps and for gene transfer across sexual barriers. A basic requisite in such work is a precise understanding of chromosome numbers and morphology. Unfortunately in many plants, we still do not know the chromosome number and whether chromosome races within a species or polyploidy within the genus occur. It is in this context that the present compilation made by Drs. Virendra Kumar and B. Subramaniam assumes great significance and value.

As mentioned by the authors, over 15,000 angiosperm species occur in India. All the knowledge available up to 1982 has been brought together in this book. The authors have drawn attention to the fact that less than 50% of the angiosperm species occurring in India have been subjected to cytological studies. Therefore, this book not only gives information on what we know but also brings out clearly the gaps in existing knowledge. We cannot take advantage of the tools of molecular genetics if we do not have basic information on chromosome number and structure helpful to the development of a standardised system of chromosome nomenclature in each species.

The authors have arranged the available information in a very methodical and informative manner. We owe them a deep debt of gratitude for the careful and painstaking work they have done over 10 years to help all fellow scientists and scholars interested in the cytology and breeding of the flowering plants of the Indian subcontinent.



M.S. Swaminathan
Director General
International Rice Research Institute

17 May 1986
Los Baños, Philippines

PREFACE

Chromosomes are the organelles which store, replicate, transmit hereditary information and also help to regulate gene recombination and gene action. Their study at individual, specific and population levels has contributed to our understanding of the variation and evolution of living organisms. It is, therefore, not surprising, that for more than five decades chromosome research has been an important element in evaluating relationships and deducing phylogenetic sequences in flowering plants. The data derived from this field have proved to be of immense value in a better and clearer understanding of the origin and evolution of some of our important crop plants like wheat, rice, potato, maize, cotton, tomato, brassicas, tobacco, etc. These studies provided invaluable information about the architecture of the germplasm of these and many other economic plants which laid the foundations for their improvement, resulting in the present levels of their productivity.

Most of the chromosome information available pertains to the temperate flora and that too of the northern hemisphere. The little work done on the transcontinental genera as also tropical/subtropical taxa, particularly woody elements is indeed revealing. However, such data are not available for a large part of the tropical/subtropical flora. According to Raven (1975), of about 354 families recognised by Cronquist (1968), there are 44 for which no cytological information is available at present. The information pertaining to the tropics is either scanty or largely lacking. Regarding flora of the Indian subcontinent, despite the studies of the well known research groups of Prof. A. Abraham, Prof. M.S. Chennaveeraiah, Dr. T.N. Khoshoo, Prof. P. N. Mehra, Prof. R.P. Roy, Prof. A.K. Sharma, and others, not even 50% of the flowering plants in our flora have been cytologically analysed. Chromosome information regarding lower plants like algae and mosses is very scanty. In India, there is thus a vast reservoir of plant material awaiting investigation. The work on chromosome census assumes added importance in view of the Botanical Survey of India's preoccupation with the preparation of Indian Flora. The cytological data offer an important dimension to the interpretation of our flora particularly with reference to its composition, endemism, conservation, evolutionary status, relationship to other floras, movement of flora, etc. in relation to the particular ecological, geographical and geological composition of the Indian subcontinent. Another aspect is that India is one of those countries whose flora has been exposed to the longest influence of man because Indian civilisation is one of the oldest in the world. The analysis of cytological data in relation to the above parameters, apart from important applied implications, will enable us to have considerable basic knowledge on floristics which at present is based almost entirely on the work done on temperate plants. All these aspects of chromosome research are now considered under a discipline, Chromosome Botany (*sensu* C. D. Darlington, 1963).

So far, the principal sources of such information have been Chromosome Atlases by Darlington and Janaki Ammal (1945), Darlington and Wylie (1955), Bolkhovskikh *et al.* (1969), and the periodic listing under the '*Index to Plant Chromosome Numbers*' (Regnum Vegeta-

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bile). However, there is now need for a detailed regional treatment of this subject, and a regional compendium is urgently called for together with a periodic publication of '*Chromosome Census Newsletter*' to keep chromosome botanists in India and abroad posted with newer results including with their implications. The task is no doubt a stupendous one.

In view of the above, an urgent need was felt to gather chromosome information on the Indian Flora, which is scattered at present. Drs. Virendra Kumar and B. Subramaniam had been compiling such information and they very kindly agreed to place it at the disposal of Botanical Survey of India who are engaged in the preparation of the Flora of India. It was felt that chromosome dimension may help in refinement of taxonomic treatments. The present compilation will also enable us to know where we stand in this regard. Verification of chromosome numbers may be needed in many doubtful cases. It is also true that most of the earlier counts have not been supported by authentic records of the voucher specimens in absence of which considerable confusion has been created on account of the taxonomic mis-identification as also updating of nomenclature of the taxa investigated. Lack of such a record has been responsible for the avoidable confusion in interpretation regarding evolutionary, phylogenetic and cytogeographic aspects of the different taxa.

During 1982-85, work was also initiated on other groups of plants namely algae, fungi, bryophytes, pteridophytes and gymnosperms as also on animals.

To cover the gaps in our knowledge, it may be a good idea to float All India Coordinated Projects one each on Chromosome Census of Indian Plants and Animals. One of the encouraging factors for undertaking projects of such a dimension is the availability of infrastructure including trained personnel in various parts of India. With this as the base, a national grid needs to be organised in order to complete the work in the next decade or so.

I have no doubt that this effort of Botanical Survey of India would get due support and would be received well. I would like to congratulate Drs. Virendra Kumar and B. Subramaniam most heartily for undertaking this useful work.

T.N. Khoshoo
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December 24, 1986.

INTRODUCTORY NOTE

Understanding of chromosome structure and variation is crucial in elucidating the evolutionary forces responsible for speciation. Variation in chromosome number has played a significant role in the origin and evolution of crop plants.

The classical works *Chromosome Atlas of Cultivated Plants* by Darlington and Janaki Ammal (1945), *Chromosome Atlas of Flowering Plants* (2nd. ed.) by Darlington and Wylie (1955) and *Chromosome Numbers of Flowering Plants* by Pedorov (1969) are pathfinders in the realm of understanding of variation, population biology and evolution of species. These have been useful dictionaries on chromosome numbers for many years. Cytologists have been collecting data on chromosomes of flowering plants occurring in this subcontinent for several decades but the information is scattered and not easily accessible. During the past twelve years, Dr. Virendra Kumar and Mr. B. Subramaniam have taken up the herculean task of compiling the vast amount of data on the chromosome of flowering plants of this region. *Chromosome Atlas of Flowering Plants of the Indian Subcontinent* is the result of their sustained and untiring efforts.

Publication of this useful work, which appears in two volumes was initiated by Dr. T.N. Khoshoo, the former Secretary of the Department of Environment, Government of India. He constituted a committee of three of us to oversee the production. The work of the publication was entrusted to the Botanical Survey of India. We are grateful to Dr. M.S. Swaminathan, Director-General, International Rice Research Institute, Manila (Philippines) and President of the International Union for Conservation of Nature and Natural Resources (IUCN) for writing the Foreword. It is our hope this work will be found useful to plant scientists, evolutionary biologists, foresters, conservationists and to all those who are interested in the value of plant resources from this part of the world.

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AUTHORS' PREFACE

The Indian subcontinent harbours a fairly high proportion of World's flowering plant gene pool of different adaptive histories, in its vastly varying spectrum of ecological conditions. Past efforts of the scientists in the region and elsewhere have, though considerably advanced our knowledge of the prevailing diversity, it is still inadequate to attempt in-depth assessments of the gene pools. Such studies are essential to meet the urgent needs of scientific manipulation of the available genetic material containing novel gene complexes and also for meaningful conservation of the floristic wealth. The preparation of the *Chromosome Atlas of Flowering Plants of the Indian Subcontinent* is aimed to serve as a comprehensive reference work and to assist in the identification of existing gaps in our knowledge and stimulate further research.

The compilation work which began in 1973 passed through various stages of hope and despair, a variety of expected and unexpected difficulties, including dearth of adequate financial support at the later stages. To be candid, we had not realized the enormity and magnitude of the task; it was sheer will and love's labour which steered us through the long drawn toil for over a decade to bring the work at the present stage. It is apt to quote here the lines from the famous poem 'The Hollow Men' by T.S. Eliot :

*Between the idea
And the reality.
Falls the shadow*

*Between the conception
And the creation.
Falls the shadow*

We feel a sense of satisfaction in presenting this work to our fellow scientists with the hope that this effort would help in enlarging the scope of chromosome based studies in the region.

The nature of work presented in the two volumes leaves scope for mistakes and omissions to creep in at different stages of its preparation notwithstanding careful scrutiny. We would welcome constructive criticism by those who use this work and we hope to rectify the shortcomings in future revised edition and supplements.

Virendra Kumar
B. Subramaniam

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The expansive and ambitious nature of the work presented in this book required support from a number of institutions and individuals at different stages of its preparation.

We owe sincere gratitude to Dr. M.S. Swaminathan FRS, Director General, International Rice Research Institute, Manila for his constant encouragement to the idea of preparing this book. His active support and keen interest has been a guiding force in the progress of this work.

The senior author wishes to thank the University Grants Commission for providing financial support for the preparation of the book including a senior fellowship for the junior author, under the 'University Level Book Writing Project' for a period of three years (1973-76). This timely assistance made the beginning of the ambitious project possible.

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Thanks are due to Prof. P.N. Mehra, Professor Emeritus, Panjab University, Chandigarh, for his encouragement and help by providing us with needed literature on chromosome numbers from his personal collection.

Our sincere thanks are due to Mrs. P.P. Trivedi IAS, Secretary to the Government of India for her keen interest in this work.

We are thankful to Prof. A.K. Sharma, Professor of Botany, University of Calcutta, Prof. V.L. Chopra, Nuclear Research Laboratory, IARI, Prof. H.Y. Mohan Ram, University of Delhi and Dr. T.N. Khoshoo, former Secretary, Department of Environment, Govt. of India, as members of the committee which approved the publication of this book.

The production committee comprising of Prof. H.Y. Mohan Ram (Chairman), Dr. M.P. Nayar, Director, Botanical Survey of India, and Dr. Subodh K. Sharma (Member-Secretary) deserve our grateful thanks for their constant interest, guidance and sorting out the problems which came during the course of publication.

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We owe our sincere thanks and appreciation to the governing body of Zakir Husain College and to the Principal Dr. Syed Ahmed Ali, for the encouraging support and for providing us with the available facilities for this work.

ABOUT THE BOOK

The two-volume work deals with the chromosome number reports (published until 1982) of the flowering plants described from the Indian subcontinent (India, Bangla Desh, Bhutan, Nepal, Pakistan and Sri Lanka). Volume I contains the chromosome numbers of dicotyledons, and volume II provides the chromosome numbers of monocotyledons.

Both the volumes encompass the chromosome numbers of 6,973 species distributed among 286 families belonging to 2,021 genera. The number of species covered in this work represent slightly less than half (45.06%) of the angiospermic flora of the Indian subcontinent.

The following is the format adopted for the presentation of data :

The families are arranged alphabetically. The circumscription and nomenclature of the families adopted are that of Willis' *Dictionary of Flowering Plants*, edited by Airy Shaw (1973) and Santspau and Henry's *A Dictionary of Flowering Plants in India* (1973). For each family, information on the number of genera and species followed by their chief distribution in the World, and then by the number of genera and species and their distribution in the Indian subcontinent have been given.

In the first column, genera and species are listed, the second column is devoted to cytomatic ($2n$) chromosome numbers, and the third column is reserved for the author(s), who reported the chromosome number, along with the year of publication in which the number was reported.

The circumscription of the genera followed is also that of Willis' *Dictionary of Flowering Plants* and *A Dictionary of the Flowering Plants in India*, except in cases where recent studies demonstrated the justification for the modification in the circumscription. Within each family, the genera are arranged alphabetically. For each genus, the data on the number of species in the world followed by the number reported from the Indian subcontinent have been provided. Within each genus, the species are listed alphabetically. For each species, the valid name (bold type face) followed by the synonyms (italics) are given. The nomenclature of both the genera and species are brought up-to-date, as far as possible, according to the International Code of Botanical Nomenclature (1983).

For each species, the chromosome numbers are cited in an ascending order, if more than one number is reported. The number reported by the author(s) is cited under the name adopted by the author. If more than one author reported the same chromosome number for the same species, the authors are cited chronologically.

To facilitate the location of references, the initials of name(s) of author(s) have been included. In cases where there are more than two authors, *et al.* is suffixed to the first author's name. Wherever more than three authors are involved and if the first author simultaneously published more papers with different authors in the same year, names of the first two authors followed by *et al.* are included.

The Bibliography for both the volumes is given only in volume II, to avoid duplication of numerous references, however, an index has been provided for the volume I.

Five appendices follow the text in each volume which give the cytotaxonomical conspectus of the floristic elements in the Indian subcontinent. This, *a priori* spade work will assist both taxonomists and cytogeneticists to assess the floristic and genetic diversity potential as well as to realize the gaps existing in the chromosome number reports for directing further researches.

INTRODUCTION

The plate tectonic drive, which transported the Indian landmass from southern hemisphere to the neighbourhood of Afro-Asian landmasses, helped in creating a unique geographic assembly of immense geobiological significance. The Indian landmass arrived (about 45 m. y. BP) with impoverished flora (Raven & Axelrod, 1974 ; Nayar, 1977), whose nature and composition is yet to be fully fathomed. The ensuing geophysical changes during Mio-Pliocene which led to the Himalayan uplift and changes in the palaeo-climatic profiles, created favourable conditions for in-migration of tropical floristic elements from the phytogeographic regions of Indo-Malesia, Australasia and African-Madagascar on the eastern and western flanks of the Indian landmass. Available land connections and prevalence of favourable moist climate during this period, large scale migrations and intermingling of eastern and western floristic elements took place (Lakhanpal, 1970 ; Lakhanpal & Guleria, 1983) ; this is substantiated also by the fossil records. The Indian subcontinent acquired new role to serve as a bridge between these two major tropical regions of ancient floristic histories. For example, family Dipterocarpaceae with its centre of origin in Borneo migrated to its western-most distribution limits in Africa, via the Indian subcontinent. In the process it differentiated and diverged into new evolutionary lines of development (Lakhanpal, 1970 ; Meijer, 1974).

During the pre-Pleistocene glaciation, the emerging montane territory of Himalayan range offered new migration and colonizing opportunities. It coincided with the development and consolidation of Laurasian Tertiary forest flora in Eurasia. The Himalayan territory was occupied by floristic elements drawn from East Africa, the Mediterranean, the Irano-Turkestan, the European, central Asian and Sino-Japanese montane regions (Meusel, 1971 ; Nayar, 1977).

The following epoch of Pleistocene glaciation and the complex history of Himalayan orogeny, which brought drastic changes in the climate, caused disruptions in the established ecosystems. What precisely happened to the floristic scenario during this and the following phases of geophysical changes during Holocene is an area of darkness in our knowledge of the geobotany of the Indian subcontinent. However, there exists a fair amount of certainty that the shifting of glacier termini to lower elevations (c. 1,200 m), was accompanied by disruption of habitats, forcing the Himalayan flora migrate along the southern slopes to much lower altitudes. Opinions, however, differ if the northern temperate floristic elements from Sino-Himalayan region strayed as far as the hilly ranges of the central and the peninsular India and also Ceylon under the impact of a Pleistocene glaciation event (Hora 1949, 1950 ; Biswas, 1949 ; Razi, 1955 ; Kingdon-Ward, 1960 ; Kumar, 1965, 1968 ; Blasco, 1971 ; Nayar, 1977).

Following the geophysical upheaval of Pleistocene glaciation, the process of gradual re-colonization of ice-free areas in the Himalayan region was of great evolutionary significance. During this period, not only the temperate vegetation was re-established, but it evolved

to acquire new physiological rhythms and new gene complexes with superior adaptations to colonize the still higher elevated mountain ridges due to the post-Pleistocene uplift and vast stretches of glaciated valleys. Perhaps the Pleistocene and post-Pleistocene Himalayan flora underwent a phase of similar changes which were visualized for the Great Caucasus Forests, in the restructuring of forest associations, floristic exchanges and evolved cold resistance during the Pleistocene glaciation fluxes (Tumajanov, 1971). However, unlike the Great Caucasian Forests, the Himalayan flora could shift to warmer south and escape impoverishment of the floristic wealth acquired from the temperate floristic pool of Eurasian stock and elsewhere. The Himalayan flora returned with enhanced potential for floristic diversity which is reflected in the present day occurrence of large number of endemics. There is evidence to consider these as neo-endemics, the product of recent events of speciation (Kumar, 1983). In the newly structured vegetation there exist possibilities of the occurrence of isolated relict populations of pre-Pleistocene Laurasian temperate floristic elements, which escaped the rigors of Ice Age as the Himalayan slopes offered suitable ecological niches for their probable survival on the altitude-based thermo-ecoclines (Dr. Askel Löve, personal communication). Though difficult to identify, such palaeo-endemics of temperate stock would be of immense phylogenetic significance.

The Pleistocene and post-Pleistocene migration events involving Indian subcontinent and subjacent geographical areas gave ample opportunities for the reshuffling of temperate and tropical flora, providing new floristic associations and in the process giving new dimensions to the geographic distribution of the taxa of two contrasting biomes of the erstwhile Gondwanaland and Laurasian landmasses. This was aided by the mountain physiography and enlarged spectrum of climatic profiles and new ecological niches which developed during the Pleistocene and post-Pleistocene epochs.

In contrast, the southern peninsula acted primarily as a repository of survivors of the early Gondwanaland floristic elements and the later migrants from Arabia-Africa and West Asia and the South-east Asian regions. The advent of a phase of aridity during Pliocene brought discontinuities in the migration routes (Lakhanpal, 1970). The hill-plateau physiography of the peninsular India offered contrasting zones of extreme aridity and wetness, and provided survival opportunities to the West Asian-African floristic elements in the Western arid zones and the Malesian elements in the wetter humid parts of the peninsula. This region therefore, harbours a large number of palaeo-endemics. The surviving gene pools of tropical elements exist in much altered and disrupted ecosystems in isolated pockets. Due to poor reproductive and dispersal strategies, requiring unaltered ecosystems for their survival, these floristic elements have become relicts (Nayar, 1977).

In addition to the geobotanical interactions, the human cultural activities dating back to prehistoric times have been playing a key role in shaping the taxonomic and genetic composition of the flora of Indian subcontinent. The impact of anthropogenic factor has been particularly severe in the river valleys, where a variety of agrarian and pastoral activities have resulted in an almost total removal of natural flora. The opening of new ecological niches have been filled with aggressive weed and naturalized alien species. In tribal belts, the primi-

tive methods of cultivation, based on slash and burn technology have been one of the key-factors responsible for the decimation of primeval forests. This process though disruptive, has also stimulated the evolution of aggressive species with new gene complexes and inflow of alien weed flora to colonize the bare areas and the disturbed habitat situations (Anderson, 1956).

The foregoing sketch of the geophysical history of the Indian subcontinent, the associated dynamic phases of plant migration and past evolutionary histories of participating flora give a distinct uniqueness to the region. It is a history of complex interplay of organism-environment relationships spread over the long geological times of momentous changes, involving curious landmass displacement during which the new genetic systems evolved and diversified. Even though, the Indian subcontinent might lack the distinctions of individualistic flora or of harbouring high levels of endemism of Malesia, Australasia, Africa, and tropical America, nevertheless it became a meeting point of the evolutionary products of Gondwanaland and Laurasia, spread over from the time of origin of early angiosperms to the recent times of their dominance on the earth's land surface. During this long geological time-frame, the earth passed through numerous known and yet to be known catastrophic upheavals, besides the major geophysical landmarks of continental drift, associated mountain building and the Pleistocene glaciation of recent times.

With this fascinating geobotanical background history of the Indian subcontinent, the region offers an equally fascinating field of cytogenetic assessment of the present day angiosperm diversity. It requires, (i) an assessment of the gene pools now contained in the numerous geographically localized taxa; (ii) the past histories of evolutionary development by the processes of in-migration; and (iii) the numerous steps of syntheses and divergences which emerged out of the galaxy of genetic recombinations and mutations, and were accompanied by the prolonged history of adaptations under the varied fluxes of major or minor geophysical and climatic changes causing the ebb and flow of the ecosystems on its varied geographical landscape.

The cytogenetic assessment to fathom the levels and patterns of genetic diversity is an essential need for not only meeting academic interests but fulfilling the two urgent requirements of present cataclysmic times : (i) to prevent further destruction of available genetic variability potential existing in natural ecosystems due to sheer lack of genuine understanding; the loss of diverse floristic elements containing unique and not so unique gene complexes, evolved through geo-biological interactions of the past which cannot be resurrected, and (ii) to utilize the available genetic diversity for increased plant productivity required for the fulfilment of the basic needs of the mounting human and its dependent domesticated animal populations in the subcontinent. It requires continued intelligent manipulation of genetic material, which nature has provided after millions of years of evolutionary innovations. Significant steps have already been taken to open the new phase of gene manipulation involving genetic engineering and biotechnology.

The cytological studies have taken quantum jump from the time *Strasburger (1882) in Germany, and also Guignard (1882) in France (Löve & Löve, 1970), first published miscellaneous

* Dr. Keith Jones, Jodrell Lab., Royal Botanic Garden, Kew. Personal communication.

chromosome counts, to present times of chromosome banding and highly sophisticated nucleotide considerations, complementing the genotype and karyotype studies (Bennett, 1972, 1973); forging intimate and meaningful linkages earlier with genetics and now with molecular biology.

Great incentive to studies based on chromosome number determination and other karyological features was provided by discovery in 1937 of the spindle arresting properties of alkaloid colchicine, followed by a host of other chemicals performing the same function. It encouraged workers all over the world to the task of determining chromosome numbers in the regional floras. In India, contribution of various active groups has already been mentioned elsewhere in the volume. This phase, lasting for about four decades, contributed to the main bulk of the pool of known chromosome numbers of flowering plants in the subcontinent. Out of about 15,475 flowering plant species known to be occurring in the region, chromosome numbers for about 6,973 (45.06%) species have yet been known. It speaks of the task still lying ahead of the cytologists of the Indian subcontinent. In the world floras, the chromosome numbers for only 15-20% of the 2,50,000 species of flowering plants are so far known (Stace, 1980). It is not an encouraging situation, keeping in view the foreboding assessment of Peter Raven (Bennett, 1984) expecting a loss of 20-25% of all the diversity of all the living things on earth within next decade and a half.

However, as science too runs on prevailing fashions, new breakthroughs on the scientific frontiers, often tend to divert manpower and funds to newer fields. The significant advances made in the field of molecular biology diverted attention from the comparatively simple tasks of new chromosome number determinations and karyological analysis to new sophisticated areas of chromosome studies. These basic investigations invariably form the first step towards studies leading to deeper understanding of the structure, organization and functioning of the genetic systems. Scientific researches ranging from visual observation of form and behaviour, light to ultra-microscopy and to molecular analysis of genomes call for coordinated efforts of scientists specializing in their respective disciplines. It is like relay race, each participant's role is to carry the baton to a specified point, to be taken over by the next.

The availability of data on chromosome numbers could help in determining the phyletic and phylogeographic relationships in the plants. The reports of the existence of primarily diploid chromosome number ($2n=26$) for the tropical *Rhododendron* by Jones and Brighton (1972) has indicated the possibility of 'Malasia-New Guinea' region as the primary centre of the origin of the genus, even though largest species concentration lies in temperate East Asia with high levels of polyploidy (Janaki Ammal, 1960).

In a cytological survey of a group of primitive angiosperms, the woody Polycarpiceae (Magnoliales and Laurales), Ehrendorfer *et al.* (1968) reported various levels of polyploidy. On the basis of careful analysis of the chromosome number data and associated primitive morphological and anatomical characters, they suggested a parallel and reticulate evolutionary pattern for the living palaeopolyploids, which differentiated from original diploid progenitors with basic no. $x=7$. They could also relate a common origin of "Amentiferae" and woody Polycarpiceae, in remote past from a monophyletic group of diploid progenitors with $x=7$. In

the prevailing uncertainties concerning the question of the origin of angiosperms, these chromosome number based investigations have significantly added to the existing knowledge base

Karyological studies accompanied by data on chromosome pairing during meiosis in parental and hybrid progenies can indicate genic homologies and bring to light the mechanisms involved in the variations in chromosome number, size and suggest the direction of chromosomal evolution in specific taxa (Jones, 1978). These studies together with chromosome substitution technique (chromosomal engineering) have helped in the identification and location of specific genes and block of genes on different chromosomes in several plant groups of economic importance.

The origin and evolution of cultivated wheats was first hypothesized on the basis of comparative studies on chromosome numbers (Sears, 1948). These basic studies supported by breeding experiments in turn led to detailed genomic analysis of wheat groups to reveal the evolutionary pathways. The deeper understanding of the genetic systems, primarily based on cytogenetical studies is responsible for the green revolution in wheat crop (Feldman & Sears, 1981). Recent molecular studies on 2C DNA content and the distribution of heterochromatin blocks in wheats and their aliens not only throw light on the mode of speciation in this important group of plants, but also open the possibilities to manipulate the genome at will. In fact, comparative studies on chromosome numbers are the basic tenets in establishing evolutionary relationships in any taxonomic group (Goodspeed, 1954; Rick & Butler, 1956; Swaminathan & Magoon, 1961). Such evolutionary relationships enable not only to manipulate the gene pools but also provide the imperative to conserve them for posterity. In short, chromosome number is the raw material on which evolutionary forces have been acting, leading to the origin and evolution of the entire biological diversity (Stebbins, 1950; Grant, 1971; Lewis, 1980).

The chromosomal data on plants, having relatively larger chromosomes were used to construct karyotypes, which on the basis of symmetry and asymmetry relationships were utilized as taxonomic markers, and also to indicate the process and the direction of chromosomal evolution. Processes like centric fusion and fission brought about changes in chromosome phenotype and involved reorganization of chromosome arms with the implications to bring a change in linkage groups and the gene recombinations. The study of chromosome phenotype forms the basis to observe their behaviour during mitosis and meiosis, thus demonstrating how they carry out their functions (Jones, 1978).

During recent years a new vision of chromosome phenotype has been revealed by differential staining of chromosomes by the use of various fluorescent dyes like quinacrine mustard and Giemsa stain, which give characteristic Q, C or G bands (Caspersson & Zech, 1973; Hsu, 1973). The linear differential staining of chromosomes was earlier seen in cold treated metaphase chromosomes of *Trillium* by Haga & Kurabayashi (1954) and Kurabayashi (1963), which was related to polymorphism within natural population and also in geographic races.

The recent use of different banding techniques has indicated the presence of different kinds of heterochromatic segments, which are distinctive and repeatable, therefore, can

form the basis for detailed comparison of karyotype and serve as valuable markers in the analysis of chromosome phenotype. The banding patterns have also been studied in relation to the molecular structure of chromosomes which have significantly helped in the understanding of developmental and genetic significance of complexities of chromosome organization (Jones, 1978) and its implications in speciation.

The studies related to quantitative and qualitative differentiation of nuclear DNA per genome, appearance of interphase nuclei, chromatin and other parameters are being recommended for biosystematics related studies. Recent studies on genome size estimations based on mean and total chromosome length and also nuclear DNA content have indicated size differences between tropical and temperate herbaceous plant species. In general the temperate herbs have been shown to have larger genome than in tropical herbs (Levin & Funderburg, 1979). The data can be usefully employed in indicating spatial replacements of species in temperate and tropical biomes.

Recent advances in molecular biology enable any one to develop appropriate DNA probes for analysing the variation at the gene level. But employing such probes is practically not feasible to analyse even a minute fraction of the global genetic diversity in the near future, further there is a genetic erosion of diversity due to increasing habitat pressures, particularly from the tropics. Still, even basic taxonomic studies on the tropical floras are far from complete, which means even the inventory of botanical diversity is inadequate for evaluation, utilization and conservation of plant genetic resources, leave apart the chromosome counts. Chromosome atlas is complementary to the flora for any meaningful basic and applied researches involving plant resources. Consequently, preparation of national or regional floras should be simultaneously accompanied by the chromosome atlases. Such a venture would pave the way for the development of strategies on the sustainable utilization and conservation of plant resources. It is in this background, that the preparation of the *Chromosome Atlas of Flowering Plants of the Indian Subcontinent* was undertaken.

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KEY TO THE ABBREVIATIONS OF REFERENCE BOOKS

- AA Aquatic Angiosperms, by Subramanyam, K. 1962. Council of Scientific and Industrial Research, New Delhi.
- D. 1945 Chromosome Atlas of Cultivated Plants, by Darlington, C.D. and Janaki Ammal, E.K. 1945. George Allen and Unwin Ltd., London.
- D. 1955 Chromosome Atlas of Flowering Plants, by Darlington, C.D. and Wylie, A.P. 1955. George Allen and Unwin Ltd., London.
- DFPI A Dictionary of the Flowering Plants in India, by Santapau, H. and Henry, A.N. 1973. Publications & Information Directorate, Council of Scientific and Industrial Research, New Delhi.
- FBI The Flora of British India by Hooker, J.D. 1872-97. Secretary of State for India, London, Volumes 1-7.
- FD The Flora of Delhi, by Maheshwari, J.K. 1963. Council of Scientific and Industrial Research, New Delhi.
- Fedorov Chromosome Numbers of Flowering Plants, ed. Fedorov, AN. A. 1969. Academy of sciences of the USSR. V.L. Komarov Botanical Institute.
- FEH The Flora of Eastern Himalaya, by Hara, H. 1966. The University of Tokyo Press, Japan.
- FEH, 2 The Flora of Eastern Himalaya : Second Report, by Hara, H. 1971. The University of Tokyo Press, Tokyo, Japan.
- FEH, 3 The Flora of Eastern Himalaya : Third Report, by Ohashi, H. 1975. The University of Tokyo Press, Tokyo, Japan.
- FHD Flora of Hassan District, Karnataka, India, by Saldanha, C.F. and Nicolson, D.H. 1976. Amerind Publishing Co. Pvt. Ltd., New Delhi.
- HFDD Herbaceous Flora of Dehra Dun, by Babu, C.R. 1977. Publications & Information Directorate Council of Scientific and Industrial Research, New Delhi.
- RHFC, 1-3 A Revised Handbook to the Flora of Ceylon, ed. Dassanayake, M.D. and Fosberg, F.R. 1980-81. Amerind Publishing Co. Pvt. Ltd., New Delhi, Volumes, 1-3.
- RHFC,
Vol. I, Pt I A Revised Handbook to the Flora of Ceylon, ed. Abeywickrama, B.A. 1973. University of Ceylon, Paradeniya. Sri Lanka (Ceylon), Volume I, Part I.
- RHFC,
Vol. I,
Pt. II A Revised Handbook to the Flora of Ceylon, ed. Dassanayake, M.D. 1977. University of Sri Lanka, Paradeniya, Sri Lanka, Volume I, Part II.
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- WI, 1-11 The Wealth of India : A Dictionary of Indian Raw Materials. 1948-76. Publications & Information Directorate, Council of Scientific and Industrial Research, New Delhi, Volumes 1-11.
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ACANTHACEAE Juss.

250/2,500 ; especially in tropics but also in Mediterranean, United States and Australia, 4 chief centres of distribution are Indo-Malesia, Africa, Brazil and Central America. 81/424 ; abundant in the mountains of Southern and Western India, a few in tropical and subtropical Himalaya (up to 3,630 m), and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka a few cultivated.

Acanthus Linn.

50 ; South Europe, tropical and subtropical Asia and Africa. 6 ; Eastern Himalaya and along sea coasts, and Bhutan and Sri Lanka.

ilicifolius Linn.

- 44, 48 Narayanan, C.R. 1951a, b
48 Sidhu, S.S. 1961 ; Mitra, K. & Datta, N. 1967

Adhatoda Mill.

20 ; tropical Africa and Asia. 3 ; Eastern Himalaya and Southern India, 1 throughout India, and Sri Lanka.

zeylanica Medic.

vasica Nees

- 34 Mukherjee, S.K. 1952b ; Hardas, M.W. & Joshi, A.B. 1954 ; Verma, S.C. & Dhillon, S.S. 1967 ; Mehra, P.N. & Gill, L.S. 1968a ; Datta, P.C. & Maiti, R.K. 1970
34, 40, 46, 50 Datta, P.C. & Maiti, R.K. 1968b
34, 40, 50 Datta, P.C. & Samanta, P. 1974
56 Grant, W.F. 1955

Justicia adhatoda Linn.

- 34 Pathak, G.N. *et al.* 1949

Aechmanthera Nees

3 ; Himalaya (up to 1,650 m) ; and Nepal.

gossypina (Nees) Nees

tomentosa Nees

- 30 Verma, S.C. & Dhillon, S.S. 1967

Andrographis Wall.

20 ; tropical Asia. 18 ; chiefly in the hills of Southern India, and Sri Lanka.

paniculata (Burtt.) Nees

- 28 Narayanan, C.R. 1951a
50 Raghavan, R.S. 1957 ; Ellis, J.L. 1962 ; Verma, S.C. & Dhillon, S.S. 1967 ; Datta, P.C. & Maiti, R.K. 1970

Aphelandra R. Br.

200 ; warm America. 4 ; cultivated.

cristata R. Br.

- 68 Narayanan, C.R. 1951a

fulgens Decne

- 56 Pal, M. 1964

tetragona (Vahl) Nees

- 56 Kaur, J. 1970

Asystasia Blume

40 ; palaeotropics. 8 ; chiefly in the mountains of Western and Southern India, and Bhutan and Sri Lanka.

chelonoides Nees

- 26 Sarkar, A.K., Chakraverty, M. *et al.* 1980

2 ACANTHACEAE

coromandeliana Nees

- 25 Narayanan, C.R. 1951b ; Mangenot, S. & Mangenot, G. 1957, 1962

crispata Benth.

- 26 Kaur, J. 1970

dahzieliana Santap.

- 52 Kaur, J. 1970

gangetica (Linn.) T. Anders.

- 26 Gadella, T.W.J. 1977
44, 48, 52 Narayanan, C.R. 1951a, b
(Grant, W.F. 1955)
50 De, A. 1966a ; Sarkar, A.K., Chakraverty, M. *et al.* 1978
52 Grant, W.F. 1955 ; Ellis, J.L. 1962, Kaur, J. 1965b

mysorensis (Roth) T. Anders.

- 52 Kaur, J. 1965b

travancorica Bedd.

- 28 Narayanan, C.R. 1951a
c. 66 Verma, S.C. & Dhillon, S.S. 1967

Barleria Linn.

About 230 ; tropics. 31 ; chiefly in the mountains of Western and Southern India, a few in tropical and subtropical Himalaya, and Pakistan, Bangla Desh and Sri Lanka - a few cultivated.

hexifolia Linn.

- 40 Narayanan, C.R. 1951a ; Ellis, J.L. 1962 ; Raman, V.S. & Kesavan, P.C. 1964a, 1965

cristata Linn.

- 34, 36,
38, 40 Narayanan, C.R. 1951a
40 Grant, W.F. 1955 ; Ellis, J.L. 1962 ; Raman, V.S. & Kesavan, P.C. 1964a, 1965 ; De, A. 1966a, b ; Verma, S.C. & Dhillon, S.S. 1967 ; Krishnaswami, S. & Menon, P.M. 1974

vaspidata Heyne

- 40 Ellis, J.L. 1962

dichotoma Roxb.

cristata Linn.

var. *dichotoma* (Roxb.) Prain

- 32 Datta, P.C. & Maiti, R.K. 1970

- 40 Kaur, J. 1970

- 42 De, A. 1966a, b

gibsoni Datz.

- 40 Mehra, P.N. & Vasudevan, K.N. 1972

lapulina Lindl.

- 40 Pal, M. 1964 ; De, A. 1966a, b

mysorensis Roth

- 40 Krishnaswami, S. & Menon, P.M. 1974

noctiflora Linn. f.

- 40 Ellis, J.L. 1962 ; Raman, V.S. & Kesavan, P.C. 1964a, 1965 ; Krishnaswami, S. & Menon, P.M. 1974

prionitis Linn.

- 30 Narayanan, C.R. 1951a
32 Datta, P.C. & Maiti, R.K. 1970
40 Raman, V.S. & Kesavan, P.C. 1964a, 1965 ; De, A. 1966a, b ; Krishnaswami, S. & Menon, P.M. 1974 ; Deahroukh, S.V. 1978 ; Sarkar, A.K., Chakraverty, M. *et al.* 1980

prionitis x *noctiflora*

- 40 Krishnaswami, S. & Menon, P.M. 1974

strigosa Willd.

- 42 De, A. 1966a, b

var. *terminalis*

- 40 Kaur, J. 1969

Beloperone Nees

60 ; warm America and West Indies.

4 ; cultivated.

guttata Brand.

- 28 Grant, W.F. 1955 ; Takizawa, Y. 1957 ; De, A. 1966a

nanorosa (Swartz) Nees

- 62 Narayanan, C.R. 1951a

oblongata Nees

- 28 Verma, S.C. & Dhillon, S.S. 1967

Blepharis Juss.

About 100 ; palaeotropics, Mediterranean, South Africa and Madagascar. 5 ; chiefly in Southern India, and Pakistan and Sri Lanka.

- hinacifolia* Pers.
24 Mibge, J. 1962
- sindica* T. Anders.
26 Baquar, S.R. *et al.* 1966
- madagascarensis* (Linn.) Roth
26 Sareen, T.S. & Sanjogta, K. 1976
30 Mibge, J. 1962; Bir, S.S. & Saggoo, M.I.S. 1979
- boerhaviaefolia* Pers.
26 Kaur, J. 1966
- repans* (Vahl) Roth
- molluginifolia* Pers.
34 Kaur, J. 1966; Sareen, T.S. & Sanjogta, K. 1976
- Crossandra** Salisb.
50; tropical Africa, Madagascar and Arabia. 2; cultivated, also occur as escapes.
- infundibuliformis* Nees
20 Narayanan, C.R. 1951a
38 Grant, W.F. 1955; Ellis, J.L. 1962
60 De, A. 1966a
- undulaefolia* Salisb.
38 Verma, S.C. & Dhillon, S.S. 1967
- nilotica* Oliver
40, 60 Kaur, J. 1970
c. 60 Grant, W.F. 1955
- Dicliptera** Juss.
About 150; tropics and subtropics. 8; chiefly in Southern India, Bhutan, Bangla Desh and Sri Lanka a few cultivated.
- elegans* Dalz.
20 Kaur, J. 1970
40 Kaur, J. 1965a
- leonotis* Dalz. *ex* Clarke
48 Kaur, J. 1965a, 1970
- roxburghiana* Nees
26 Verma, S.C. & Dhillon, S.S. 1967;
Kaur, J. 1969; Kaur, J. & Nizam, J. 1970; Sareen, T.S. & Sanjogta, K. 1976
- bupleuroides* Nees
26 Verma, S.C. & Dhillon, S.S. 1967
52 Sareen, T.S. & Kumari, S. 1973
- verticillata* (Forsk.) C. Chr.
30 Kaur, J. 1970
- Didyplosandra** Bremek.
3; Southern India, and Sri Lanka.
- lurida* (Wight) Bremek.
Strobilanthes luridus Wight
32 Ellis, J.L. 1962
- Dipteracanthus** Nees *emend.* Bremek.
10; tropical East Africa, Asia and Australia. 7; chiefly in Eastern, Central and Southern India, and Sri Lanka.
- patulus* (Jacq.) Nees
Ruellia patula Jacq.
32 Baquar, S.R. *et al.* 1966
- prostratus* Nees
44 Kaur, J. 1966; De, A. 1966a
- Ruellia prostrata* Lam.
34 Sarkar, A.K., Chakraverty, M. *et al.* 1980
- Dyschoriste** Nees
100; tropics and subtropics. 3; Central and Peninsular India, and Sri Lanka.
- depressa* Nees
60 Bir, S.S. & Saggoo, M.I.S. 1979
- vagans* Wight*
56 Kaur, J. 1969
- Ecbolium** Kurz
19; tropical and South Africa, Madagascar, Socotra and India. 2; North Eastern India, Western Ghats and Peninsular India, and Sri Lanka a few cultivated.

* The combination *Dyschoriste vagans* was made by Kuntze (FHD : 547).

4 ACANTHACEAE

linneanum Kurz

36 Joseph, J. 1964

var. *laetevirens* (Vahl) Clarke

36 Kaur, J. 1970

viride (Forsk.) Alston

36 Ellis, J.L. 1962 ; De, A. 1966a

linneanum Kurz

var. *dentata* (Klein) Clarke

36 Kaur, J. 1969 ; Datta, P.C. & Maiti, R.K. 1970

Elytraria Michx.

7 ; tropics and subtropics. 1 ; Eastern Himalaya, Northern and Southern India, and Sri Lanka.

aeaulis (Linn. f.) Lindau

var. *acaulis*

34 Kaur, J. 1969

Eranthemum Linn. *emend.* Radik.

30 ; tropical Asia. 12 ; tropical and subtropical Himalaya, Eastern, Central and Southern India, and Bhutan, Bangla Desh and Sri Lanka a few cultivated.

chinabaricum Wall.

34, 38 Narayanan, C.R. 1951a

longiflorum

38 Narayanan, C.R. 1951a

metallicum

34 Narayanan, C.R. 1951a

nervosum Vahl*

42 Kaur, J. 1970

nervosum (Vahl) R. Br. *ex* Roem. & Schult.

Daedalacanthus nervosus T. Anders.

42 Pathak, G.N. *et al.* 1949 ; Sarkar, A.K., Datta, N. *et al.* 1978

purpurascens Nees

84 Kaur, J. 1970

roseum R. Br.

30 Narayanan, C.R. 1951a

splendens (T. Anders.) Hort. *ex* Siebert & Voss *Daedalacanthus splendens* T. Anders.

24 Nanda, P.C. 1962

variegatum Linn.

34 Narayanan, C.R. 1951a

42 Pathak, G.N. *et al.* 1949

Fittonia Coem.

2 ; Peru. 1 ; cultivated.

verschaffeltii Coem.

36 Takizawa, Y. 1957 ; Kaur, J. 1965b

36, 54 Grant, W.F. 1955

Gendarussa Nees

2 ; Indo-Malesia. 1 ; throughout India, and Sri Lanka, also cultivated.

vulgaris Nees

30 De, A. 1966a

Justicia gendarussa Linn. f.**

28 Basak, S.L. 1959

30 Joseph, J. 1964 ; Sarkar, A.K., Chakraverty, M. *et al.* 1980

30+2B Raghuvanshi, S.S. & Joshi, S. 1968b

32 Narayanan, C.R. 1951a

Justicia gendarussa Burm. f.

30 Datta, P.C. & Maiti, R.K. 1970

Goldfussia Nees

30 ; Himalaya to Philippine Islands and Java. 10 ; tropical and subtropical Himalaya, and Nepal, Bhutan and Bangla Desh.

anisophylla Nees

Strobilanthes anisophyllus T. Anders.

26 Verma, S.C. & Dhillon, S.S. 1967

bracteata Nees

Strobilanthes quadrangularis Clarke

22 Mehra, P.N. & Vasudevan, K.N. 1972

* The combination *Eranthemum nervosum* was made by R. Br. *ex* Roem. & Schult. (HFDD : 382).

** The combination *Justicia gendarussa* was made by Burm. f. (HFDD : 383).

dalhousiana Nees*Strobilanthes dalhousianus* Clarke

18 Verma, S.C. & Dhillon, S.S. 1967

isophylla Nees*Strobilanthes isophyllus* T. Anders.

20 Grant, W.F. 1955; Takizawa, Y. 1957

pentstemonoides Nees26 Malla, S.B., Bhattaraj, S. *et al.* 1977a*thomsonii* (Nees) Bremek.*Strobilanthes wallichii* Nees

40 Mehra, P.N. & Vasudevan, K.N. 1972

Graptophyllum Nees

10; tropical West Africa, New Guinea, Australia and Polynesia. 1; cultivated.

pictum Griff.

36 Lakshmi, N. & Rao, N.B. 1977a

60 Grant, W.F. 1955

Hemigraphis Nees

100; South China, Indo-Malesia, tropical Australia and Pacific. 4; chiefly in Southern India.

alternata (Burm. f.) T. Anders.

32 Kaur, J. 1969

latebrosa (Heyne ex Roth) Nees

56 Bir, S.S. & Sagoo, M.I.S. 1979

hirta T. Anders.30 Sarkar, A.K., Chakraverty, M. *et al.* 1980*rupestris* Heyne ex T. Anders.

26 Kaur, J. 1965b

latebrosa Neesvar. *rupestris* Clarke

28 Sareen, T.S. & Kumari, S. 1973; Sareen, T.S. & Sanjogta, K. 1976

Hygrophila R. Br.

80; tropics. 8; chiefly in Southern,

Central and Western India, and Bhutan, Bangla Desh and Sri Lanka.

auriculata (Schum.) Heide

32 Subramanyam, K. & Kambic, N.P. 1971

spinosa T. Anders.

24 Sugiura, T. 1937c, 1940a

32 Rangaswami, K. 1941; Grant, W.F. 1955; Midge, J. 1962; Verma, S.C. & Dhillon S.S. 1967; Mehra, P.N. & Gill, L.S. 1968a.

Asteracantha longifolia (Linn.) Nees

32 De, A. 1966a

polysperma (Roxb.) T. Anders.32 Grant, W.F. 1955; Kaur, J. 1970; Sarkar, A.K., Chakraverty, M. *et al.* 1978, 1980*Indoneesiella* Sreem.

2; 1 throughout the greater part of India, 1 in Maharashtra.

echinoides (Linn.) Sreem.*Andrographis echinoides* (Linn.) Nees

38 Narayanan, C.R. 1951a

48 Kaur, J. 1969

Jacobinia Nees ex Moric.

50; Mexico to tropical South America. 2; cultivated.

gheibreghtiana Benth. & Hook*.

28 Grant, W.F. 1955

tinctoria Hemsl.

28 Kaur, J. 1969

Justicia Linn.

300; tropics and subtropics. About 23; chiefly in Eastern Himalaya and Southern India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

betonica Linn.

28 Narayanan, C.R. 1951a

*The combination *Jacobinia gheibreghtiana* was made by Hemsl. (DFPI; 88).

6 ACANTHACEAE

- 34 Ellis, J.L. 1962 ; Bir, S.S. & Saggoo, M.I.S. 1979
- glauca* Rottl.
24 Kaur, J. 1965b
26 Ellis, J.L. 1962
- prostrata* Gamble
18 Sarkar, A.K., Chakraverty, M. *et al.* 1978, 1980
- pubigera* Wall.
28 Mehra, P.N. & Vasudevan, K.N. 1972 ; Kumar, V. & Chauhan K.P.S.
- tranquebariensis* Linn. f.
26 Ellis, J.L. 1962
- ventricosa* Wall.
28 Nanda, P.C. 1962
30 Pal, M. 1964
- Lepidagathis* Willd.
About 100 ; tropics and subtropics. 28 ; chiefly in Western and Southern India, and Pakistan, Bangla Desh and Sri Lanka.
- eristata* Willd.
22 Kaur, J. 1965a, 1970 ; Kaur, J. & Nizam, J. 1970
24 Chopda, V.P. 1965
- var. *rusticaris* (Nees) Clarke
22 Kaur, J. 1970
- conspidata* Nees
22 Verma, S.C. & Dhillon, S.S. 1967 ; Sareen, T.S. & Sanjogta, K. 1976
- fusculata* Nees
20 Bir, S.S. & Saggoo, M.I.S. 1979
- incurva* Buch. - Ham. ex D. Don
- var. *mollis* Hook*.
84 Sareen, T.S. & Kumari, S. 1973 ; Sareen, T.S. & Sanjogta, K. 1976
- var. *macronata* (Nees) Clarke ex Cooke
- hyalina* Nees
20 Bir, S.S. & Saggoo, M.I.S. 1979
- purpuricumbis* Nees
22 Sareen, T.S. & Kumari, S. 1973 ; Sareen, T.S. & Sanjogta, K. 1976
- 84 Mehra, P.N. & Vasudevan, K.N. 1972
- subarmata* (Clarke) Gamble
22 Kaur, J. 1969
- Monechma* Hochst.
60 ; tropical Africa. 1 : Western India
- debilis* (Forsk.) Nees
Justicia debilis Lam.
28 Sugiura, T. 1936a ; Grant, W.F. 1953
- Odontanema* Nees
40 ; Mexico to tropical South America and West Indies. 2 ; cultivated.
- nitidum* O. Kuntze
42 De, A. 1966a
- strictum* O. Kuntze
42 De, A. 1966a
- Pachystachys* Nees
5 ; tropical America and West Indies. 1 ; cultivated.
- coccinea* Nees
Justicia coccinea Aubl.
32 Takizawa, Y. 1957
- Peristrophe* Nees
30 ; warmer Africa to Eastern Malaysia, 8 ; tropical parts of India, and Pakistan, Bhutan, Bangla Desh and Sri Lanka.
- bicalyculata* Nees
20 Narayanan, C.R. 1951a
30 Ahuja, M.R. 1955 ; Midge, J. & Josseland, N. 1972 ; Sareen, T.S. & Sanjogta, K. 1976
60 Verma, S.C. & Dhillon, S.S. 1967
- spatiosa* Nees
60 Sareen, T.S. & Sanjogta, K. 1976
- Petalidium* Nees
35 ; tropics and South Africa. 1 ;

* The combination *Lepidagathis incurva* var. *mollis* was made by Rajz. & Sax. (Rau, M. A. 1968).

Western Himalaya and Western Peninsular India.

barlerioides Nees

32 Ellis, J.L. 1962 ; Pal, M. 1964

Phaulopsis Willd. *corr.* Spreng.

20 ; tropical Africa, Mascarene and India. 1 ; warmer parts of India, and Sri Lanka.

dorsiflora (Retz.) Santap.

56 Subramanyam, K. & Kamble, N.P. 1971

70 Kaur, J. 1969

Phlogacanthus Nees

30 ; Indo Malesia. 10 ; Eastern Himalaya.

thrysiiflora Nees

42 Mehra, P.N. & Gill, L.S. 1968a ; Gill, L.S. 1972

50 Bedi, Y.S. *et al.* 1980

Pseudaechmanthera Bremek.

1 ; Himalaya.

glutinosa (Nees) Bremek.

Strobilanthes glutinosus Nees

28 Mehra, P.N. & Vasudevan, K.N. 1972.

Pseuderanthemum Radlk.

120 ; tropics. 6 ; Eastern Himalaya and Western Peninsula, and Bhutan, Bangla Desh and Sri Lanka.

atropurpureum

42 Kaur, J. 1966

bicolor (Schränk) Radlk. *ex* Lindau

42 De, A. 1966a

laxiflorum Hubb.

60 Kaur, J. 1969

reticulatum

42 Kaur, J. 1966

seticalyx (Clarke) Stapf

42 Grant, W.F. 1955 ; Kaur, J. 1970

Pteracanthus (Nees) Bremek.

20 ; Himalaya and Assam, and Nepal and Bhutan - a few cultivated.

alatus Bremek.

Strobilanthes alatus Nees

32 Mehra, P.N. & Gill, L.S. 1968a ; Bhat, B.K. *et al.* 1975

Rhinacanthus Nees

15 ; tropical Africa, Madagascar, Socotra, East Asia and Indo-Malesia. 2 ; 1 in Eastern Himalaya, 1 in Western Peninsula, and Sri Lanka, cultivated elsewhere.

nasutus (Linn.) Kurz

30 De, A. 1966a ; Kaur, J. 1966

commutis Nees

30 Sarkar, A.K. *et al.* 1976

var. *montana*

montanus

32 Narayanan, C.R. 1951a

Rostellularia Reichb.

22 ; 1 in Abyssinia, 20 in tropical and subtropical Asia, 1 in Queensland. 11 ; chiefly in Southern India, and Nepal, Pakistan and Sri Lanka.

diffusa (Willd.) Nees

18 Kaur, J. 1965a

Justicia diffusa Willd.

18 Mehra, P.N. & Vasudevan, K.N. 1972 ; Bir, S.S. & Sidhu, M. 1974

var. *prostrata* Roxb. *ex* Clarke

18 Kaur, J. 1970

Justicia diffusa Willd.

var. *prostrata* Roxb.

18 Bir, S.S. & Saggoo, M.I.S. 1979

molleculma (Nees) Nees

Justicia simplex D. Don

18 Pal, M. 1964 ; Sarkar, A.K., Chakraverty, M. *et al.* 1980

28 Mehra, P.N. & Gill, L.S. 1968a

36 Grant, W.F. 1955 ; Ellis, J.L. 1962 ; Verma, S.C. & Dhillon, S.S. 1967

procumbens (Linn.) Nees

18 Kaur, J. 1965a, 1970

8 ACANTHACEAE

- Justicia procumbens* Linn.
 28 Grant, W.F. 1955
 56 Hsu, C.-C. 1968
- quinqueangularis* (Koen. ex Roxb.) Nees
Justicia quinqueangularis Koen. ex Roxb.
 18 Ahuja, M.R. & Natarajan, A.T. 1957 ;
 Verma, S.C. & Dhillon, S.S. 1967
- var. *peplodes* (Nees) C.R. Babu
Justicia quinqueangularis Koen. ex Roxb.
 var. *peplodes* (Nees) Clarke
 18 Sareen, T.S. & Kumari, S. 1973 ;
 Sareen, T.S. & Sanjogta, K. 1973, 1976
- rotundifolia* Nees
 18 Kaur, J. 1965a, 1970
- serpyllifolia* Gamble
 18 Kaur, J. 1965a, 1970
- vahlii* (Roth) Nees
 18 Kaur, J. 1965a, 1970
- Ruellia** Linn. *emend.* Bremek.
 5 ; tropical and subtropical America. 1 ;
 cultivated and naturalized.
- ciliata* Hornem.*
 36 Sugiura, T. 1936a
- formosa* T. Anders.*
 34 De, A. 1966a
- malacosperma* Greenman*
 34 De, A. 1966a
- tuberosa* Linn.
 32 Sugiura, T. 1936b ; Ellis, J.L. 1962
 32, 34 Narayanan, C.R. 1951a ; Bowden, W.M.
 1940a, 1945a
 34 Grant, W.F. 1955 ; De, A. 1966a ; Verma,
 S.C. & Dhillon, S.S. 1967 ; Khoshoo,
 T.N. *et al.* 1968 ; Gill, L.S. 1971c ; Long,
 R.W. 1976 ; Khoshoo, T.N. 1979
- Rungia** Nees
 50 ; tropical Africa, India, South East
 Asia, West Malaysia and Celebes. 14 ; chiefly
 in Western and Southern India, and Nepal
 and Sri Lanka.
- parviflora* Nees
 16 Baquar, S.R. 1967 - 1968
 26 Bir, S.S. & Saggoo, M.I.S. 1979
 30 Datta, P.C. & Maiti, R.K. 1970
 52 Mehra, P.N. & Vasudevan, K.N. 1972 ;
 Sareen, T.S. & Sanjogta, K. 1976 ;
 Sarkar, A.K., Chakraverty, M. *et al.*
 1980
 60 Devi, T. 1980
- pectinata* Nees
 26 Bir, S.S. & Saggoo, M.I.S. 1979
 50 De, A. 1966a
- repens* (Linn.) Nees
 20 Narayanan, C.R. 1951a ; Ellis, J.L.
 1962 ; Bhat, R.N. & Tandon, S.L. 1967
- Sanchezia** Ruiz & Pav.
 30 ; tropical South America. 2 ; culti-
 vated.
- nobilis* Hook.
 e. 132 Grant, W.F. 1955
 136 Singh, B. 1951 ; Kaur, J. 1970
- parvibracteata*
 80 Narayanan, C.R. 1951a
- Stephanophysum** Pohl
 5 ; tropical America. 1 ; cultivated and
 naturalized.
- longifolium* Pohl
Ruellia amoena Nees ex Backer
 36 Sugiura, T. 1937b, 1939
- Ruellia graecizans* Backer
 34 Grant, W.F. 1955
- Strobilanthes** Blume**
atropurpureus Nees
 32 Mehra, P.N. & Vasudevan, K.N. 1972
- cusia* (Nees) Inlay
flaccidifolius Nees
 16 Hsu, C.-C. 1968

* Now placed under the genus *Dipteracanthus*.

** The species given under *Strobilanthes* are now treated under several other smaller genera (DFPI : 164).

discolor T. Anders.

- 22 Pandey, R.M. 1980 ; Pandey, R.M. & Pal, M. 1980b

papillosus T. Anders.

- 32 Ramar, V.S. & Kesavan, P.C. 1963b.

Synnema Benth.

20 ; palaeotropics. 8 ; chiefly in South Western India, and Sri Lanka.

balsamica (Linn. f.) O. Kuntze

- 32 Kaur, J. 1970

triflora O. Kuntze

Cardanthera triflora Buch. - Ham.

- 28 Verma, S.C. & Dhillon, S.S. 1967

- 30 Joseph, J. 1964 ; De, A. 1966a

- 34 Sarkar, A.K., Chakraverty, M. *et al.* 1980

ACERACEAE Juss.

3/200 ; North temperate and tropical mountains. 1/18 ; Himalaya, and Nepal and Bhutan.

Acer Linn.

About 198 ; North temperate (especially in hill districts) and tropical mountains, many in China and Japan, a few in South East Asia, 1 in West Malaysia. 18 ; Himalaya, and Nepal and Bhutan (up to 3,660 m).

caesium Wall.

- 26 Mehra, P.N. & Sreen, T.S. 1969 ; Mehra, P.N., Khosla, P.K. & Sreen, T.S. 1972

campbellii Hook. f. & Thoms.

- 26 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N. 1972 ; Mehra, P.N., Khosla, P.K. & Sreen, T.S. 1972

caudatum Wall.

- 26 Mehra, P.N. & Sreen, T.S. 1969 ; Mehra, P.N., Khosla, P.K. & Sreen, T.S. 1972

papillo King

- 26 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N., Khosla, P.K. & Sreen, T.S. 1972

hookeri Miq.

- 26 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N., Khosla, P.K. & Sreen, T.S. 1972

japonicum Thunb.

- 26 Takizawa, S. 1940 ; Mehra, P.N., Khosla, P.K. & Sreen, T.S. 1972

laevigatum Wall.

- 26 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N. & Sreen, T.S. 1969 ; Mehra, P.N., Khosla, P.K. & Sreen, T.S. 1972

nivoum Blume

- 26 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N., Khosla, P.K. & Sreen, T.S. 1972

oblongum Wall.*

- 26 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N. & Sreen, T.S. 1969 ; Mehra, P.N., Khosla, P.K. & Sreen, T.S. 1972

osmastonii Gamble

- 26 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N., Khosla, P.K. & Sreen, T.S. 1972

palmetum Thunb.

- 26 Foster, R.C. 1933 ; Meurman, O. 1933 ; Takizawa, S. 1952 ; Mehra, P.N., Khosla, P.K. & Sreen, T.S. 1972

var. *versicolor* Schw.

- 26 Mehra, P.N. & Khosla, P.K. 1969

The combination *Acer oblongum* should be attributed to DC.

10 ACERACEAE

- Mehra, P.N., Khosla, P.K. & Sareen, T.S. 1972
- pectinatum* Wall. ex Pax
26 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N., Khosla, P.K. & Sareen, T.S. 1972
- pictum* Thunb.*
26 Mehra, P.N., Khosla, P.K. & Sareen, T.S. 1972
- sikkimense* Miq.
26 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N., Khosla, P.K. & Sareen, T.S. 1972
- stachyophyllum* Hiern
26 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N., Khosla, P.K. & Sareen, T.S. 1972
- sterculiaceum* Wall.
villosum Wall.
26 Mehra, P.N. & Khosla, P.K. 1969
26+0-2B Mehra, P.N. & Sareen, T.S. 1969 ; Mehra, P.N., 1972 ; Mehra, P.N., Khosla, P.K. & Sareen, T.S. 1972
- thomsonii* Miq.
26 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N. 1972 ; Mehra, P.N., Khosla, P.K. & Sareen, T.S. 1972

ADOXACEAE Trautv.

1/1 ; North temperate. Western Himalaya.

Adoxa Linn.

1 ; North temperate, South to Western Himalaya, Colorado and Illinois.

moschatellina Linn.

- 36 Lagerberg, T. 1909 ; Tischler, G. 1934 ; Geitler, L. 1935, 1940 ; Rohweder, H. 1937 ; Delay, C. 1947 ; Poucques, M.L.

de 1949 ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Sorsa, V. 1963b ; Sokolovskaya, A.P. (Fedorov) ; Zbukova, P.G. 1967a ; Johnson, A.W. & Packer, J.G. 1968 ; Packer, J.G. 1968 ; Lepper, L. 1970b

- 54 Oikawa, K. 1942 ; Noguchi, J. & Kawano, S. 1974
56 Matsuura, H. & Sutô, T. 1935

AIZOACEAE Rudolphi

130/1,200 ; chiefly in South Africa, also in tropical Africa and Asia, Australia, California and South America. 10/18 ; chiefly in semi-arid regions, and Pakistan and Sri Lanka.

Aizoön Linn.

15 ; Africa, Mediterranean, Orient and Australia. 1 ; Pakistan.

canariense Linn.

- 32 Sugiura, T. 1936a, b

Gisekia Linn.

5 ; tropical and South Africa to India,

* *Acer pictum* Thunb., FBI, 1 : 696 is a synonym of *A. cappadocicum* Gleditsch var. *indicum* (Pax Rehder) (FEH, 2: 72).

Sri Lanka and Indo-China. 1; throughout the greater part of India, and Pakistan.

pharnaceoides Linn.

- 36 Raghavan, T.S. & Srinivasan, V.K. 1940a,c
36, 72,
108 Pal, M. 1964
72 Bir, S.S. & Sidhu, M. 1974

Glinus Linn.

12; tropics and subtropics. 2; throughout India and Sri Lanka.

lotoides Linn.

- 36 Mitra, K. & Datta, N. 1967; Subramanyam, K. & Kamble, N.P. 1967

Mollugo hirta Thunb.

- 36 Sharma, A.K. & Bhattacharyya, N.K. 1956b; Baquar, S.R. *et al.* 1965; Sarkar, A.K., Datta, N. & Chatterjee, U. 1980

Mollugo lotoides O. Kuntze

- 36 Roy, R.P. & Thakur, V. 1961b; Sanjappa, M. 1978

oppositifolius (Linn.) DC.

- 36 Mitra, K. & Datta, N. 1967

Mollugo oppositifolia Linn.

- 36 Raghavan, T.S. & Srinivasan, V.K. 1940a,e; Sanjappa, M. 1978

Mollugo spargula Linn.

- 36 Ghosh, S. & Sharma, A.K. 1967; Sharma, A.K. & Ghosh, S. 1968

Limeum Linn.

28; tropical and South Africa, Arabia and India. 1; North Western India, and Pakistan.

indicum Stocks *ex* T. Anders.

- 18 Narayana, H.S. & Jain, K. 1962; Baquar, S.R. *et al.* 1966

Mesembryanthemum Linn.

1,000; South Africa, few in tropical Africa, Canaries, Mediterranean, Arabia, Australia, 1 in Chile and 1 in St. Helena. 1; cultivated.

crystallinum Linn.

- 18 Sugiura, T. 1936a, b; Larsen, K. 1960

Mollugo Linn.

20; tropics and subtropics. 4; hotter parts of India and Sri Lanka.

cerviana Seringe

- 18 Sugiura, T. 1936a; Raghavan, T.S. & Srinivasan, V.K. 1940a,c; Sanjappa, M. 1978

rudicaulis Lam.

- 54 Raghavan, T.S. & Srinivasan, V.K. 1940a,e; Sanjappa, M. 1978

pentaphylla Linn.

- 18 Hau, C.-C. 1967
36 Raghavan, T.S. & Srinivasan, V.K. 1940a; Sanjappa, M. 1978

Mollugo stricta Linn.

- 18 Sugiura, T. 1941

racemosa Lam.

- 36 Raghavan, T.S. & Srinivasan, V.K. 1940a,c

Sesuvium Linn.

8; tropics and subtropics. 1; seashores of Eastern and Western India.

portulacastrum Linn.

- 16 Di Fulvio, T.E. 1967
36 Sharma, A.K. & Bhattacharyya, N.K. 1956b
48 Raghavan, T.S. & Srinivasan, V.K. 1940a,e
c.48 Carr, G.D. 1978

Trianthema Linn.

20; tropical and subtropical Africa, Asia and especially Australia, 1 in tropical America. 2-3; almost throughout India and Sri Lanka.

crystallina Vahl

- 28-32 Hagerup, O. 1932

portulacastrum Linn.

- 26 Bir, S.S. & Sidhu, M. 1974, 1980
28 Sarkar, A.K. *et al.* 1973a

12 AIZOACEAE

monogyna Linn.

- 26 Raghavan, T.S. & Srinivasan, V.K. 1940a; Sharma, A.K. & Bhattacharyya, N.K. 1956b
 28 Ghosh, S. & Sharma, A.K. 1967; Sharma, A.K. & Ghosh, S. 1968
 32 Raghavan, T.S. & Srinivasan, V.K. 1940e

Zaleya Burm. f.

3; tropical Africa, India, Sri Lanka,

Lesser Sunda Islands and Australia. 3; North-West and Western India and Western Peninsula, and Pakistan and Sri Lanka.

decandra (Linn.) Burm. f.

Trianthema decandra Linn.

- 16 Raghavan, T.S. & Srinivasan, V.K. 1940a,e; Sanjappa, M. 1978

ALANGIACEAE DC.

2/20; tropics. 1/3; Himalaya and Assam, 1 throughout India, and Sri Lanka.

Alangium Lam.

17; tropical Africa, Madagascar, Comoro Islands, China, South East Asia, Indo-Malesia and East Australia. 3; Himalaya and Assam, 1 throughout India, and Sri Lanka.

alpinum Smith & Cave

- 22 Mehra, P.N. & Bawa, K.S. 1969

chinense (Lour.) Harms

- 66 Mehra, P.N. & Bawa, K.S. 1969

lamarckii Thwaites

- 16 Gopinath, D.M. 1945
 22 Sanjappa, M. & Sathyananda, N. 1979

salvifolium (Linn. f.) Wang

- 22 Mitra, K. & Datta, N. 1967; Sarkar, A.K., Datta, N. *et al.* 1976

begoniifolium (Roxb.) Bail.

- 22 Wanscher, J.H. 1933, 1934a

ALTINGIACEAE Lindl.

2/10; Asia Minor, temperate and tropical South East Asia and North and Central America. 2/2; Assam, and Bhutan. 1 introduced.

Liquidambar Linn.

6; Atlantic North America, South West Asia Minor, South East China, Indo-China

and Formosa. 1; introduced.

orientalis Mill.

- 32 Pizzolongo, P. 1958; Santamour Jr, F.S. 1972

AMARANTHACEAE Juss.

65/850; tropics and temperate. 17/60; tropical and subtropical India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Achyranthes Linn.

100; tropics and subtropics, abundant in Africa and Asia. 5; chiefly in Western and Southern India, and Nepal, Bangla Desh and Sri Lanka.

aspera Linn.

- 14 Malik, N.A. & Ahmad, A.J. 1963
 21, 42 Pal, M. (Khoshoo, T.N. 1979)
 36 Sinha, S.S.N. *et al.* 1972
 42 Ahuja, M.R. 1955; Mall, L.P. & Arzare, K.C. 1956; Sen, S. 1956; Thombre, M.V. 1959a; Roy, R.P. & Thakur, V. 1961c; Sharma, A.K. & Banik, M. 1965; Gill, B.S. & Vasudeva, S. 1970b; Mitta, R. 1971; Midga, J. & Josserand, N. 1972; Behera, B. & Patnaik, S.N. 1974; Bir, S.S. & Sidhu, M. 1980
 42, 84 Pal, M. 1964
 84 Van Loon, J.C. 1974

bidentata Blume

- 24 Kurosawa, S. 1971b
 36 Mitta, R. 1971
 42 Sugiyama, T. 1931, 1936b; Roy, R.P. & Thakur, V. 1961c; Pal, M. 1964
 84 Roy, R.P. & Thakur, V. 1962

Aerva Forsk.

10; temperate and tropical Africa and Asia. 7; drier parts of India, and Pakistan, Bhutan and Sri Lanka.

javanica (Burm. f.) Spreng.*

- 36 Pal, M. 1964

javanica (Burm. f.) Juss.

- 36, 72 Pal, M. (Khoshoo, T.N. 1979)

lanata Juss.

- 16 Gajapathy, C. 1961; Pal, M. 1964; Sharma, A.K. & Banik, M. 1965; Behera, B. & Patnaik, S.N. 1974; Pal, M. (Khoshoo, T.N. 1979)

sanguinolenta (Linn.) Blume

- 42 Gill, B.S. & Vasudeva, S. 1970b; Sarkar, A.K. Datta, R. *et al.* 1975

- 44 Sharma, A.K. & Banik, M. 1965; Pal, M. (Khoshoo, T.N. 1979)

scandens Wall.

- 16, 26 Pal, M. (Khoshoo, T.N. 1979)
 36 Grant, W.F. 1964; Mitra, K. & Datta, N. 1967; Sarkar, A.K., Datta, R. *et al.* 1975
 52 Pal, M. 1964; Mitta, R. 1971; Behera, B. & Patnaik, S.N. 1974

Allmania R. Br. *ex* Wight

1-2; tropical Asia. 1; tropical India, and Sri Lanka.

nodiflora R. Br.

- 32 Behera, B. & Patnaik, S.N. 1972, 1974; Sanjappa, M. & Sathyananda, N. 1979
 96 Sharma, A.K. & Banik, M. 1965

var. roxburghii Hook. f.

- 36 Behera, B. & Patnaik, S.N. 1972, 1974

Alteranthera Forsk.

About 200; tropics and subtropics. 4-9; chiefly introduced and naturalized, 1 indigenous, and Bangla Desh and Sri Lanka.

ambigua Hort.

- 68 Sharma, A.K. & Banik, M. 1965

echinata Smith

- 68 Pal, M. 1964

ficoidea (Linn.) R. Br. *ex* Roem. & Schult.*Telanthera ficoidea* Moq.

- 68 Pal, M. 1964

phloxeroides (Mart.) Griseb.

- 28 Hsu, C.-C. 1967
 100 Datta, N. & Chatterjee, U. 1969

polygonoides (Linn.) R. Br.

- 34 Pal, M. 1964

paronychioides St.-Hil.

- 96 Datta, N. & Chatterjee, U. 1969

pungens HBK

- 64 Datta, N. & Chatterjee, U. 1969

The combination *Aerva javanica* was made by Juss. (FBI. 4: 727).

14 AMARANTHACEAE

sessilis (Linn.) DC.

sessilis (Linn.) R. Br.

- 34 Grant, W.F. 1964 ; Pal, M. 1964 ;
 Behera, B. & Patnaik, S.N. 1974
 34, 96 Sharma, A.K. & Banik, M. 1965
 36 Mitra, K. & Datta, N. 1967
 60 Mitra, R. 1971

versicolor Regel

- 68 Gill, B.S. & Vasudeva, S. 1970a,b

Amaranthus Linn.

60 ; tropics and temperate. 15 ; wild and/
 or cultivated throughout India, and Nepal,
 Pakistan and Sri Lanka.

blitum Linn.*

- 16 Malik, N.A. & Ahmad, A.J. 1963
 34 Takagi, F. 1933 ; Grant, W.F. 1959c ;
 Tandon, S.L. & Tawakley, M. 1970 ;
 Behera, B. & Patnaik, S.N. 1974

var. *oleraceus* Durthle**

- 34 Roy, R.P. & Thakur, V. 1961c

caudatus Linn.

- 32 Takagi, F. 1933 ; Murray, M.J. 1940a,
 b ; Cárdenas, M. & Hawkes, J.G. 1948 ;
 Grant, W.F. 1959c ; Tandon, S.L. &
 Tawakley, M. 1970 ; Behera, B. &
 Patnaik, S.N. 1974 ; Khoshoo, T.N. 1979

edulis Speng.

- 32 Covas, G. 1950 ; Grant, W.F. 1959c ;
 Tandon, S.L. & Tawakley, M. 1970 ;
 Khoshoo, T.N. 1979

dubius Mart. ex Thell.

- 64 Grant, W.F. 1959b, 1967 ; Pal, M. 1964,
 1972 ; Pal, M. & Khoshoo, T.N. 1965,
 1966 ; Behera, B. & Patnaik, S.N. 1977 ;
 Khoshoo, T.N. 1979
 64, 128 Behera, B. & Patnaik, S.N. 1975

dubius x spinosus

- 49 Grant, W.F. 1959b

graecizans Linn.

- 32 Heiser, C.B. & Whittaker, T.W. 1948 ;
 Grant, W.F. 1959c

ssp. *graecizans* Brenan

- 34 Khoshoo, T.N. 1979

ssp. *sylvestris* (Vill.) Brenan

- 32 Khoshoo, T.N. 1979

hybridus Linn.

- 32 Murray, M.J. 1940a ; Covas, G. &
 Schnack, B. 1946 ; Covas, G. 1950 ;
 Grant, W.F. 1959c, 1967 ; Tandon S.L.
 & Tawakley, M. 1970 ; Khoshoo, T.N.
 1979

ssp. *crucentus* (Linn.) Thell.

crucentus Linn.

- 32 Tandon, S.L. & Tawakley, M. 1970
 34 Grant, W.F. 1959c ; Khoshoo, T.N. 1979

paniculatus Linn.

- 32 Takagi, F. 1933
 34 Tandon, S.L. & Tawakley, M. 1970

hybridus Linn.

var. *paniculatus* Linn.

- 32 Behera, B. & Patnaik, S.N. 1974

ssp. *hybridus*

var. *hybridus*

chlorostachys Willd.

- 32 Májovský, J. *et al.* 1970b
 34 Khoshoo, T.N. 1979

hybridus Linn.

var. *frumentaceus* Roxb.

- 32 Behera, B. & Patnaik, S.N. 1974

var. *erythrostachys* Moq.

hypochondriacus Linn.

- 32 Khoshoo, T.N. 1979
 32, 64 Behera, B. & Patnaik, S.N. 1975
 34 Tandon, S.L. & Tawakley, M. 1970

leucocarpus S. Wats.

- 32 Grant, W.F. 1959c ; Pal, M. 1964 ;
 Tandon, S.L. & Tawakley, M. 1970

lividus Linn.

- 34 Grant, W.F. 1959c ; Tandon, S.L. &
 Tawakley, M. 1970

* It is proposed to reject the name *A. blitum* Linn. in favour of *A. lividus* Linn. as it has been a source of confusion.

** The combination *Amaranthus blitum* var. *oleraceus* should be attributed to Hook. f. (Fillias *et al.* 1980, *Taxon* 29 : 149).

palmeri S. Wats.

- 32, 34 Grant, W.F. 1959a
34 Grant, W.F. 1958

retroflexus Linn.

- 18 Pólya, L. 1949
c. 32 Heiser, C.B. & Whitaker, T.W. 1948
34 Murray, M.J. 1940a, b; Grant, W.F. 1959c, 1967; Mulligan, G.A. 1961a; Jávůrková, V. 1980

spinosus Linn.

- 32 Subramanyam, K. & Kamble, N.P. 1966
34 Takagi, F. 1933; Murray, M.J. 1940a; Sen, S. 1956; Grant, W.F. 1959c, 1967; Roy, R.P. & Thakur, V. 1961c; Pal, M. 1964, 1972; Pal, M. & Khoshoo, T.N. 1965, 1966; Sharma, A.K. & Banik, M. 1965; Hsu, C.-C. 1967; Tandon, S.L. & Tawakley, M. 1970; Mitra, R. 1971; Mitge, J. & Jossierand, N. 1972; Behera, B. & Patnaik, S.N. 1974, 1977; Khoshoo, T.N. 1979

spinosus x *dubius*

- 49 Behera, B. & Patnaik, S.N. 1977; Khoshoo, T.N. 1979

(*spinosus* x *dubius*) x *dubius*

- 49-59,
81 Khoshoo, T.N. 1979

tricolor Linn.

- 34 Kihara, H. (Kihara, H. *et al.* 1931); Takagi, F. 1933; Grant, W.F. 1959c; Sharma, A.K. & Banik, M. 1965; Behera, B. & Patnaik, S.N. 1974

gangeticus Linn.

- 34 Sen, S. 1956; Roy, R.P. & Thakur, V. 1961c; Sharma, A.K. & Banik, M. 1965; Tandon, S.L. & Tawakley, M. 1970; Mitra, R. 1971

var. *polygamus* Haines

- 34 Roy, R.P. & Thakur, V. 1961c

mangostanus Linn.

- 32 Takagi, F. 1933
34 Tandon, S.L. & Tawakley, M. 1970; Behera, B. & Patnaik, S.N. 1974

polygamus Linn.

- 34 Sharma, A.K. & Banik, M. 1965

salicifolius Hort.

- 34 Tandon, S.L. & Tawakley, M. 1970

tricolor-splendens Linn.

- 34 Tandon, S.L. & Tawakley, M. 1970

tricolor Linn.

var. *tristis* Haines

- 34 Behera, B. & Patnaik, S.N. 1974

viridis Linn.

- 34 Krishnaswamy, N. & Raman, V.S. 1949; Sen, S. 1956; Grant, W.F. 1959c; Roy, R.P. & Thakur, V. 1961c; Pal, M. 1964; Sharma, A.K. & Banik, M. 1965; Gill, B.S. & Vasudeva, S. 1970b; Tandon, S.L. & Tawakley, M. 1970; Mitra, R. 1971; Bir, S.S. & Sidhu, M. 1980

gracilis Desf.

- 34 Covas, G. & Honziker, J.H. 1954; Behera, B. & Patnaik, S.N. 1974

var. *fasciatus*

- 34 Roy, R.P. & Thakur, V. 1961c

Bosca Linn.

3; Canary Islands, Cyprus and India. 1; temperate Western Himalaya.

amberstiana Hook. f.

- 36 Pal, M. 1964; Pal, M. (Khoshoo, T.N. 1979)

Celosia Linn.

60; tropics and temperate. 4; 2 Southern India, 2 throughout India, 1 also cultivated, and Sri Lanka.

argentea Linn.

- 36 Kihara, H. (Kihara, H. *et al.* 1931); Sanjappa, M. 1978
36+0-1B Behera, B. & Patnaik, S.N. 1974
72 Wakakuwa, S. 1931; Grant, W.F. 1954, 1961, 1967; Pal, M. 1964; Sharma, A.K. & Banik, M. 1965; Gill, B.S. & Vasudeva, S. 1970b; Desai, S.R. 1971; Mitra, R. 1971

eristata Linn.

- 35 Gill, B.S. & Vasudeva, S. 1970a
36 Wakakuwa, S. 1931; Grant, W.F. 1954, 1961, 1967; Sen, S. 1956; Pal, M. 1964; Sharma, A.K. & Banik, M. 1965;

16 AMARANTHACEAE

Mitra, R. 1971 ; Behera, B. & Patnaik, S.N. 1974

cv. 'Yellow'

35 Gill, B.S. & Vasudeva, S. 1970b

cv. 'Red'

36 Gill, B.S. & Vasudeva, S. 1970b

palebells Moq.

36 Behera, B. & Patnaik, S.N. 1974

Cyathula Blume

About 25-30 ; Africa, Madagascar, Sri Lanka, China and Indo-Malesia. 4 ; Himalaya (up to 2,970 m), 1 also in Bengal and Southern India, and Sri Lanka.

prostrata Blume

42 Behera, B. & Patnaik, S.N. 1974

48 Pal, M. 1964 ; Khoshoo, T.N. 1979

tomentosa Moq.

34 Pal, M. 1964 ; Gill, B.S. & Vasudeva, S. 1970b ; Khoshoo, T.N. 1979

Deeringia R. Br.

12 ; Madagascar and Indo-Malesia. 1 ; subtropical Himalaya (up to 1,650 m). Bihar and Western Ghats, and Bhutan and Bangla Desh.

amaranthoides (Lam.) Merr.

18 Pal, M., 1964

celosioides R. Br.

16 Sarkar, A.K., Chakraverty, M. et al. 1980

18 Pal, M. (Khoshoo, T.N. 1979)

Digera Forsk.

2 ; palaeotropics. 1 ; Northern, Eastern and Southern India, and Pakistan and Sri Lanka.

muricata (Linn.) Mart.

18 Pal, M. 1964

alternifolia (Linn.) Aschers.

18 Mitra, K. & Datta, N. 1967 ; Mitra, R. 1971

arvensis Forsk.

12 Joshi & Rao (Tischler, G. 1935 - 1936) ; Puri, V. & Singh, N. B. 1935 (D. 1955)

18 Sen, S. 1956 ; Malik, C. P. 1960b ; Thakur, V. 1964 ; Sharma, A. K. & Banik, M. 1965 ; Baquar, S. R. et al. 1966 ; Gill, B. S. & Vasudeva, S. 1970b ; Pal, M. (Khoshoo, T. N. 1979)

20, 28, 34 Desai, S. R. 1971

34 Sanjappa, M. 1978

Gomphrena Linn.

About 100 ; Central and South America. 3 ; a few cultivated, 1 naturalized throughout India.

celosioides Jacq.*

26 Grant, W. F. 1964 ; Pal, M. 1964

celosioides Mart.

26 Gill, B. S. & Vasudeva, S. 1970b ; Behera, R. & Patnaik, S. N. 1974

decumbens Jacq.

18 Sanjappa, M. 1978

26 Grant, W. F. 1964

globosa Linn.

32 Nanda, P.C. 1962

40 Sen, S. 1956

40-44 Sharma, A.K. & Banik, M. 1965

44 Behera, B. & Patnaik, S. N. 1974

44+0-18 Gill, B.S. & Vasudeva, S. 1970 a, b

44-48 Grant, W.F. (Löve, A. & Löve, D. 1961b)

Indobanalia Henry & Roy

1 ; Southern mountains of Western Ghats.

thyrsiflora (Moq.) Henry & Roy

Banalia thyrsiflora Moq.

16 Gajapathy, C. 1962b

Iresine P. Br.

80 ; Australia, Galapagos and America. 1 ; cultivated.

* The combination *Gomphrena celosioides* should be attributed to Mart. (HFDD : 434).

herbestii Benth. & Hook.*

102 Sharma, A. K. & Banik, M. 1965.

Nothosaerva Wight

1 ; tropical Africa, Mauritius and tropical Asia. Throughout the plains of India, and Pakistan and Sri Lanka.

brachiata Wight

18 Pal, M. 1964 ; Pal, M. (Khoshoo, T.N. 1979)

Pupalia Adans. *mut.* Juss.

10 ; tropical Africa, Madagascar and India. 3 ; chiefly in Western and Southern India, and Nepal, Pakistan and Sri Lanka.

lappacea Juss.

25, 50 Pal, M. (Khoshoo, T. N. 1979)

50, 100 Pal, M. 1964

52 Behera, B. & Patnaik, S. N. 1974

ANACARDIACEAE Lindl.

60/600 ; chiefly in tropics, but also in Mediterranean, East Asia and America. 24/74 ; chiefly in tropical Himalaya and Western Peninsula, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka a few cultivated.

Anacardium Linn.

15 ; tropical America. 1 ; cultivated and naturalized.

occidentale Linn.

24 Mehra, P. N. & Khosla, P. K. 1969 ; Khosla, P. K. *et al.* 1973

c.40 Simmonds, N. W. 1954

40 Gill, B. S. *et al.* 1979b

42 Jacaki Ammal (D. 1945) ; Rai, R. 1979

Buchanania Spreng.

25 ; Indo - Malesia and tropical Australia. 6 ; chiefly in Peninsular India, and Sri Lanka.

latifolia Roxb.

22 Gill, B. S., Birc, S. S. & Singhal, V. K. 1979a

Choerospondias Burt & Hill

1 ; North Eastern India to South East China and North Siam.

axillaris (Roxb.) Burt & Hill

Poupartia axillaris King & Prain

24 Mehra, P. N. & Khosla, P. K. 1969 ; Khosla, P. K. *et al.* 1973

Cotinus Mill.

3 ; 1 South East United States, 1 South Europe to Himalaya and China, 1 South West China. 1 ; Western Himalaya.

coggyria Scop.

30 Solbrig (Brizicky, G. K. 1962)

Dracontomelon Blume

8 ; Malaysia to Fiji. 1 ; the Andamans eastwards.

puberulum Miq.

mangiferum Blume

36 Sarker, A. K., Mallick, R. *et al.* 1977

* The combination *Irenina herbestii* (the specific epithet is not *herbestii*) should be attributed to Hook. *ex* Lindl. (RHFC, 1:57).

18 ANACARDIACEAE

Lannea A. Rich.

70 ; tropical Africa, 1 Indo Malesia. 1 ; deciduous forests throughout India, and Sri Lanka, sometimes cultivated.

coromandelica (Houtt.) Merr.

- 30 Mehra, P. N. & Khosla, P. K. 1969 ; Mehra, P. N. & Sareen, T. S. 1969 ; Khosla, P. K. *et al.* 1973

grandis Engl.

- 40 Nanda, P. C. 1962

Mangifera Linn.

40 ; South East Asia and Indo Malesia. 5 ; Eastern Himalaya, Andaman Islands, 1 throughout India, also cultivated, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

indica Linn.

- 40 Janaki Ammal (D. 1945) ; Mukherjee, S. K. 1950, 1951 ; Agharkar, S. P. & Roy, B. 1951 ; Simmonds, N. W. 1954 ; Mehra, P. N. 1972 ; Khosla, P. K. *et al.* 1973 ; Sharma, D. K. *et al.* 1976
- 40, 42 Roy, B. 1950

khasiana Pierre

- 40 Mukherjee, S. K. 1950

sylvatica Roxb.

- 40 Mukherjee, S. K. 1950, 1951 ; Agharkar, S. P. & Roy, B. 1951

Rhus Linn.

250 ; subtropics and warm temperate. 14 ; many in Himalaya, and a few in Central India and Western Peninsula, and Nepal, Pakistan and Bhutan.

cotinus Linn.

- 30 Khosla, P. K. *et al.* 1973

griffithii Hook. f.

- 30 Mehra, P. N. & Khosla, P. K. 1969 ; Khosla, P. K. *et al.* 1973

hookeri Sahní & Bahadur

- 30 Khosla, P. K. *et al.* 1973

insignis Hook. f.

- 30 Mehra, P. N. & Khosla, P. K. 1969

javanica Linn.

- 30 Morinaga (Funabiki, K. 1958)

semialata Murr.

- 30 Mehra, P. N. & Khosla, P. K. 1969 ; Mehra, P. N. & Sareen, T. S. 1969 ; Khosla, P. K. *et al.* 1973

khasiana Hook. f.

- 30 Mehra, P. N. & Khosla, P. K. 1969 ; Khosla, P. K. *et al.* 1973

parviflora Roxb.

- 30 Mehra, P. N. & Sareen, T. S. 1969 ; Khosla, P. K. *et al.* 1973

poitainii

- 30 Khosla, P. K. *et al.* 1973

punjabensis Stewart ex Brand.

- 30 Singhal, V. K. *et al.* 1980a

succedanea Linn.

- 30 Sugiura, T. 1931, 1936b

var. *acuminata* DC.

- 30 Mehra, P. N. & Khosla, P. K. 1969 ; Khosla, P. K. *et al.* 1973

typhina

- 30 Khosla, P. K. *et al.* 1973

wallichii Hook. f.

- 30 Mehra, P. N. & Sareen, T. S. 1969 ; Khosla, P. K. *et al.* 1973

Schinus Linn.

- 30 ; Mexico to Argentina. 2 ; cultivated.

molle Linn.

- 28 Schnack, B. & Covas, G. 1947 ; Diers, L. 1961
- 30 Copeland, H. F. 1959

terebinthifolius Raddi

- 60 Sarkar, A. K. *et al.* 1973a

Semecarpus Linn. f.

50 ; distributed in Indo Malesia, Micronesia and Solomon Islands. 20 ; chiefly in tropical Himalaya and Western Peninsula, and Sri Lanka and Bangla Desh.

anacardium Linn.

- 60 Janaki Ammal (D. 1945); Khosla, P.K. *et al.* 1973; Sarkar, A.K., Datta, N. & Chatterjee, U. 1980

Spondias Linn.

10 12; Indo - Malesia, South East Asia and tropical America. 5; South Western Peninsula, 1 throughout India, and Nepal and Sri Lanka 1 cultivated.

mombin Linn.

- 32 Simmonds, N.W. 1954; Bawa, K.S. 1973

planata (Linn. f.) Kurz

- 32 Khosla, P.K. *et al.* 1973

mungifera Willd.

- 32 Banerji, E.A.K. 1936

ANNONACEAE Juss.

120/2,100; chiefly in tropics, especially Old World. 26/131; chiefly in Eastern India and Western Peninsula, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka a few cultivated.

Annona Linn.

120; warm regions especially America. 4; cultivated, a few naturalized.

cherimola Mill.*

- 14 Kumar, L.S.S. & Ranadive, K. 1941; Pawar, M.S. *et al.* 1956; Thakur, D.R. & Singh, R. N. 1969; Tanaka, R. & Okada, H. 1972
16 Bowden, W.M. 1948

muricata Linn.

- 14 Kumar, L.S.S. & Ranadive, K. 1941; Delay, C. 1947; Simmonds, N.W. 1954; Pawar, M.S. *et al.* 1956; Tanaka, R. & Okada, H. 1972
16 Bowden, W.M. 1945a, 1948; Sarkar, A.K., Chakraverty, M. *et al.* 1980; Sobha, V. & Ramachandran, K. 1980

reticulata Linn.

- 14 Kumar, L.S.S. & Ranadive, K. 1941; Asana, J.J. & Adatia, R.D. 1945; Pawar, M.S. *et al.* 1956; Thakur, D.R. & Singh, R.N. 1969; Bawa, K.S. 1973
16 Bowden, W.M. 1945a, 1948

squamosa Linn.

- 14 Kumar, L.S.S. & Ranadive, K. 1941; Asana, J.J. & Adatia, R.D. 1945; Simmonds, N.W. 1954; Pawar, M.S. *et al.* 1956; Thakur, D.R. & Singh R.N. 1969
14(28) Islam, A.S. 1953
16 Bowden, W.M. 1945a, 1948

Artabotrys R. Br.

More than 100; tropical Africa and Indo Malesia. 7; Eastern Himalaya, Southern India and Andaman Islands, and Bangla Desh and Sri Lanka - a few cultivated.

hexapetala (Linn. f.) Bhandari

- 16 Sarkar, A.K., Chakraverty, M. *et al.* 1980

odoratissimus R. Br.

- 16 Asana, J.J. & Adatia, R.D. 1945; Sobha, V. & Ramachandran, K. 1979
18 Bowden, W.M. 1948

zeylanicus Hook. f. & Thoms.

- 20 Sobha, V. & Ramachandran, K. 1980

* The specific epithet is *cherimolia* (Willd. : 69).

Cananga (DC.) Hook. f. & Thoms.

2; tropical Asia to Australia. 2; cultivated.

odorata (Lamb.) Hook. f. & Thoms.

16 Bowden, W.M. 1945a, 1948; Miège, J. 1954

Desmos Lour.

30; Indo Malesia, Australia and Pacific. 10; Peninsular and North Eastern India.

pannosus SalT.**Unona pannosa** Dalz.

14 Sobha, V. & Ramachandran, K. 1980

Goniothalamus Hook. f. & Thoms.

115; Indo Malesia. 13; Southern and Eastern India, and Sri Lanka.

wynaadensis Bedd.

16 Sobha, V. & Ramachandran, K. 1980

Millusa Leschen. ex A. DC.

40; Indo Malesia and Australia. 13; chiefly in Eastern Himalaya and Southern India, and Sri Lanka.

eriocarpa Dunn.

28 Sobha, V. & Ramachandran, K. 1980

tomentosa (Roxb.) J. Sinclair**Saccopetalum tomentosum** Hook. f. & Thoms.

18 Adatia, R.D. & Chokshi, D.V. 1951

velutina Hook. f. & Thoms.

18 Gill, B.S., et al. 1979a

Monodora Dunal

20; tropical Africa and Madagascar. 2; cultivated.

myristica (Gaertn.) Dunal

16 Miège, J. 1954; Mangenot, S. & Mangenot, G. 1962

Polyalthia Blume

120; palaeotropics especially Indo Malesia. 14; chiefly in Eastern and Southern India, and Sri Lanka and Bangla Desh 1 cultivated.

cerasoides Benth. & Hook.

18 Sobha, V. & Ramachandran, K. 1980

korintii Hook. f. & Thoms.

16 Sobha, V. & Ramachandran, K. 1980

longifolia (Lam.) Hook. f.*

18 Asana, J.J. & Adatia, R.D. 1945

suberosa Hook. f.**

18 Nalivaiko (Fedorov)

suberosa Thwaites

18 Pancho, J.V. 1971

Unona Linn. f.**zeylanica** Hook. f. & Thoms.***

16 Sobha, V. & Ramachandran, K. 1980

APIACEAE Lindl.

(=UMBELLIFERAE Juss.)

About 275/2,850; throughout the world, abundant in North temperate region. 60/197; chiefly in temperate and alpine North Western Himalaya and in the mountains of Southern

* The combination *Polyalthia longifolia* was made by Thwaites (DFPI; 136).

** The combination *Polyalthia suberosa* should be attributed to Thwaites.

*** *Unona zeylanica* is now placed under the genus *Desmos*.

India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka some cultivated in warmer parts.

Aegopodium Linn.

7; Europe and temperate Asia. 2; Kashmir and Naga hills.

alpestre Ledeb.

- c. 54 Sokolovskaya, A.P. (Fedorov)
- 54-56 Gurzenkov, N.N. & Gorovoy, P.G. 1971
- 66 Rostovtseva, T.S. 1979a

henryi Diels

- 42-44 Sokolovskaya, A.P. (Fedorov)
- 54-56 Gurzenkov, N.N. & Gorovoy, P.G. 1971

Ammi Linn.

10; Azores, Madeira, Mediterranean and temperate West Asia. 2; cultivated, 1 naturalized.

majus Linn.

- 22 Schulz - Gaebel, H. 1930; Wanscher, J.H. 1932; Malheiros - Gardé, N. & Gardé, A. 1950, 1951; Håkansson, A. 1953; Gardé, A. & Malheiros - Gardé, N. 1954; Kawatani, T., Fujita, S. *et al.* 1954; Sharma, A.K. & Ghosh, C. 1954a; Sharma, A.K., Bhattacharyya, N.K. 1959b; Engstrand, L. 1970; Sarkar, A.K. *et al.* 1974; Constance, L. *et al.* 1976; Hore, A. 1977d; Humphries, C.J. *et al.* 1978; Ahmad, I. & Koul, A.K. 1980

cv. Sutton's monarda

- 22 Hore, A. 1980

visnaga (Linn.) Lam.

- 20 Malheiros - Gardé, N. & Gardé, A. 1950, 1951; Gardé, A. & Malheiros - Gardé, N. 1954; Kawatani, T., Fujita, S. *et al.* 1954; Bell, C.R. & Constance, L. 1957; Murin, A. & Chaudhri, I.I.

1970; Ahmad, I. & Koul, A.K. 1980

- 22 Schulz - Gaebel, H. 1930; Covas, G. & Schnack, B. 1947; Cauwet, A.M. 1967; Kordyum, E.L. 1967; Hore, A. 1980

Anethum Linn.

4; 1 in North Africa and 3 in West Asia. 2; cultivated and naturalized.

graveolens Linn.

- 22 Melderis, A. 1930; Tamamshjan, S. (Fedorov); Delay, C. 1947; Reese, G. 1950; Suzuka, O. 1956; Kordyum, E.L. 1967

Peucedanum graveolens (Linn.) Hiern

- 22 Schulz - Gaebel, H. 1930

sowa Kurz

Peucedanum sowa Kurz

- 22 Schulz - Gaebel, H. 1930; Sharma, A.K. & Ghosh, C. 1954a; Sinha, B. M. B. & Sinha, A.K. 1977

Angelica Linn.

80; Northern hemisphere and New Zealand. 3; Himalaya.

archangelica Linn.

- 22 Schulz - Gaebel, H. 1930; Vaarama, A. 1947; Löve, A. & Löve, D. 1948; 1965b; Gardé, A. & Malheiros - Gardé, N. 1949; Jørgensen, C.A. *et al.* 1958; Sorsa, V. 1962, 1963b; Ahmad, I. & Koul, A.K. 1980

Apium Linn.

About 20; mostly in Northern Hemisphere. 2; 1 cultivated, 1 introduced and naturalized.

graveolens Linn.

- 22 Emsweller, S.L. 1928; Wanscher, J.H.

- 1931, 1932; Hosono & Takahashi (Kihara, H. *et al.* 1931); Tamamshjan, S. (Fedorov); Tischler, G. 1934; Wulff, H.D. 1937a; Whitaker, T.W. 1941; Suzuka, O. & Kotiba, S. 1949; Shah, G.L. 1953; Gardé, A. & Malheiros-Gardé, N. 1954; Hiroe, M. 1955; Mitsukuri, Y. & Kurahori, Y. 1959; Sharma, A.K. & Bhattacharyya, N.K. 1959b; Kordyum, E.L. 1967; Engstrand, L. 1970; Hore, A. 1971, 1977a; Constance, L. *et al.* 1976; Ahmad, I. & Koul, A.K. 1980
- leptophyllum** (Pers.) F. Muell.
14 Bell, C.R. & Constance, L. 1957, 1960
- Archangelica** v. Wolf
12; North temperate species. 3; Himalaya, and Nepal.
officinalis (Moench) Hoffm.
22 Skalińska, M. *et al.* 1959; Löve, A. & Löve, D. 1961b; Kordyum, E.L. 1967
- Bunium** Linn.
40; Europe to Central Asia. 2; Western Himalaya.
peraticum (Boiss.) Fedts.
14 Koul, A.K. & Hamal, I.A. 1979; Ahmad, I. & Koul, A.K. 1980
- Bupleurum** Linn.
About 150; Europe, Asia, Africa and North America. 16; chiefly between 330 and 3,960 m in North Western Himalaya, a few in the mountains of Southern India, and Nepal, Pakistan, Bhutan and Sri Lanka.
candollei Wall.
14 Ahmad, I. & Koul, A.K. 1980
16 Wanscher, J.H. 1932; Mehra, P.N. & Dhawan, H. 1971
- distichophyllum** Wight & Arn.
16 Cauwet-Marc, A.M. 1978
- falcatum** Linn.
16 Bakšay, L. 1956; Bell, C.R. & Constance, L. 1957; Reese (Löve, A. & Löve, D. 1961b); Bhattacharya, N.K. 1967; Cauwet, A. 1967; Hore, A. 1971; Mehra, P.N. & Dhawan, H. 1971; Ahmad, I. & Koul, A.K. 1980
16, 32 Bakšay, L. 1957a
28 Suzuka, O. 1950a
- var. **exaltatum** M. Bieb.
16 Cauwet-Marc, A.M. 1978
- sep. **falcatum**
16 Uhrliková, A. & Schwarzová, T. 1978
- var. **falcatum**
16 Cauwet-Marc, A.M. 1978
- hamiltonii** Balak.
tenue D. Don
16 Mehra, P.N. & Dhawan, H. 1971; Cauwet-Marc, A.M. 1978; Ahmad, I. & Koul, A.K. 1980
- juncoidum** Kurz
12 Ahmad, I. & Koul, A.K. 1980
- sachalinense** F. Schmidt
12 Gurzenkov, N.N. & Gorovoy, P.G. 1971
- lanccolatum** Wall.
16 Mehra, P.N. & Dhawan, H. 1971
- longicaule** Wall.
16 Ahmad, I. & Koul, A.K. 1980
- margiostum** Wall.
16 Ahmad, I. & Koul, A.K. 1980
- macronatum** Wight & Arn.
16 Cauwet, A.M. 1971; Constance, L. *et al.* 1976; Cauwet-Marc, A.M. 1978
- Carum** Linn.
30; temperate and subtropics. 5; Western Himalaya and South Western Peninsula, and Nepal and Sri Lanka.
anethifolium Benth.*
22 Mehra, P. N. & Dhawan, H. 1971

* *Carum anethifolium* is now placed under *Trachyspermum*.

bulbocastanum Koch

- 22 Schulz-Gaebel, H. 1930; Wanscher, J. H. 1932

carvi Linn.

- 20 Wanscher, J. H. 1931, 1932; Tamamsbjan, S. (Fedorov); Gardé, A. & Malheiros Gardé, N. 1949, 1954; Håkansson, A. 1953; Tschermak-Woess, E. & Doležal, R. 1953; Löve, A. & Löve, D. 1956 b; Mulligan, G. A. 1959, 1967; Bell, C. R. & Constance, L. 1960; Kordyum, E. L. 1967; Májovský, J. *et al.* 1970 b; Crawford, D. J. & Hartman, R. L. 1972; Rostovtseva, T. S. 1974; Javůrková, V. 1979; Ahmad, I. & Koul, A. K. 1980; Dijkstra, H. & Speckmann, G. J. 1980.
- 20, 22 Tischler, G. 1934, 1937
- 22 Melderis, A. 1930; Schulz-Gaebel, H. 1930; Delay, C. 1947; Milovidov, P. 1960; Cauwet, A. - M. 1963; Gurzenkov, N. N. & Gorovoy, P. G. 1971; Sarkar, A. K., Chakraverty, M. *et al.* 1977

Caucalis Linn.

4; Europe to Central Asia. 2; Kashmir and Punjab.

latifolia Linn.

- 32 ? Wanscher, J. H. 1932

leptophylla Linn.

- 12 Wanscher, J. H. 1932

Tarilla leptophylla (Linn.) Reichb. f.

- 12 Wanscher, J. H. 1932; Engstrand, L. 1970; Ahmad, I. & Koul, A. K. 1980

Centella Linn.

40; Africa, Australia, New Zealand and America. 1; throughout India, ascending up to 660 m in the Himalaya, and Sri Lanka.

asiatica (Linn.) Urban

- 18 Bell, C. R. & Constance, L. 1960; Liu, T. S. *et al.* 1961; Hau, C. - C. 1967, 1968; Mitra, K. & Datta, N. 1967; Datta, P. C. & Maiti, R. K. 1968a;

Constance, L. *et al.* 1971, 1976; Sinha, B. M. B. & Sinha, A. K. 1977; Ahmad, I. & Koul, A. K. 1980

- 22 Joshi, S. & Raghuvanshi, S. S. 1970

22 ÷ 1-2B Raghuvanshi, S. S. & Joshi, S. 1968b

- 33 Mitsukuri, Y. & Kurahori, Y. 1959

Hydrocotyle asiatica Linn.

- 18 Sharma, A. K. & Ghosh, C. 1954a; Sharma, A. K. & Bhattacharyya, N. K. 1959b, 1960; Baquar, S. R. 1967 - 1968
- 22 Sharma, A. K. & Sharma, A. 1957

Chaerophyllum Linn.

40; North temperate. 5; Himalaya (up to 4,000 m).

acuminatum Lindl.

- 22 Hore, A. 1971; Ahmad, I. & Koul, A. K. 1980

villosum Wall.

- 22 Hore, A. 1971; Mehra, P. N. & Dhawan, H. 1971; Ahmad, I. & Koul, A. K. 1980

Cleuta Linn.

10; North temperate. 1; Kashmir.

virosa Linn.

- 22 Ogawa, K. 1929; Takahashi (Kihara, H. *et al.* 1931); Wanscher, J. H. 1932; Löve, A. 1954b; Bakšay, L. 1956; Sokolovskaya, A. P. (Fedorov); Soraa, V. 1962; Pogan (Skališská, M. *et al.* 1966); Hindáková, M. & Činčura, F. 1967; Kordyum, E. L. 1967; Laane, M. M. 1969b; Gurzenkov, N. N. & Gorovoy, P. G. 1971; Rostovtseva, T. S. 1974
- 22, 44 Melderis, A. 1930; Tischler, G. 1934

Conium Linn.

4; North temperate Eurasia and South Africa. 1; temperate Northern India.

maculatum Linn.

- 16 Nordheim, K. 1930; Delay, C. 1947
- 22 Wanscher, J. H. 1931, 1932; Tischler, G. 1934, 1937; Heiser, C. B. & Whitaker T. W. 1948; Gardé, A. & Malheiros-Gardé, N. 1949, 1954; Hindáková, M. & Činčura, F. 1967; Kordyum, E. L.

1967; Dahlgren, R. *et al.* 1971; Crawford, D.J. & Hartman, R.L. 1972; Dvořák, F. & Džáková, B. 1976; Popova, M.T. & Česĥmedjiev, I.V. 1978; Ahmad, I. & Koul, A.K. 1980

Coriandrum Linn.

2; Mediterranean, 1; cultivated.

sativum Linn.

22 Wanscher, J.H. 1932; Tamamshjan, S. (Fedorov); Delay, C. 1947; Gardé, A. & Malheiros - Gardé, N. 1949, 1954; Suzuki, O. 1952 - 1953, 1956; Håkansson, A. 1953; Sharma, A.K. & Ghosh, C. 1954a; Sharma, A.K. & Datta, P.C. 1957; Sharma, A.K. & Bhattacharyya, N.K. 1959b; Bell, C.R. & Constance, L. 1960, 1966; Kordyum, E.L. 1967; Baijal, S.K. & Kaul, B.K. 1973; Ahmad, I. & Koul, A.K. 1980; Sarkar, A.K., Datta, N. & Chatterjee, U. 1980

22

(15, 22+2,
23, 24, 25, 27

variant

nuclei) Hore, A. 1977c

22, 23,

24, 25,

28 Hore, A. 1976

22, 44 Hanumanthappa, H.S. & Seetharam, A. 1974

44 Biswas, A.K. & Chatterji, A.K. 1971

cv. 'Madras'

22 Hore, A. 1977d

cv. 'WB 4'

24 Hore, A. 1977d

Cortia DC.

7; Afghanistan to South West China, 2; Himalaya (up to 5,300 m), and Bhutan.

hookeri Clarke

22 Wanscher, J.H. 1933

Cuminum Linn.

2; Mediterranean to Sudan and Central Asia. 1; cultivated.

cymosum Linn.

14 Sharma, A.K. & Ghosh, C. 1954a; Baijal, S.K. & Kaul, B.K. 1973; Ahmad, I. & Koul, A.K. 1980; Hore, A. 1980

Daucus Linn.

60; Europe, Africa, Asia and America. 1; cultivated.

carota Linn.

18 Lindenboin, W. 1932; Tamamshjan, S. (Fedorov); Wanscher, J.H. 1933; Tischler, G. 1934; Maude, P.F. 1939, 1940; Skovsted, A. 1939; Hagerup, O. 1941b; Delay, C. 1947; Heiser, C.B. & Whitaker, T.W. 1948; Vaarama (Löve, A. & Löve, D. 1948); Whitaker, T.W. 1949; Malheiros - Gardé, N. & Gardé, A. 1950, 1951; Håkansson, A. 1953; Rodrigues, J.E. de M. 1953; Shah, G.L. 1953; Larsen, K. 1954a; Sharma, A.K. & Ghosh, C. 1954a; Schwanitz, F. & Pirson, H. 1955; Sharma, A.K. & Bhattacharyya, N.K. 1959b; Bell, C.R. & Constance, L. 1960; Mulligan, G.A. 1961a; Gadelia, T.W.J. & Kliphuis, E. 1966, 1970a; Murin & Váchoš (Fedorov); Hore, A. 1969; Podtech, D. & Dieterle, A. 1969; Májovský, J. *et al.* 1970a; Tutkov, V. D. *et al.* 1974; Sinha, B.M.B. & Sinha, A.K. 1977; Van Loon, J. Chr. & de Jong, H. 1978; Ahmad, I. & Koul, A. K. 1980

18, 36, 54 Dudits, D. *et al.* 1976

22 Melderis, A. 1930

Eryngium Linn.

230; tropics and temperate (excluding tropical and South Africa). 3; North Western Himalaya (up to 1,980m), 1 naturalized, and Pakistan.

billardiieri Del.

16 Ahmad, I. & Koul, A.K. 1980

caeruleum Bieb.

16 Hamel, J. L. 1955; Bell, C.R. & Constance, L. 1966; Ahmad, I. & Koul, A. K. 1980

28 Podlech, D. & Dieterle, A. 1969

foetidum Linn.

16 Chuang, T. I. *et al.* 1963; Bell, C. R. & Constance, L. 1966; Bhattacharya, N. K. 1967; Constance, L. *et al.* 1971; Hore, A. 1971, 1977d, 1980

Ferula Linn.

133; Mediterranean to Central Asia. 4; Western Himalaya (up to 4,000 m). 1 cultivated.

assafœtida Linn.

22 Håkansson, A. 1953

jaeskeana Walke

22 Ahmad, I. & Koul, A.K. 1980

ssp. *jaeschkeana*

22 Leute, G. - H. & Spela, F. 1972

Foeniculum Mill.

5; Mediterranean and Europe. 1; cultivated.

vulgare Mill.

22 Ogawa, K. 1929; Melderis, A. 1930; Wanschör, J. H. 1931, 1932; Tamamshjan, S. (Fedorov); Delay, C. 1947; Heiser, C. B. & Whitaker, T. W. 1948; Gardé, A. & Malheiros Gardé, N. 1949; Sharma, A. K. & Ghosh, C. 1954a; Bell, C. R. & Constance, L. 1957; Mitsukuri, Y. & Kurahori, Y. 1959; Sharma, A. K. & Bhattacharyya, N. K. 1959b, 1960; Cartier, D. 1960; Raghuvanshi, S. S. & Joshi, S. 1966; Hore, A. 1977b; Humphries, C. J. *et al.* 1978

44 Biswas, A. K. & Chatterji, A. K. 1971

ssp. *piperitum* (Veria) Coutinho

22 Ahmad, I. & Koul, A. K. 1980; Labadie, J. P. 1976

Heracleum Linn.

70; North temperate and tropical mountains. 21; Himalaya and Western Peninsula, and Nepal, Bhutan and Sri Lanka.

cachemiricum Clarke

22 Ahmad, I. & Koul, A.K. 1980

candicans Wall.

22 Mehra, P.N. & Dhawan, H. 1971; Bhat, B.K. *et al.* 1974a; Ahmad, I. & Koul, A. K. 1980

nepalense Don

42, 44 Hore, A. 1971

48 Sharma, A. & Sarkar, A.K. 1967 - 1968

pinnatum Clarke

22 Ahmad, I. & Koul, A.K. 1980

wallichii DC.

38 Hore, A. 1977b

44 Malla, S. B. *et al.* 1976

Hydrocotyle Linn.

About 100; tropics and temperate. 4; Himalaya (up to 2,640 m) and Southern India, and Bhutan and Sri Lanka.

javonica Thunb.

36, 64 Datta, P.C. & Maiti, R.K. 1968a

48, 50,

52, 54 Hore, A. 1971

72 Sharma, A. K. & Bhattacharyya, N.K. 1959b; Sharma, A. & Sarkar, A.K. 1967 - 1968; Sinha, B.M.B. & Sinha, A. K. 1977

96 Liu, T. S. *et al.* 1961

168 Constance, L. *et al.* 1971

nepalensis Hook.

72 Kurosawa, S. 1966

podantha Moik.

c. 72 Kurosawa, S. 1966

himalaica P.K. Mukherjee

66, 72 Hore, A. 1971

alithorpioides Lam.

24 Liu, T.S. *et al.* 1961; Hore, A. 1971; Ahmad, I. & Koul, A.K. 1980

48, 64 Borgmann, E. 1964

rotundifolia Roxb.

24 Sharma, A.K. & Bhattacharyya, N. K. 1959b

Koelzella Hiroe

1 ; Afghanistan and North Western Himalaya.

pabularia (Lindl.) Hiroe

Prangos pabularia Lindl.

36 Podlech, D. & Dieterle, A. 1969

Ligusticum Linn.

60 ; North hemisphere. 18 ; chiefly in the North Western Himalaya (up to 3,900 m).

elatum Clarke

22 Sinha, B. M. B. & Sinha, A.K. 1977
22+ - 12B Ahmad, I. & Koul, A.K. 1980

thomsonii Clarke

22+1B Ahmad, I. & Koul, A.K. 1980

Oenanthe Linn.

40 ; temperate Eurasia and mountains of tropical Africa. 5 ; chiefly in the Eastern Himalaya (up to 2,640 m), and Nepal.

benghalensis Benth.*

20 Sharma, A.K. & Ghosh, C. 1954a ;
Sharma, A.K. & Bhattacharyya, N.K.
1959b ; Sarkar, A.K., Chakraverty, M.
et al. 1977

javanica (Blume) DC.

20 Bell, C.R. & Constance, L. 1960 ; Liu,
T.S. *et al.* 1961 ; Ahmad, I. & Koul, A.
K. 1980
22 Hsu, C. - C. 1967, 1968

stolonifera DC.

20 Mehra, P.N. & Dhawan, H. 1971
20, 22 Horc, A. 1971
22 Yamashita (Kibara, H. *et al.* 1931)

linearis Wall.

20 Bell, C.R. & Constance, L. 1960

thomsonii Clarke

20 Sharma, A.K. & Bhattacharyya, N.K.
1959b ; Sinha, B.M.B. & Sinha, A.K.
1977

22 Sharma, A. & Sarkar, A.K. 1967 -
1968 ; Sarkar, A.K. *et al.* 1971

Opopanax Koch

3 ; Balkans to Persia. 1 ; introduced.

chironium Koch

22 Gardé, A. & Matheiros Gardé, N.
1949

Osmorhiza Rafin.

15 ; Caucasia to Himalaya and Japan, North America and Andes. 1 ; North Western Himalaya.

aristata (Thunb.) Makino & Yabe

var. *laxa* (Royle) Constance & Shan

claytonii (Michx.) Clarke

22 Bell, C.R. & Constance, L. 1957

Pastinaca Linn.

15 ; temperate Eurasia. 1 ; cultivated.

sativa Linn.

22 Ogawa, K. 1929 ; Melderis, A. 1930 ;
Doutreligne, J. 1933 ; Tamamshjan, S.
(Fedorov) ; Tischler, G. 1934 ; Delay,
C. 1947 ; Pólya, L. 1950 ; Bell, C. R. &
Constance, L. 1957, 1960 ; Mulligan, G.
A. 1959 ; Sharma, A.K. & Bhattach-
aryya, N.K. 1959b ; Kordyum, E.L.
1967 ; Cauwet, A. - M. 1968 ; Gadella,
T. W.J. & Kliphuis, E. 1970a ; Craw-
ford, D.J. & Hartman, R. L. 1972 ;
Tomkins, D.J. & Grant, W.F. 1978 ;
Van Loon, J. Chr. & Kieft, B. 1980

Pseudoanum sativum Benth. & Hook. f.

22 Schulz - Gaebel, H. 1930 ; Delay, C.
1947

Petroselinum Hill

5 ; Europe and Mediterranean. 1 ; cultivated.

crispum (Mill.) Nym. ex A. W. Hill

22 Rutland, J.P. 1941 ; Reesc, G. 1950 ;

* The combination *Oenanthe benghalensis* was made by Kurz (SFUGP: 86).

Håkansson, A. 1953 ; Hiroe, M. 1955

hortense Hoffm.

- 22 Gardé, A. & Malheiros Gardé, N. 1949

saffrum Hoffm.

- 22 Ogawa, K. 1929 ; Schulz - Gaebel, H. 1930 ; Mitsukuri, Y. & Kurahori Y. 1959 ; Sharma, A.K. & Bhattacharyya, N.K. 1959b ; Kordyum, E.L. 1967
23 Tamamshjan, S. (Fedorov)

Peucedanum Linn.

About 120 ; temperate Eurasia and South Africa. 12 ; mostly between 1,320 and 2,920m in the Himalaya, and Nepal and Sri Lanka.

dhana Buch.-Ham. ex Clarke

- 22 Hore, A. 1971

thomsonii Clarke

- 22 Ahmad, I. & Koul, A.K. 1980

Pimpinella Linn.

About 150 ; Eurasia and Africa, with a few in South America. 30 ; chiefly in Himalaya up to 4,950 m, and Nepal and Sri Lanka.

schilleifolia Clarke

- 18 Bhattacharyya, N.K. 1967

acuminata Clarke

- 20 Mehra, P.N. & Dhawan, H. 1971

adscendens Dalz.

- 22 Shah, G. L. 1953

ansum Linn.

- 18 Schulz - Gaebel, H. 1930 ; Tamamshjan, S. (Fedorov)
20 Bell, C.R. & Constance, L. 1957

bracteata

- 22 Sinha, B.M.B. & Sinha, A.K. 1977

diversifolia DC.

- 18 Sharma, A.K. & Bhattacharyya, N.K. 1959b ; Liu, T.S. *et al.* 1961 ; Ahmad, I. & Koul, A.K. 1980

leschenaultii DC.

- 18 Constance, L. *et al.* 1976

monoica Dalz.

- 22 Sinha, B.M.B. & Sinha, A.K. 1977

saxifraga Linn.

- 18 Schulz - Gaebel, H. 1930 ; Gardé, A. & Malheiros - Gardé, N. 1949 ; Delay, C. 1947 ; Pólya, L. 1949
18, 36 Håkansson, A. 1933, 1953 ; Tischler, G. 1934
20 Cauwet, A. - M. 1968
36 Wanscher, J.H. 1933, 1934a ; Löve, A. 1951b ; Gadella, T.W.J. & Kliphuis, E. 1971a ; Leane, M. M. 1971
36, 40 Gawlowska, M. 1967
40 Bell, C.R. & Constance, L. 1960 ; Hindáková (Fedorov) ; Májovský, J. *et al.* 1970a

ssp. *saxifraga*

- 40 Váchová, M. & Májovský, J. 1978

Psammogeton Edgew.

5 ; Central America to Persia and Western Himalaya. 1 ; Western Himalaya and the Punjab.

bitermum Edgew.

- 18 Ahmad, I. & Koul, A.K. 1980

Pterocyclus Klotzsch

3 ; Himalaya and West China. 1 ; Western Himalaya.

unguicoides Klotzsch

- 22 Mehra, P.N. & Dhawan, H. 1971

Sanicula Linn.

37 ; Cosmopolitan excluding New Guinea and Australasia. 3 ; Himalaya and Western Peninsula, and Bhutan and Sri Lanka.

elata Ham.

- 16 Hara, H. & Kurosawa S. 1963a ; Kurosawa, S. 1966 ; Hore, A. 1971, 1980 ; Ahmad, I. & Koul, A.K. 1980
32 Gadella, T.W.J. 1977

europaea Linn.*

- 16 Tischler, G. 1931 ; Wanscher, J.H. 1931 ; Löve, A. & Löve, D. 1944b ; Pólya, L. 1949 ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Bhattacharya, N.K. 1967 ; Skalińska, M., Pogan, E. & Jankun, A. 1968 ; Schotsman, H.D. 1970 ; Lovka, M. *et al.* 1972 ; Van Loon, J. C. & Oudemans J.J. M.H. 1976 ; Peev, D. 1977b ; Srid, A. 1980 ; Van Louw, J. Chr. 1980

Scandix Linn.

15 20 ; Europe and Mediterranean. 1 ; North Western India (up to 2,000 m in the Himalaya).

pecten - venaria Linn.

- 16 Melderis, A. 1930 ; Schulz - Gaebel, H. 1930 ; Wanscher, J. H. 1931 ; Tischler, G. 1934 ; Delay, C. 1947 ; Heiser, C.B. & Whitaker, T. W. 1948 ; Kordyum, E. L. 1967 ; Cauwet, A.-M. 1968 ; Podlech, D. & Dieterle, A. 1969
26 Tamamshjan, S. (Fedorov) ; Dablgren, R. *et al.* 1971 ; Humphries C.J. *et al.* 1978 ; Ahmad, I. & Koul, A.K. 1980

esp. *pecten - venaria*

- 26 Kramer, K.U. *et al.* 1972
28 Constance, L. *et al.* 1976

Selinum Linn.

4 ; Scandinavia and Central Europe to Central Asia. 2 ; Himalaya, and Nepal and Bhutan.

candollei DC.

- 22 Kumar, V. & Chauhan, K.P.S.

tenuifolium Wall. ex DC.

- 22 Schulz - Gaebel, H. 1930 ; Sharma, A. K. & Bhattacharyya, N.K. 1959b ; Sharma, A. & Sarkar, A.K. 1967 - 1968 ; Mallá, S.B. *et al.* 1974

wallichianum (DC.) Ruiz. ex Sax

- 14 Hore, A. 1980

- 22 Hore, A. 1971

vaginatum (Edgew.) Clarke

- 22 Mehra, P.N & Dhawan, H. 1971 ; Ahmad, I. & Koul, A.K. 1980

Seseli Linn.

80 ; Europe to Central Asia. 6 ; chiefly in the Himalaya, 1 extending to the plains of India, and Bhutan and Bangla Desh.

diffusum (Roxb. ex Smith) Santap. & Wagh

- 18 Mitra, K. & Datta, N. 1967
20, 22 Hore, A. 1971

indicum Wight & Arn.

- 18 Sinha, B.M.B. & Sinha, A.K. 1977
42 Sharma, A.K. & Bhattacharyya, N.K. 1959b, 1960

libanotis (Linn.) Koch

- 26 Ahmad, I. & Koul, A.K. 1980

Sium Linn.

10 15 ; cosmopolitan excluding South America and Australia. 1 ; North Western Himalaya.

isathugum Clarke

- 12 Naqshi, A.R. & Javid, G.N. 1976 ; Ahmad, I. & Koul, A.K. 1980

Torilis Adans.

15 ; Canaries and Mediterranean to East Asia. 1 ; Himalaya.

ispanica (Houtt.) DC.

- 12 Májovský, J. *et al.* 1970b
16 Bell, C.R. & Constance, L. 1957 ; Liu, T. S. *et al.* 1961 ; Sokolovskaya, A.P. (Fedorov) ; Kordyum, E. L. 1967 ; Gurzenkov, N.N. & Gorovoy, P.G. 1971 ; Constance, L. *et al.* 1976 ; Ahmad, I. & Koul, A. K. 1980

Trachyspermum Link

20 ; tropical and North East Africa to

* *Sanicula europaea* Linn. *sensu* Clarke FBI, 2:670 is a synonym of *S. elata* Ham. (FPH: 231).

Central Asia, India and Western China, 3
5; Himalaya, and Nepal and Sri Lanka a
few cultivated.

ammi (Linn.) Sprague

18 Ahmad, I. & Koul, A.K. 1980

copticum (Linn.) Link

20 Constance, L. *et al.* 1976

Carum copticum Benth.*

18 Shah, G.L. 1953; Sharma, A.K. &
Ghosh, C. 1954a; Sinha, B.M.B. &
Sinha, A. K. 1977

roxburghianum (DC.) Craib

20, 40

42, 44 Hore, A. 1971

Carum roxburghianum Benth.

18 Sharma, A.K. & Ghosh, C. 1954a

Vicatia DC.

5; Himalaya and West China, 3; Hima-
laya (up to 4,000 m), and Nepal.

conifolia DC.

22 Hore, A. 1971, 1980; Ahmad, I. &
Koul, A.K. 1980

APOCYNACEAE Juss.

180/1,500; mostly in tropics, a few temperate. 46/111; chiefly in the Eastern Himalaya,
and Southern and Peninsular India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka -
many cultivated.

Acokanthera G. Don

15; South Africa, tropical East Africa
and Arabia. 2; cultivated.

spectabilis Hook. f.

22 Tapadar, N. N. Roy 1964a

Adenium Roem. & Schult.

15; tropical and subtropical Africa and
Arabia. 1; cultivated.

obesum Roem. & Schult.

22 Tapadar, N.N. Roy 1964a

Aganosma G. Don

10; China and Indo Malesia. 5; East-
ern and Peninsular India, and Bangla Desh
and Sri Lanka.

caryophyllata G. Don

22 Tapadar, N.N. Roy & Sen, N.K.
1960a, b

Allemanda Linn. (*sphalm. Allamanda*)

15; tropical South America and West
Indies. A few cultivated.

cathartica Linn.

18 Sen, N.K. & Sahni, V.M. 1954a; Sen,
N.K. & Tapadar, N.N. Roy 1956;
Tapadar, N.N. Roy & Sen, N.K.
1960b; Tapadar, N.N. Roy 1964a;
Sarkar, A.K., Datta, N. *et al.* 1978;
Datta, R. & Bhattacharya, G. 1981;
Dutta, R. & Bhattacharya, G. N. 1981

var. *nobilis* T. Moore

18 Tapadar, N.N. Roy & Sen, N.K.
1960a

* The combination *Carum copticum* was made by Hiern (HFDD: 218).

grandiflora Hook.18 Pathak, G.N. *et al.* 1949**verticillata** Hook.

18 Tapadar, N.N. Roy & Sen, N.K. 1960a, b

schottii Pohl

20 Bir, S. S. & Neelam 1980

violacea Gardn.

36 Tapadar, N.N. Roy & Sen, N.K. 1960a, b; Sen, N.K. & Tapadar, N.N. Roy 1956

Alstonia R. Br.

50; Indo Malesia and Polynesia. 6; Peninsular India, Southern India, Andaman Islands, 1 throughout moist regions of India, and Nepal, Bhutan and Sri Lanka a few cultivated.

macrophylla Wall.

22 Patil, R.P. 1958; Tapadar, N.N. Roy 1964a

scholaris R. Br.

40 Mehra, P.N. & Bawa, K.S. 1969
44 Tapadar, N.N. Roy & Sen, N.K. 1960a, b; Chauhan, A.K.S. & Raghuvanshi, S. S. 1977

Beaumontia Wall.

15; China and Indo - Malesia. 4; Eastern Himalaya and Western Ghats, and Nepal and Bangla Desh - a few cultivated.

grandiflora (Roxb.) Wall.

24 Tapadar N.N. Roy & Sen, N.K. 1960a

Carissa Linn.

35; warm Africa and Asia. 12; chiefly in Peninsular India, and Pakistan and Sri Lanka a few cultivated.

carandus Linn.

22 Singh, B. 1951; Tapadar, N. N. Roy & Sen N.K. 1960a, b; Tapadar, N.N. Roy 1964a; Chauhan, A.K.S. &

Raghuvanshi, S.S. 1977; Balamani, G. V.A. 1980

grandiflora A. DC.

22 Riley, H.P. & Hoff, V.J. 1961

paucinervia A. DC.

22 Tapadar, N.N. Roy 1964a

spissarum Linn.

22 Singh, B. 1951; Chauhan, A.K.S. & Raghuvanshi, S. S. 1977; Balamani, G. V. A. 1980
28 Abeywickrama, B.A. 1973

Catharanthus G. Don

5; tropics, especially Madagascar. 2; 1 throughout the greater part of India, 1 cultivated and naturalized.

posillus (Linn.) G. Don

16 Raman, V.S. & Kesavan, P.C. 1963a; Balamani, G.V.A. 1981

Vinca pusilla Murr.

46 Sanjappa, M. 1979

roseus (Linn.) G. Don

16 Abeywickrama, B.A. 1973; Sarkar, A. K., Datta, N. & Chatterjee, U. 1975; Chauhan, A.K.S. 1980; Balamani, G. V.A. 1981

Lochnera rosea (Linn.) Reichb.

16 Sugiura, T. 1931, 1936b; Bowden, W. M. 1940a, 1945a; Tapadar, N.N. Roy 1964a

Vinca rosea Linn.

16 Roy, R.P. & Saran, J. 1960; Dnyansagar, V.R. & Sudhakaran, I.V. 1966a, b; Sudhakaran, I.V. 1968; Gill, L.S. 1972; Gill, L.S. & Abubakar, A.M. 1975
16, 32 Furusato, K. 1940; Janaki Ammal, E. K. & Bezbaruah, H.P. 1963
32 Dnyansagar, V.R. & Sudhakaran, I.V. 1970

Cerbera Linn.

6; India and West Pacific oceans. 1; tropical coasts of India, and Sri Lanka.

manghas Linn.

adollam Gaertn.

40 Rau, M.A. 1941

Chonemorpha G. Don

20 ; South East Asia and Indo Malesia.
2 ; moist forests throughout India and Eastern Himalaya, and Sri Lanka.

fragrans (Moon) Alston

macrophylla (Roxb.) G. Don

20 Tapadar, N.N. Roy 1964a

Euntomia Stapf

3 ; tropical Africa. 1 ; introduced.

elastica Stapf

22 Mangenot, S. & Mangenot, G. 1957,
1962

Holarrhena R. Br.

20 ; tropical Africa, Madagascar, India, South East Asia, Philippines and Malay Peninsula. 2 ; throughout the greater part of India, and Sri Lanka.

antidysenterica Wall.

22 Raghavan, R.S. 1959b ; Tapadar, N. N. Roy & Sen, N.K. 1960a, b ; Mehra, P.N. & Bawa, K.S. 1969 ; Sarkar, A. K., Datta, R. *et al.* 1975 ; Chauhan, A. K.S. & Raghuvanshi, S.S. 1977 ; De, M. 1978

Hunteria Roxb.

6 ; tropical Africa, Southern India, Sri Lanka, Andaman Islands, South China, South East Asia, Malay Peninsula and Anambas Islands. 1 ; India and Andaman Islands, and Sri Lanka.

zeylanica (Retz.) Gardn. ex Thwaites

corymbosa Roxb.

22 Tapadar, N.N. Roy & Sen, N.K. 1960a, b

Ichnocarpus R. Br.

18 ; South China to Indo Malesia. 3 ;

Eastern Himalaya, 1 throughout India, and Nepal, Bangla Desh and Sri Lanka.

frutescens R. Br.

20 Gajapathy, C. 1962b

Kopsia Blume

25 ; South East Asia, West Malaysia and Caroline Islands. A few cultivated.

fruticosa A. DC.

36 Tapadar, N.N. Roy & Sen, N.K. 1960a, b ; Tapadar, N.N. Roy 1964a

penniformis Reichb. f.

72 Tapadar, N.N. Roy & Sen, N.K. 1960a, b

Malouetia A. DC.

25 ; Central and tropical South America, West Indies and tropical Africa. 1 ; cultivated.

jasminoides A. DC.

22 Tapadar, N.N. Roy 1964a

Mascarenhasia A. DC.

10 ; tropical East Africa and Madagascar. 1 ; introduced.

elastica K. Schum.

22 Janaki Ammal, E.K. (D. 1945)

Melodinus J. R. & G. Forst.

50 ; Indo - Malesia, Australia and Pacific. 2 ; Eastern Himalaya, Bengal and Bihar, and Bangla Desh.

monogynus Roxb.

22 Bedi, Y.S. *et al.* 1980

Nerium Linn.

3 ; Mediterranean to Japan. 2 ; cultivated.

indicum Mill.

22 Chauhan, A.K.S. & Raghuvanshi, S. S. 1977

32 APOCYNACEAE

odorum Soland.

- 22 Sugiura, T. 1931, 1936b; Tjio, J.H. 1948; Tapadar, N.N. Roy & Sen, N. K. 1960a, b; Tapadar, N.N. Roy 1964a

oleander Linn.

- 16 Schürhoff, P.N. & Müller, H. 1937
22 Tjio, J.H. 1948; Larsen, K. & Lagaard, S. 1971; Gadella, T.W.J. 1977

Odontadenia Benth.

30; Central and tropical South America and West Indies. 1; cultivated.

speciosa Benth.

- 24 Andersson, A. 1931; Tapadar, N.N. Roy 1964a

Pugiantha Markgraf

20; Indo Malesia and Pacific. 2; Decan Peninsula, and Sri Lanka.

dichotoma (Roxb.) Markgraf

Ervatamia dichotoma (Roxb.) Burkill

- 22 Tapadar, N.N. Roy & Sen, N.K. 1960a, b

Plumeria Linn.

7; warm America. 3; cultivated.

alba Linn.

- 36 Singh, B. 1951; Tapadar, N.N. Roy 1964a
54 Tapadar, N.N. Roy & Sen, N.K. 1960a, b

rubra Linn.

- 36 Singh, B. 1951; Tapadar, N.N. Roy & Sen, N.K. 1960a, b; Tapadar, N.N. Roy 1964a

acutifolia Poir.

- 36 Singh, B. 1951; Nanda, P.C. 1962

rubra Linn.

var. *acutifolia* Poir.

- 36 Sen, N.K. & Sahni, V.M. 1954a; Bawa, K.S. 1973

tuberculata Lodd.

- 36 Tapadar, N.N. Roy 1964a

Rauvolfia Linn.

100; tropics. 5; chiefly in the mountains of Southern and Western India, and Himalaya (up to 1,320 m), and Sri Lanka a few cultivated.

caffra Sond.

- 41 Kawatani, T. *et al.* 1957; Haque, A. & Hossain, Md. A. 1973

densiflora Benth.

- 44 Raghavan, R.S. 1957; Mehra, P.N. & Bawa, K.S. 1969

serpentina Benth. ex Kurz

- 20 Singh, D.N. 1961; Raghavan, R.S. 1957

- 22 Kawatani, T., Miyazaki, Y. & Ohno, T. 1957; Mangenot, S. & Mangenot, G. 1958, 1962; Milovidov, P. & Štorchová, J. 1958; Tapadar, N.N. Roy & Sen, N. K. 1960a, b; Tapadar, N.N. Roy 1964a; Dnyansagar, V.R. & Torne, S.G. 1967, 1968; Haque, A. & Hossain, Md. A. 1973; De, M. 1979

- 22, 44 Koul, M.L.H. 1964c; Banerjee, R. 1972

- 24 Chandra, V. 1957

tetraphylla Linn.

- 66 Dnyansagar, V.R. & Torne, S.G. 1967; Mitra, K. & Datta, N. 1967

canescens Linn.

- 44 Kawatani, T. *et al.* 1958
55, 68, 88 Sharma, A.K. & Sharma, A. 1957
66 Raghavan, R.S. 1957; Tapadar, N.N. Roy & Sen, N.K. 1960a, b; Mehra, P. N. & Bawa, K.S. 1969; Haque, A. & Hossain, Md. A. 1973; De, M. 1979

vomitaria Afz.

- 22 Kawatani, T. *et al.* 1958; De, M. 1979; Mangenot, S. & Mangenot, G. 1962; Haque, A. & Hossain, Md. A. 1973

Rhazya Decne

2; 1 Grecian Thrace and North West Asia Minor, 1 from Arabia to North Western India, and Pakistan.

stricta Decne

- 22 Baqar, S.R. 1969a

Strophantbus DC.

60 ; tropical Africa, Madagascar and Indo Malesia, 3 ; Khasi Hills, Hills of Northern Circars and South India, and Bangla Desh 1 cultivated.

olebotomus A. DC.

- 20 Tapadar, N.N. Roy 1964a ; Sarkar, A. K. *et al.* 1973a

caudatus Kurz

- 20 Tapadar, N.N. Roy & Sen, N.K. 1960a, b

gratus Franch.

- 20 Witkus, E.R. 1951 ; Tapadar, N.N. Roy & Sen, N.K. 1960a, b ; Mangenot, S. & Mangenot, G. 1962 ; Tapadar, N. N. Roy 1964a

wightianus Wall. *ex* Wight

- 20 Witkus, E.R. 1951

Tabernaemontana Linn.

100 ; palaeotropics, 3 ; Andaman Islands, and Bangla Desh, 1 cultivated.

divaricata (Linn.) R. Br. *ex* Roem. & Schult.

- 22 Raghuvanshi, S.S. & Chauhan, A.K. S. 1970
22, 33 Raghuvanshi, S.S. & Chauhan, A.K. S. 1969
28 Hsu, C. - C. 1967
33, 66 Chauhan, A.K.S. & Raghuvanshi, S.S. 1976

coronaria R. Br.

- 22 Mehra, P.N. & Bawa, K.S. 1969

coronaria Willd.*

- 22 Pathak, G.N. *et al.* 1949 ; Kaul, C.L. 1970a ; De, M. 1981

Ervatamia coronaria Stapf

- 22, 33 Tapadar, N.N. Roy & Sen, N.K. 1960a, b

Ervatamia divaricata (Linn.) Burkill

- 22 Sen, N.K. & Sahni, V.M. 1954a ; Tapadar, N.N. Roy 1964b
22, 33 De, M. 1978

Thevetia (Linn.) Juss. *ex* Endl.

9 ; tropical America and West Indies. 1 ; cultivated.

peruviana (Pers.) K. Schum.

- 18 Pathak, G.N. *et al.* 1949
20 Hardas, M.W. & Joshi, A.B. 1954 ; Chauhan, A.K.S. & Raghuvanshi, S.S. 1977

fertilifolia Juss. *ex* Steud.

- 20 Tapadar, N.N. Roy & Sen, N.K. 1960a, b ; Tapadar, N.N. Roy 1964a ; Mehra, P.N. & Gill, L.S. 1968a ; Gadella, T.W.J. 1977
22 Nanda, P.C. 1962

Trachelospermum Lem.

30 ; India to Japan and South East United States. 5 ; Eastern Himalaya and Kumaon, and Bhutan (up to 1,900m) a few cultivated.

divaricatum (Thunb.) K. Schum.**jasminoides** Lem.

- 20 Sugiura, T. 1936a ; Tapadar, N.N. Roy & Sen, N.K. 1960a, b

Valeris Burm. f.

10 ; India to South East Asia, Philippines and Malay Peninsula. 3 ; tropical Himalaya to Peninsular India and Bengal, and Bangla Desh and Sri Lanka, 1 also cultivated.

solanacea (Roth) Kuntze

- 20 Abeywickrama, B.A. 1973

heynel Spreng.

- 20 Rau, M.A. 1941 ; Tapadar, N.N. Roy 1964a
22 Bedi, Y.S. *et al.* 1980

Vinca Linn.

5 ; Europe, North Africa and West Asia. A few cultivated.

* The combination *Tabernaemontana coronaria* should be attributed to R. Br. (FEH : 259).

major Linn.

- 16 Schürhoff, P.N. & Müller, H. 1937
 92 *Pannocchia* - Laj, F. 1938 ; Bowden, W. M. 1940a, b, 1945a ; Rutland, J.P. 1941

minor Linn.

- 46 Schürhoff, P.N. & Müller, H. 1937 ; Finn, W.W. 1928 ; Tischler, G. 1934 ; *Pannocchia* - Laj, F. 1938 ; Bowden, W.M. 1940a, b, 1945 a ; Rutland, J.P. 1941 ; Delay, C. 1947 ; Gadella, T.W.J. & Kiphuis, E. 1966 ; Kieft, B. & Van Loon, J. Chr. 1978

Voacanga Thou.

25 ; tropical Africa, Madagascar and Malaysia, 1 ; cultivated.

grandifolia Rolfe

- 22 Tapadar, N.N. Roy 1964a

Wrightia R. Br.

23 ; tropical Africa, Asia and Australia. 7 ; chiefly in drier parts of India, and Sri Lanka.

coccinea Sims

- 22 Tapadar, N. N. Roy & Sen, N. K. 1960a, b

stricta R. Br.

- 20 Gajapathy, C. 1962b ; Raman, V. S. Kesavan, P.C. 1963a
 22 Tapadar, N.N. Roy 1964 a

tomentosa Roem. & Schult.

- 22 Tapadar, N. N. Roy 1964a ; Mehra, P. N. & Bawa, K.S. 1969

AQUIFOLIACEAE Bartl.

2/400 ; tropics and temperate. 1/22 ; Himalaya (up to 3,600 m) and Western Peninsula, and Nepal and Sri Lanka a few cultivated.

Ilex Linn.

About 400 ; cosmopolitan, excluding North America. 22 ; Himalaya (up to 3,600 m) and Western Peninsula, and Nepal and Sri Lanka a few cultivated.

aquifolium Linn.

- 40 Maude, P.F. 1939, 1940
 c. 46 Wolff, H.D. 1939a

crenata Thunb.

var. *thomsoni* (Hook. f.) Loes.
thomsoni Hook. f.

- 36 Mehra, P.N. & Khosla, P.K. 1969

diphyrena Walp.

- 38 Mehra, P.N. & Singh, A. 1963

dentata DC.

- 40 Mehra, P.N. & Khosla, P.K. 1969

fragilis Hook. f.

- 36 Mehra, P. N. & Khosla, P.K. 1969

godajam Colebr.

- 40 Mehra, P.N. & Khosla, P.K. 1969

griffithii Hook. f.

- 40 Mehra, P.N. & Khosla, P.K. 1969

hookeri King

- 40 Mehra, P.N. & Khosla, P.K. 1969

insularis Hook. f.

- 40 Mehra, P.N. & Khosla, P.K. 1969

intricata Hook. f.

- 36 Mehra, P.N. & Khosla, P.K. 1969

odorata Buch. - Ham.

- 40 Mehra, P.N. & Singh, A. 1963

paraguaricensis St.-Hil.

- 40 André, J.M. & Saura, F. 1943 ; Janaki Ammal, E.K. (D. 1945)

sikkimensis King*

- 36 Mehra, P.N. & Khosla, P.K. 1969

*The combination *Ilex sikkimensis* should be attributed to Kurz [FEH : 183].

theaeifolia Hook. f.

40 Mehra, P.N. & Khosla, P.K. 1969

umbellulata (Wall.) Loes.

sulcata Wall.

40 Mehra, P.N. & Khosla, P.K. 1969

venalosa Hook. f.

40 Mehra, P.N. & Khosla, P.K. 1969

vomitoria Ait.

40 Jensen, H.W. 1944

wightiana Wall.

40 Mehra, P.N. & Khosla, P.K. 1969

ARALIACEAE Juss.

55/700 ; chiefly tropics, especially Indo-Malesia and tropical America. 17/56 ; chiefly in Eastern Himalaya and Western Peninsula, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

Acanthopanax (Decne & Planch.) Miq.

50 ; East Asia, Philippines and Malay Peninsula. 2 ; Eastern Himalaya.

aculeatum Seem.

c. 54 Wanscher, J. H. 1933

Aralia Linn.

35 ; Indo Malesia, East Asia and North America. 8 ; Eastern and Western Himalaya and Western Ghats, and Nepal and Bhutan.

elegantissima Veitch

36, 48 Guha, S. 1971

filicifolia Chr. - Moore

24 Wanscher, J.H. 1933 ; Singh, D.N. 1959, 1961 ; Guha, S. 1971

Brassain Endl.

actinophylla F. Muell.*

24 Nanda, P.C. 1962
36, 48,
49, 52 Guha, S. 1971

Brassaiopsis Decne & Planch.

35 ; China, South East Asia and Indo Malesia. 10 ; Himalaya, Eastern India and Andaman Islands, and Nepal, Bhutan and Bangla Desh.

hania Seem.

24 Arora, C.M. 1961

Gamblea Clarke

2 ; Eastern Himalaya and Burma. 1 ; Eastern Himalaya.

ciliata Clarke

48 Mehra, P.N. & Bawa, K.S. 1969

Hedera Linn.

15 ; Canary Islands, Western and Central Europe, Mediterranean to Caucasus, Western Himalaya to Korea and Japan, Queensland. 2 ; Himalaya and Khasi Hills (up to 3,300m), 1 cultivated.

helix Linn.*

43 - 47 Oshim, G. 1924

**Brassain actinophylla* is now placed under the genus *Scheffera*.

**Hedera helix* Linn. *sensu* Clarke FBI, 2 : 739 is a synonym of *H. nepalensis* K. Koch (FEH : 226). *Hedera helix* Linn. is cultivated in the Nilgiris.

- c. 44 Tischler, G. 1934 ; Rohwedder, H. 1937
 44 - 48 Wanscher, J.H. 1933
 48 Gadella, T.W.J. & Kliphuis, E. 1963 ;
 Huziwara, Y. 1968
 48, 96 Jacobsen, P. 1954

nepalensis K. Koch

- 48 Singhal, V. K. *et al.* 1980b

Macropanax Miq.

3 ; Eastern Himalaya to Java. 2 ; Eastern Himalaya and Assam, and Nepal, Bhutan and Bangla Desh.

dispermus (Blume) O. Kuntze

oreophilum Miq.

- 48 Mehra, P.N. & Bawa, K.S. 1969

Panax serratum Wall. ex DC.

- 24 Guha, S. 1971

Panax Linn.

8 ; tropics and East Asia, and North America. 1 ; Eastern Himalaya and Khasi Hills.

pseudo-ginseng Wall.

- 24 Hara, H. 1970 ; Guha, S. 1971

Aralia pseudo-ginseng Benth.

- 24, 48 Sharma, A. & Sarkar, A.K. 1967 - 1968

esp. *himalatum* Hara

- 24 Kurosawa, S. 1971b

var. *angustifolius* (Burkill) Li

- 24 Kurosawa, S. 1971b

pseudo-ginseng Wall.

var. *angustifolius* (Burkill) Li

- c. 48 Kurosawa, S. 1966

esp. *pseudo-ginseng*

- 24 Kurosawa, S. 1971b

sp.

- 24 Guha, S. 1971

Pentapanax Seem.

15 ; Himalaya to Formosa, Java, Queensland and South America. 4 ; Eastern Himalaya, Khasi Hills, Western Ghats and Kumaon, and Nepal and Sri Lanka.

leschenaultii Seem.

- 26 ? Wanscher, J.H. 1933

var. *umbellatus* (Seem) Clarke

- 24 Singhal, V.K. *et al.* 1980a

Polyscias J.R. & G. Forst.

80 ; palaeotropics. 4 ; 1 Western Ghats, 1 throughout warmer parts of India, and Sri Lanka a few cultivated.

salfouriana Bailey

var. *marginata*

- 24 Guha, S. 1971

var. *pennokii*

- 24, 48 Guha, S. 1971

fruticosa (Linn.) Harms

- 24 Sharma, A.K. & Chatterji, A.K. 1964 ;
 Stone, B.C. & Loo, A.H. 1969 ; Guha,
 S. 1971

Panax fruticosum Linn.

- 22 Gopinath, D.M. 1944

- 24 Wanscher, J.H. 1933

gulfkeylet Bailey

- 24, 35 Guha, S. 1971

- 24, 36 Sharma, A.K. & Chatterji, A.K. 1964

var. *laciniata*

- 24 Guha, S. 1971

var. *quinquefolia*

- 24 Guha, S. 1971

scutellaris Burm.

- 24+0 - 4B Guha, S. 1971

Schefflera J.R. & G. Forst.

200 ; tropics and subtropics. Probably 16 ; Himalaya, Khasi Hills, Bengal and Western Peninsula, and Bhutan and Sri Lanka.

impressa (Clarke) Harms

Heptapleurum impressum Clarke

- 48 Mehra, P.N. & Bawa, K.S. 1969

venulosa (Wight & Arn.) Harms

Heptapleurum venulosum Seem.

- 48 Gili, B.S., Bir, S.S. & Singhal, V.K.
 1979a

Tetrapanax Koch

1; South China and Formosa. Cultivated.

papyrifera (Hook.) Koch

48 Huziwara, Y. 1962d

Fatsia papyrifera Benth. & Hook. f.

48, 50 Guha, S. 1971

ARISTOLOCHIACEAE Juss.

7/400; tropics and warm temperate except Australia. 4/22; chiefly in Eastern Himalaya, a few in Southern and Western India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Apama Lam.

12; Indo - Malesia and South China. 4; Western Peninsula, and Sri Lanka and Bangla Desh.

siliquosa Lam.

26 Gajapathy, C. 1962b

& Varma, B. 1959a, b; Sanjappa, M. 1978

littoralis Parodi

elegans Mast.

14 Venugopalan, S. 1949; Gregory, M.P. 1956; Sharma, A.K. & Varma, B. 1959a, b

16 Takagi, N. 1938

Aristolochia Linn.

About 350; tropics and temperate. 15; mostly in Himalaya, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka a few cultivated.

bracteolata Lam.

bracteata Retz.

12 Venugopalan, S. 1949; Sanjappa, M. & Sathyananda, N. 1979

cymbifera Mart. & Zucc.

14 Gregory, M.P. 1956; Sharma, A.K. & Varma, B. 1959a, b

grandiflora Swartz

14 Gregory, M.P. 1956; Sharma, A.K. & Varma, B. 1959a, b

indica Linn.

12 Venugopalan, S. 1949; Sharma, A.K.

macroura Gomes

14 Gadella, T.W.J. *et al.* 1969; Gadella, T.W.J. & Kliphuis, E. 1968b

ridicula N.E. Brown

14 Sharma, A.K. & Varma, B. 1959a, b

ringens Vahl

14 Gregory, M.P. 1956

tagala Cham.

14 Gregory, M.P. 1956; Pancho, J.V. 1971

Asarum Linn.

70; North temperate. 2; Eastern Himalaya.

himalaicum Hook. f. & Thoms.

26 Kurosewa, S. 1966

ASCLEPIADACEAE R. Br.

About 130/2,000; tropics and subtropics. 42/208; mostly in tropical Himalaya, mountains of Southern and Western India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Asclepias Linn.

120 ; America, especially United States of America. 2 ; 1 naturalized.

curassavica Linn.

- 22 Pardi, P. 1933a,b; Plotnikowa, T. (Fedorov) ; Moyer, L.S. 1936 ; Moore, R.J. 1946 ; Delay, C. 1947 ; Bezbaruah, H. P. 1963 ; Huynh, K.L. 1965 ; Gadella, T.W.J. *et al.* 1969 ; Niehaus, T. & Wong, L. Jr 1971 ; Sarkar, A.K., Datta, N. *et al.* 1973 ; Sreedevi, P. & Namboodiri, A.N. 1977, 1979

physocarpa Schlecht.

- 22 Sanjappa, M. & Sathyananda, N. 1979

Calotropis R. Br.

6 ; tropical Africa and Asia. 3 ; Western and Central India, Eastern India, 1 throughout India, ascending up to 990 m in the Himalaya, and Pakistan and Sri Lanka.

gigantea (Linn.) R. Br.

- 22 Ahuja, M.R. & Natarajan, A.T. 1957 ; Biswas, I. 1957a ; Raghavan, R.S. 1957 ; Mitra, K. & Datta, N. 1967 ; Sreedevi, P. & Namboodiri, A.N. 1977 ; Mukherjee, P. 1980

procera (Willd.) R. Br.*

- 22 Ahuja, M.R. & Natarajan, A. T. 1957 ; Biswas, I. 1957a ; Raghavan, R.S. 1957 ; Miège, J. 1962 ; Bir, S.S. & Sidhu, M. 1980
26 Bramwell, D. *et al.* 1972 ; Bramwell, D. & Murray, B.G. 1972

procera W. Ait.

- 22 Bhattacharya, S. S. *et al.* 1971

Caralluma R. Br.

110 ; Africa and Mediterranean to Burma. 13 ; chiefly in Southern India, and Pakistan and Sri Lanka.

adscendens (Roxb.) Haw.
var. *fimbriata* (Wall.) Gravelly
fimbriata Wall.

- 22 Chopde, V.P. 1965

attenuata Wight*

- 22 Raghavan, R.S. & Arora, C.M. 1958
44 Navaneetham, N. 1980

crenulata Wall.

- 22 Reese, G. 1972

indica

- 44 Navaneetham, N. 1980

stalagmifera Fisch.

- 22 Navaneetham, N. 1980

Ceropegia Linn.

160 ; Canary Islands, tropical and South Africa, Madagascar, tropical and subtropical Asia and North Queensland. 45 ; chiefly in the mountains of Southern and Western India, a few in the Himalaya, and Nepal, Bangla Desh and Sri Lanka.

attenuata Hook.

- 22 Raghavan, R.S. & Ansari, M.Y. 1975

bulbosa Roxb.var. *bulbosa*

- 22 Raghavan, R.S. & Ansari, M.Y. 1975

var. *lushii* (Grah.) Hook. f.

- 22 Raghavan, R.S. & Ansari, M.Y. 1975

huberi Ans.

- 22 Raghavan, R.S. & Ansari, M.Y. 1975

maccanensis Ans.

- 22 Raghavan, R.S. & Ansari, M.Y. 1975

media (Huber) Ans.

- 22 Raghavan, R.S. & Ansari, M.Y. 1975

oculata Hook.

- 22 Raghavan, R.S. & Ansari, M.Y. 1975

pubescens Wall.

- 20 Malla, S.B. *et al.* 1979

*The combination *Calotropis procera* should be attributed to Dryand *ex* W. Ait. (HFDD : 304).

**Caralluma attenuata* Thwaites non Wight, FRI, 4 : 76 is a synonym of *Caralluma adscendens* (Roxb.) Haw. var. *fimbriata* (Wall.) Gravelly [RHFC, 1 (pt. 1) : 56].

pusilla Wight & Arn.

22 Sreedevi, P. & Namboodiri, A.N. 1977
sahyadrica Ans. & Kulk.

22 Raghavan, R.S. & Ansari, M.Y. 1975
sentapauli Wadhwa & Ans.

22 Raghavan, R.S. & Ansari, M.Y. 1975

Cosmostigma Wight

3 ; South China (Hainan) and Indo
Malaysia. 1 ; Western and Peninsular India,
and Bangla Desh and Sri Lanka.

racemosum (Roxb.) Wight

22 Sreedevi, P. & Namboodiri, A.N. 1977

Cynanchum Linn.

About 150 ; tropics and temperate. 14 ;
chiefly in Western Himalaya, Bihar and Penin-
sular India, and Nepal, Bangla Desh and
Sri Lanka.

vincetoxinum (Linn.) Pers.

22 Böcher, T.W. & Larsen, K. 1955 ;
Murin & Váchoš (Fedorov)
22, 44 Bekšay (Löve, A & Löve, D. 1961b)

Dischidia R. Br.

80 ; Indo Malaysia, Polynesia and Aus-
tralia. 4 ; Assam, Sikkim, Andaman Islands,
and Nepal and Bangla Desh.

rafflesiana Wall.

22 Biswas, I. 1957a

Frerea Dalz.

1 ; Western Ghats.

indica Dalz.

44 Reese, G. & Kressel, H. 1968

Gomphocarpus R. Br.

50 ; tropics and South Africa. 1 ; culti-
vated.

physocarpus E. Mey.

22 Pardi, P. 1933a, b

Gymnema R. Br.

25 ; palaeotropics, South Africa and
Australia. 14 ; chiefly in Eastern Himalaya
and Peninsular India, and Bangla Desh and
Sri Lanka.

sylvestre (Retz.) R. Br. ex Schult.

22 Sreedevi, P. & Namboodiri, A.N.
1977 ; Sanjappa, M. & Sathyananda,
N. 1979

Hoya R. Br.

200 ; South China, South East Asia,
Indo Malaysia, Australia and Pacific. 25 ;
chiefly in Eastern Himalaya and South Wes-
tern India, and Nepal, Bhutan, Bangla Desh
and Sri Lanka.

carnosa Linn.

22 Sreedevi, P. & Namboodiri, A.N. 1977

longifolia Wall.

22 Malla, S.B., Bhattarai, S. et al. 1977a

minima Const.

22 Malla, S.B., Bhattarai, S. et al. 1977a

Leptadenia R. Br.

4 ; tropical Africa and Asia. 2 ; Upper
Gangetic Plain to Peninsular India and North
Western India, and Pakistan and Sri Lanka.

pyrotechnica (Forsk.) Decne

22 Baquar, S.R. & Husain, S.A. 1967

reticulata Wight & Arn.

22 Biswas, I. 1955

Oxystelma R. Br.

4 ; Old World tropics. 1 ; widely distri-
buted in the plains and lower hills of India,
and Sri Lanka.

secamone (Linn.) Karst.

22 Navaneetham, N. 1980

Pentstemon R. Br.

6 ; 2 in Africa, Mascarene, Orient, India
and Sri Lanka, 4 in Australia. 2 ; Peninsular

40 ASCLEPIADACEAE

India, Bengal, Punjab eastwards to the Yamuna river and Gujarat, and Pakistan and Sri Lanka.

capensis (Linn. f.) Bullock

microphylla Wight & Arn.

22 Biswas, I. 1955

Pergularia Linn.

3 5 ; Africa and Madagascar to India. 3 ; North Western India, 1 throughout the greater part of India, and Pakistan and Sri Lanka.

daemia (Forsk.) Chiov.

22 Navaneetham, N. 1980

24 Mitra, K. & Datta, N. 1967

extensa N.E. Brown

22 Miège, J. 1960a

Daemia extensa R. Br.

22 Biswas, I. 1955, 1957b

24 Nirula, R.L. 1945 ; Sarkar, A.K., Datta N. & Chatterjee, U. 1975

minor Andr.

22 Navaneetham, N. 1980

tomentosa Linn.

22 Miège, J. 1960a ; Amin, A. 1972

Sarcostemma R. Br.

10 ; tropical and subtropical Old World. 4 ; Deccan Peninsula, and Pakistan and Sri Lanka.

acutum Voigt

22 Chopde, V.P. 1965

brevistigma Wight & Arn.

22 Sarkar, A.K., Datta, N. & Chatterjee, U. 1978

Stapelia Linn.

75 ; tropics and South Africa. 3 ; cultivated.

gigantea N. E. Brown

22 Pardi, P. 1933a ; Nakamura, T. 1972 ; Sarkar, A.K., Datta, N. *et al.* 1976

grandiflora Mass.

22 Pardi, P. 1933a, b ; Nakamura, T. 1972

variegata Linn.

44 Pardi, P. 1933a

var. variegata

44 Reese, G. & Kressel, H. 1968

Stephanotis Thou.

5 ; Madagascar. 1 ; cultivated.

floribunda R. Br.*

22 Pardi, P. 1933a, b

Telosma Coville

10 ; Old World tropics. 2 ; 1 in Himalaya (up to 1,650 m), Central, Eastern and Western India, 1 cultivated or wild throughout India.

minor Andr.**

22 Sreedevi, P. & Namboodiri, A.N. 1977

pallida (Roxb.) Craib

Pergularia pallida Wight & Arn.

22 Biswas, I. 1955, 1957a

Tylophora R. Br.

50 ; palaeotropics and South Africa. About 20 ; subtropical Himalaya (up to 1,980m) mountains of Western and Southern India, Andaman Islands, and Nepal, Bangla Desh and Sri Lanka.

dalzellii Hook. f.

22 Chopde, V.P. 1965

indica (Burm. f.) Merr.

22 Sarkar, A.K. *et al.* 1973 ; Sarkar, A. K., Datta, N. & Chatterjee, U. 1980

asthmatica Wight & Arn.

22 Biswas, I. 1955

24 Sreedevi, P. & Namboodiri, A.N. 1977

*The combination *Stephanotis floribunda* was made by Brongn. (DFPI : 163).

**The combination *Telosma minor* should be attributed to Craib (DFPI : 168).

Wattakaka Hassk.

2 ; India and Sri Lanka to South China and Malaysia. 1 ; throughout the greater part of India.

volubilis (Linn. f.) Stapf

Dregea volubilis Benth.

22 Biswas, I. 1957a ; Sreedevi, P. & Nambodiri, A. N. 1977, 1979

ASTERACEAE Dumort.
(= COMPOSITAE Giseke)

900/over 13,000 ; widely distributed throughout the globe. About 155/762 ; chiefly in the Himalaya and the mountains of Southern and Western India (ascending up to 5,940 m), and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka many cultivated.

Acanthospermum Schrank

8 ; West Indies, South America, Galapagos and Madagascar. 2 ; introduced and naturalized.

hispidum DC.

22 Mensinkai, S.W. 1958 ; Midge, J. 1960b ; Gajapathy, C. 1962b ; Mangenot, S. & Mangenot, G. 1962 ; Mehra, P.N. & Remanandan, P. 1974

Achillea Linn.

200 ; North temperate. 3 ; 1 Western Himalaya, 2 introduced.

millefolium Linn.

18 Felföldy, L.J. M. 1947a ; Harling, G. 1950 ; Shetty, B.V. 1964 ; Mehra, P.N. *et al.* 1965

18, 36

54 Mehra, P.N. & Remanandan, P. 1974

35, 36,

36+1B,

44, 45,

54 Gervais, C. 1977

c. 36 Hedberg, O. 1967

36 Pólya, L. 1948 ; Ferris, R.S. 1958 ; Huziwara, Y. 1962d ; Faassen, P.V. & Nadeau, P. 1976 ; Tomkins, D.J. & Grant, W.F. 1978 ; Androschuk, A. F. *et al.* 1979

36, 45, 54 Tyril, R. J. 1969

36, 45, 54, 63,

72 Tyril, R.J. 1975

36, 54 Clausen, J. *et al.* 1938 ; Turesson, G. 1938 ; Ehrendorfer, F. 1973 ; Gervais, C. 1977 ; Androschuk, O.F. *et al.* 1978

36, 72 Clausen, J. *et al.* 1946 ; Lawrence, W. E. 1947

c. 48 Lundegårdh, H. 1909 ; Tischler, G. 1934, 1937 ; Delay, C. 1947

54 Clausen, J. *et al.* 1939, 1940a ; Löve, A. & Löve, D. 1944b ; Vaarama (Löve, A. & Löve, D. 1948) ; Ehrendorfer, F. 1952 1959a, b ; Löve, A. 1954b ; Löve, A. & Löve, D. 1956b ; Jørgensen, C.A. *et al.* 1958 ; Mulligan, G.A. & Bassett, J. 1959 ; Háberová, I. 1963 ; Skalníčka, M. *et al.* 1964 ; Gadella, T.W. J. & Kliphuis, E. 1966 ; Choukasanova, N. A. *et al.* 1968a ; Taylor, R.L. & Mulligan, G.A. 1968 ; Susnik, F. *et al.* 1972 ; Mizianty, M. & Frey, L. 1973 ; Oswiecimska, M. 1974 ; Biste, C. 1977 ; Hommel, P.W.F.M. & Wieffering, J. H. 1979

54, 54+B Ehrendorfer, F. 1960

72 Záborský (Fedorov)

sibirica Ledeb.

18 Mehra, P.N. *et al.* 1965 ; Mehra, P.N. & Remanandan, P. 1974

36 Löve, A. 1954 b ; Huziwara (Kitamura, S. 1957) ; Sokolovskaya, A.P. (Fedorov) ; Packer, J.G. 1964

42 ASTERACEAE

Adenocaulon Hook.

5; North East temperate Asia, North temperate, Central and temperate South America. 1; temperate Himalaya.

bicolor Hook.*

46 Ornduff, R. *et al.* 1963, 1967; Moore, D.M. 1963

himalaicum Edgew.

38 Arano, H. 1962b

46 Arano, H. 1965; Huziwara, Y. 1968; Kurosawa, S. 1971b

Adenoön Dalz.

1; Indo Malesia. Western Ghats.

indicum Dalz.

20 Narayana, B.M. 1979

Adenostemma J.R. & G. Forst.

5-30; tropical America and South Africa, 1 pantropics. 1 5; throughout India (up to 1,650 m in the Himalaya), and Sri Lanka.

lavenia (Linn.) O. Kuntze

20 Gajapathy, C. 1962b; Lee, Y.N. 1967; Shukur, A. 1967; Powell, A.M. & Cuatrecasas, J. 1970; Miyagi, C. 1971

viscosum Forst.

20 Mehra, P.N. *et al.* 1965

Ageratum Linn.

About 60; tropical America. 2; naturalized throughout India (up to 1,650 m in the Himalaya).

conyzoides Linn.

20 Ishikawa, M. 1916; Mehra, P.N. & Sidhu, S.S. 1960; Koul, M.L. H. 1964a; Mehra, P.N. *et al.* 1965; Hsu, C.-C. 1967, 1970; Gupta, P.K. *et al.* 1972; Singh, N.K. 1972; Sarkar, A.K. *et al.* 1974; Bir, S.S. & Sidhu, M. 1980; Gill, B.S., Gupta, R.C. & Kaur, S. 1980; Olsen, J. 1960

20, 40 Dey, D. & Sharma, A.K. 1968; Gupta, P.K. 1969b; Kaul, M.L.H. 1971; Mehra, P.N. & Remanandan, P. 1975

20+0-3B Gill, B.S. & Gupta, T. 1971

38 Sharma, A.K. & Varma, B. 1960

40 Mitra, J. (Löve, A. & Löve, D. 1961b); Turner, B.L. & King, R.M. 1964; Turner, B.L. & Lewis, W.H. 1965; Harvey 1966; Grant, W.F. 1967; Coleman, R. 1968b; Powell, A.M. & King, R.M. 1969b; Miyagi, C. 1971; Subramanyam, K. & Kamble, N.P. 1971; Gadella, T.W.J. 1972; Olorode, O. 1974a; Gill, L.S. & Abubakar, A.M. 1975; Jansen, R.K. & Stuessy, T.F. 1980

houstonianum Mill.

20 Cooper, D.C. & Mahony, K.L. 1935; Delay, C. 1947; Morrison, J.W. & Rajhathy, T. 1960a; Turner, B.L., Powell, M. & King, R.M. 1962; Mehra, P.N. *et al.* 1965; Hsu, C.-C. 1967, 1970; Dey, D. & Sharma, A.K. 1968; Miyagi, C. 1971

40 Shukur, A. *et al.* 1977

40, c. 40 Torres, A.M. & Liogier, A.H. 1970

houstonianum (2n=40) × *conyzoides* (2n=20) (?)

30 Nazeer, M.A. *et al.* 1981

Ainsliea DC.

40; East Asia to West Malaysia. 3; temperate Himalaya (up to 3,330m), and Bhutan.

aptera DC.

24 Mehra, P.N. *et al.* 1965; Gill, B.S., Gupta, R.C. & Kaur, S. 1980

latifolia (Don) Schulz-Bip.

24 Mallia, S.B., Bhattarai, S. *et al.* 1977a

pteropoda DC.

16 Mehra, P.N. *et al.* 1965

24 Mehra, P.N. & Remanandan, P. 1969

Amberboa (Pers.) Less.

20; Mediterranean to Central Asia. 1; cultivated.

* *Adenocaulon bicolor sensu* Hook., (f). FBI, 3 : 302 is a synonym of *A. himalaicum* Edgew. (FEH, 2 : 131).

moschata (Linn.) Less.

32 Poddubnaja-Arnoldi, V. 1931

Centaurea moschata Linn.

28,32 Dey, D. & Sharma, A.K. 1967

32 Vilmorin, R. de & Chopinet, M. 1954

Anaphalis DC.

35 ; Europe, Asia and America. About 33 ; mostly confined between 1,320 and 5,610m in the Himalaya, some in mountains of Western and Southern India, and Nepal, Bhutan and Sri Lanka.

adnata DC.

28 Shetty, B.V. 1964, 1967; Mehra, P.N. *et al.* 1965 ; Subramanyam, K. & Kamble N.P. 1967 ; Mehra, P.N. & Remanandan, P. 1975

beddomei Hook. f.

28 Mehra, P.N. & Remanandan, P. 1969, 1975

brevifolia DC.

hournei Fyson

28 Shetty, B.V. 1964, 1967 ; Mehra, P.N. & Remanandan, P. 1975

contorta Hook. f.

28 Mehra, P.N. *et al.* 1965 ; Subramanyam, K. & Kamble, N.P. 1967 ; Hsu, C.-C. 1970 ; Mehra, P.N. & Remanandan, P. 1975

margaritacea (Linn.) Benth. & Hook. f.

28 Keil, D.J. & Pinkava, D.J. 1976

28,42,56 Mehra, P.N. & Remanandan, P. 1975

cinnamomea Clarke

28 Mehra, P.N. *et al.* 1965 ; Subramanyam, K. & Kamble, N.P. 1967 ; Chatterjee, T. & Sharma, A.K. 1968 ; Sarkar, A.K., Chakravorty, M. *et al.* 1977

nepalensis Spreng.*

28 Mehra, P.N. & Remanandan, P. 1969, 1975

subdecurrens (DC.) Gamble

28 Shetty, B.V. 1967 ; Shukur, A. 1969

oblonga DC.

28 Mehra, P.N. & Remanandan, P. 1969, 1975

travancorica Smith

28 Mehra, P.N. & Remanandan, P. 1967, 1975

triplinervis Clarke

28 Mehra, P.N. *et al.* 1965 ; Sharma, A. & Sarkar, A.K. 1967-1968 ; Mehra, P.N. & Remanandan, P. 1975

wightiana DC.

28 Mehra, P.N. & Remanandan, P. 1967, 1975

Anthemis Linn.

About 200 ; Europe and Mediterranean to Persia. 2-4 ; cultivated and naturalized.

cotula Linn.

18 Wulff, H.D. 1937b ; Delay, C. 1947 ; Heiser, C.B. & Whitaker, T.W. 1948 ; Harling, G. 1950 ; Mulligan, G.A. 1957 ; Delay, J. 1968a ; Taylor, R.L. & Mulligan, G.A. 1968 ; Májovský, J. *et al.* 1970b ; Yavin, Z. 1970 ; Strid, A. 1971 ; Mehra, P.N. & Remanandan, P. 1974 ; Keil, D.J. & Pinkava, D.J. 1979 ; Kuzmanov, B. *et al.* 1980

ssp. *cotula*

18 Fernandes, A. & Queiros, M. 1971

fuseata Brot.

32 Mehra, P.N. & Remanandan, P. 1974

tinctoria Linn.

18 Lundegårdh, H. 1909 ; Holmgren, I. 1915 ; Tischler, G. 1934 ; Harling, G. 1950 ; Löve, A. & Löve, D. 1956b ; Koul, M.L.H. 1964b ; Hindáková (Fedorov)

Arctium Linn.

5 ; palaeotemperate. 1 ; Western Himalaya (up to 2,630 m).

lappa Linn.

32 Sugiura, T. 1931, 1936b ; Tischler, G. 1934 ; Rohwedder, H. 1937

36 Nakajima, G. 1936 ; Tarnavski, I.T. 1948 ; Mehra, P.N. *et al.* 1965 ; Murin & Váchoš (Fedorov) ; Chouksanova,

*The combination *Anaphalis nepalensis* was made by Hand.-Mazz. and is a synonym of *A. triplinervis* C.B. Clarke var. *intermedia* (DC.) Airy Shaw (FEH, 3 : 110 - 111).

44 ASTERACEAE

N.A. *et al.* 1968a; Májovský, J. *et al.* 1970a; Kuzmanov, B.A. & Ancev, M.E. 1973; Pogosyan, A.I. 1974; Mehra, P.N. & Remanandan, P. 1976; Javůrková, V. 1979

Artemisia Linn.

About 400; North temperate, South Africa and South America. 34; chiefly between 1,650 and 5,940 m in North Western Himalaya, and Nepal, Pakistan and Sri Lanka.

absinthium Linn.

18 Weinedel - Liebau, F. 1928; Tischler, G. 1934; Rohweder, H. 1937; Suzuka, O. 1949; Khoshoo, T.N. & Sobti, S.N. 1958; Urbánková (Skališská, M. *et al.* 1959); Kawatani, T. & Ohno, T. 1964; Koul, M.L.H. 1964d; Hindáková, M. & Činžura, F. 1967; Podlech, D. & Dieterle, A. 1969; Bhat, B.K. *et al.* 1974b; Mehra, P.N. & Remanandan, P. 1974; McArthur, E.D. & Pope, C.L. 1977

annua Linn.

18 Weinedel - Liebau, F. 1928; Pólya, L. 1949; Suzuka, O. 1950b, 1952; Arano, H. 1964b, 1968; Maumori, S. 1972

biennis Willd.

18 Powell, A.M. *et al.* 1974

glauca Pall.

18 Kawatani, T. & Ohno, T. 1964
36 Khoshoo, T.N. & Sobti, S.N. 1958; Koul, M.L.H. 1964d

gmelinii Web.

18 Suzuka, O. 1956; Khoshoo, T.N. & Sobti, S.N. 1958
18, 54 Ehrendorfer, F. 1964
54 Suzuka, O. 1950b, 1952; Kawatani, T. & Ohno, T. 1964

indica Willd.

34 In FEH : 332

japonica Thunb.

18, 36 Lee, Y.N. 1967
36 Shimotomai, N. 1947a; Suzuka, O. 1950b, 1952; Arano, H. 1962c, 1968; Kawatani, T. & Ohno, T. 1964

kurramensis Quazilbash

18 Quazilbash, N.A. 1953 (Löve, A. & Löve, D. 1961b); Suzuka, O. 1953; Kitamura, S. 1957; Kawatani, T. & Ohno, T. 1964
36 Suzuka, O. 1955

lacinata Willd.

18 Suzuka, O. 1950b, 1952; Khoshoo, T.N. & Sobti, S.N. 1958; Ehrendorfer, F. 1964; Kawatani, T. & Ohno, T. 1964; Koul, M.L.H. 1964d
18, 54 Korobkov, A.A. 1972
18+0-1B Bhat, B.K. *et al.* 1974b

macrocephala Jacq.

36 Kawatani, T. & Ohno, T. 1964

maritima Linn.

18 Weinedel - Liebau, F. 1928; Tischler, G. 1934; Wulff, H.D. 1937a; Pólya, L. 1948; Laane, M.M. 1971
36 Titova, N.N. (Fedorov); Tarnavski, I.T. 1948; Suzuka, O. 1952; Koul, M.L.H. 1964d
36, 54 Khoshoo, T.N. & Sobti, S.N. 1958; Kawatani, T. & Ohno, T. 1964
54 Suzuka, O. & Koriba, S. 1949; Kawatani, T. 1950, 1952; Suzuka, O. 1950b, 1952; Kitamura, S. 1957; Kawatani, T. & Ohno, T. 1960; Mitsuoka, S. 1961; Gadella, T. W.J. & Kliphuis, E. 1968a

brevifolia Wall.

36 Suzuka, O. 1953; Kawatani, T. & Ohno, T. 1964
36, 54 Quazilbash, N.A. 1953

fragrans Willd.

18 Kawatani, T. & Ohno, T. 1964

moorcroftiana Wall.

18 Sobti, S.N. & Singh, S.D. 1961; Koul, M.L.H. 1964d; Bhat, B.K. *et al.* 1974b

nigritica (Clarke) Pamp.

18 Mehra, P.N. & Remanandan, P. 1969, 1974

palleas Wall.

16 Sobti, S.N. & Singh, S.D. 1961; Koul, M.L.H. 1964d; Sheriff, A. & Srinath, K.V. 1965

parviflora Roxb.*

- 18 Khoshoo, T.N. & Sobti, S.N. 1958 ; Koul, M.L.H. 1964d
- 36 Shimotomai, N. 1947a (Kitamura, S. 1957)

parviflora Buch. - Ham.

- 18, 36 Mehra, P.N. & Remanandan, P. 1974
- 36 Mehra, P.N. & Remanandan, P. 1969

roxburghiana Bess.

- 18 Suzuka, O. 1952 1953, 1956 ; Mehra, P.N. & Remanandan, P. 1974
- 18, 36 Khoshoo, T.N. & Sobti, S.N. 1958 ; Koul, M.L.H. 1964d ; Bhat B.K. *et al.* 1974b

sacrorum Ledeb.

- 18 Suzuka, O. 1952 - 1953, 1956 ; Mehra, P.N. & Remanandan, P. 1969
- 36 Kawatani, T. & Ohno, T. 1964

var. *vestita* DC.

- 18 Mehra, P.N. & Remanandan, P. 1974

scoparia Waldst. & Kit.

- 16 Khoshoo, T.N. & Sobti, S.N. 1958 ; Chouksanova, N.A. *et al.* 1968a ; Murin, A. & Chaudhri, I.I. 1970 ; Bhat, B.K. *et al.* 1974b
- 16, 36 Kawatani, T. & Ohno, T. 1964
- 18 Mehra, P.N. & Remanandan, P. 1969

sieversiana Willd.

- 18 Kawatani, T. & Ohno, T. 1964 ; Chouksanova, N.A. *et al.* 1968a ; Bhat, B.K. *et al.* 1974b

stracheyi Hook. f. & Thoms.

- 18 Bhat, B.K. *et al.* 1974b

tournefortiana Reichb.

- 18 Khoshoo, T.N. & Sobti, S.N. 1958 ; Kawatani, T. & Ohno, T. 1964 ; Koul, M.L.H. 1964d ; Podlech, D. & Dieterle, A. 1969 ; Bhat, B.K. *et al.* 1974b

vestita Wall.

- 18 Khoshoo, T.N. & Sobti, S.N. 1958 ; Koul, M.L.H. 1964a, d ; Mehra, P.N. *et al.* 1965 ; Bhat, B.K. *et al.* 1974b

vulgaris Linn.**

- 16 Tischler, G. 1934 ; Clausen, J., Keck, D.D. & Hiesey, W.M. 1939 ; Keck, D.D. 1946 ; Pólya, L. 1949 ; Wulff, H.D. 1950 ; Löve, A. & Löve, D. 1956b ; Mulligan, G.A. 1957 ; Urbánka (Skalińska, M. *et al.* 1959) ; Sorsa, V. 1962 ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Zhukova, P.G. (Fedorov) ; Kawatani, T. & Ohno, T. 1964 ; Martinioli, G. & Oglioni, P. 1970 ; Fernandes, A. & Queiros, M. 1971 ; Laane, M.M. 1971
- 16,16+18 Korobkov, A.A. 1972
- 16,18 Koul, M.L.H. 1964a ; Zhukova, P.G. 1967b
- 16, 18, 36, 54 Khoshoo, T.N. & Sobti, S.N. 1958 ; Koul, M.L.H. 1964d
- 18 Weinedel - Liebau, F. 1928 ; Mehra, P.N. *et al.* 1965
- 18, 36, 54 Clausen, J. *et al.* 1938
- 18, 45 Mehra, P.N. & Remanandan, P. 1974
- 24 Sharma, A. & Sarkar, A.K. 1967-1968

Aster Linn.

500 ; America, Eurasia and Africa. 18 ; confined to the Himalaya between 2,660 and 5,330m, and Nepal a few cultivated.

altaicus Willd.

- 18 Annen, E. 1945
- 36 Shimotomai, N. & Huziwarra, Y. 1942

amellus Linn.

- 18 Negodi, G. 1938 ; Annen, E. 1945 ; Chatterji, A.K. 1962 ; Lepper, L. 1970b ; Gupta, P.K. *et al.* 1972
- 18, 54, 66 Huziwarra, Y. 1962c
- 36 Chouksanova, N.A. *et al.* 1968a
- 54 Mehra, P.N. *et al.* 1965 ; Májovský, J. *et al.* 1970b ; Dvořák, F. & Dadáková, B. 1974 ; Mehra, P.N. & Remanandan, P. 1974

*The combination *Artemisia parviflora* was made by Buch.-Ham. (HFDD : 241).

**According to Babu, C.R. (HFDD : 241), *Artemisia vulgaris* auct. pl. (non Linn.), FBI, 3 : 325 is a synonym of *A. nilagirica* (Clarke) Pamp. In RHFC, 1 : 240-241, *A. vulgaris* auct. pl. (non Linn.) has been treated as a synonym of *A. dubia* Wall. ex Bess. var. *grata* (Wall. ex DC.) Pamp.

46 ASTERACEAE

asp. amellus

18 Holub, J. *et al.* 1970

asperulus Nees

54 Huziwara, Y. 1965 ; Mehra, P.N. *et al.* 1965 ; Mehra, P.N. & Remanandan, P. 1974

himalaicus Clarke

18 Huziwara, Y. 1962b ; Chouksanova, N.A. 1968a

laevis Linn.

48 Van Faassen, P. 1963 ; Löve, A. & Löve, D. 1964
54 DeLisle (Avers, C.J. 1953) ; Kevell (D. 1955)

maritimum Linn.

18 Mehra, P.N. *et al.* 1965 ; Mehra, P.N. & Remanandan, P. 1974

molluscus Will.

18 Mehra, P.N. & Remanandan, P. 1969, 1974
36 Mehra, P.N. & Sidhu, S.S. 1960

novae-angliae Linn.

10+0-2B Koul, A.K. & Wakhlu, A.K. 1976

novi-belgii Linn.

18 Avers, C.J. 1953
48 Huziwara, Y. 1956
48, 49 Huziwara, Y. 1941, 1958b
54 Negodi, G. 1938

obovatum Clarke

18 Mehra, P.N. *et al.* 1965 ; Mehra, P.N. & Sidhu, S.S. 1960 ; Chouksanova, N.A. *et al.* 1968a
27 Anton, E. 1945
36 Mehra, P.N. & Remanandan, P. 1969, 1974

tibeticus Hook.

18 Zhukova, P.G. 1967b ; Chouksanova, N.A. *et al.* 1968a

trivertus Roxb.

36 Tahara, M. & Shimotomai, N. 1926

Bellis Linn.

15 ; Europe and Mediterranean. 2 : cultivated.

mexicana A. Gray

36 Negodi, G. 1937b, d ; Sharma, A. & Sarkar, A.K. 1967 - 1968

perennis Linn.

18 Ishikawa, M. 1916 ; Winge, Ö. 1917b ; Heitz, E. 1926 ; Bolton (Tischler, G. 1935-1936) ; Tischler, G. 1934, 1937 ; Negodi, G. 1935, 1937d, e ; Rohwedder, H. 1937 ; Delay, C. 1947 ; Felföldy, L.J.M. 1947a ; Heiser, C.B. & Whitaker, T.W. 1948 ; Huziwara, Y. 1954 ; Löve, A. & Löve, D. 1956b ; Contandriopoulos, J. 1957c, 1962 ; Garajová, S. 1959 ; Piotrowicz (Skalińska, M. *et al.* 1959) ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Mehra, P.N. *et al.* 1965 ; Sharma, A. & Sarkar, A.K. 1967-1968 ; Taylor, R.L. & Mulligan, G.A. 1968 ; Kuzmanov, B.A. & Kozuharov, S.I. 1970 ; Fernandes, A. & Queiros, M. 1971 ; Mehra, P.N. & Remanandan, P. 1974 ; Witherspoon, J.T. *et al.* 1974 ; Javůrková, V. 1980

Bidens Linn.

About 230 ; cosmopolitan, abundant in tropical America. 8-9 : throughout India, 2 confined between 1,320 and 1,980 m in North Western Himalaya, and Nepal.

bipinnata Linn.

24 Hsu, C.-C. 1970
72 Huziwara, Y. 1955b ; Mangaly, J.K. *et al.* 1967 ; Weedon, R.R. & Butler, M.G. 1976 ; Peng, C.-I. & Hsu, C.-C. 1977, 1978

alternata (Lour.) Merr. & Sherff *ex* Sherff

72 Subramanyam, K. & Kamble, N.P. 1971 ; Mehra, P.N. & Remanandan, P. 1974 ; Sarkar, A.K., Datta, N. & Chatterjee, U. 1975 ; Bir, S.S. & Sidhu, M. 1980 ; Kumar, V. & Chauhan, K.P.S.

pliosa *quert.* non Linn.

72 Shukur, A. 1969

wallichii DC.

72 Mehra, P.N. & Sidhu, S.S. 1960 ; Gill, B.S., Gupta, R.C. & Kaur, S. 1980

cerava Linn.

- 24 Rohweder, H. 1937; Lewitsky, G.A. 1940; Pogan (Skalinska, M. *et al.* 1959); Löve, A. & Löve, D. 1964; Gadella, T.W.J. & Kliphuis, E. 1966; Mangaly, J.K. *et al.* 1967; Mulligan, G.A. *et al.* 1972; Weedon, R.R. & Butler, M.G. 1976
48 Hindáková (Fedorov); Májovský J. *et al.* 1970a

humilis HBK.

- 24 Mehra, P.N. & Remanandan, P. 1969, 1974

leucantha Willd.

- 72 Gelin, O.E.V. 1934; Chouksanova, N.A. *et al.* 1968a

malcolmii Hook.

- 18 Mathew, A. & Mathew, P.M. 1978

pilosa Linn.

- 24 Powell, A.M. & King, R.M. 1969a; Gill, L.S. 1978b
24, 48 Turner, B.L., Ellison, W.L. & King, R. 1961
24, 72 Powell, A.M. & Turner, B.L. 1963; Keil, D.J. & Stuessy, T.F. 1977
36 Sharma, A. & Sarkar, A.K. 1967-1968
46 Torres, A.M. & Liogier, A.H. 1970
48 Arano, H. & Nakamura, T. 1964; Smith, E.B. 1965
48, 72 Powell, A.M. & King, R.M. 1969b
72 Gelin, O.E.V. 1934; Covas, G. & Schnack, B. 1946; Diers, L. 1961; Mehra, P.N. *et al.* 1965; Harvey 1966; Björkqvist, I. *et al.* 1969; Olorode, O. 1974a; Gadella, T.W.J. 1977; Mathew, K.M. 1977; Gill, B.S., Gupta, R.C. & Kaur, S. 1980; Pilz, G.E. 1980
c. 76 Turner, B. L. & Lewis, W. H. 1965; Van Loon, J. C. 1974

tripartita Linn.

- 48 Lewitsky (Tischler, G. 1935 - 1936); Rohweder, H. 1937; Pogan (Skalinska, M. *et al.* 1959); Sorsa, V. 1962; Mangaly, J. K. *et al.* 1967; Hindáková & Uhríková (Fedorov); Chouksanova, N. A. *et al.* 1968 a; Podlech, D. & Dietrich, A. 1969; Májovský, J. *et al.* 1970a
72 Mehra, P. N. *et al.* 1965; Gill, B. S., Gupta, R. C. & Kaur, S. 1980

wightiana DC.

- 20, 22 Sharma, A & Sarkar, A. K. 1967 - 1968

Blainvillea Cass.

10; palaeotropics. 1; throughout India (up to 1,650 m in the Himalaya), and Sri Lanka.

acmella (Linn.) Philipson

- 32 Shukur, A. 1969

latifolia (Linn. f.) DC.

- 34 Mehra, P. N. & Remanandan, P. 1969
72 Mehra, P.N. *et al.* 1965

rhomboidea Cass.

- 34 Mehra, P.N. & Remanandan, P. 1974; Mathew, A. & Mathew, P.M. 1978

Blumea DC.

About 50; tropics and South Africa, Madagascar, India, East Asia to Australia and Pacific. 34; chiefly in tropical Eastern Himalaya (up to 1,650 m), Western and Southern India, and Nepal, Bangla Desh and Sri Lanka.

amplectens DC.

- 20 Shukur, A. *et al.* 1977

aromatica DC.

- 18 Peng, C. - I. & Hsu, C. - C. 1977, 1978
36 Malla, S.B., Bhattacharai, S. *et al.* 1977b

balsamifera DC.

- 20 Chuang, T.I. *et al.* 1963; Hsu, C. - C. 1970

barbata DC.

- 16 Mathew, A. & Mathew, P.M. 1975a

belangeriana DC.

- 16 Patil, K.M. & Chennaveeraiah, M.S. 1969

bifoliata DC.

- 18 Patil, R.M. & Chennaveeraiah, M.S. 1969
20 Narayan, K.N. & Shukur, A. 1968, 1969; Shukur, A. *et al.* 1977
22 Shetty, B.V. 1961
36 Mathew, A. & Mathew, P.M. 1975b

48 ASTERACEAE

eriantha DC.

- 20 Shukur, A. 1967; Narayan, K.N. & Shukur, A. 1969; Shukur, A. *et al.* 1977
27, 36 Patil, R.M. & Chennaveeraiah, M.S. 1969; Chennaveeraiah, M.S. & Patil, R.M. 1971

fistulosa (Roxb.) Kurz

- 18 Mathew, A. & Mathew, P.M. 1975b
30 Gupta, R.C. & Gill, B.S. 1979b

hieracifolia (D. Don) DC.

- 32 Patil, R.M. & Chennaveeraiah, M.S. 1969
36 Peng, C. - I. & Hsu, C. - C. 1977
48 Peng, C. - I. & Hsu, C. - C. 1978

lacera (Burns, f.) DC.

- 11 Gupta, P.K. 1969b
18 Subramanyam, K. & Kamble, N.P. 1966; Miyagi, C. 1971
20 Hsu, C. - C. 1970
22 Mehra, P.N. & Sidhu, S.S. 1960; Mehra, P.N. *et al.* 1963; Singh, N.K. 1972
36 Patil, R.M. & Chennaveeraiah, M.S. 1969; Mathew, A. & Mathew, P.M. 1975a; Peng, C. - I. & Hsu, C. - C. 1977, 1978

laciniata (Roxb.) DC.

- 18 Sharma, A. & Sarkar, A.K. 1967 - 1968; Patil, R.M. & Chennaveeraiah, M.S. 1969; Gupta, P.K. *et al.* 1972; Peng, C. - I. & Hsu, C. - C. 1977, 1978; Bir, S.S. & Sidhu, M. 1980
20 Gupta, P.K. 1969b
22 Mehra, P.N. & Remanandan, P. 1969, 1975

lancoolaria (Roxb.) Druce

- 18 Patil, R.M. & Chennaveeraiah, M.S. 1969
20 Gupta, R.C. & Gill, B.S. 1979b

malcolmi Hook. f.

- 27 Patil, R.M. & Chennaveeraiah, M.S. 1969

membranacea DC.

- 18 Patil, R.M. & Chennaveeraiah, M.S. 1969; Mathew, A. & Mathew, P.M. 1978
22 Mehra, P.N. & Sidhu, S.S. 1960;

Mehra, P.N. *et al.* 1965

- 36 Mathew, A. & Mathew, P.M. 1975a
44 Mehra, P.N. & Remanandan, P. 1969, 1975

var. *jacquemontii* (Hook. f.) Randeria
Jacquemontii Hook. f.

- 18 Mathew, A. & Mathew, P.M. 1975

mollis (D. Don) Merr.

- 18 Patil, R.M. & Chennaveeraiah, M.S. 1969
18+1-28 Mathew, A. & Mathew, P.M. 1978
22 Turner, B.L. & Lewis, W.H. 1965; Mehra, P.N. & Remanandan, P. 1969; Gill, L.S. & Abubakar, A.M. 1975; Mehra, P.N. & Remanandan, P. 1975

wightiana DC.

- 18 (16 - 22) Sampathkumar, R. & Ayyangar, K.R. 1979
18 Mehra, P.N. & Sidhu, S.S. 1960; Mathew, A. & Mathew, P.M. 1975a
20 Shukur, A. 1967; Narayan, K.N. & Shukur, A. 1969; Shukur, A. *et al.* 1977

obliqua (Linn.) Druce

- 20 Patil, R.M. & Chennaveeraiah, M.S. 1969; Bhandari, M.M. & Singhvi, D. M. 1977

oxyodonta DC.

- 18 Patil, R.M. & Chennaveeraiah, M.S. 1969; Mathew, A. & Mathew, P.M. 1975a
27 Patil, R.M. & Chennaveeraiah, M.S. 1969; Chennaveeraiah, M.S. & Patil, R.M. 1971

riparia (Blume) DC.

- 18 Malla, S. B., Bhattaraj, S. *et al.* 1977a

var. *megacephala* Randeria

- 16 Peng, C. - I. & Hsu, C. - C. 1977, 1978

virens DC.

- 18 Patil, R.M. & Chennaveeraiah, M.S. 1969; Mathew, A. & Mathew, P.M. 1975a

sp.

- 18 Mehra, P.N. & Sidhu, S.S. 1960

Brachyactis Ledeb.

5; North Asia and North America. 3; Himalaya (up to 4,660 m) and Assam, and Pakistan.

robusta Benth.

- 18 Mehra, P.N. & Remanandan, P. 1969, 1974

1947; Janaki Ammal, E.K. & Sobti, S. N. 1962

- 32 Weddell, C. 1941

Brachycome Cass.

75; Australia, New Zealand, North America and Africa. 1; cultivated.

iberidifolia Benth.

- 18 DeJong 1963; Chauksanova, N.A. *et al.* 1968a; Gupta, P.K. 1969b; Turner, B.L. 1970

Caesulia Roxb.

1; throughout the greater part of India, and Bangla Desh.

axillaris Roxb.

- 14 Mohan, K.V.J. 1964; Mehra, P.N. *et al.* 1965; Bhandari, M.M. & Singhvi, D.M. 1977

Calendula Linn.

20-30; Mediterranean to Persia. About 3; cultivated.

arvensis Linn.

- 18 Humphries, C.J. *et al.* 1978
36 Negodi, G. 1935, 1937a; Janaki Ammal, E.K. & Sobti, S.N. 1962
44 Meusel, H. & Ohle, H. 1966; Fernandes, A. & Queiroz, M. 1970-1971; Dahlgren, R. *et al.* 1971; Strother, J. L. 1972; Powell, A.M. *et al.* 1974; Van Loon, J.C. 1974

var. *arvensis*

- 46 Rashid, A. 1974

officinalla Linn.

- 28 Lundegårdh, H. 1909; Negodi, G. 1935, 1937a
32 Weddell, C. 1941; Janaki Ammal, E.K. & Sobti, S.N. 1962; Mehra, P.N. *et al.* 1965; Meusel, H. & Ohle, H. 1966; Gupta, P.K. 1969b; Gupta, P.K. *et al.* 1972; Hazra, R.R. 1970; Mehra, P.N. & Remanandan, P. 1976

suffruticosa Vahl

- 18 Meusel, H. & Ohle, H. 1966
28 Negodi, G. 1935, 1937a; Delay, C.

Callistephus Cass.

1; China and Japan. Cultivated.

hortensis Cass.

- 18 Mehra, P.N. & Remanandan, P. 1974

chinensis (Linn.) Nees

- 18 Tahara, M. & Shimotomai, N. 1926; Huziwara, Y. 1954 (Kitamura, S. 1957); Mehra, P.N. & Remanandan, P. 1969
36 Vaarama, A. & Suikinoja, M. 1958

Carduus Linn.

100; Europe, Mediterranean and Asia. 2; Western Himalaya (up to 4,330 m), and Pakistan and Sri Lanka.

montanus Linn.

- 16 Poddubnaja-Arnoldi, W.A. (Fedorov); Tischler, G. 1934; Löve A. & Löve, D. 1944b; Górecka, A. 1956; Moore, R.J. & Mulligan, G.A. 1956, 1958, 1964; Moore, R.J. & Frankton, C. 1962; Gadella, T.W.J. & Kliphuis, E. 1968a; Gadella, T.W.J. *et al.* 1970; Májovský, J. *et al.* 1970b; Van Loon, J. Chr. & de Jong, H. 1978
40 Mehra, P.N. *et al.* 1965; Mehra, P.N. & Remanandan, P. 1976

ssp. *montanus*

- 16 Van Loon, J. Chr. & Snelders, H.C.M. 1979; Van Loon, J. Chr. & Kieft, B. 1980

pycnocephalus Linn.

- 54 Moore, R.J. & Frankton, C. 1962
64 Kramer, K.U. *et al.* 1972

Carpesium Linn.

10; South Europe and temperate Asia. 3; between 1,650 and 3,300 m in the Himalaya, and Western Ghats.

abrotanoides Linn.

- 36 Shimakawa, S. 1952; Arado, H. 1962a

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caeruleum Linn.

- 40 Shimakawa, S. 1952 ; Arano, H. 1962a ; Mehra, P.N. *et al.* 1965 ; Chouksanova, N.A. *et al.* 1968a ; Mehra, P.N. & Remanandan, P. 1975 ; Gill, B.S., Gupta, R.C. & Kaur, S. 1980 ; Kumar, V. & Chauhan, K.P.S.

trachelifolium Less.

- 40 Mehra, P.N. *et al.* 1965 ; Gill, B.S., Gupta, R.C. & Kaur, S. 1980

Carthamus Linn.

13 ; Mediterranean, Africa and Asia. 3 ; Kashmir, Punjab, Delhi and adjacent areas, 1 cultivated.

lanatus Linn.

- 22 Heaton, T.C. & Klisiewicz, J.M. 1981
44 Ashri, A. & Knowles, P.F. 1959, 1960 ; Harvey, B.L. 1966a ; Khidir, M.O. 1969 ; Khidir, M.O. & Knowles, P.F. 1970 ; Dumé, C. 1976 ; Estilai, A. & Knowles, P.F. 1976 ; Kuzmanov, B. & Georgieva, S. 1976
44, 64 Hanelt, P. 1963
64 Poddubnaja-Arnoldi, V. 1931 ; Tonjan, Z.R. 1968a ; Mehra, P.N. & Remanandan, P. 1976

oxycantha Bieb.

- 24 Kishore, H. 1951 ; Ashri, A. & Knowles, P.F. 1960 ; Mehra, P.N. & Sidhu, S.S. 1960 ; Hanelt, P. 1963 ; Mehra, P.N. *et al.* 1965 ; Tonjan, Z.R. 1968a ; Gupta, P.K. *et al.* 1972 ; Estilai, A. & Knowles, P.F. 1976 ; Mehta, P.N. & Remanandan, P. 1976 ; Aryavand, A. 1977b

tinctorius Linn.

- 24 Poddubnaja - Arnoldi, V. 1931 ; Patel, J.S. & Narayana, G.V. 1935 ; Richharia, R.H. & Kotval, J.P. 1940a ; Ashri, A. & Knowles, P.F. 1959, 1960 ; Hanelt, P. 1963 ; Mehra, P.N. *et al.* 1965 ; Khidir, M.O. 1969 ; Rathore, O.S. & Chatterji, A.K. 1972 ; Mehra, P.N. & Remanandan, P. 1976 ; Carapetian, J. & Rupert, E.A. 1977 ; Estilai, A. 1977 ; Uhríková, A. & Feráková, V. 1980 ; Chatterji, A.K. & Jayaramu, M. 1981a ; Heaton, T.C. & Klisiewicz, J.M. 1981

24, 96, 336 Chatterji, A.K. & Jayaramu, (in tapetum) M. 1981b

tinctorius x *lanatus*

- 34, 68 Heaton, T.C. & Klisiewicz, J.M. 1981

Centaurea Linn.

About 600 ; Europe, North Africa to Northern India, Northern China and temperate North and South America. About 5 ; North Western India and Nilgiris, and Pakistan a few cultivated.

calcitrapa Linn.

- 20 Vignoli, L. 1945 ; Heiser, C.B. & Whitaker, T. W. 1948 ; Guinochet, M. 1957 ; Tonjan, Z.R. 1968b ; Fernandes, A. & Queiros, M. 1971 ; Morales, M.J.F. 1974 ; Powell, A.M. *et al.* 1974

cyanus Linn.

- 20, 24 Dey, D. & Sharma, A. K. 1967
24 Poddubnaja - Arnoldi, V. 1931 (Fedorov) ; Morinaga, T. *et al.* 1929 ; Tischler, G. 1934, 1937 ; Fritsch, R. 1935 ; Rohweder, H. 1937 ; Löve, A. & Löve, D. 1956b ; Guinochet, M. 1957 ; Mehra, P.N. *et al.* 1965 ; Tonjan, Z.R. 1968b ; Fernandes, A. & Queiros, M. 1971 ; Speta, F. 1971a ; Gupta, P.K. *et al.* 1972 ; Fritsch, R.M. 1973 ; Powell, A.M. *et al.* 1974

depressa Bieb.

- 16 Chouksanova, N.A. *et al.* 1968a ; Tonjan, Z.R. 1968b
18 Vilmorin R. de & Chopinet, R. 1954

iberica Trev.

- 16 Poddubnaja - Arnoldi, V. 1931 ; Heiser, C.B. & Whitaker, T.W. 1948 ; Tonjan, Z.R. 1968b
20 Powell, A.M. *et al.* 1974
20+2-4B Podlech, D. & Dieterle, A. 1969

malitensis Linn.

- 22 Covas, G. & Schnack, B. 1947
24 Guinochet, M. 1957 ; Guinochet, M. & Foissac, J. 1962 ; Björkqvist, I. *et al.* 1969 ; Dahlgren, R. *et al.* 1971 ; Fernandes, A. & Queiros, M. 1971 ; Morales, M. J. F. 1974 ; Powell, A. M. *et al.* 1974 ; Van Loon, J. C. 1974

36 Chiappini, M. 1954

Centipeda Lour.

6 ; Madagascar, Afghanistan, East Asia, Indo Malesia, Australia, New Zealand, Polynesia and Chile. 1 ; throughout India, and Sri Lanka

mutua (Linn.) A. Br. & Aschers.

- 14 Malla, S. B., Bhattarai, S. *et al.* 1978a
- 18, 20 Arano, H. 1962b
- 20 Mangenot, S. & Mangenot, G. 1962 ; Peng, C. - I. & Hsu, C. - C. 1977, 1978

orbicularis Lour.

- 20 Ishikawa, M. 1916 ; Hair, J. B. 1963 ; Gupta, R.C. & Gill, B.S. 1980

Centratherum Cass.

20 ; tropics. 11 ; mostly in Western Peninsula.

anthelminticum (Linn.) O. Kuntze

Vernonia anthelmintica (Linn.) Willd.

- 20 Mehra, P.N. & Sidhu, S.S. 1960 ; Mehra, P.N. *et al.* 1965 ; Jones, S.B. Jr 1970 ; Mathew, A. & Mathew, P. M. 1976

- 54 Parameswar, N. S. 1960

cowrtalleans (DC.) Benth.

- 18 Mathew, A. & Mathew, P.M. 1975b ; Narayana, B.M. 1979

mayarli Fischer

- 18 Narayana, B.M. 1979

molle Benth.

- 18 Mathew, A. & Mathew, P.M. 1978 ; Narayana, B.M. 1979

phyllotaenium (DC.) Benth. & Hook.

- 18 Mehra, P.N. & Remanandan, P. 1969, 1975

rangacharii Gamble

- 18 Shetty, B.V. 1967 ; Narayana, B.M. 1979

ritchiei Hook. f.

- 18 Narayana, B.M. 1979

sp.

phyllotaenium auct. non Benth.

- 18 Narayana, B.M. 1979

Charieis Cass.

2 ; South Africa. 1 ; introduced.

heterophylla Cass.

- 10 Solbrig, O.T. *et al.* 1964 ; Nordens-tam, B. 1969

Chrysanthemum Linn.

About 200 ; Europe, Asia, Africa and America. 13 ; 2 confined between 4,290 and 5,610 m in the Himalaya, about 11 cultivated.

arisanense Hayata

- 18 Mehra, P.N. & Remanandan, P. 1974

balsamita Linn.

- 18 Kaul, M.L.H. 1964b
- 18, 54 Harling, G. 1951a ; Dowrick, G.J. 1952
- 54 Shimotomai, N. 1937

carinatum Schousb.

- 18 Tahara, M. 1914, 1915a, c, 1921 ; Harling, G. 1951a ; Vilmorin, R. de & Chopinet, R. 1954 ; Jain, H.K. & Gupta, S.B. 1960 ; Kapoor, B.M. & Tandon, S.L. 1964a ; Rana, R.S. & Jain, H.K. 1965 ; Rana, R.S. 1966 ; Lamprochi, H. 1966 ; Chauksanova, N.A. *et al.* 1968a ; Chauhan, K.P.S. 1972 ; Mehra, P.N. & Remanandan, P. 1974 ; Chaudhuri, B.K. *et al.* 1976 ; Humphries, C.J. *et al.* 1978

18,26,

29,36,37 Bergman, B. (Fedorov)

carinatum x coronarium

- 18 Chaudhuri, B.K. *et al.* 1976

cinerariffolium Vis.

- 18 Tahara, M. 1915c, 1921 ; Shimotomai, N. 1947b ; Dowrick, G.J. 1952 ; Fujiwara, I. 1954 ; Corsi, G. 1962 ; Kaul, M.L.H. 1964a ; Tominaga, Y. 1969

18, 27, 36 Tominaga, Y. 1959, 1967, 1972

- 36 Kawatani, T., Ohno, T. & Kinoshita, K. 1954

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coronarum Linn.

10, 16, 18.

- 20, 28, 30 Gupta, R.C. & Gill, B.S. 1979a
 18 Tahara, M. 1914, 1915a, c, 1921; Shimotomai, N. & Takemoto, T. 1936, 1939; Glotov, V. (Fedorov); Lamprecht, H. 1966; Gupta, P.K. 1969b; Gupta, P.K. *et al.* 1972; Borgon, L. 1970; Bramwell, D. *et al.* 1971; Nordenstam, B. 1972; Mehra, P.N. & Remanandan, P. 1974; Van Loon, J.C. 1974; Bhattacharyya, D. 1976; Chaudhuri, B.K. *et al.* 1976; Rao, P.N. & Rao, N.K. 1980
 18, 36 Shimotomai, N. & Hara, K. 1935; Dowrick, G.J. 1952; Srivastava, V.K. 1980

coronarum x cartatum

- 18 Chaudhuri, B.K. *et al.* 1976; Chaudhury, S.K. 1976

corymbosum Linn.

- 18 Fernandes, A. & Queiros, M. 1971; Mehra, P.N. & Remanandan, P. 1974
 18,
 18+B, 36 Dowrick, G. J. 1952
 36 Shimotomai, N. 1937; Bijok, K. 1955, 1960; Murin & Váchoš (Fedorov)

ssp. corymbosum

- 36 Májovský, J. *et al.* 1970a

hortorum Bailey

- 54 Gupta, R.C. & Gill, B.S. 1980

indicum Linn.

- 20 Haro, C.V. & Lee, M.S. 1968
 36 Tahara, M. 1915a, 1921; Shimotomai, N. 1933, '938; Shimotomai, N. & Hara, K. 1935; Shimotomai, N. & Takemoto, T. 1936, 1939; Takemoto, T. 1939; Tanaka, R. 1957; Watanabe, K. *et al.* 1972
 36, 54 Dowrick, G.J. 1952; Tanaka, R. 1952; Shimotomai, N. *et al.* 1957; Shimotomai, N. & Yoshinari, T. 1960
 54 Dowrick, G.J. 1953; Tanaka, R. 1955

leucanthemum Linn.

- 18 Pólya, L. 1950; Martin, R. W. & Smith, F.H. 1955; Bakšay, L. 1956, 1960; Duckert, M. M. & Favarger, C. 1956; Favarger, C. & Villard, M. 1965a,

- b; Larsen, K. 1965b; Hindáková & Uhríková (Fedorov); Tomkins, D.J. & Grant, W. F. 1978
 18, 36 Mehra, P. N. *et al.* 1965; Gadella, T. W.J. & Kliphuis, E. 1966; Mehra, P.N. & Remanandan, P. 1974
 18, 36, 54 Dowrick, G.J. 1952; Böcher, T. W. & Larsen, K. 1957; Mulligan, G. A. 1958, 1959; Czapik (Skaliňská, M. *et al.* 1964)
 18,
 36, 54, 72 Favarger, C. 1959
 18,
 54 +1 - 3B Favarger, C. 1963
 36 Tahara, M. 1915a, b, c, d, 1921; Ohrt (Tischler, G. 1927a); Tischler, G. 1934; Cooper, D.C. & Mahony, K.L. 1935; Negodi, G. 1937b; Rohweder, H. 1937; Shimotomai, N. 1937; Löve, A. & Löve, D. 1956b; Gadella, T.W.J. & Kliphuis, E. 1963; Bhattacharyya, D. 1976
 90 Favarger, C. 1962
morifolium Ramat.
 42 Tahara, M. 1921
 54 Tahara, M. 1915c; Shimotomai, N. 1932, 1933; Dowrick, G. J. 1953
 54, 56 Tahara, M. 1915a
cv. 'Chenghiskhan'
 72+1B Nazeer, M.A. 1981
cv. 'Imocence'
 56 Nazeer, M.A. 1981
cv. 'Nigeria'
 54 Nazeer, M.A. 1981
cv. 'Red Princess Anne'
 54 Nazeer, M.A. 1981
cv. 'WI'
 54 Nazeer, M.A. 1981
segetum Linn.
 18 Tahara, M. 1921; Tischler, G. 1934; Rohweder, H. 1937; Shimotomai, N. 1938; Delay, C. 1947; Harling (Tischler, G. 1950); Bijok, K. 1960; Gadella, T.W.J. & Kliphuis, E. 1968a; Fernandes, A. & Queiros, M. 1971; Strother, J.L. 1972; Mehra, P.N. & Remanandan, P. 1974; Bhattacharyya, D. 1976
 18, 36 Dowrick, G.J. 1952

Cicerbita Wallr.

18 ; North temperate, especially mountains. About 5 ; temperate Himalaya (up to 4,500 m).

cyanea (D. Don) Beauv.

Lactuca hastata DC.

- 16 Stebbins G. L. *et al.* 1953 ; Mehra, P. N. *et al.* 1965 ; Shetty, B.V. 1967 ; Remanandan, P. & Mehra, P.N. 1974

macrantha (Clarke) Beauv.

Lactuca macrantha Clarke

- 16 Stebbins, G.L. *et al.* 1953

Cichorium Linn.

9 ; Europe, Mediterranean and Abyssinia. 3 ; North Western India, also cultivated.

intybus Linn.

- 18 Makoveltski, M. (Fedorov) ; Tischler, G. 1934 ; Delay, C. 1947 ; Heiser, C.B. & Whitaker, T.W. 1948 ; Singh, B. 1951 ; Rick, C.M. 1953 ; Stebbins, G. L. *et al.* 1953 ; Mehra, P.N. & Sidhu, S.S. 1960 ; Koul, M.L.H. 1964a ; Skalińska, M. *et al.* 1964 ; Mehra, P. N. *et al.* 1965 ; Podlech, D. & Dieterle, A. 1969 ; Kuzmanov, B.A. & Kozubarov, S. I. 1970 ; Murin, A. & Sheikh, M. Y. 1971 ; Kaul, V. & Singh, D. 1972 ; Remanandan, P. & Mehra, P.N. 1974 ; Kliphuis, E. 1977 ; Tomb, A.S. *et al.* 1978 ; Jansen, R.K. & Stuessy, T. F. 1980 ; Bir, S.S. & Sidhu, M. 1980 ; Van Loon, J. Chr. & Kieft, B. 1980
- 18, 20 Javorcikova, D. 1970
- 20 Májovský, J. *et al.* 1970b ; Feráková, V. 1972

Cirsium Mill.

About 150 ; North temperate. 7 ; Himalaya (up to 4,620m), 1 extending to Gangetic Delta.

argyranthum DC.

- 34 Podlech, D. & Dieterle, A. 1969

Cnicus argyranthus DC.*

- 32 or 34 ? Mehra, P.N. & Sidhu, S.S. 1960
- 34 Mehra, P.N. *et al.* 1965 ; Mehra, P.N. & Remanandan, P. 1976
- 34 ± 0.5f Gill, B.S., Gupta, R.C. & Kaur, S. 1980

arvense (Linn.) Scop.

- 34 Poddubnaja Arnoldi, V. 1931 ; Tischler, G. 1934, 1937 ; Rohwedder, H. 1937 ; Ehrenberg, L. 1945 ; Heiser, C. B. & Whitaker, T.W. 1948 ; Pólya, L. 1950 ; Löve, A. & Löve, D. 1956b ; Moore, R.J. & Frankton, C. 1962 ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Taylor, R. L. & Mulligan, G.A. 1968 ; Májovský, J. *et al.* 1970b ; Fernandes, A. & Queiros, M. 1971 ; Tomkins, D.J. & Grant, W.F. 1978 ; Van Loon, J. Chr. & de Jong, H. 1978 ; Brand, C.V. D. *et al.* 1979 ; Kliphuis, E. & Wiering, J. H. 1979 ; Bir, S.S. & Sidhu, M. 1980
- 34 - 36 Laane, M.M. 1969a
- 34, 68 Czapik, R. 1958
- 36 Gupta, P.K. *et al.* 1972

Cnicus arvensis Hoffm.

- 34 Mehra, P.N. & Sidhu, S.S. 1960 ; Mehra, P.N. *et al.* 1965 ; Mehra, P.N. & Remanandan, P. 1976
- 40 Sarkar, A.K., Chakraverty, M. *et al.* 1977

eriphorum (Linn.) Scop.

- 34 Reese, G. 1952b ; Czapik, R. 1958 ; Moore, R.J. & Frankton, C. 1962 ; Májovský, J. *et al.* 1970b

griffithii Boiss.

- 34 Podlech, D. & Dieterle, A. 1969

wallichii DC.

Cnicus wallichii DC.**

- 34 Mehra, P. N. & Remanandan, P. 1969, 1976

* The combination *Cnicus argyranthus* was made by Hook. f. (HFDD : 253).

** The combination *Cnicus wallichii* was made by Hook. f. (HFDD : 254).

Conyza Less.

60 ; temperate and subtropics. 10 ; chiefly in the subtropical Himalaya (up to 1,980 m), and Sri Lanka.

aegyptiaca (Linn.) Alt.

- 18 Mehra, P.N. *et al.* 1965 ; Turner, B.L. & Lewis, W.H. 1965

ambigua DC.

- 54 Mehra, P.N. & Sidhu, S.S. 1960 ; Mehra, P.N. *et al.* 1965 ; Borgen, L. 1969 ; Bir, S.S. & Sidhu, M. 1980

japonica (Thunb.) Less.

- 18 Mehra, P.N. *et al.* 1965 ; Hsu, C. - C. 1970 ; Mehra, P.N. & Remanandan, P. 1974 ; Peng, C. - I. & Iisu, C. - C. 1977, 1978

tenantha (D. Don) Ludlow & Raven

- 18 Gupta, R.C. & Gill, B.S. 1979b

stricta Willd.

- 18 Mehra, P.N. & Sidhu, S.S. 1960 ; Mehra, P.N. *et al.* 1965 ; Shetty, B.V. 1967 ; Shukur, A. 1967 ; Mehra, P.N. & Remanandan, P. 1974 ; Shukur, A. *et al.* 1977
36 Gupta, R.C. & Gill, B.S. 1979b

Coreopsis Linn.

About 120 ; America and tropical Africa. About 6 ; cultivated.

auriculata Linn.

- 20 Gupta, R.C. & Gill, B.S. 1980
24 Bilquez (Delay, C. 1951)

basalis Blake

- 20, 22 Gupta, P.K. *et al.* 1972
26 Turner, B.L. 1960

drummondii Torr. & A. Gray

- 26 Galin, O.E.V. 1934

var. **basalis**

- 26 Parker, H.M. 1972

coronata Hook.

- 20 Gupta, P.K. 1969b ; Mehra, P.N. & Remanandan, P. 1969
26 Vilmorin, R. de & Chopinet, R. 1954

grandiflora Nutt.

- 20 Mehra, P.N. & Remanandan, P. 1974
26 Galin, O.E.V. 1934
28 Turner, B.L. & Lewis, W.H. 1965

lanceolata Linn.

- 24, 48 Bilquez (Delay, C. 1951) ; Gupta, S. & Gadgil, V.N. 1972
26 Turner, B.L. 1960 ; Alexandrova, T. W. (Fedorov) ; Jones, S.B. Jr 1968 ; Smith, E.B. 1971

finctoria Nutt.

- 24 Saito, K. 1950 ; Turner, B.L. 1960 ; Jones, S.B. Jr 1968 ; Sharma, J.N. *et al.* 1971 ; Parker, H.M. 1972
26 Shukur, A. 1969 ; Smith, E.B. & Parker, H.M. 1971

Cosmos Cav.

25 ; tropics and subtropics, America and West Indies. 2 ; cultivated.

bipinnatus Cav.

- 24 Sugiura, T. 1931, 1936b ; Sharma, A.K. 1947 (Léve, A. & Léve, D. 1961b) ; Powell, A.M. & Turner, B.L. 1963 ; Mehra, P.N. *et al.* 1965 ; Melchert, T. E. 1968 ; Mehra, P.N. & Remanandan, P. 1974 ; Keil, D.J. & Stuessy, T.F. 1977
24, 24+R Gupta, P. K. 1972

sulphureus Cav.

- 24 Sugiura, T. 1936b, 1937b, 1939 ; Mehra, P.N. *et al.* 1965 ; Turner, B.L. & Flyr, D. 1966 ; Melchert, T.E. 1968 ; Singh, N.K. 1972 ; Solbrig O.T. *et al.* 1972 ; Turner, B.L. *et al.* 1973 ; Olsen, J. 1980
26 Mehra, P.N. & Remanandan, P. 1974

var. **sulphureus**

- 24 Pinkava, D.J. & Keil, D.J. 1977

Cotula Linn.

75 ; throughout the world, chiefly in Southern Hemisphere. 4 ; Himalaya (up to 990m) Northern and Eastern India, Western Ghats, and Pakistan.

anthemoides Linn.

- 20 Gupta, R.C. & Gill, B.S. 1980
- 36 Mehra, P.N. *et al.* 1965

australis (Less.) Hook. f.

- 36 Hair, J.B. 1962
- 40 Davis, G. L. 1961, 1962

hemispherica (Roxb.) C. R. Babu

hemispherica Wall.

- 20 Malik, C.F. 1960b; Mehra, P.N. & Sidhu, S.S. 1960; Mehra, P.N. *et al.* 1965; Gupta, P.K. *et al.* 1972

Cousinia Cass.

About 400; East Mediterranean to Central Asia and Mongolia, South to Persia, Afghanistan and Western Himalaya. 6; between 1,650 and 3,630 m in North Western Himalaya.

microcarpa Boiss.

- 20 Mehra, P.N. & Romanandan, P. 1969, 1976
- 26 Koul, M.L.H. 1964a; Podlech, D. & Dieterle, A. 1969

minuta Boiss.

- 20 Mehra, P.N. *et al.* 1965

Crassocephalum Moench

30; warm Africa and Madagascar. 1; Eastern and Southern India.

crepidioides (Benth.) S. Moore

- 40 Afzelius, K. 1924, 1967; Borgmann, E. 1964; Turner, B.L. & Lewis, W.H. 1965; Miyagi, C. 1971; Gadella, T.W. J. 1972

Gynura crepidioides (Benth.) S. Moore*

- 40 Afzelius K. 1924

Cremanthodium Benth.

55; Himalaya and China. 10; Himalaya (mostly in Sikkim) up to 5,330 m, and Nepal.

reniforme Benth.

- 58 Sharma, A. & Sarkar, A. K. 1967-1968

Crepis Linn.

200; Northern hemisphere, tropical and South Africa. About 12; Himalaya (up to 5, 660 m).

bhutanica Hutch.

- 16 Babcock, E.B. & Cameron, D.R. 1934

blattarioides (Linn.) Vahl

- 8 Marchal, E. 1920; Rosenberg, O. 1920; Mann, M. C. 1925; Babcock, E.B. & Mann-Lesley, M. 1926; Geitler, L. 1929; Hollingshead, L. & Babcock, E.B. 1930; Babcock, E.B. & Jenkins, J.A. 1943; Linder, R. & Brun, J. 1956; Delay, J. 1970a

depressa Hook. f. & Thoms.

- 16 Babcock, E.B. & Cameron, D.R. 1934

foetida Linn.

- 8 Rosenberg, O. 1918; Marchal, E. 1920
- 10 Mann, M.C. 1922, 1925; Babcock, E. H. & Mann-Lesley, M. 1926; Hollingshead, L. & Babcock, E.B. 1930; Poole, C. 1931; Babcock, E.B. & Cave, M.S. 1938; Babcock, E.B. & Jenkins, J.A. 1943; Sherman, M. 1946; Babcock, E.B. 1947a; Linder, R. & Brun, J. 1956; Nazarova, Z.A. (Fedorov); Nazarova, N. A. 1968; Kuzmanov, B. A. & Kozuharov, S.I. 1970; Májovský, J. *et al.* 1970b; Gadella, T. & Kliphuis, E. 1972; Kliphuis, E. & Wieffering, J.H. 1972; Kuzmanov, B. & Nikolova, V. 1980

ssp. *foetida*

- 10 Fernandes, A. & Queiros, M. 1971; Van Loon, J. Chr. & Kieft, B. 1980

kashmirica Bab.

- 12 Babcock, E.B. & Cameron, D.R. 1934; Babcock, E.B. 1942, 1947b

* The combination *Gynura crepidioides* was made by Benth. (FEH:337).

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lampsanoides (Gouan) Froel.

- 12 Babcock, E.B. & Jenkins, J.A. 1943 ;
Delay, J. 1969c ; Fernandes, A. &
Queiroz, M. 1971 ; Delay, J. 1970a

Phaeocastum pulchrum Reichb.

- 8 Chuksanova (Fedorov)

nana Rich.

- 14 Hollingshead, L. & Babcock, E.B.
1930 ; Babcock, E.B. & Jenkins, J.A.
1943 ; Taylor, R.L. & Brockman, R.P.
1966 ; Zbukova, P.G. (Fedorov), 1969 ;
Hedberg, O. 1967 ; Johnson, A.W. &
Packer, J. G. 1968 ; Mulligan, G. A.
et al. 1972 ; Mulligan, G. A. & Cody,
W. J. 1973

var. *nana*

- 14 Dawe, J. C. & Murray, D. F. 1979

pulchra Linn.

- 8 Rosenberg, O. 1918, 1920 ; Mann, M.C.
1922, 1925 ; Navashin M. S. (Fedorov) ;
Babcock, E.B. & Mann - Lesley, M.
1926 ; Hollingshead, L. & Babcock, E.
B. 1930 ; Heitz, E. 1931a ; Babcock, E.
B. & Jenkins, J.A. 1943 ; Murin &
Váchoš (Fedorov) ; Nazarova, N. A.
1968 ; Májovský, J. *et al.* 1970a ; Strid,
A. 1971

sancta (Linn.) Babc.

ssp. *bifida* (Vis.) Tbell. *ex* Babc.

Pterotheca falconeri Hook. f.

- 6 Mehra, P.N. *et al.* 1965 ; Mehra, P. N. &
Singh, P. 1968 ; Mehra, P.N. & Mann,
S.K. 1974 ; Remanandan, P. & Mehra,
P.N. 1974 ; Mehra, P.N. & Rao, L.
1980

6.6+1-3 B,

7, 8, 9, 12,

12+4B, 14 Kaushal, P.S. & Mehra, P.N. 1976

6+1-3B Mehra, P.N. & Mann, S.K. 1972

10 Shetty, B. V. 1967

sibirica Linn.

- 8 Marchal, E. 1920
10 Mann, M.C. 1922, 1925 ; Babcock, E.
B. & Mann - Lesley, M. 1926 ; Hollings-
head, L. & Babcock, E.B. 1930 ; Heitz,
E. 1931a ; Babcock, E.B. 1942, 1947a,
b ; Babcock, E.B. & Jenkins, J.A.
1943 ; Nazarova, N.A. 1968 ; Waga-
naar, E.B. 1969

10

10+1-2B Swezy, O. 1935

thomsonii Babc.

- 10 Babcock, E.B. & Cameron, D.R. 1934 ;
Sherman, M. 1946 ; Babcock, E.B.
1947b

Cyathocline Cass.

3 ; India in Western Ghats, 1 extending
to Eastern and Central India, Himalaya (up
to 1,320 m), and Nepal, Bhutan and Bangla
Desh.

lutea Law *ex* Wight

- 20 Subramanyam, K. & Kamble, N. P.
1971

purpurea (D. Don) O. Kuntze

- 22 Shetty, B.V. 1967 ; Subramanyam, K.
& Kamble, N.P. 1967

lyrata Cass.

- 18 Koul, A.K. & Wakblu, A.K. 1975
22 Mehra, P.N. & Sidhu, S.S. 1960 ; Koul
M.L.H. 1964a ; Mehra, P.N. *et al.*
1965

Cynara Linn.

14 ; Mediterranean to Kurdistan. 1 ;
cultivated.

scolymus Linn.

- 34 Janaki Ammal, E.K. (D. 1943)

Dahlia Cav.

27 ; Mexico and Guatemala. A few
cultivated.

coccinea Cav.

- 32 Lawrence, W.J.C. 1929, 1930, 1931a,
b ; Mathew, A. & Mathew, P.M. 1975b
64 Turner, B.L., Ellison, W.L. & King
R. 1961 ; Mehra, P.N. & Remanandan,
P. 1974

excelsa Benth.

- 32 Mehra, P.N. & Remanandan, P. 1974
36 Mehra, P.N. & Remanandan, P. 1969

imperialia Roetzl

- 32 Lawrence, W. J. C. 1929, 1931a ; Sol-
brig, O. T. *et al.* 1972 ; Singh, V. K. &
Roy, S. K. 1973b

variabilis (Willd.) Desf.

- 32 Gagnieu, A. *et al.* 1956
- 64 Ishikawa, M. 1911; Lawrence, W.J.C. 1929, 1930, 1931a, b; Delay, C. 1947; Gupta, P.K. *et al.* 1972; Singh, V.K. & Roy, S.K. 1973b

Dichrocephala L' Herit, *ex* DC.

10; warmer parts of Africa, Madagascar, India, China and Java. 4; Himalaya (up to 2,920 m), Western Ghats and Nilgiris.

bicolor (Roth) Schlecht.

- 12 Hsu, C. - C. 1967
- 18 Borgmann, E. 1964; Miyagi, C. 1971; Mehra, P.N. & Remanandan, P. 1974

integrifolia (Linn. f.) O. Kuntze

- 18 Turner, B.L. & Lewis, W.H. 1965; Hsu, C. - C. 1970; Gadella, T.W.J. 1977; Peng, C. - I. & Hsu, C. - C. 1977, 1978

latifolia DC.

- 18 Mehra, P.N. & Sidhu, S.S. 1960; Mehra, P.N. *et al.* 1965; Shetty, B.V. 1967; Gill, B.S., Gupta, R.C. & Kaur, S. 1980

chrysanthemifolia DC.

- 18 Mathew, A. & Mathew, P.M. 1978
- 20 Shetty, B.V. 1967

Dicoma Cass.

48; Central, East and South Africa, Madagascar and Socotra, 1 in India. 1; North Western to Southern India.

tomentosa Cass.

- 22 Bhandari, M.M. & Singhvi, D.M. 1977

Dimorphotheca Moench

7; South Africa. 3; cultivated.

annua Less.

- 18 Gupta, P.K. *et al.* 1972

aurantiaca DC.

- 18 Harrison, J.W. (Tischler, G. 1935 1936); Negodi, G. 1937a; Riley, H.P. & Hoff, V.J. 1961; Mehra, P.N. *et al.* 1965; Mehra, P.N. & Remanandan, P. 1976

- 18, 36 Rizvi, S. 1973

pluvialis (Linn.) Moench

- 17+18 Gupta, P. K. 1969b
- 18 Harrison, J. W. (Tischler, G. 1935 - 1936); Negodi, G. 1937a; Bilquez (Delay, C. 1951)

Doronicum Linn.

35; temperate Eurasia and North Africa. 5; Himalaya (up to 4,660 m).

roylei DC.

- 60 Mehra, P.N. & Remanandan, P. 1969, 1975

Dubyaea DC.

10; Himalaya and West China. 5; Himalaya.

hispida (D. Don) DC.

- 16 Babcock, E.B. *et al.* 1937; Shetty, B.V. 1967

Dyssodia Cav.

50; South West United States and Mexico. 1; cultivated.

tenuifolia (Cass.) Loes.

- 16 Johnston, M.C. & Turner, B.L. 1962; Strother, J.L. 1969

Echinops Linn.

About 100; Eastern Europe, Africa and Asia. 4; North Western Himalaya (up to 3,690 m), 1 almost throughout India, and Pakistan.

cornigerus DC.

- 28 Mehra, P.N. *et al.* 1965; Mehra, P.N. & Remanandan, P. 1976
- 30 Sharma, A. & Sarkar, A.K. 1967 - 1968
- 32 Kawatani, T. *et al.* 1968

echinatus DC*

- 28 Malik, C.P. 1960b; Mehra, P.N. & Sidhu, S.S. 1960; Koul, M.L.H. 1964a; Mehra, P.N. *et al.* 1965; Bhandari, M.M. & Singhvi, D.M. 1977

* The combination *Echinops echinatus* was made by Roxb. (FHD : 611; FD : 200).

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niveus Wall.

- 22 Mehra, P.N. *et al.* 1965
28 Chouksanova, N.A. *et al.* 1968b ;
Mehra, P.N. & Remanandan, P. 1969,
1976

Eclipta Linn.

3 4 ; warmer parts of America, Africa,
Asia and Australia. 1 ; throughout India (up
to 1,980 m in the Himalaya).

prostrata (Linn.) Linn.

- 18, 22 Mohan, K.V.J. *et al.* 1962
22 Arano, H. 1962b ; Hsu, C. - C. 1967,
1970 ; Subramanyam, K. & Kamble, N.
P. 1967 ; Baquar, S.R. & Abid Askari,
S.H. 1970a, b ; Torres, A.M. & Liogier,
A.H. 1970 ; Fernandes, A. & Queiroz,
M. 1971 ; Miyagi, C. 1971 ; Olorode, O.
1974a ; Sharma, A.K. & Varma, B.
1960 ; Bir, S.S. & Sidhu, M. 1980

alba (Linn.) Hassk.

- 22 Mehra, P.N. & Sidhu, S.S. 1960 ;
Miège, J. 1960b ; Mangenot, S. &
Mangenot, G. 1962 ; Mehra, P.N. *et*
al. 1965 ; Turner, B.L. & Filyr, D.
1966 ; Coleman, R. 1968b ; Gupta,
P.K. 1969b ; Thakur, V. & Singh, N.P.
1969 ; Solbrig, O.T. *et al.* 1972 ; Singh,
N.K. 1972 ; Strother, J.L. 1972 ; Tur-
ner, B.L. *et al.* 1973 ; Keil, D.J. &
Stueesy, T.F. 1977 ; Finkava, D.J. &
Keil, D.J. 1977

erecta Linn.

- 20 Bhattacharyya, G.N. & Sharma, A.K.
1970
22 Singh, B. 1951 ; Mehra, P.N. & Rema-
nandan, P. 1974 ; Sarkar, A.K., Chakra-
verti, M. *et al.* 1980

Elephantopus Linn.

32 ; tropics. 2 ; 1 throughout India, and
Sri Lanka, 1 naturalized.

scaber Linn.

- 18 Ayyangar, K.R. & Sampathkumar
1969a

- 22 Huynh, K.L. 1965 ; Mehra, P.N. *et al.*
1965 ; Dey, D. & Sharma, A.K. 1969 ;
Peng, C. - I. & Hsu, C. - C. 1977, 1978

- 22, 44 Sharma, A. & Sarkar, A.K. 1967 - 1968

Eleutheranthera Poit. ex Bosc.

2 ; 1 tropical America and 1 in Mada-
gascar. 1 ; West Bengal.

ruderalis (Swartz) Sch. - Bip.

- 30 - 32 Turner, B.L. & King, R.M. 1964

Emilia Cass.

30 ; palaeotropics. About 8 ; Eastern
Himalaya (up to 1,320 m), Western Ghats,
Southern India, 1 throughout India, and Sri
Lanka a few cultivated.

javanica Merr.*

- 10 Mehra, P.N. & Remanandan, P. 1975

javanica (Burm. f.) C.B. Rob.

sagittata (Vahl) DC.

- 10 Ishikawa (Tischler, G. 1927a) ; Afzelius,
K. 1924 ; Baldwin, J.T. & Speese, B.M.
1949
20 Peng, C. - I. & Hsu, C. - C. 1977, 1978

flammea Cass.

- 10 Vilmorin, R. de & Chopinet, R. 1954

sonchifolia (Linn.) DC.

- 10 Afzelius, K. 1924 ; Baldwin, J.T. 1946 ;
Baldwin, J.T. & Speese, B.M. 1949 ; Me-
hra, P.N. & Sidhu, S.S. 1960 ; Turner,
B.L. & King, R.M. 1964 ; Mehra, P.N.
et al. 1965 ; Harvey 1966 ; Shukur,
A. 1967 ; Chatterjee, T. & Sharma,
A.K. 1968 ; Singh, N.K. 1972 ; Mehra,
P.N. & Remanandan, P. 1975 ; Sarkar,
A.K., Mallick, R. *et al.* 1977 ; Gill, L.S.
1978b ; Olorode, O. & Olopade, D.J.
1978 ; Gill, B.S., Gupta, R.C. & Kaur,
S. 1980
12 Ayyangar, K.R. *et al.* 1971
16 Gupta, P.K. *et al.* 1972
20 Arano, H. 1962b, 1964a, 1968 ; Mänge-
not, S. & Mangenot, G. 1962 ; Hsu, C.
- C. 1967, 1970 ; Miyagi, C. 1971 ; Olo-
rode, O. & Orubo, I.D. A. 1978

* The combination *Emilia javanica* should be attributed to C.B. Rob. (Raizada, M.B. 1968).

20, 30 Torres, A.M. & Liogier, A.H. 1970

Eurydra Lour.

10 ; warmer parts of the globe, 1 ; Eastern India, and Bangla Desh.

fractans Lour.

- 22 Ray, M. 1957 ; Bagdar, S.R. & Abid Asakari, S.H. 1970a, b
- 30 Bhattacharyya, G.N. & Sharma, A.K. 1970

Epaltes Cass.

17 ; tropics. 2 ; Western Peninsula, and Sri Lanka.

divaricata Cass.

- 20 Shukur, A. 1967

Erechtites Rafin

15 ; America, Australia and New Zealand. 1 ; introduced.

valerianaeifolia (Wolf.) DC.

- 20 Hsu, C. - C. 1967, 1970
- c. 40 Powell, A.M. & King, R.M. 1969b
- 40 Sharma, A.K. & Varma, B. 1960 ; Turner, B.L. & Irwin, H.S. 1960 ; Narayan, K.N. & Shukur, A. 1968 ; Torres, A.M. & Liogier, A.H. 1970

Erigeron Linn.

About 200 ; throughout the world, chiefly in North America. 10 ; chiefly in Himalaya (up to 5,940 m) - a few naturalized.

alpinus Linn.

- 18 Chiarugi, A. 1926, 1927a, b ; Sokolovskaya, A.P. & Strelkova, D.S. (Fedorov) ; Mattick (Tischler, G. 1930) ; Montgomery, F.H. & Yang, S. - J. 1960 ; Pogan (Skalinska, M. *et al.* 1966) ; Shetty, B.V. 1967 ; Gadella, T.W.J. & Kliphuis, E. 1970b ; Mehra, P.N. & Remanandan, P. 1974 ; Hedberg, I. & Hedberg, O. 1977 ; Van Loon, J. Chr. & Kieft, B. 1980

var. *multicaulis* Hook. f.

multicaulis Wall.

- 18 Mehra, P.N. *et al.* 1965
- 54 Kouli, M.L.H. 1964a

bomariensis Linn.

- 18 Mehra, P.N. & Remanandan, P. 1969 ; Gill, B.S., Gupta, R.C. & Kaur, S. 1980
- 18, 54 Mehra, P.N. & Remanandan, P. 1974
- 54 Holmgren, I. 1919 ; Huziwara, Y. 1958a ; Arano, H. 1965 ; Shukur, A. 1969 ; Gupta, P.K. *et al.* 1972 ; Singh, N.K. 1972

linifolius Willd.

- 27 Mehra, P.N. & Sidhu, S.S. 1960
- 52 Tahara, M. 1915c, 1921
- c. 54, Heiser, C.B. & Whitaker, T.W. 1948
- 54 Van Loon, J.C. *et al.* 1971

canadensis Linn.

- 18 Okabe, S. 1934 ; Tischler, G. 1934 ; Cooper, D.C. & Mahony, K.L. 1935 ; Rohwedder, H. 1937 ; Heiser, C.B. & Whitaker, T.W. 1948 ; Harling, G. 1951b ; Huziwara, Y. 1955a, 1958a ; Mulligan, G.A. 1957 ; Arano, H. 1965 ; Gadella, T.W.J. & Kliphuis, E. 1966, 1971a ; Chouksanova, N.A. *et al.* 1968a ; Hsu, C. - C. 1967 ; Bjlok, K. *et al.* 1972 ; Tomkins, D.J. & Grant, W.P. 1978 ; Gupta, R.C. & Gill, B.S. 1980

floribundus (HBK) Sch. - Bip.

sumatrensis Retz.

- 36 Hsu, C. - C. 1970

karvinakianus DC.

- 18 Olsen, J. 1980
- 18, 27 Turner, B.L., Ellison, W.L. & King, R. 1961
- 32 Carano, E. 1924 ; Battaglia, E. 1930
- 36 Fagerlind, F. 1947 ; Larson, K. 1953, 1954a ; Anderson, L.C. *et al.* 1974
- c. 54 Turner B.L. *et al.* 1962

micronatus DC.

- 32 Battaglia, E. 1930
- 32 - 34 Carano, E. 1921
- 36 Fagerlind, F. 1947 ; Montgomery, F.H. & Yang, S.J. 1960 ; Mehra, P.N. *et al.* 1965 ; Shukur, A. 1967 ; Mehra, P.N. & Remanandan, P. 1974

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karvinskianus DC.

var. *nucronatus* (DC.) Aschera.

36 Kliphuis, F. & Wieffering, I.H. 1972

multiradiatus Benth.

18 Zhukova, P.G. (Fedorov), 1967b ; Mehra, P.N. *et al.* 1965 ; Chouksanova, N.A. *et al.* 1968a ; Mehra, P.N. & Remanandan, P. 1974

roylet DC.

18 Zhukova, P.G. (Fedorov), 1967b

salsuginosus A. Gray

18 Mehra, P.N. *et al.* 1965 ; Chouksanova, N. A. *et al.* 1968a

sabiyrafus DC.

asteroides Roxb.

18 Shetty, B.V. 1961 ; Narayan, K.N. & Shukur, A. 1968

Echelia Linn.

10 ; tropical America, tropical and South Africa, Mascarene Islands, Assam and Sunda Islands. 1 ; Assam and Bengal, and Bangla Desh.

conyzoides Linn. f.

c. 20, 40 Turner, B.L. & Lewis, W.H. 1965
40 Moore, R.J. 1967 ; Olorode, O. 1974a ; Pilz, G.E. 1980

Eupatorium Linn.

About 1,200 ; chiefly in America, a few in Europe, Asia and Africa. 8 ; 2 native to Himalaya and Bhutan, the rest are American adventives.

adenophorum Spreng.

51 Khonglam, A. & Singh, A. 1980

glandulosum HBK

51 Holmgren, I. 1919 ; Grant, W.F. 1953 ; Mehra, P.N. *et al.* 1965 ; Shukur, A. 1967 ; Fernandes, A. & Queiros, M. 1971 ; Mehra, P.N. & Remanandan, P. 1975

ayapama Vent.

40 Sharma, A.K. & Varma, B. 1960

cusumabinam Linn.

20 Holmgren, I. 1919 ; Tischler, G. 1934 ; Felföldy, L.J.M. 1947a ; Pólya, L. 1949 ; Löve, A. & Löve, D. (Fedorov), Grant, W.F. 1953 ; Garašová, S. 1959 ; Gadella, T.W.J. & Kliphuis, E. 1963, 1966 ; Larsen, K. 1965 b ; Murin & Váchoš (Fedorov) ; Leveque, M. & Gorenflot, R. 1969 ; Májovský, J. *et al.* 1970a ; Fernandes, A. & Queiros, M. 1971 ; Holub, J. *et al.* 1971 ; Kuzmanov, B.A. 1975 ; Brand, C.V.D. *et al.* 1979

20, 40 Skališská, M. *et al.* 1971

multifolium HBK

20 Powell, A.M. & King, R.M. 1969a

odoratum Linn.

51 Mehra, P.N. & Remanandan, P. 1969, 1975

58 Sharma, A.K. & Varma, B. 1960 ; Ghosh, R.B. 1961 ; Sharma, A. & Sarkar, A. K. 1967-1968 ; Dey, D. & Sharma, A.K. 1968

c. 60 Olorode, O. 1974a

60 Shukur, A. 1967 ; Shukur, A. *et al.* 1977 ; Khonglam, A. & Singh, A. 1980

c. 80 Powell, A.M. & King, R.M. 1969b ; Grabhoff, J. L. *et al.* 1972

120 Subramanyam, K. & Kamble, N.P. 1971

conyzoides Vahl

40 Gupta, R.C. & Gill, B. S. 1979b

c. 64 Mangenot, S. & Mangenot, G. 1962

repandum Willd.

40 Narayan, K.N. & Shukur, A. 1968 ; Shukur, A. *et al.* 1977

riparium Regel

48 Sparvoli, E. 1958, 1961

51 Khonglam, A. & Singh, A. 1980

triplinerve Vahl

16, 36 Sharma, A. & Sarkar, A.K. 1967-1968

36 Dey, D. & Sharma, A. K. 1968

51 Delay, C. 1947

Felicia Cass.

60 ; tropical and South Africa. 1 ; cultivated.

ameloides (Linn.) Voss

- 16 Sugiura, T. 1936a, b
18 Riley, H. F. & Levyns, M.R. 1963

Filago Linn.

20 ; Europe, North Africa, Asia, South Western and Eastern North America. 2 ; Northern India and Himalaya (up to 2,970 m).

arvensis Linn.

- 28 Wulff, H.D. 1937b ; Löve, A. & Löve, D. 1956b

- *Logfia arvensis* (Linn.) Holub.

- 28 Váchová, M. & Feráková, V. 1980

spathulata Presl

- 28 Hagerup, O. 1941b ; Larsen, K. 1960

Flaveria Juss.

14 ; America (especially Southern United States and Mexico), 1 in Australia. 2 ; introduced.

australasica Hook.

- 36 Covas, G. & Schnack, B. 1946 (Raven, P.H. & Kyhos D.W. 1961) ; Raven, P.H. & Kyhos, D.W. 1961 ; Shukur, A. 1969

trinervia (Spreng.) C. Mohr.

- 36 Gupta, R.C. & Gill, B.S. 1980

Gaillardia Foug.

26 ; North America, 2 in temperate South America. 3 ; cultivated.

aristata Pursh

- 17, 34 Witherspoon, J.T. *et al.* 1974
34 Biddulph, S.F. 1944 ; Packer, J.G. 1964 ; Taylor, R.L. 1967
34, c. 72 Stoutamire, W.P. 1960
36 Cooper, D.C. & Mahony, K.L. 1935
68 Taylor, R.L. & Brockman, R.P. 1966
69 Keil, D.J. & Pinkava, D. J. 1976
72 Atwood, S. 1937a, b

palchella Foug.

- 34 Biddulph, S.F. 1944 ; Schnack, B. & Fernandez, O. 1946 ; Stoutamire, W.P. 1955, 1960 ; Mehra, P.N. *et al.* 1965 ;

Jones, S. B. Jr 1970 ; Urbatsch, L.E. 1974 ; Peng, C. - I. & Hsu, C. C. 1977 ; Keil, D.J. & Pinkava, D.J. 1976 ; Peng, C. - I. & Hsu, C. - C. 1978

34, 68 Schnack, B. 1940

36 Morinaga, T. *et al.* 1929

picta Sweet

34 Jaab, M. 1967

Galinsoga Ruiz & Pav.

4 ; Mexico to Argentina. 2 ; introduced, 1 in Himalaya (up to 2,640 m), 1 throughout India.

ciliata (Rafin.) Blake

16 Gadella, T.W.J. 1972

32 Haskell, G. & Marks, G.E. 1952 ; Solbrig, O.T. *et al.* 1972 ; Gopinathan, M.C. & Babu, C.R. 1982

parviflora Cav.

c. 16 Powell, A.M. & King, R.M. 1969a
16 Covas, G. & Schnack, B. 1946 ; Pölya, L. 1950 ; Haskell, G. & Marks, G.E. 1952 ; Haskell, G. 1954 ; Mehra, P.N. & Sidhu, S.S. 1960 ; Diers, L. 1961 ; Koul, M.L.H. 1964a ; Skalinska, M. *et al.* 1964 ; Mehra, P.N. *et al.* 1965 ; Turner, B.L. & Lewis, W.H. 1965 ; Gadella, T.W.J. & Kliphuis, E. 1967 ; Chatterjee, T. & Sharma, A.K. 1968 ; Narayan, K.N. & Shukur, A. 1968 ; Subramanyam, K. & Kamble, N.P. 1967 ; Májovský, J. *et al.* 1970b ; Powell, A.M. & Sikes, S. 1970 ; Torres, A.M. & Liogier, A.H. 1970 ; Fernandes, A. & Queiros, M. 1971 ; Solbrig, O. T. *et al.* 1972 ; Mehra, P.N. & Ramnandan, P. 1974 ; Strother, J.L. 1976 ; Peng, C. - I. & Hsu, C. - C. 1977 ; Gopinathan, M.C. & Babu, C.R. 1982

16, 32 Turner, B.L. *et al.* 1962

32 Turner, B.L. & King, R.M. 1964 ; Turner, B.L. & Flyr, D. 1966 ; Longpre, E.K. 1970 ; Weedon, J.F. & Powell, A.M. 1978

36 Tischler, G. 1934 ; Rohwedder, H. 1937 ; Delay, C. 1947

parviflora x *ciliata*

24 Gopinathan, M.C. & Babu, C.R. 1982

parviflora x (*parviflora* x *ciliata*)

16 Gopinathan, M.C. & Babu, C.R. 1982

Gamolepis Less.

13 ; South Africa. 1 ; cultivated.

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tagetes Less.

20 Mehra, P.N. *et al.* 1965; Gupta, P.K. *et al.* 1972

Gazania Gaertn.

40 ; tropics and (mostly) South Africa.
2 ; cultivated.

krebsiana Less.

14 Mehra, P.N. & Remanandan, P. 1976
16 Mehra, P.N. & Remanandan, P. 1969

ringens R. Br.

10 La Cour (D. 1945)
14 Mehra, P.N. & Remanandan, P. 1976

Gerbera Linn. *ex* Cass. *mut.* Spreng.

70 ; Africa, Madagascar, Asia and Indonesia. 6 ; between 1,320 and 3,960 m in the Himalaya, and Nepal and Bhutan a few cultivated.

gossypina (Royle) Beauv.

lanuginosa Benth.

46 Mehra, P.N. *et al.* 1965 ; Mehra, P.N. & Remanandan, P. 1976

jamesonii Holus

30 Kishimoto, E. 1936 ; Bowden, W.M. 1945a ; Koul, M.L.H. 1964b ; Mehra, P.N. *et al.* 1965 ; Jash, M. 1968 ; Mehra, P.N. & Remanandan, P. 1976

Glossocardia Cass.

2 : Western and Central India.

boottiana (Linn. f.) DC.

linearifolia Cass.

24 Chopde, V.P. 1965 ; Gupta, R.C. & Gill, B.S. 1980

retosa Blatt. & Hall.

24 Bhandari, M.M. & Singhvi, D.M. 1977

Glossogyne Cass.

8 ; South China, South East Asia, Indo-Malesia and Australia. 1 ; throughout the greater part of India.

bilens (Retz.) Alston

24 Shetty, B.V. 1967

pinnatifida DC.

24 Shukur, A. 1969

Gnaphalium Linn.

About 200 ; world wide. 8 ; chiefly in Himalaya (up to 3,300 m), and Pakistan and Bhutan.

hypoleucum DC.

14 Arano, H. 1963

indicum Linn.*

14 Mehra, P.N. *et al.* 1965 ; Bhattacharyya, N.K. 1969b
28 Sharma, A.K. & Varma, B. 1960 ; Chatterjee, T. & Sharma, A.K. 1968 ; Mehra, P.N. & Remanandan, P. 1975

luteo - album Linn.

14 Wulff, H. D. 1938 ; Rodrigues, J. E. de M. 1953 ; Turner, B.L. & Lewis, W.H. 1965 ; Gadella, T.W.J. & Kliphuis, E. 1966 ; Baquar, S. R. 1967 - 1968 ; Chatterjee, T. & Sharma, A.K. 1968 ; Bhattacharyya, N.K. 1969b ; Björkqvist, I. *et al.* 1969 ; Podlech, D. & Dieterle, A. 1969 ; Turner, B.L. 1970 ; Fernandes, A. & Queiros, M. 1971 ; Singh, N.K. 1972

14, 14+18 Larsen, K. 1960 ; Mehra, P.N. *et al.* 1965

ssp. affine (D. Don) Koster

14 Shetty, B.V. 1967

affine D. Don

14 Arano, H. 1956, 1963 ; Hsu, C. - C. 1970

pulvinatum Delile

14 Bhattacharyya, N.K. 1969b

**Gnaphalium indicum* auct. pl. (non Linn.) FBI, 3:289, is a synonym of *G. polycaulon* Pers. (HPDD : 269-270 ; FHD : 616)

purpureum Linn.*

- 14 Mehra, P.N. & Remanandan, P. 1969, 1975
- 18 Gupta, P.K. 1969b
- 28 Arano, H. 1963; Huynh, K.L. 1965; Bhattacharyya, N.K. 1969b; Hsu, C.-C. 1970; Torres, M. & Liogier, A.H. 1970; Fernandes, A. & Queiros, M. 1971; Keil, D.J. & Stuessy, T.F. 1977; Peng, C.-I. & Hsu, C.-C. 1977, 1978; Bir, S.S. & Sidhu, M. 1980

Goniocaulon Cass.

1; Indo Malesia, Central and Peninsular India.

glabrum Cass.

- 32 Gupta, R.C. & Gill, B.S. 1979b

Grangea Adans.

6; tropical Africa, Madagascar and tropical Asia. 1; throughout India.

maderaspata (Linn.) Poir.

- 18 Mitra, J. 1947; Mehra, P.N. & Remanandan, P. 1974; Peng, C.-I. & Hsu, C.-C. 1977, 1978

Gnizotia Cass.

12; tropical Africa. 1; cultivated.

abyssinica Cass.

- 30 Gelin, O.E.V. 1934; Rjchharia, R.H. & Kalamkar, W.J. 1938; Shetty, B.V. 1967; Harriman, N. A. 1978

Gynura Cass.

100; tropical Africa and Madagascar to East Asia and Malaysia. 7; temperate Himalaya and Southern India, and Sri Lanka - 1 cultivated.

cusimbus (D. Don) S. Moore

- 40 Mehra, P.N. & Remanandan, P. 1969, 1975

angulosa DC.

- 18 Mehra, P.N. & Sidhu, S.S. 1960
- 20, 40 Mehra, P.N. *et al.* 1965

lycopersicifolia DC.**

- 20 Mathew, A. & Mathew, P.M. 1975b

nepalensis DC.

- 20 Mehra, P.N. *et al.* 1965; Shetty, B.V. 1967

nitida DC.

- 20 Mathew, A. & Mathew, P. M. 1975b

travancorica W. W. Smith

- 20 Mathew, A. & Mathew, P. M. 1975b

Helemium Linn.

40; West America. 1; cultivated.

hoopesii A. Gray

- 30 Raven, P.H. & Kyhos, D.W. 1961; Beaman, J.H. *et al.* 1962; Beaman, J.H. & Turner, B.L. 1962; Chouksanova, N.A. *et al.* 1968a; Strother, J.L. 1972; Mehra, P.N. & Remanandan, P. 1974
- 34 Zhukova, P.G. (Fedorov)

Helianthus Linn.

About 110; America. 3; cultivated.

annuus Linn.

- 34 Tahara, M. 1915g; Prošina, M.N. (Fedorov); Makoveltski, M. (Fedorov); Geisler, F. 1931; Yamamoto, Y. (Kihara, H. *et al.* 1931); Wagner, S. 1932; Tschler, G. 1937; Alekowsky, M.K. (Fedorov); Klimochkina, L.V. (Fedorov); Ioffe, E.U. (Fedorov); Kostoff, D. (Fedorov); Delay, C. 1947; Heiser, C.B. & Whitaker, T.W. 1948; Heiser, C.B. 1958; Heiser, C.B. & Smith, D.M. 1959; Kodama, A. 1970a;

**Gnaphalium purpureum* auct. pl. (non Linn.) FBI, 3 : 289 is a synonym of *G. pennsylvanicum* Willd. *G. purpureum* does not occur in India (HFDD : 269).

***Gynura lycopersicifolia* DC. of FBI, 3 : 334 is a synonym of *G. lycopersicifolia* DC. ssp. *taprobansis* Grierson (RHFC, 1 : 245).

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Solbrig, O.T. *et al.* 1972 ; Georgieva - Todorova, I. 1973 ; Anashchenko, A.V. 1974 ; Mehra, P.N. & Remanandan, P. 1974 ; Dasgupta, A. 1975 ; Raicu, P. *et al.* 1976 ; Whelan, E.D.P. 1978 ; Al-Allaf, S. & Godward, M.B.E. 1979a, b ; Kulshreshtha, V.B. & Gupta, P.K. 1979

- 34, 68 Saini, R.G. & Dhesi, J.S. 1972 ; Dhesi J.S. & Saini, R.G. 1973 ; Gupta, S.K. & Roy, S. K. 1980
68, 85 Kovádk, A. 1970

cucumerifolius Torr. & A. Gray

- 14 Schewtschenko (Fedorov)
34 Wagner, S. 1932

tuberosus Linn.

- 102 Makoveitski, M. (Fedorov) ; Yamamoto, Y. (Kihara, H. *et al.* 1931) ; Wagner, S. 1932 ; Kostoff, D. (Fedorov) ; Schewtschenko (Fedorov) ; Clevenger, S. & Heiser, C.B. 1963 ; Georgieva - Todorova, I. 1973 ; Anashchenko, A.V. 1974 ; Kulshreshtha, V.B. & Gupta, P. K. 1979

Helichrysum Mill. *corr.* Pers.

500 ; South Europe, tropical and South Africa, Madagascar, Socotra, South West Asia, Southern India, Sri Lanka and Australia, 200 in South Africa. 4 ; South Western India, and Sri Lanka, 1 cultivated.

bracteatum Andr.

- 24 Tongiorgi, E. 1935 ; Chatterjee, T. & Sharma, A.K. 1968 ; Gupta, P.K. *et al.* 1972
28 Tongiorgi, E. 1942 ; Chouksanova, N.A. *et al.* 1968a ; Turner, B.L. 1970
30 Gupta, P.K. 1969b

budileoides DC.

- 28 Mehra, P.N. & Remanandan, P. 1969, 1975

var. *hookerianum* (Wight & Arn.) Hook. f.

hookerianum Wight & Arn.

- 28 Mathew, A. & Mathew, P.M. 1975b

Hellipterum DC.

90 ; South Africa and Australia. 2 ; cultivated,

manglesii F. V. Muell.

- 22 Bilquez (Delay, C. 1951) ; Turner, B.L. 1970

orseum Benth.

- 14 Bilquez (Delay, C. 1951)
14, 28 Turner, B.L. 1970
28 Mehra, P.N. & Remanandan, P. 1975

Hieracium Linn.

Perhaps 5,000 apomictic micro species, or 1,000 macro species ; temperate regions (excluding Australasia) and tropical mountains. 5 ; Western Himalaya between 1,660 and 3,330 m.

crocatum Fries

- 27 Remanandan, P. & Mehra, P.N. 1974

preanthoides Vill.

- 18 Favarger, C. 1969b, c
36 Christoff, M. & Popoff, A. 1933

umbellatum Linn.

- 17 Nisioka, T. 1958
18 Juel, H.O. 1905 ; Christoff, M. & Popoff, A. 1933 ; Turesson, G. 1938 ; Gustafsson, A. 1947a ; Wulff, H.D. 1950 ; Lövkvist, B. 1962 ; Sorsa, V. 1962 ; Hedberg, I. & Hedberg, O. 1964 ; Gadella, T.W.J. & Kliphuis, B. 1967, 1968a ; Murin, & Uhríková (Fedorov) ; Laane, M.M. 1969b ; Májovský, J. *et al.* 1970a ; Skaliňska, M. *et al.* 1971 ; Uhríková A. & Feráková, V. 1977
18, 27 Rosenberg, O. 1926 ; Tischler, G. 1934 ; Bergman, B. 1935a ; Rohweder, H. 1937
27 Bergman, B. 1941 ; Sokolovskaya, A.P. (Fedorov) ; Guppy, G.A. 1978
36 Gustafsson, A. 1947a, b
54 Rosenberg, O. 1927

viresum Pall.

- 36 Rosenberg, O. 1926

vulgatum Fries.

- 27 Tischler, G. 1934 ; Gentscheff, G. 1937a

Hypochoeris Linn.

100 ; cosmopolitan. 2 ; South Western Peninsula and Assam.

glabra Linn.

- 8 Turner, B.L. 1970

- 10 Wulff, H.D. 1939a ; Löve, A. & Löve, D. 1944b ; Stebbins, G.L. *et al.* 1953 ; Larsen, K. 1960 ; Shetty, B.V. 1967 ; Fernandes, A. & Queiros, M. 1971 ; Remanandan, P. & Mehra, P.N. 1974 ; Tomb, A.S. *et al.* 1978
 10, 12 Heiser, C.B. & Whitaker, T.W. 1948
 12 Negodi, G. 1935

radicata Linn.

- 8 Navashin, M.S. (Tischler, G. 1927) ; Tischler, G. 1934 ; Rohwedder, H. 1937 ; Löve, A. & Löve, D. 1944b ; Heiser, C. B. & Whitaker, T.W. 1948 ; Saez, F.A. 1949 ; Fahmy, T.Y. 1951 (Löve, A. & Löve, D. 1961b) ; Stebbins, G.L. *et al.* 1953 ; Mulligan, G. 1957 ; Heiser, C.B. 1963 ; Turner, B.L. & King, R.M. 1964 ; Gadella, T.W.J. & Kliphuis, E. 1966 ; Uhríková & Murin (Fedorov) ; Delay, J. 1968a, b ; Coleman, R. 1968b ; Taylor, R.L. & Mulligan, G.A. 1968 ; Chatterjee, T. & Sharma, A.K. 1969 ; Powell, A.M. & King, R.M. 1969a ; Kuzmanov, B.A. & Kozuharov, S.I. 1970 ; Májovský, J. *et al.* 1970a ; Kaul, V. & Singh, D. 1972 ; Peng, C. - I. & Hau, C. - C. 1978 ; Van Loon, J. Chr. & de Jong, H. 1978 ; Jensen, R.K. & Stueasy, T.F. 1980 ; Van Loon, J. Chr. & Kieft, B. 1980

ifoga Cass.

10 ; Canaries, Mediterranean, South Africa and India. 1 ; Upper Gangetic Plains.

fontanesii Cass.

- 14 Mehra, P.N. & Sidhu, S.S. 1960 ; Mehra, P.N. *et al.* 1965

inula Linn.

About 200 ; Europe, Asia and Africa. 21 ; mostly confined between 1,320 and 4,620 m in the North Western Himalaya, and Pakistan and Bhutan.

cappa DC.

- 20 Mehra, P.N. *et al.* 1965
 40 Mehra, P.N. & Remanandan, P. 1975

cuspidata Clarke

- 20 Mehra, P.N. *et al.* 1965 ; Mehra, P.N. & Remanandan, P. 1975

eupatorioides DC.

- 20 Mehra, P.N. *et al.* 1965 ; Mehra, P.N. & Remanandan, P. 1975

grandiflora Willd.

- 16 Sokolovskaya, A.P. & Strelkova, O. 1940 ; Shetty, B.V. 1967

grantioides Boiss.

- 20 Baquar, S.R. & Abid Askari, S.H. 1970a, b

graveolens (Linn.) Desf.

- 16 Podlech, D. & Dieterle, A. 1969
 18 Fernandes, A. & Queiros, M. 1971
 20 Björkqvist, I. *et al.* 1969

hookeri Clarke

- 20 Tongiorgi, E. 1942

racemosa Hook. f.

- 20 Tongiorgi, E. 1935 ; Zhukova, P.G. (Fedorov), 1967b ; Mehra, P.N. & Remanandan, P. 1975

royleana DC.

- 20 Zhukova, P.G. (Fedorov), 1967b ; Chouksanova, N.A. *et al.* 1968a ; Mehra, P.N. & Remanandan, P. 1975

rubricaulis Clarke

- 20 Mehra, P.N. & Remanandan, P. 1969

Ixeris Cass.

50 ; East and South East Asia to New Guinea. 3 ; Himalaya (up to 1, 980 m), 1 extending to Northern India.

polycephala Cass.

- 16 Babcock, E.B. *et al.* 1937 ; Kitamura, S. 1955 ; Shetty, B.V. 1967

sagittarioides (Clarke) Stebbins

- 18 Shetty, B.V. 1967

Koeleria Pali.

5 ; North Africa to East Asia. 1 ; North Western India.

linearis Pali.

- 54 Stebbins, G.L. *et al.* 1953

Lactuca Linn.

About 100 ; chiefly in temperate Eurasia, extending to tropical and South Africa. 18 ; mostly confined between 1,320 and 4,280 m in the Himalaya, and Nepal, Pakistan, Bhutan and Sri Lanka, 1 cultivated.

- bracteata* Hook. f. & Thoms.
16 Babcock, E.B. *et al.* 1937
- braconiana* (Wall.) Clarke
16 Shetty, B.V. 1967
- dissecta* D. Don
16 Mehra, P.N. & Sidhu, B.S. 1960 ; Mehra, P.N. *et al.* 1965 ; Shetty, B.V. 1967 ; Kaul, V. & Singh, D. 1972 ; Remanandan, P. & Mehra, P.N. 1974
- dolichophylla* Kitamura
longifolia DC.
16 Stebbins, G. L. *et al.* 1953 ; Mehra, P. N. *et al.* 1965 ; Shetty, B.V. 1967 ; Kaul, V. & Singh, D. 1972 ; Remanandan, P. & Mehra, P.N. 1974 ; Gill, B.S., Gupta, R.C. & Kaur, S. 1980
- lesseriana* Clarke
16 Stebbins, G.L. *et al.* 1953
- macrorhiza* Hook. f.
16 Mehra, P.N. *et al.* 1965 ; Shetty, B.V. 1967 ; Remanandan, P. & Mehra, P.N. 1974 ; Kumar, V. & Chauhan, K.P.S.
- polycephala* Benth.
16 Gupta, R.C. & Gill, B.S. 1980
- rapunculoides* (DC.) Clarke
16 Stebbins G.L. *et al.* 1953
- rostrata* (Blume) O. Kuntze
graciliflora DC.
16 Mehra, P.N. *et al.* 1965
18 Chatterjee, T. & Sharma, A.K. 1969
- rapunculoides* (DC.) Clarke
var. *mehraiana* Reman.
16 Remanandan, P. & Mehra, P.N. 1974
- runcinata* DC.
18 Shetty, B.V. 1961 ; Chopde, V.P. 1965
- sagittarioides* (Clarke) Stebbins
- sagittarioides* Clarke
10- Malla, S.B., Bhattarai, S. *et al.* 1977a
- sativa* Linn.
18 Gates, R.R. & Rees, E.M. 1921 ; Whitaker, T.W. & Jagger, I. C. 1939 ; Thompson, R. C. *et al.* 1941 ; Prakken, R. & Swaminathan, M. S. 1951 ; Lindqvist, K. 1960 ; Baquar, S. R. & Abid Askari, S. H. 1970a, b
- 18, 36, 36+B Einset, J. 1944
- serricola* Linn.
18 Thompson, R.C. *et al.* 1941 ; Heiser, C. B. & Whitaker, T.W. 1948 ; Lindqvist, K. 1960 ; Gadella, T.W.J. & Kliphuis, E. 1966 ; Nazarova, E.A. (Fedorov), 1968 ; Feráková (Fedorov) ; Chatterjee, T. & Sharma, A.K. 1969 ; Podlech, D. & Dieterle, A. 1969 ; Gadella, T.W.J. & Kliphuis, B. 1970a ; Májovský, J. *et al.* 1970a ; Fernandes, A. & Queiros, M. 1971 ; Tomb, A.S. *et al.* 1978
- serricola* Linn.
18 Gates R.R. & Rees, E.M. 1921 ; Ishikawa, M. 1921 ; Tischler, G. 1934 ; Cooper, D.C. & Mahony, K.L. 1935 ; Babcock, E.B. *et al.* 1937 ; Whitaker, T.W. & Jagger, I.C. 1939 ; Mulligan, G. A. 1957 ; Mehra, P.N. & Sidhu, S.S. 1960 ; Mehra, P.N. *et al.* 1965 ; Kaul, V. & Singh, D. 1972 ; Remanandan, P. & Mehra, P.N. 1974 ; Tomkins, D.J. & Grant, W.F. 1978 ; Kuzmanov, B. & Georgieva, S. 1980
- Lagascea* Cav.
15 ; Mexico to tropical South America and West Indies. 1 ; various parts of India.
- mollis* Cav.
34 Parameswar, N.S. 1960 ; Shetty, B.V. 1961 ; Turner, B. L., Ellison, W. L. & King, R. 1961 ; Chopde, V.P. 1965 ; Narayan, K.N. & Shukur, A. 1968 ; Torres, A.M. & Liogier, A.H. 1970 ; Strother, J.L. 1976 ; Gupta, R.C. & Gill, B.S. 1980
- Lagenifera* Cass.
30 ; Japan, Ryukyu Islands, Borneo, New Caledonia, New Zealand, Pacific, Central America and Andes. 1 ; Khasi Hills and Konkan, and Sri Lanka.
- gracilis* Steetz
Lagenophora stipitata Druce
18 Arano, H. 1962b, 1963 ; Smith-white, S. *et al.* 1970
- Laggera* Sch. Bip. ex Hochst.
20 ; tropical Africa, Arabia, India, South China and Formosa. 4 ; Himalaya (up to 1,650 m), mountains of Southern India, 1 in the plains, and Pakistan, Bhutan, Bangla Dosh and Sri Lanka.
- alata* (D. Don) Sch. - Bip. ex Oliv.
10 Shetty, B.V. 1964

20 Shetty, B.V. 1967 ; Patil, R.M. & Chennaveeraiah, M.S. 1969

aurita Sch. - Bip.

20 Mehra, P.N. & Sidhu, S.S. 1960 ; Mehra, P.N. *et al.* 1965 ; Patil, R.M. & Chennaveeraiah, M.S. 1969 ; Singh, N.K. 1972 ; Mathew, A. & Mathew, P.M. 1975b ; Bir, S.S. & Sidhu, M. 1980

Blumea aurita (Linn. f.) DC.

22 Gill, L.S. & Abubakar, A. M. 1975

pterodonta Benth.

20 Mathew, A. & Mathew, P.M. 1975b

Lamprachaenium Benth.

1 ; Peninsular India.

microcephalum Benth.

18 Narayana, B.M. 1979

Lapsana Linn.

9 ; temperate Eurasia. 1 ; Kashmir.

communis Linn.

12 Marchal, E. 1920 ; Tischler, G. 1934
14 Vaarama, (Löve, A. & Löve, D. 1948) ; Stebbins, G.L. *et al.* 1953 ; Gadella, T. W.J. & Kliphuis, E. 1966 ; Murin & Váchoá (Fedorov) ; Nazarova, N.A. 1968 ; Taylor, R.L. & Mulligan, G.A. 1968 ; Májovský, J. *et al.* 1970a ; Fernandes, A. & Queiros, M. 1971 ; Van Loon, J.C. *et al.* 1971 ; Kaul, V. & Singh, D. 1972 ; Edmonds, J.M. *et al.* 1974 ; Remanandan, P. & Mehra, P.N. 1974
16 Sorsa, V. 1962, 1963a ; Kuzmanov, B. & Georgieva, S. 1977a

Launaea Cass.

40 ; Canaries, Mediterranean to East Asia, tropical and South Africa. About 8 ; chiefly in the plains of India, and Pakistan and Sri Lanka.

neaults (Roxb.) Bab. ex Craib

18 Stebbins, G.L. *et al.* 1953 ; Shetty, B.V. 1967 ; Narayan, K.N. & Shukur, A. 1968

septenifolia Hook. f.

12 Chatterjee, T. & Sharma, A.K. 1969 ; Sarkar, A.K., Datta, N. & Chatterjee, U. 1973b, 1974 ; Sarkar, A.K., Datta, R. *et al.* 1975

capitata (Spreng.) Dandy

glomerata (Cass.) Hook. f.

16 Miège, J. 1962
18 Mohan, K.V.J. *et al.* 1962

fallax (Jaub. & Spach) O. Kuntze*

18 Gupta, P.K. *et al.* 1972 ; Shetty, B.V. 1967

macronata (Forsk.) Muschler

16 Reese, G. 1957 ; Amin, A. 1973b

nudicaulis (Linn.) Hook. f.**

18 Stebbins, G. L. *et al.* 1953 ; Reese, G. 1957 ; Mehra, P.N. & Sidhu, S.S. 1960 ; Mohan, K.V.J. *et al.* 1962 ; Mehra, P.N. *et al.* 1965 ; Subramanyam, K. & Kanble, N.P. 1967 ; Chatterjee, T. & Sharma, A.K. 1969 ; Gupta, P.K. 1969b ; Borgen, L. 1970 ; Nordenstam, B. 1972 ; Amin, A. 1973b ; Remanandan, P. & Mehra, P.N. 1974 ; Singhvi, D.M. 1974 ; Van Loon, J.C. 1974 ; Bir, S.S. & Sidhu, M. 1980 ; Gill, B.S., Gupta, R.C. & Kaur, S. 1980

resedifolia (Linn.) Druce

16 Stebbins, G.L. *et al.* 1953 ; Singhvi, D. M. 1974

sarmentosa (Willd.) Sch. - Bip.***

18 Mehra, P.N. & Remanandan, P. 1969 ; Remanandan, P. & Mehra, P.N. 1974

**Launaea nudicaulis* Hook. f. (FBI, 3 : 416) was earlier treated as a synonym of *Launaea fallax* (Jaub. & Spach) O. Kuntze—a species not found in India.

***Launaea nudicaulis* auct. pl. (non Hook. f., FBI, 3 : 416) is a synonym of *L. procumbens* (Roxb.) Ramayya & Rajagopal. *L. nudicaulis* (Linn.) Hook. f. does not occur in India (Kew Bull. 1969, 23 : 465).

***The combination *Launaea sarmentosa* was made by Alston (DFPI : 94).

sarmentosa (Willd.) Alston
plumatifida Cass.

- 18 Mohan, K.V.J. *et al.* 1962; Narayan, K.N. & Shukur, A. 1968; Chatterjee, T. & Sharma, A.K. 1969; Sarkar, A.K., Datta, N. & Chatterjee, U. 1975

secunda Clarke

- 18 Mehra, P.N. *et al.* 1965; Chatterjee, T. & Sharma, A.K. 1969; Gill, H.S., Gupta, R.C. & Kaur, S. 1980

Lalbnitzia Cass.

3; East Asia and 2 in Central America. 1; Himalaya, and Nepal.

nepalensis (Kunze) Kitamura
Gerbera kunzeana A. Br. & Aschers.

- 24 Mehra, P.N. & Remanandan, P. 1969
46 Choukanova, N.A. *et al.* 1968b

Leontopodium R. Br. *ex* Cass.

30; mountains of Europe, Asia and South America. 3; alpine and Eastern Himalaya (between 3,330 and 6,000 m).

alpinum Cass.

- 14 Mehra, P.N. & Remanandan, P. 1975
26 Sakai, K. 1934, 1935a
c. 48 Favarger, C. 1954
48 Biljak, S. 1977
52 Skalińska, M. 1959; Sokolowska - Kulczycka, A. 1959; Urbánska - Worytkiewicz, K. 1968; Susanik, F. *et al.* 1972, 1974; Murin, A. & Pačlova, L. 1979

Matricaria Linn.

40; Europe, Mediterranean and West Asia, 10 in South Africa and 2 in West America. 2; North Western India and Upper Gangetic Plain, and Pakistan.

chamomilla Linn.

- 18 Lundegårdh, H. 1909; Beer, R. 1912; Hartwich, K. 1936; Tischler, G. 1934, 1937; Maude, P.F. 1939; Löve, A. & Löve, D. 1948; Pólya, L. 1948; Tarnavski, I.T. 1948; Koul, M.L.H. 1964a; Gadella, T.W.J. & Kliphuis, E. 1966; Fernandes, A. & Queiros, M. 1971
18, 36 Madhusoodanan, K.J. & Arora, O.P. 1979
32 Bara, I.I. 1979

inodora Linn.

- 18 Tischler, G. 1934, 1937; Delay, C. 1947
Vaarama (Löve, A. & Löve, D. 1948)
Sorsa, V. 1962
36 Koul, M.L.H. 1964b; Gadella, T.W.J. & Kliphuis, E. 1966
36+1B Madhusoodanan, K.J. & Arora, O.P. 1980

Microglossa DC.

About 6; Asia and Africa, 3; Himalaya and Western Ghats, and Bangla Desh and Sri Lanka.

pyrifolia (Lam.) Kuntze

- 18 Borgmann, E. 1964; Hsu, C. - C. 1970

volubilis DC.

- 18 Mangenot, S. & Mangenot, G. 1962; Chuang, T.I. *et al.* 1963

Mikania Willd.

250; tropical America, West Indies, 2 in South Africa. 1; Eastern and Southern India.

cordata (Burm. f.) Robinson

- 36 Turner, B.L. & Lewis, W.H. 1965; Olorode, O. 1974a

scandens Willd.*

- 30 Dey, D. & Sharma, A.K. 1968

**Mikania scandens* does not occur in India. The Old World plant is either *Mikania cordata* (Burm. f.) Robinson or *M. micrantha* HBK. (SFUGP : 125-126; RHFC, 1 : 146-147).

- 36 Baquar, S.R. 1967 - 1968 ; Mangenot, S. & Mangenot, G. 1958, 1962
 38 Mitra, J. 1947 ; Gaiser, L.O. 1954 ; Mitra, K. & Datta, N. 1967 ; Sharma, A. & Sarkar, A.K. 1967 - 1968

Montanoa Cerv.

50 ; Mexico to Columbia. 1 ; cultivated and naturalized.

grandiflora (DC.) Hemsl.

- 38 Solbrig, O.T. *et al.* 1972

Myriactis Less.

10 ; Caucasia to Japan and New Guinea. 4 ; temperate Himalaya (up to 4,000 m), Assam and Nilgiris, and Nepal and Sri Lanka.

nepalensis Less.

- 36 Mehra, P.N. *et al.* 1965 ; Mehra, P.N. & Remanandan, P. 1974

wallichii Less.

- 36 Mehra, P.N. & Sidhu, S.S. 1960 ; Mehra P.N. *et al.* 1965 ; Sharma, A. & Sarkar, A.K. 1967 - 1968 ; Baquar, S.R. & Abid Askari, S.H. 1970a, b ; Mehra, P.N. & Remanandan, P. 1974 ; Gill, B.S., Gupta, R.C. & Kaur, S. 1980

wightii DC.

- 36 Mehra, P.N. & Remanandan, P. 1969, 1974

Notonla DC.

25 ; tropical Africa, Madagascar and India. 4 ; Western Peninsula, and Sri Lanka.

grandiflora DC.

- 20 Ganesan, D. 1939 ; Koul, M.L.H. 1964 a ; Narayan, K.N. & Shukur, A. 1968

walkeri Clarke

- 20 Shetty, B.V. 1967

Oligochaeta Koch

5 ; South Europe, North Africa, West Asia and India. 1 ; throughout tropical India.

ramosa (Roxb.) Wagen.

- 28 Bhandari, M.M. & Singhvi, D.M. 1977

divaricata (Fisch. & C.A. Mey.) C. Koch

- 24 Tonjan, Z.R. 1968a

Amberboa ramosa Roxb.

- 36 Gupta, P.K. *et al.* 1972

Volucarella divaricata Benth.

- 16, 28 Mehra, P.N. *et al.* 1965

Parthenium Linn.

15 ; America and West Indies. 1 ; almost throughout India.

hysterophorus Linn.

- 18 Hakoo, M.L. 1963
 32 Kanchan, S.D. & Geetha. K.S. 1977
 34 Rollins, R.C. 1946 ; Gustafsson, Å. 1947a ; DeJong, D.C.D. & Longpre, E.K. 1963 ; Coleman, R. 1968b ; Powell, A.M. & King, R.M. 1969b ; Henderson, R.J. *et al.* 1977 ; Keil, D.J. & Stuessy, T.F. 1977 ; Gupta, R.C. & Gill, B.S. 1980

c. 34, 34,

- 35 Rollins, R.C. 1950
 36 Kokieva, B. (Fedorov); Thombre, M.V. 1959b

Pegolettia Cass.

12 ; North, tropical and South Africa and Madagascar. 1 ; Rajasthan.

senegalensis Cass.

- 20 Singhvi, D.M. *et al.* 1975 ; Bhandari, M.M. & Singhvi, D.M. 1977

Pteris Linn.

40 - 50 ; temperate Eurasia, Mediterranean and Abyssinia. 1 ; temperate Himalaya, Khasi Hills and Western Ghats, and Bhutan.

hieracioides Linn.

- 10 Ishikawa, M. 1916; Bergman, B. 1932, 1935b; Tischler, G. 1934; Delay, C. 1947; Perret (Löve, A. & Löve, D. 1961b); Mehra, P.N. *et al.* 1965; Nazarova, E.A. (Fedorov), 1968; Fernandes, A. & Queiroz, M. 1971; Kaul, V. & Singh, D. 1972; Kliphuis, E. 1977; Kuzmanov, B. & Georgieva, S. 1977a; Brand, C.V.D. *et al.* 1979

ssp. **hieracioides**

- 10 Van Loon, J. Chr. & Kieft, B. 1980

Pluchea Cass.

50; tropics and subtropics. 7; chiefly in Eastern India and Punjab, and Pakistan.

indica Less.

- 20 Cooperider, T.S. & Galang, M.M. 1965; King, R.M. & Robinson, H. 1969; Peng, C. - I. & Hsu, C. - C. 1977, 1978

lanceolata Clarke*

- 20 Koul, A.K. 1964

wallichiana DC.

- 20 Bhandari, M.M. & Singhvi, D.N. 1977

Prenanthes Linn.

40; North America, Canaries, tropical Africa, temperate and tropical Asia. 6; Western and Eastern Himalaya.

brunoniana Walp.

- 16 Mehra, P.N. *et al.* 1965; Gill, B.S., Gupta, R.C. & Kaur, S. 1980

Pseudelephantopus Rohr.

1 - 3; Central and tropical South America. 1; West Bengal, Gangetic Plains and elsewhere.

spicatus (Juss. ex Aubl.) Rohr. ex Gleason

- 20 Harms, L.J. 1969
22 Subramanyam, K. & Kamble, N.P. 1967, 1971; Peng, C. - I. & Hsu, C. - C. 1977, 1978
26 Sarkar, A.K., Chakraverty, M. *et al.* 1980

Elephantopus spicatus Aubl.

- 26 Sharma, A. & Sarkar, A.K. 1967 - 1968; Dey, D. & Sharma, A.K. 1969

Psychrogeton Boiss.

29; South West and Central Asia. 1; Western Himalaya.

andryaloides (DC.) Novopokr. ex Krasch.**Erigeron andryaloides** Benth.

- 18 Mehra, P.N. & Remanandan, P. 1974

Pulicaria Gaertn.

50 - 60; temperate and warm Eurasia, tropical and South Africa. 12; chiefly in North Western India, and Pakistan.

angustifolia DC.

- 14 Bhandari, M.M. & Singhvi, D.M. 1977
18 Baquar, S.R. & Abid Askari, S.H. 1970a, b

crispa Sch. - Bip.

- 18 Mehra, P.N. *et al.* 1965
20 Singh, B. 1951

dysenterica (Linn.) Benth.

- 18 Fernandes, A. & Queiroz, M. 1971; Strid, A. 1971; Hommal, P.W.F.M. & Wieffering, J.H. 1979; Van Loon, J. Chr. & Snelders, H.C.M. 1979; Kuzmanov, B. & Georgieva, S. 1980
18. 20 Gadella, T.W.J. & Kliphuis, E. 1967
20 Rodolico, A. 1933; Tischler, G. 1934; Murin & Vácnová (Fedorov); Májovský, J. *et al.* 1970a

*The combination *Pluchea lanceolata* was made by Oliv. & Hiern (DFP[: 135).

rajputanae Blatt. & Hall.

- 20 Singhvi, D.M. *et al.* 1975; Bhandari, M.M. & Singhvi, D.M. 1977

vulgaris Gaertn.

- 18 Wulff, H.D. 1937b

wightiana Clarke

- 14 Chopde, V.P. 1965; Bhandari, M.M. & Singhvi, D.M. 1977

Reichardia Roth

10; Mediterranean. 1; Punjab.

tingitana (Linn.) Roth.

- 16 Teležičský (Tischler, G. 1931); Borgen, L. 1970; Van Loon, J.C. 1974; Humphries, C.J. *et al.* 1978

Picridium tingitanum Desf.

- 16 Larsen, K. 1960
18 Mehra, P.N. & Sidhu, S.S. 1960; Mehra, P.N. *et al.* 1965; Gill, B.S., Gupta, R.C. & Kaur, S. 1980

Rhynchospermum Reinw.

2; Himalaya to Japan. 1; temperate Himalaya (up to 2,000 m) and Khasi Hills.

verticillatum Reinw.

- 18 Arano, H. 1962b, 1965; Huziwara, Y. 1965; Mehra, P.N. *et al.* 1965; Peng, C. - I. & Hsu, C. - C. 1977, 1978

Saussurea DC.

About 403; chiefly in temperate Asia, abundant in the mountains. About 46; confined between 2,310 and 5,940 m in the Himalaya, with 1 extending to Western Peninsula and 1 to plains, and Nepal and Bhutan.

affinis Spreng.

- 36 Ishikawa, M. 1916

gossypiphora D. Don

- 26 Malla, S.B. *et al.* 1979

heteromalla (D. Don) Hand. - Mazz.

- 34 Shetty, B.V. 1967

candicans Clarke

- 32 Mehra, P.N. *et al.* 1965
32, 34 Mehra, P.N. & Remanandan, P. 1976

hypoleuca Spreng.

- 58 Kumar, V. & Chauhan, K.P.S.

lappa Clarke

- 26 Zhukova, P.G. (Fedorov); 1967b

obovata Wall.

- c. 32 Shetty, B.V. 1967
32 Kumar, V. & Chauhan, K.P.S.

sacra Edgew.

- c. 32 Shetty, B.V. 1967

Sclerocarpus Jacq.

15; Southern United States to Columbia and tropical Africa. 1; Western Himalaya (up to 1,830 m), Punjab and Western Peninsula.

africanus Jacq.

- 22 Mehra, P.N. *et al.* 1965; Mehra, P.N. & Remanandan, P. 1974
36 Olorode, O. 1974a

Scorzonera Linn.

150; Mediterranean and from Central Europe to Central Asia. 4; Western Himalaya (up to 5,000 m), Punjab, and Pakistan, 1 cultivated.

divaricata Turcz.

- 14 Remanandan, P. & Mehra, P.N. 1974

hispanica Linn.

- 14 Marchal, E. 1920; Kraevoj, S. Ya (Fedorov); Poddubnaja - Arnoldi, W. *et al.* (Fedorov); Scherz, C. 1957; Jaworska (Skalińska, M. *et al.* 1964); Murin & Váchoá (Fedorov); Májovský, J. *et al.* 1970a; Kuzmanov, B.A. & Ancev, M.E. 1973; Dvořák, P. & Dadašková, B. 1976, 1977a

14, 28 Sosnovetz, A.A. (Fedorov)
purpurea Linn.

14 Kraevoi, S. Ya (Fedorov); Baksay, L. 1958; Sosnovetz, A.A. (Fedorov); Májovský, J. *et al.* 1970b; Skalińska, M. *et al.* 1971; Ferakova, V. 1972; Dvořák, F. & Dadáková, B. 1977b

14, 14+1 Dvořák, F., Dadáková, B. & Ruzicka, J. 1979

Senecio Linn.

About 2,000 - 3,000; widely distributed throughout the world. 76; chiefly between 1,320 and 5,610 m in the Himalaya, 20 endemic to Western Ghats, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka a few are ornamentals.

alatus Wall.

40 Mehra, P.N. *et al.* 1965

candicans DC.

20 Mathew, A. & Mathew, P.M. 1978

chrysanthemoides DC.

40 Mehra, P.N. *et al.* 1965; Bhat, B.K. *et al.* 1975; Mehra, P.N. & Remanandan, P. 1975

coronopifolius Desf.

20 Aryavand, A. 1975

40 Mehra, P.N. & Remanandan, P. 1969, 1975

crenatus DC.

60 Larsen, K. 1958b; 1960; Gupta, P.K. *et al.* 1972; Mehra, P.N. & Remanandan, P. 1975

dalzellii Clarke

40 Mathew, A. & Mathew, P.M. 1978

elegans Linn.

20 Afzelius, K. 1924; Delay, C. 1947; Ornduff, R. *et al.* 1963; Mehra, P.N. *et al.* 1965

graciliflorus DC.

40 Mehra, P.N. *et al.* 1965; Mehra, P.N. & Remanandan, P. 1975; Gill, B.S., Gupta, R.C. & Kaur, S. 1980

grahamii Hook. f.

20 Gupta, R.C. & Gill, B.S. 1979b

lavendulacifolius DC.

20 Mathew, A. & Mathew, P.M. 1978

nilgheryanus DC.

40 Shetty, B.V. 1967

nudicaulis Buch. - Ham. *ex* D. Don

40 Mehra, P.N. *et al.* 1965; Mehra, P.N. & Remanandan, P. 1975; Malla, S.B., Bhatnagar, S. *et al.* 1977b

ruficervis DC.

36 Mehra, P.N. & Remanandan, P. 1969, 1975

40 Mehra, P.N. *et al.* 1965; Gill, B.S., Gupta, R.C. & Kaur, S. 1980

saxatilis Wall.

20 Gupta, R.C. & Gill, B.S. 1980

scandens Buch. - Ham. *ex* D. Don

20 Afzelius, K. 1924; Arano, H. 1962d, 1964a; Mehra, P.N. *et al.* 1965; Shetty, B.V. 1967; Hsu, C. - C. 1970; Peng, C.-I. & Hsu, C. - C. 1977

34 Peng, C. - J. & Hsu, C. - C. 1978

tenuifolius Cass.*

20 Shukur, A. 1967

tussilaginis Less.

60 Larsen, K. 1960; Borgen, L. 1969. Brarwell, D. *et al.* 1972

Ligularia tussilaginea (Burm. f.) Makino

60 Lee, Y.N. 1967

60, 62 Miyaji (Ishikawa, M. 1916); Morinaga, T. & Fukushima, E. 1931a

*The combination *Senecio tenuifolius* was made by Burm. (FHD : 621).

vulgaris Linn.

- 38 Ishikawa, M. 1916
 40 Afzelius, K. 1924; Tischler, G. 1934, 1937; Vasrama (Löve, A. & Löve, D. 1942b); Heiser, C.B. & Whitaker, T.W. 1948; Löve, A. & Löve, D. 1956b; Oenduff, R. 1960; Mulligan, G.A. 1961a; Gadella, T.W.J. & Kliphuis, E. 1963, 1966; Palmblad, I.G. 1965; Taylor, R.L., Powell, A.M. & King, R.M. 1969a; Crisp, P. & Jones, B.M.G. 1970; Turner, B.L. 1970; Kliphuis, E. & Wieffering, J.H. 1972, 1979; Harriman, N.A. 1978

- Dahlgren, R. *et al.* 1971; Fernandes, A. & Queiros, M. 1971; Kramer, K.U. *et al.* 1972; Powell, A.M. *et al.* 1974; Van Loon, J.C. 1974; Humphries, C.J. *et al.* 1978

wightii (DC.) Benth.

- 20 Mathew, A. & Mathew, P.M. 1975b

Sigesbeckia Linn.

6; tropical America, Africa and Malay Peninsula, Borneo and North Australia. 1; throughout India (up to 1,650 m in the Himalaya).

orientalis Linn.

- 20, 30 Hsu, C. - C. 1967
 24 Subramanyam, K. & Kamble, N.P. 1967
 30 Diers, L. 1961; Koul, M.L.H. 1964a; Turner, B.L. & Flyr, D. 1966; Matveeva, T.S. & Tikhonova, A.D. (Fedorov); Hsu, C. - C. 1970; Strother, J.L. 1972; Mehra, P.N. & Remanandan, P. 1974; Peng, C. - I. & Hsu, C. - C. 1977, 1978; Gill, B.S., Gupta, R.C. & Kaur, S. 1980
 30, 60 Mehra, P.N. & Sidhu, S.S. 1960, Mehra, P.N. *et al.* 1965
 60 Solbrig, O.T. *et al.* 1972

Silybum Adans.

2; Mediterranean. 1; Western Himalaya, Kashmir and Punjab, and Pakistan.

marianum (Linn.) Gaertn.

- 34 Heiser, C.B. & Whitaker, T.W. 1948; Larsen, K. 1956b; Czapik (Skalická, M. *et al.* 1959); Moore, R.J. & Frankton, C. 1962; Björkqvist, I. *et al.* 1969; Gadella, T.W.J. & Kliphuis, E. 1970a;

Solidago Linn.

About 100; America, 1 in Europe. 4; 1 confined between 1,650 and 2,970m in the Himalaya, 3 cultivated.

canadensis Linn.

- 18 Carano, E. 1921 (Goodwin, R.H. 1937); Beaudry, J.R. 1968, 1969; Tomkins, D.J. & Pinkawa, D.J. 1979
 18, 18+1
 2B Beaudry, J.R. & Chabot, D.L. 1957, 1959
 18, 54 Mehra, P.N. *et al.* 1965
 18+0 - 1B Kapoor, B.M. 1970
 18+0 - 2s Kapoor, B.M. 1978
 36 Taylor, R.L. & Mulligan, G.A. 1968
 54 Raven, P.H. *et al.* 1960; Sarkar, A.K., Chakraverty, M. *et al.* 1980

nemoralis Ait.

- 18 Beaudry, J.R. 1963, 1970
 18, 18+1 -
 3B Beaudry, J.R. & Chabot, D.L. 1959
 54 Morinaga, T. & Fukushima, E. 1931a

virga - aurea Linn.

- 18 Turesson, G. 1938; Scheerer, H. 1939; Löve, A. & Löve, D. 1942b, 1948; Sokolovskaya, A.P. & Streikova, O.S. (Fedorov); Mattick (Tischler, G. 1950); Löve, A. 1954b; Bakšay, L. 1957b; Sokolovskaya, A.P. (Fedorov); Arano, H. 1962b; Huziwara, Y. 1962a; Sorsa, V. 1962; Beaudry, J.R. 1963; Mehra, P.N. *et al.* 1965; Murin & Váchoá (Fedorov); Shetty, B.V. 1967; Beaudry, J.R. 1969; Hsu, C. - C. 1970; Májovský, J. *et al.* 1970a; Garbari, F. & Tornadore, N. 1972; Mehra, P.N. & Remanandan, P. 1974; Van Loon, J. Chr. & de Jong, H. 1978; Gill, B.S., Gupta, R.C. & Kaur, S. 1980; Kumar, V. & Chauhan, K.P.S.
 18, 40 Rostovtseva, T.S. 1979b

Soliva Ruiz & Pav.

8; South America. 1; naturalized in certain regions of Uttar Pradesh.

anthemifolia R. Br.

c. 118 Gupta, R.C. & Gill, B.S. 1980

Sonchus Linn.

50; Eurasia, Mediterranean, Atlantic Islands and tropical Africa. 4; throughout India (up to 2,640 m in the Himalaya), and Pakistan.

arvensis Linn.*

18 Shetty, B.V. 1961; Sorsa, V. 1963a; Mehra, P.N. *et al.* 1965; Hsu, C.-C. 1970; Remanandan, P. & Mehra, P.N. 1974; Peng, C.-I. & Hsu, C.-C. 1977, 1978

18 - 36 Tomkins, D.J. & Grant, W.F. 1978

18, 32, 36 Gupta, P.K. *et al.* 1972

c. 36 Sorsa, V. 1962

36 Skalińska, M. *et al.* 1971; Alam, S. 1972; Hsieh, T.-S. *et al.* 1972

36, 45, 54 Mulligan, G.A. 1957

36, 54 Shumovich, W. & Montgomery, F.H. 1955

54 Löve, A. & Löve, D. 1956b; Boulos, L. 1961; Gadella, T.W.J. & Kliphuis, B. 1963, 1967, 1968a; Curran, P.L. 1968; Edmonds, J.M. *et al.* 1974

54, 64 Boulos, L. 1959

>60 Tischler, G. 1937

64 Erlandsson (Löve, A. & Löve, D. 1942b); Ruhweder, H. 1937; Wulff, H.D. 1937b

f. brachyotus (DC.) Kirp.**brachyotus DC.**

18 Nisioka, T. 1958; Shetty, B.V. 1964; Mehra, P.N. *et al.* 1965; Mitra, K. & Datta, N. 1967; Boulos, L. 1970

f. glubrescens (Guenth. *et al.*) Kirp.**uliginosus Bieb.**

36 Shumovich, W. & Montgomery, F.H. 1955; Boulos, L. 1959, 1961; Packer, J.G. 1964; Bir, S.S. & Sidhu, M. 1974

asper (Linn.) Hill

18 Wulff, H.D. 1939b; Barber, H.N. 1941; Rutland, J.P. 1941; Heiser, C.B. & Whitaker, T.W. 1948; Vaarama (Löve, A. & Löve, D. 1948); Stebbins, G.L. *et al.* 1953; Löve, A. & Löve, D. 1956b; Mulligan, G.A. 1957; Nisioka, T. 1958; Henin (Boulos, L. 1960); Mehra, P.N. & Sidhu, S.S. 1960; Koul, M.L.H. 1964a; Mehra, P.N. *et al.* 1965; Gadella, T.W.J. & Kliphuis, E. 1966; Subramanyam, K. & Kamble, N.P. 1967; Curran, P.L. 1968; Taylor, R.L. & Mulligan, G.A. 1968; Gupta, P.K. 1969b; Baquar, S.R. & Abid Askari, S.H. 1970a, b; Májovský, J. *et al.* 1970b; Torres, A.M. & Liogier, A.H. 1970; Fernandes, A. & Queiros, M. 1971; Marchi, P. 1971b; Ohno, R. 1971; Walter, R. & Kuta, E. 1971; Gupta, P.K. *et al.* 1972; Hsieh, T.-S. *et al.* 1972; Nordenstam, B. 1972; Singh, N.K. 1972; Edmonds, J.M. *et al.* 1974; Remanandan, P. & Mehra, P.N. 1974; Keil, D.J. & Pinkawa, D.J. 1976; Kuzmanov, B. & Georgieva, S. 1976; Labadie, J.P. 1976; Gill, L.S. 1978b; Brand, C.V.D. *et al.* 1979; Bir, S.S. & Sidhu, M. 1980; Gill, B.S., Gupta, R.C. & Kaur, S. 1980

36 Kuzmanov, B. & Georgieva, S. 1980

maritimus Linn.

18 Henin (Boulos, L. 1960); Delay, J. 1968b; Fernandes, A. & Queiros, M. 1971; Roux, P.J. & Boulos, L. 1972; Labadie, J.P. 1976

**Sonchus arvensis auct. pl.* (non Linn.) FBI, 3: 414, is a synonym of *S. brachyotus* DC. *S. arvensis* Linn. is an exclusively European species and does not occur in India (HFCD: 282). In FHD: 622 and RHFC, 1: 274, *S. arvensis auct. pl.* (non Linn.) has been kept as a synonym of *S. wightianus* DC.

oleraceus Linn.

- 16 Marchal, E. 1920; Tischler, G. 1934, 1937; Rohweder, H. 1937; Brjandsson (Löve, A. & Löve, D. 1942b)
- 18 Sharma, A. & Sarkar, A.K. 1967-1968; Ohno, R. 1971
- 32 Ishikawa, M. 1916; Cooper, D.C. & Mahony, K.L. 1935; Barber, H.N. 1941; Rutland, J.P. 1941; Helsner, C.B. & Whitaker, T.W. 1948; Pólya, L. 1949; Stebbins, G.L. *et al.* 1953; Jinno, T. 1956; Mulligan, G.A. 1957; Nisioka, T. 1958; Henin (Boulos, L. 1960); Larsen, K. 1960b; Mehra, P.N. & Sidhu, S.S. 1960; Turner, B.L., Elison, W.L. & King, R. 1961; Koul, M.L.H. 1964a; Mehra, P.N. *et al.* 1965; Curran, P.L. 1968; Leveque, M. & Gorenflor, R. 1969; Powell, A.M. & King, R.M. 1969b; Borgon, L. 1970; Hsu, C. - C. 1970; Kuzmanov, B.A. & Kozuharov, S.I. 1970; Torres, A.M. & Llogier, A.H. 1970; Dahlgren, R. *et al.* 1971; Strid, A. 1971; Van Loon, J.C. *et al.* 1971; Walter, R. & Kuta, E. 1971; Alam, S. 1972; Nordenstam, B. 1972; Roux, P.J. & Boulos, L. 1972; Turner, B.L. *et al.* 1973; Edmonds, J.M. *et al.* 1974; Remanandan, P. & Mehra, P.N. 1974; Schaack, C.G. *et al.* 1974; Peng, C. - I. & Hsu, C. - C. 1977, 1978; Torab, A.S. *et al.* 1978; Kliphuis, E. & Wieffering, J.H. 1979; Gill, B.S., Gupta, R.C. & Kaur, S. 1980; Jansen R.K. & Stuessy, J.F. 1980; Van Loon, J. Chr. 1980
- 36 Hsieh, T. - S. *et al.* 1972; Bir, S.S. & Sidhu, M. 1980

oleraceus x *asper* (16+9)

- 25 Barber, H.N. 1941

Sorozeris Stebbins

8; Himalaya, Tibet and West China. 5; Himalaya.

pumila Stebbins

Crepis pumila (Lowe) Babcock

- 8 Babcock, E.B. & Cameron, D.R. 1934

Sphaeranthus Linn.

40; Africa, Madagascar, Iraq to Persia, India, South East Asia, West Malaysia, Celebes and North East Australia. 3; tropical Himalaya (up to 1,660 m), Assam, West Bengal and Southern India, and Bangla Desh and Sri Lanka.

africanus Linn.

- 20 Mehra, P.N. & Remanandan, P. 1969, 1975; Mathew, A. & Mathew, P.M. 1975b

indicus Linn.

- 20 Shetty, B.V. 1961; Chatterjee, T. & Sharma, A.K. 1968; Mehra, P.N. & Remanandan, P. 1969, 1975

Spilanthes Jacq.

60; tropical America, Africa, Malay Peninsula, Borneo and North Australia. 3; throughout India (up to 1,650 m in the mountains).

acmella (Linn.) Murr.

- 14 Malik, N.A. & Ahmad, A.J. 1963
24 Mehra, P.N. *et al.* 1965
48+2 Coleman, J.R. 1970
52 Gajapathy, C. 1962b; Mehra, P.N. & Remanandan, P. 1969, 1974; Narkhede, M.N. & Phadnis, B.A. 1971

oleracea Linn.*

- 78 Mathew, A. & Mathew, P.M. 1978

paniculata Wall. ex DC.

- 78 Mathew, A. & Mathew, P.M. 1978

Struchium P. Br.

1; tropical America, West Indies and tropical Africa. Kerala.

sparganophorum (Linn.) O. Kuntze

- 32 Mathew, A. & Mathew, P.M. 1978

*The combination *Spilanthes oleracea* should be attributed to Murr.

Synedrella Gaertn.

50 : warm America, tropical Africa, Madagascar and India. 1 ; plains of India.

nodiflora (Linn.) Gaertn.

- 32 Hsu, C. - C. 1970
 36 Mangenot, S. & Mangenot, G. 1962; Olorode, O. 1974a
 36, c. 36 Torres, A.M. & Liogier, A.H. 1970
 38 Gajapathy, C. 1962b ; Shukur, A. 1969; Bhattacharyya, G.N. & Sharma, A.K. 1970
 38 or 40 Powell, A.M. & King, R.M. 1969b
 40 Hanerji, I. & Pal, S. 1959 ; Harvey 1966 ; Sharma, A. & Sarkar, A.K. 1967-1968 ; Mehra, P.N. & Ramanandan, P. 1969, 1974 ; Miyagi, C. 1971 ; Peng, C. - I. & Hsu, C. - C. 1977, 1978 ; Sarkar, A.K., Chakraverty, M. *et al.* 1978, 1980

Tagetes Linn.

50 : warmer parts of America. 4 - 5 ; cultivated, a few naturalized.

erecta Linn.

- 24 Eyster, W.H. 1939 ; Towner, J.W. 1958 ; Bolz, G. 1961 ; Mehra, P.N. *et al.* 1965 ; Jalil, R. Khoshoo, T.N. & Pal, M. 1974 ; Khoshoo, T.N. 1979 ; Kuleshchikha, V.B. 1979
 24, 48 Jalil, R. & Pal, M. 1980 ; Mathew, A. & Mathew, P.M. 1980
 48 Gupta, P.K. *et al.* 1972

erecta x patula

- 26, 36, 44,
 72 Khoshoo, T.N. 1979
 36, 72 Jalil, R., Khoshoo, T.N. & Pal, M. 1974

micrantha Cav.

- 24 Neher, R.T. 1967 ; Keil, D.J. & Pinkava, D.J. 1976

minuta Linn.

- 48 Mehra, P.N. & Ramanandan, P. 1969, 1974 ; Khoshoo, T.N. 1979

patula Linn.

- 14 Gupta, P.K. *et al.* 1972
 20, 24, 48 Sharma, A. & Sarkar, A.K. 1967 - 1968
 48 Eyster, W.H. 1939 ; Towner, J.W. 1958 ; Bolz, G. 1961 ; Mehra, P.N. *et al.* 1965 ; Huziwara, Y. 1968 ; Jalil, R., Khoshoo, T.N. & Pal, M. 1974 ; Khoshoo, T.N. 1979

Tanacetum Linn.

50 - 60 ; North temperate. 9 ; confined to Himalaya (up to 5,400 m).

longifolium Wall.

- 18 Mehra, P.N. & Ramanandan, P. 1969, 1974

Taraxacum Weber

About 60 ; chiefly in North temperate zone, with 2 in South America. 1 - 25 ; confined between 330 and 5,940 m in the Himalaya.

banhyalense v. Soest

- 32 Singh, D. & Kaul, V. 1973 ; Singh, D. *et al.* 1974

deplidens Lindb. f.

- 24 Gustafsson, Å. 1932 ; Hou-Liu, P.Y. 1963 ; Singh, D. & Kaul, V. 1973 ; Singh, D. *et al.* 1974

- 24, 26 Richards, A.J. 1970

flavum v. Soest

- 24 Singh, D. & Kaul, V. 1973 ; Singh, D. *et al.* 1974

karbhajian singhii**ssp. pahalgauense v. Soest**

- 24 Singh, D. & Kaul, V. 1973 ; Singh, D. *et al.* 1974

officinale Weber ex Wigg.*

- 8 Panigrahi, G. & Kammathy, R.V. 1960 (Sharma, A.K. & Chatterjee, T. 1961) ;

*In RHFC, 1 : 271, *T. officinale auct.* (non Wiggers), FBI, 3 : 401 is kept as a synonym of *T. javanicum v. Soest.*

- Sharma, A.K. & Chatterjee, T. 1961 ;
 Sharma A.K. & Chatterji, T. 1961 ;
 Narayan, K.N. & Shukur, A. 1968
- 16, 18, 24,
 32, 34, 36,
 37 Fürnkranz, D. 1960
- 16, 24, 26
 27, 32, 38 Gill, B.S. & Gupta, R.C. 1980
- 22 - 24 Heitz, E. 1926
- 24 Poddubnaja - Arnoldi, W.A. (Fedorov) ;
 Tischler, G. 1937 ; Pólya, L. 1950 ;
 Malecka, J. 1958, 1962, 1968, 1971 ;
 Mulligan, G.A. 1959 ; Koul, M.L.H.
 1964a ; Murin & Váchoš (Fedorov) ;
 Sharma, A. & Sarkar, A.K. 1967 - 1968 ;
 Chouksanova, N.A. *et al.* 1968a ; Taylor,
 R.L. & Mulligan, G.A. 1968 ; Arevshat-
 tian, J.G. 1970 ; Lee, Y.N. 1970 ;
 Májovský, J. *et al.* 1970a ; Lovka, M.
et al. 1971 ; Peng, C. - I. & Hsu, C. - C.
 1977, 1978 ; Tomkins, D.J. & Grant,
 W.F. 1978 ; Van Loon, J. Chr. & de
 Jong, H. 1978 ; Kliphuis, E. & Wieffer-
 ing, J.H. 1979
- 24, 24+2B Takemoto, T. 1954
- 24, 24+2B,
 26 Takemoto, T. 1956
- 24 - 26, 30 Juel, H.O. 1905
- 24, 26 Fernandes, A. & Queiros, M. 1971
- 24, 32 Tischler, G. 1934 ; Rohweder, H. 1937 ;
 Chatterjee, T. & Sharma, A.K. 1969 ;
 Arevshatyan, I.G. 1973
- 24, 27, 32 Mehra, P.N. *et al.* 1965
- 24, 32, 40 Remanandan, P. & Mehra, P.N. 1974
- 40 Mehra, P.N. & Remanandan, P. 1969
- polyodon* Dahlst.
- 24 (23, 24,
 26, 38, 48) Sørensen, T. & Gudjónsson, G. 1946
- 24 Sørensen, T. 1958 ; Richards, A.J. 1969
- 32 Singh, D. & Kaul, V. 1973 ; Singh, D.
et al. 1974
- tenebristylum* v. Soest
- 32 Singh, D. & Kaul, V. 1973 ; Singh, D.
et al. 1974
- vulpinum*
- f. pallidocarpum* v. Soest
- 24 Singh, D. & Kaul, V. 1973 ; Singh, D.
et al. 1974

Tithonia Desf. ex Juss.

10 ; Mexico, Central America and West
 Indies. 3 ; cultivated, 2 have run wild.

diversifolia A. Gray

- 30 Mehra, P.N. & Remanandan, P. 1969,
 1974
- 34 Turner, B.L., Ellison, W.L. & King, R.
 1961 ; Powell, A.M. & King, R.M.
 1969b ; Solbrig, O.T. *et al.* 1972

rotundifolia (Mill.) Blake

- 34 Heiser, C.B. (Fedorov) ; Turner, B.L. &
 King, R.M. 1964 ; Subramanyam, K. &
 Kamnathy, R.V. 1967

tagetiflora Desf.

- 32 Vilmorin, R. de & Chopinet, R. 1954
- 34 Mehra, P.N. & Remanandan, P. 1974 ;
 Sarkar, A.K., Chakraverty, M. *et al.*
 1978

speciosa Hook.

- 34 Gupta, R.C. & Gill, B.S. 1979b

Tragopogon Linn.

50 ; temperate Eurasia, 1 South Africa 3 ;
 Western and Central Himalaya between
 1,800 and 4,200 m, 1 cultivated.

gracile D. Don

- 12 Remanandan, P. & Mehra, P.N. 1974 ;
 Mehra, P.N. & Rao, L. 1980
- 24 Kaul, V. & Singh, D. 1972 ; Singh, D. &
 Kaul, V. 1972, 1975

portifolius Linn.

- 12 Winge, O. 1926a ; Poddubnaja - Arnoldi,
 W.A. *et al.* (Fedorov) ; Heiser, C.B. &
 Whitaker, T.W. 1948 ; Ownbey, M.
 1950 ; Ownbey, M. & McCollum, G.D.
 1954 ; Scherz, C. 1957 ; Larsen, K. 1960 ;
 Delay, J. 1970c ; Powell, A.M. & Sikes,
 S. 1970 ; Dahlgren, R. *et al.* 1971 ;
 Edmonds, J.M. *et al.* 1974 ; Labadie,
 J.P. 1976 ; Dvořák, F. & Dudáková, B.
 1978a ; Van Loon, J. Chr. & de Jong, H.
 1978

pratensis Linn.

- 12 Beer, R. 1912 ; Winge, O. 1926a ;
 Tischler, G. 1934 ; Ownbey, M. 1950 ;
 Wulff, H.D. 1950 ; Ownbey, M. & Mc-
 Collum, G.D. 1954 ; Barling, D.M.
 1955 ; Mulligan, G.A. 1957 ; Scherz, C.
 1957 ; Jaworska (Skajůnska, M. *et al.*

1961); Kožubarov, S.I. & Kuzmancy, B.A. 1968; Kuzmanov, B. *et al.* 1969; Laane, M.M. 1969b; Gadella, T.W.J. & Kliphuis, E. 1970a, b, 1971a; Kapoor, B.M. 1972; Tomkins, D.J. & Grant, W.F. 1978; Van Loon, J. Chr. & de Jong, H. 1978

- 14 Ishikawa, M. 1916
24 Remanandan, P. & Mehra, P.N. 1974

Tricholepis DC.

15; Central Asia, Himalaya and Burma. 10; chiefly between 1,650 and 3,960 m in the Himalaya, and Bhutan.

elongata DC.

- 32 Mehra, P.N. *et al.* 1965; Mehra, P.N. & Remanandan, P. 1976

glaberrima DC.

- 32 Gupta, R.C. & Gill, B.S. 1979b

radicans (Roxb.) DC.

- 32 Gupta, R.C. & Gill, B.S. 1979b

stewartii Clarke

- 16 Mehra, P.N. *et al.* 1965; Mehra, P.N. & Remanandan, P. 1976

Tridax Linn.

26; Mexico to tropical South Africa. 1; naturalized.

procumbens Linn.

- 36 Raghavan, T.S. & Venkatasubban, K.R. 1941b; Mehra, P.N. & Sidhu, S.S. 1960; Turner, B.L., Ellison, W.L. & King, R. 1961; Turner, B.L. & King, R.M. 1964; Mehra, P.N. *et al.* 1965; Powell, A.M. 1965; Turner, B.L. & Lewis, W.H. 1965; Harvey 1966; Tandon, S.L. & Bhatta, I. 1968; Gupta, P.K. 1969b; Powell, A.M. & King, R.M. 1969b; Rogers, S. 1969; Shukur, A. 1969; Bhattacharyya, G.N. & Sharma, A.K. 1970; Hsu, C.-C. 1970; Powell, A.M. & Sikes, S. 1970; Torres, A.M. & Liogier, A.H. 1970; Singh, N.K. 1972; Solbrig, O.T. *et al.* 1972; Mehra, P.N. & Remanandan, P. 1974; Keil, D.J. & Stuessy, T.F. 1977; Bir, S.S. & Sidhu, M. 1980

Tussilago Linn.

1; temperate Eurasia (excluding China and Japan) and North Africa. Western Himalaya between 1,800 and 3,300 m.

farfara Linn.

- 60 Langlet, O.F.J. 1936; Delay, C. 1947; Löve, A. & Löve, D. 1956b; Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov); Gadella, T.W.J. & Kliphuis, E. 1966; Knaben, G. & Engelskjön, T. 1967; Leveque, M. & Gorenšot, R. 1969; Májovský, J. *et al.* 1970b; Brand, C.V.D. *et al.* 1979

Venidium Less.

20 - 30; South Africa. 1; cultivated.

fastuosum Stapf

- 18 Biquez (Delay, C. 1951)

Verbesina Linn.

150; warm America. 2; 1 naturalized in Northern India, 1 cultivated.

encelioides (Cav.) Benth. & Hook. *f. ex* A. Gray

- 34 Covas, G. & Schnack, B. 1946 (D. 1955); Carlquist, S. 1954; Coleman, R. 1968a; Keil, D.J. & Stuessy, T.F. 1977; Pinkava, D.J. & Keil, D.J. 1977; Weedon, J.F. & Powell, A.M. 1980

Ximenesia encelioides Cav.

- 34 Turner, B.L. & Ellison, W.L. 1960; DeJong, D.C.D. & Longpre, E.K. 1963; Gupta, R.C. & Gill, B.S. 1980
c. 34 Solbrig, O.T. *et al.* 1972

Vernonia Schreb.

About 1,000; America, Africa, Asia and Australia. About 55; chiefly in tropical and subtropical Himalaya (up to 1,650 m) and mountains of Western and Southern India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

africans DC.

- 18 Mathew, A. & Mathew, P.M. 1976 ;
Narayana, B.M. 1979

altissima Nutt.

- 34 Gupta, R.C. & Gill, B.S. 1980
36 Jones, S.B. & Duncan, W.H. 1966

attenuata DC.

- 18 Mehra, P.N. *et al.* 1965

beddomei Hook. f.

- 18 Mathew, A. & Mathew, P.M. 1976

bourneana Smith

- 20 Mathew, A. & Mathew, P.M. 1976

cinerascens Sch. - Bip.

- 20 Mehra, P.N. *et al.* 1965 ; Mehra, P.N. &
Sidhu, S.S. 1960 ; Bhandari, M.M. &
Singhvi, D.M. 1977
40 Mangenot, S. & Mangenot, G. 1962

cineria (Linn.) Less.

- 18 Grant, W.F. 1953 ; Mangenot, S. &
Mangenot, G. 1957, 1962 ; Mehra, P.N.
& Sidhu, S.S. 1960 ; Midge, J. 1960a ;
Sharma, A.K. & Varma, B. 1960 ;
Chuang, T.I. *et al.* 1963 ; Koul, M.L.H.
1964a ; Turner, B.L. & King, R.M. 1964 ;
Mehra, P.N. *et al.* 1965 ; Turner, B.L. &
Lewis, W.H. 1965 ; Harvey 1966 ;
Subramanyam, K. & Kambho, N.P.
1966 ; Hsu, C. - C. 1967, 1970 ; Shetty,
B.V. 1967 ; Tandon, S.L. & Bhalla, I.
1968 ; Dey, D. & Sharma, A.K. 1969 ;
Gupta, P.K. 1969b ; Powell, A.M. &
King, R.M. 1969b ; Jones, S.B. Jr 1970 ;
Miyagi, C. 1971 ; Mehra, P.N. &
Ramanandan, P. 1975 ; Mathew, A. &
Mathew, P.M. 1976 ; Gill, L.S. 1978b ;
Bir, S.S. & Sidhu, M. 1980
36 Sarkar, A.K., Chakraverty, M. *et al.* 1977

commoisanensis Smith

- 20 Narayana, B.M. 1979

cozyzoides Clarke*

- 18 Mathew, A. & Mathew, P.M. 1976

dalzelliana Drumm. & Hutch.

- 18 Shukur, A. 1967 ; Mathew, A. &
Mathew, P.M. 1978

divergens Edgew.

- 18 Mathew, A. & Mathew, P.M. 1976

elaeagnifolia DC.

- 38 Sharma, A.K. & Varma, B. 1960
40 Shukur, A. 1967 ; Sharma, A. & Sarkar,
A.K. 1967 - 1968 ; Dey, D. & Sharma,
A.K. 1969 ; Mathew, A. & Mathew, P.M.
1976

gossypina Gamble

- 20 Narayana, B.M. 1979

indica Clarke

- 36 Mathew, A. & Mathew, P.M. 1976

malabarica Hook.

- 18 Mathew, A. & Mathew, P.M. 1978

monalis DC.

- 54 Mehra, P.N. & Ramanandan, P. 1969,
1975

novboracensis Willd.

- 18 Mehra, P.N. *et al.* 1965 ; Mehra, P.N. &
Ramanandan, P. 1975
34 Jones, S.B. Jr 1968

peninsularis Clarke

- 18 Mathew, A. & Mathew, P.M. 1976

ramaswamii Hutch.

- 20 Narayana, B.M. 1979

recurva Gleason

- 36 Jones, S.B. & Duncan, W.H. 1966

revoluta Buch. - Ham.

- 18 Mehra, P.N. *et al.* 1965 ; Shetty, B.V.
1967 ; Mehra, P.N. & Ramanandan, P.
1975

sharavycensis Gamble

- 60 Narayana, B.M. 1979

travancoeica Hook. f.

- 60 Narayana, B.M. 1979

*The combination *Veronica cozyzoides* was made by DC. (FHD: 627).

Vicoa Cass.

12 ; North East tropical Africa to Central Asia and North Western India. 3 ; Himalaya (up to 1,320 m), drier parts of India and Southern India, and Pakistan and Sri Lanka.

indica DC.

- 18 Mehra, P.N. & Sidhu, S.S. 1960
18, 27 Gupta, P.K. 1969b

auriculata Cass.

- 18 Mehra, P.N. *et al.* 1965

Inula indica Linn.

- 18 Singh, B. 1951 ; Bir, S.S. & Sidhu, M. 1980

vestita Benth.

- 18 Mehra, P.N. & Sidhu, S.S. 1960 ; Mehra, P.N. *et al.* 1965

Jacobaea vestita (Wall.) O. Kuntze

- 18 Gupta, P.K. 1969b ; Shetty, B.V. 1967

Viguiera Kunth

150 ; warm America and West Indies. 1 ; cultivated.

helianthoides Kunth

- 34 Gupta, P.K. *et al.* 1972

Vittadinia A. Rich.

8 ; New Guinea, Australia, New Caledonia, New Zealand and South America. 1 ; cultivated and naturalized.

triloba (Gaud.) DC.

- 18 Turner, B.L. 1970

australis A. Rich

- 18 Hair, J.B. & Beazenberg, E.J. 1966

Wedelia Jacq.

70 ; tropics and warm temperate. 4 ; Himalaya (up to 1,650 m), Western Peninsula, Eastern India and Coastal areas, and Bangla Desh and Sri Lanka.

affinis DC.

- 24 Mehra, P.N. & Remanandan, P. 1969, 1974

biflora DC.

- 30 Chuang, T.I. *et al.* 1963 ; Hsu, C. - C. 1970 ; Miyagi, C. 1971 ; Mehra, P.N. & Remanandan, P. 1974
50 Mathew, A. & Mathew, P.M. 1978

chinensis (Osbeck) Merr.

- 50 Mehra, P.N. & Remanandan, P. 1969, 1974 ; Miyagi, C. 1971

calendulacea Less.

- 50 Ghosh, R.B. 1960 ; Koul, M.L.H. 1964a ; Sarkar, A.K. *et al.* 1974
52 Chatterjee, T. 1960 ; Bhattacharyya, G.N. & Sharma, A.K. 1970
75 Mathew, A. & Mathew, P.M. 1978

urticaefolia DC.

- 76 Gupta, R.C. & Gill, B.S. 1979b

Xanthium Linn.

30 ; throughout the world. 4 ; naturalized throughout India (up to 1,650 m in Himalaya), and Pakistan and Sri Lanka.

sibiricum Patrin

- 36 Bir, S.S. & Sidhu, M. 1980

spinosum Linn.

- 36 Negodi, G. 1937b (Löve, A. & Löve, D. 1961b) ; Covas, G. & Schnack, B. 1946 (D. 1955) ; Helsner, C.B. & Whitaker, T.W. 1948 ; Löve, D. & Dansereau, P. 1959 ; Váchová & Murin (Fedorov) ; Májovský, J. *et al.* 1970a ; Fernandes, A. & Queiros, M. 1971

strumarium Linn.

- 16 Ishikawa, M. 1916
36 Raghavan, R.S. 1957 ; Löve, D. & Dansereau, P. 1959 ; Mehra, P.N. & Sidhu, S.S. 1960 ; Arano, H. (Fedorov) ; Mehra, P.N. *et al.* 1965 ; Hindáková (Fedorov) ; Bhattacharyya, G.N. & Sharma, A.K. 1970 ; Hsu, C. - C. 1970 ; Májovský, J. *et al.* 1970a ; Fernandes, A. & Queiros,

M. 1971; Mehra, P.N. & Remanandan, P. 1974; Pinkava, D.J. & Keil, D.J. 1977

Youngia Cass.

About 35 - 40; temperate and tropical Asia. 8; between 2,970 and 5,610 m in the Himalaya, extending to the plains and other mountains of India, and Sri Lanka.

fuscipappa Thwaites

16 Babcock, E.B. & Stebbins, G.L. 1937; Tischler, G. 1938

Crepis fuscipappa (Thwaites) Benth.

16 Babcock, E.B. & Mann - Lesley, M. 1926

japonica (Linn.) DC.

16 Babcock, E.B. & Stebbins, G.L. 1937; Babcock, E.B. *et al.* 1937; Nisioka, T. 1956; Mehra, P.N. & Sidhu, S.S. 1960; Borgmann, E. 1964; Heu, C. - C. 1967, 1970; Kaul, V. & Singh, D. 1972
18 Gupta, P.K. *et al.* 1972

Crepis japonica (Linn.) Benth.

16 Tahara, M. 1910a; Mann, M.C. 1922, 1925; Babcock, E.B. & Mann - Lesley, M. 1926; Hollingshead, L. & Babcock, E.B. 1930; Chuang, T.I. *et al.* 1963; Mehra, P.N. *et al.* 1965; Jones, S.B. Jr 1968

ssp. *japonica*

16 Shetty, B.V. 1967

tenuifolia (Willd.) Babo. & Stebbins

15, 20, 24 Babcock, E.B. & Stebbins, G.L. 1937; Babcock, E.B. *et al.* 1937

Crepis tenuifolia Willd.

15 Babcock, E.B. & Hollingshead, L. 1929; Babcock, E.B. & Navaahin, M. 1930; Hollingshead, L. & Babcock, E.B. 1930

sp.

Crepis stoliczkae Clarke

10 Mehra, P.N. & Remanandan, P. 1969; Remanandan, P. & Mehra, P.N. 1974

Zinnia Linn.

20; Southern United States to Brazil and Chile. 5; cultivated, a few naturalized.

angustifolia HBK

22 Turner, B.L., Beaman, J.H. & Rock, H.F.L. 1961; Powell, A.M. & Turner, B.L. 1963

24 Turner, B.L. *et al.* 1962; Torres, A.M. 1963a; Mehra, P.N. & Remanandan, P. 1974

linearis Benth.

22 Ramalingam, R.S. *et al.* 1971

22, 33, 44 Raman, V.S. *et al.* 1976

24 Mehra, P.N. *et al.* 1965; Gupta, P.K. *et al.* 1972

24, 48 Bose, S. & Panigrahi, U.C. 1968, 1969a

elegans Jacq.

24 Ishikawa, M. 1911, 1916; Delay, C. 1947; Turner, B.L. *et al.* 1962; Torres, A.M. 1963a; Ramalingam, R.S. *et al.* 1971; Mehra, P.N. & Remanandan, P. 1974

24, 48 Gupta, P.K. & Koak, R. 1976

elegans x *linearis*

23 Ramalingam, R.S. *et al.* 1971

greggii Robins & Greenm.

22 Torres, A.M. 1963a

haageana Regel

22, 22+2B Powell, A.M. & Turner, B.L. 1963

24 Vilmorin, R. de & Chopinet, R. 1954; Torres, A.M. 1963a

peruviana Linn.

24 Diers, L. 1961; Turner, B.L. *et al.* 1962; Torres, A.M. 1963a

multiflora Linn.

24 Mehra, P.N. *et al.* 1965; Nordenstam, B. 1969; Gill, B.S., Gupta, R.C. & Kaur, S. 1980

pauciflora Linn.

24 Schnack, B. & Covas, G. 1947

AUCUBACEAE J. G. Agardh

1/3; Himalaya to Japan. 1/1; Eastern Himalaya, and Bhutan.

Aucuba Thunb.

himalaica Hook. f. & Thoms.

3 ; Himalaya to Japan, 1 ; Eastern Himalaya, and Bhutan.

16 Kurosawa, S. 1971a

AVERRHOACEAE Hutch.

3/16 ; Madagascar, West Malaysia and tropical South America (?). 1/2 cultivated.

Averrhoa Linn.

carambola Linn.

2 ; tropics. 2 ; cultivated.

22 Mathew, P.M. 1938a

bilimbi Linn.

22 Mathew, P.M. 1938a

24 Ramirez, D.A. 1939a ; Gajapathy, C. 1962b ; Sanjappa, M. 1979

24 Krishnaswamy, N. & Ramad, V.S. 1949 ; Chatterjee, A. & Sharma, A.K. 1970 ; Sankar, A.K. *et al.* 1973b ; Sanjappa, M. 1979

AVICENNIACEAE Endl. ex Schradl.

2/15 ; tropical coasts. 1/3 ; salt marshes and tidal creeks of India, and Sri Lanka.

Avicennia Linn.

alba Blume

c. 66 Raghavan, R.S. & Arora, C.M. 1958

14 ; warm regions. 3 ; salt marshes and tidal creeks of India, and Sri Lanka.

marina Vierch.

36 Subramanian, D. 1980c

BALANITACEAE Endl.

1/25 ; tropical Africa and Asia. 1/1 ; drier parts of India, from South East Punjab and Delhi to Sikkim, Bihar, Gujarat, Khandesh and Deccan.

Balanites Desfile

parts of India, from South East Punjab and Delhi to Sikkim, Bihar, Gujarat, Khandesh and Deccan.

25 ; tropical Africa to Burma. 1 ; drier

egyptiaca (Linn.) Delile

16 Manganot, S. & Manganot, G. 1957,
1962; Manganot, S. *et al.* 1957

18 Pathak, G.N. *et al.* 1949

roxburghii Planch.

36 Sanjappa, M. 1979

BALANOPHORACEAE L.C. & A. Rich.

18/120; all but one in tropics. 2/8; Himalaya (up to 3,000 m), Western India and Deccan Peninsula, and Nepal and Sri Lanka.

Balanophora J.R. & G. Forst.

80; Madagascar to Japan, Malaysia, Australia and Polynesia. 7; Himalaya, Western India and Deccan Peninsula, and Nepal and Sri Lanka.

abbreviata Blume

46 Shivamurthy, G.R. & Arekal, G.D. 1979

dioica R. Br.

c. 18 Panje, R.R. 1934 (D. 1955)

BALSAMINACEAE DC.

4/5-600; Eurasia, Africa and North America. 2/about 200; mainly on the hills of Southern and Western India and the Himalaya, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Hydrocera Blume

1; Indo-Malesia. Throughout the greater part of India, and Sri Lanka.

triflora Wight & Arn.

16 Schürhoff, P.N. 1931; Rao, R.V.S. 1972

Impatiens Linn.

About 500-600; tropical and temperate Eurasia and Africa, with the major centres in India, Sri Lanka and Madagascar. About 200; many endemic to the hills of Southern and Western India, Himalaya, and Sri Lanka, and in Nepal, Pakistan, Bhutan and Bangla Desh - some cultivated.

acaulis Arn.

16, 20, 32 Bhaskar, V. & Razi, B.A. 1974

20 Bhaskar, V. 1976

var. *acaulis*

20 Bhaskar, V. 1980

var. *granulata* Bhask.

16, 18 Bhaskar, V. 1980

18, 20 Bhaskar, V. & Razi, B.A. 1972-1973

acanthera Hook. f.

18, 20 Chatterjee, A. & Sharma, A.K. 1970

ngumbeyana Bhask.

16 Bhaskar, V. 1976, 1980

alicia Fisch.

var. *bababudensis* Bhask.

16 Bhaskar, V. 1976

- amplexicaulis* Edgew.
20 Khoshoo, T.N. 1955a, 1966
- arguta* Hook. f. & Thoms.
12, 18 Chatterjee, A. & Sharma, A.K. 1970
- balsamina* Linn.
10, 12, 14 Rao, R.V.S. 1975
12, 14 Chatterjee, A. & Sharma, A.K. 1970
14 Kachidze (Schürhoff, P.N. 1931); Morinaga, T. & Fukushima, E. 1931a; Kanna, B. 1934; Smith, F.H. 1934; Heitz, E. & Resende, F. 1936; Yamaha, G. & Suematsu, S. 1936; Warburg, E.F. 1938b; Bhattacharyya, S.S. 1945; Bhattacharyya, S.S. 1956; Khoshoo, T.N. 1955a, 1966; Vazart, J. 1957; Chauhan, K.P.S. & Abel, W.O. 1968; Rao, R.V.S. 1972; Bhaskar, V. & Razi, B.A. 1972 - 1973; Chinappa, C.C. & Gdl, L.S. 1974; Terasaka, O. & Tanaka, R. 1974; Raghuvanshi, S.S. & Singh, D.N. 1979a
- 14, 14+2B Raghuvanshi, S.S. & Joshi, S. 1968a; Mahajan, S. 1980
- 14, 26, 28,
30 Jalil, R., Zadoo, S.N. & Khoshoo, T.N. 1974
- 14, 28 Bose, S. & Mukherjee, R. 1967; Raghuvanshi, S.S. & Singh, D.N. 1979b
- 14+2B Raghuvanshi, S.S. & Joshi, S. 1968b
- var. *szaleiflora*
14 Rao, R.V.S. 1973a
- var. *camelliflora*
14 Rao, R.V.S. 1973a
- var. *occidentalis* Hook. f.
14 Rao, R.V.S. 1973a
- var. *rosea* (Lindl.) Hook. f.
rosea Lindl.
14 Wulff (Tischler, G. 1935 - 1936)
- var. *vulgaris* Hook. f.
14 Rao, R.V.S. 1973a
- barberi* Hook. f.
16 Bhaskar, V. & Razi, B.A. 1974; Bhaskar, V. 1976, 1980
- beddomai* Hook. f.
16 Bhaskar, V. & Razi, B.A. 1972 - 1973
- bella* Hook. f. & Thoms.
14 Khoshoo, T.N. 1966
- bicolor* Royle
amphorata Edgew.
14 Wulff (Tischler, G. 1935 - 1936); Warburg, E.F. 1938b; Khoshoo, T.N. 1955a, 1966
- bicornuta* Wall.
16 Malla, S.B., Bhattarai, S. *et al.* 1978b
- brachycentra* Kar. & Kir.
14 Khoshoo, T.N. 1955a, 1956b, 1966; Bhat, B.K. *et al.* 1975
- campanulata* Wight
20 Rao, R.V.S. 1973b
- canariensis*
20 Rao, R.V.S. 1972
- chinensis* Linn.
16 Rao, R.V.S. 1972; Bhaskar, V. & Razi, B.A. 1972 - 1973
- var. *brevicornis* Barnes.
16 Bhaskar, V. & Razi, B.A. 1972 - 1973
- var. *intermedia* Bhask.
16 Bhaskar, V. & Razi, B.A. 1972 - 1973
- clavicornis* Turcz.
14 Rao, R.V.S. 1972
16 Bhaskar, V. 1980
- curdata* Wight
20 Bhaskar, V. & Razi, B.A. 1972 - 1973; Rao, R.V.S. 1973b; Bhaskar, V. 1976
- cupidata* Wight & Arn.
14 Bhaskar, V. & Razi, B.A. 1972 - 1973; Rao, R.V.S. 1973b
- dendricola* Fisch.
14 Bhaskar, V. 1976, 1980
- diversifolia* Wall.
16 Bhaskar, V. & Razi, B.A. 1972 - 1973
- dropanophora* Hook. f.
20 Sarkar, A.K., Datta, R. *et al.* 1975
- edgeworthii* Hook. f.
12 Khoshoo, T.N. 1955a, 1956b, 1966; Raquar, S.R. & Abid Askari, S.R. 1970a, b

- fimbriata* Hook.
16 Chatterjee, A. & Sharma, A.K. 1970
- flaccida* Arn.
14 Bhaskar, V. & Razi, B.A. 1972-1973 ;
Rao, R.V.S. 1973b
- fruticosa* DC.
16 Rao, R.V.S. 1973b
- gardneriana* Wight
16 Bhaskar, V. & Razi, B.A. 1972 - 1973
- glandulifera* Royle
18 Javůrková, V. 1979
20 Chinappa, C.C. & Gill, L.S. 1974
- roylei* Walp.
18 Smith, F.H. 1934 ; Jackson, W. (D.
1955)
20 Warburg, E.F. 1938b ; Khoshoo, T.N.
1955a, 1966
- goughii* Wight
16 Rao, R.V.S. 1973b
20 Bhaskar, V. & Razi, B.A. 1972 - 1973,
1974 ; Bhaskar, V. 1976
- grandis* Heyne
20 Rao, R.V.S. 1973b
40 Bhaskar, V. 1976
- hanslowiana* Arn.
16 Bhaskar, V. 1976
- herbicola* Hook. f.
14 Bhaskar, V. 1976
- holstii* Engl. & Warb.
16 Heitz, E. 1929 ; Wulff, H.D. 1933 ; Smith,
F.H. 1934 ; Sugiyura, T. 1936a, b ; War-
burg, E.F. 1938b ; Bhattacharyya, S.S.
1954 ; Rao, R.V.S. 1972 ; Bhaskar, V. &
Razi, B.A. 1972 - 1973
- hookeriana* Arn.
16 Rao, R.V.S. 1972
20 Bhaskar, V. & Razi, B.A. 1972 - 1973
- inconspicua* Benth. ex Wight & Arn.
pusilla Heyne
16 Rao, R.V.S. 1972 ; Bhaskar, V. 1976
- var. *inconspicua* Bhask.
16 Bhaskar, V. 1976
- insignis* DC.
18 Chatterjee, A. & Sharma, A.K. 1970
- kleinii* Wight & Arn.
16 Bhaskar, V. & Razi, B.A. 1972 - 1973
- latifolia* Linn.
6 Rao, R.V.S. 1975, 1978
- lawii* Hook. f. & Thoms.
16 Bhaskar, V. & Razi, B.A. 1974
- lawsonii* Hook. f.
20 Bhaskar, V. 1976, 1980
- lenta* Hook. f.
16 Bhaskar, V. 1976
- leptoceras* DC.
18 Chatterjee, A. & Sharma, A.K. 1970
- leschenaultii* Wall.
6 Rao, R.V.S. 1972, 1975 ; Bhaskar, V. &
Razi, B. A. 1972 - 1973 ; Rao, R.V.S.
1978
- levingii* Hook. f.
16 Rao, R.V.S. 1973b
- ligulata* Bedd.
16 Bhaskar, V. & Razi, B.A. 1974
- maculata* Wight
20 Bhaskar, V. & Razi, B.A. 1972 - 1973 ;
Rao, R.V.S. 1973b ; Bhaskar, V. 1976
- mathildae* Chiov.
14 Heitz, E. 1929
- modesta* Wight
16, 18 Bhaskar, V. & Razi, B.A. 1974
16, 18, 32 Bhaskar, V. 1976 ; Bhaskar, V. & Razi,
B.A. 1976 ; Bhaskar, V. 1980
- mysorensis* Roth
14 Bhaskar, V. 1976
- noli - tangere* Linn.
20 Winge, O. 1925 ; Tschler, G. 1934 ;
Sokolovakaya, A.P. (Fedorov) ; Packer,
J.G. 1964 ; Gaden, T.W.J. & Kliphuis,
E. 1966 ; Rao, R.V.S. 1973b
20, 40 Skalińska, M. *et al.* 1980
- olivieri* Wright
16 Wulff, H.D. 1933 ; Rao, R.V.S. 1973b
- omissa* Hook. f.
28 Rao, R.V.S. 1973b
- oppositifolia* Linn.
12, 14, 16 Bhaskar, V. & Razi, B.A. 1972 - 1973

- pallidiflora* Hook. f.
16 Rao, R.V.S. 1973b
26 Bhaskar, V. 1976
- parasitica* Bedd.
20 Bhaskar, V. 1976
- parviflora* DC.
20 Heitz, E. 1926; Schürhoff, P.N. 1931
24 Tischler, G. 1934; Wulff, H.D. 1934; Löve, A. & Löve, D. 1942a
26 Heitz, E. & Resende, F. 1936; Ehrenberg, L. 1945; Pólya, L. 1949; Skalińska M. *et al* 1959; Khoshoo, T.N. 1966; Holub, J. *et al* 1971; Chinappa, C.C. & Gill, L.S. 1974
- parvifolia* Bedd.
20 Bhaskar, V. 1976
- phoenicea* Bedd.
20 Bhaskar, V. 1976
- puberula* DC.
28 Malla, S.B., Bhattarai, S. *et al* 1977a
- racemosa* DC.
18 Chatterjee, A. & Sharma, A.K. 1970
20 Malla, S.B., Bhattarai, S. *et al* 1977b
- radiata* Hook. f.
20 Sarkar, A.K. *et al* 1974
- repens* Moon
14 Bhaskar, V. & Razi, B.A. 1972 - 1973
- salicifolia* Hook. f. & Thoms.
16 Chatterjee, A. & Sharma, A.K. 1970
- scabrida* DC.
14 Smith, F.H. 1934; Khoshoo, T.N. 1966; Huynh, K.L. 1967
14, 20 Khoshoo, T.N. 1955a
18 Chatterjee, A. & Sharma, A.K. 1970
- scabriscula* Heyne
14 Bhaskar, V. & Razi, B.A. 1972-1973
- scapiflora* Heyne
12 Bhaskar, V. & Razi, B.A. 1974
16, 20 Bhaskar, V. & Razi, B.A. 1972 - 1973
- var. *pseudo-acaulis* Bhask.
20, 32, 40 Bhaskar, V. 1976; Bhaskar, V. & Razi, B.A. 1976
20, 32, 40,
>40 Bhaskar, V. 1980
- var. *scapiflora*
12, 14, 16,
20 Bhaskar, V. 1980
12, 16, 20 Bhaskar, V. 1976
- serrata* Benth.
14 Khoshoo, T.N. 1966
- stegantha* Hook. f.
22 Chatterjee, A. & Sharma, A.K. 1970
- stocksii* Hook. f.
14 Bhaskar, V. & Razi, B.A. 1974; Bhaskar, V. 1980
20 Bhaskar, V. & Razi, B.A. 1972 - 1973
- sulcata* Wall.
20 Khoshoo, T.N. 1955a, 1956b, 1966
- sultanii* Hook. f.
16 Wulff, H.D. 1933; Smith, F.H. 1934; Suglura, T. 1936a, b; Warburg, E.F. 1938b; Bhattacharyya, S.S. 1954; Bhattacharjya, S.S. 1956; Rao, R.V.S. 1972; Bhaskar, V. & Razi, B.A. 1972 - 1973
- talbotii* Hook. f.
12 Bhaskar, V. 1976
- tenella* Heyne
14 Rao, R.V.S. 1972
16 Bhaskar, V. & Razi, B.A. 1972 - 1973
- thomsunii* Hook. f.
14, 20 Khoshoo, T.N. 1955a, 1966
- toementosa* Heyne
16 Rao, R.V.S. 1972
- trichocarpa* Hook. f.
12 Bhaskar, V. & Razi, B.A. 1972 - 1973
- tripetala* Roxb.
14 Khoshoo, T.N. 1966
16 Sarkar, A.K. *et al* 1973a; Sarkar, A.K., Datta, N. & Chatterjee, U. 1980
- umbellata* Heyne
20 Rao, R.V.S. 1973b

uncinata Wight

- 14 Rao, R.V.S. 1973b
16 Bhaskar, V. 1976

verticillata Wight

- 16 Bhaskar, V. & Razi, B.A. 1972 - 1973 ;
Rao, R.V.S. 1973b

viscida Wight

- 16 Rao, R.V.S. 1972, 1973b

viscosa Bedd.

- 16 Rao, R.V.S. 1973b
20 Bhaskar, V. & Razi, B.A. 1972 - 1973

sp.

- 14 Khoshoo, T.N. 1966

BARRINGTONIACEAE Rudolphi

5/53; palaeotropics. 4/11; chiefly in Southern and Eastern India, and Bangla Desh and Sri Lanka.

Barringtonia J.R. & G. Forst.

39 ; East Africa, Madagascar, Hainan, Formosa, Ryu Kyu Islands, North Eastern India, Indo Malesia, Australia and Pacific. 5 ; chiefly in the coastal regions and Andaman Islands, 1 throughout India, and Bangla Desh and Sri Lanka.

acutangula (Linn.) Gaertn.

- 24 Mehra, P.N. & Singh, A. 1963
26 Roy, R.P. & Jha, R.P. 1961a, 1965b ;
Sobti, S.N. & Singh, S.D. 1961

asiatica (Linn.) Kurz

- 26 Thomas K.J. 1964 - 1965

racemosa Roxb.*

- 52 Thomas, K.J. 1964 - 1965

Careya Roxb.

4 ; Indo Malesia. 3 ; terai of Himalaya, Khasi Hills, plains of Bengal, 1 throughout India, and Bangla Desh.

arborea Roxb.

- 26 Roy, R.P. & Jha, R.P. 1961a, 1965b ;
Thomas, K.J. 1964 - 1965 ; Mehra, P.N.
1972 ; Sarkar, A.K., Datta, N. *et al.*
1978

Chydenanthus Miers

1 ; Burma, Andamans, Borneo and Sumatra to West New Guinea.

excelsus (Blume) Miers

- 26 Sarkar, A.K., Datta, N. & Chatterjee,
U. 1978

Planchonia Blume

8 ; Andamans to North and North East Australia. 1 ; Andamans.

littoralis van Houtte*valida* Blume

- 26 Sarkar, A.K., Datta, N. *et al.* 1976

*The combination *Barringtonia racemosa* was made by Spreng. (DFP1: 22).

BASSELLACEAE Moq. Tand.

4/25; America, Africa and Asia. 2/3 ; throughout India, and Sri Lanka, also cultivated.

Basella Linn.

6 ; 2 tropical Africa, 3 in Madagascar, 1 pantropical. 2 ; throughout India, and Sri Lanka, also cultivated.

Grant, W.F. 1964 ; Mehra, P.N. & Malik, C.P. 1961b ; Fathima, T. *et al.* 1971a, b

alba Linn.

- 44 Fathima, T. *et al.* 1971a, b
48 Mackenzie (Tischler, G. 1935 - 1936) ;
Diers, L. 1961
48, 49 Pushpa, G. *et al.* 1975

rubra Linn.

- 44 Mackenzie (Tischler, G. 1935 - 1936) ;
Suglura, T. 1936a ; Takagi, N. 1938 ;

Boussingaultia HBK

5 10 ; South United States and West Indies to Argentina, and Galapagos, 1 ; cultivated.

baselloides HBK

- c. 20 Rocén, T. 1927
36 Mackenzie (Tischler, G. 1935 - 1936)

BEGONIACEAE C. A. Agardh

5/920 ; tropics. 1/45 50 ; chiefly in tropical and subtropical Eastern Himalaya, and Nepal, Bhutan, Bangia Desh and Sri Lanka—a few cultivated.

Begonia Linn.

About 900 ; tropics and subtropics ; abundant in America. 45 - 50 ; mostly in Eastern Himalaya (up to 3,660 m) and Southern India, and Nepal, Bhutan, Bangia Desh and Sri Lanka a few cultivated.

barbata Wall.

- 26 Sarkar, A.K. 1974
26, 40, 42 Sharma, A.K. & Bhattacharyya, U.C. 1957

catheartii Hook. f.

- 22+f Legro, R.A.H. & Doorenbos, J. 1969

crenata Dryand.

- 56 Legro, R.A.H. & Doorenbos, J. 1971

floccifera Bedd.

- 28 or 32 Legro, R.A.H. & Doorenbos, J. 1971
30 Sharma, A.K. & Bhattacharyya, U.C. 1957

fuchsoides Hook.

- 24 Sharma, A. & Sarkar, A.K. 1967 - 1968 ;
Sarkar, A.K. 1974
>40 Heitz, E. 1927b
60 Matsuura, H. & Okuno, S. 1936 ; Legro,
R.A.H. & Doorenbos, J. 1969

hatsuea Hamilt. ex D. Don**rubroventris** Hook. f.

- 22 Legro, R.A.H. & Doorenbos, J. 1969

inflata Griseb.*

- 22 Legro, R.A.H. & Doorenbos, J. 1969

*The combination *Begonia inflata* was made by Clarke (FBI, 2 : 636).

lucerna Hort.

20 Sarkar, A.K. 1974

maculata Roxb.

- 30 - 40 Heitz, E. 1927b
 34 Sarkar, A.K. 1974
 56 Matsuura, H. & Okuno, S. 1936; Legro, R.A.H. & Doorenbos, J. 1969

malabarica Lam.

- 28 Sharma, A.K. & Bhattacharyya, U.C. 1961b
 60 Legro, R.A.H. & Doorenbos, J. 1969

dipetala Grah.

- c. 28 Heitz, E. 1927b
 30 Legro, R.A.H. & Doorenbos, J. 1971

nepalensis (A. DC.) Warburg*gigantea* Wall.

- 16 Legro, R.A.H. & Doorenbos, J. 1971
 28, 32, 34,
 40, 42 Sharma, A.K. & Bhattacharyya, U.C. 1961b

palmata D. Don*lacinata* Roxb.

- 20, 22 Sharma, A.K. & Bhattacharyya, U.C. 1961b; Legro, R.A.H. & Doorenbos, J. 1969
 22 Legro, R.A.H. & Doorenbos, J. 1973
 32 Sharma, A.K. & Bhattacharyya, U.C. 1957
 46 Sarkar, A.K. 1974

howringiana Champ.

22+2f Legro, R.A.H. & Doorenbos, J. 1969

picta Smith22 White, O.E., *et al.* 1946; Legro, R.A.H. & Doorenbos, J. 1969*rex* Putz.

- 22 Sarkar, A.K. 1974
 22, 32, 34 Sharma, A.K. & Bhattacharyya, U.C. 1961b
 26 (28, 30) Sharma, A.K. & Bhattacharyya, U.C. 1957
 32, 33, 34,
 42, 43, 44 Matsuura, H. & Okuno, S. 1936

roxburghii A. DC.

22 Legro, R.A.H. & Doorenbos, J. 1971

semperflorens Link & Otto

- 33, 36,
 60, 66 Matsuura, H. & Okuno, S. 1936
 34 Legro, R.A.H. & Doorenbos, J. 1971
 40-46 Sharma, A.K. & Bhattacharyya, U.C. 1961b

sikkimensis A. DC.

22 Legro, R.A.H. & Doorenbos, J. 1973

thomsonii A. DC.

22 Legro, R.A.H. & Doorenbos, J. 1969

xanthina Hook.

22 Legro, R.A.H. & Doorenbos, J. 1969

BERBERIDACEAE Juss.

4/575; North temperate, tropical mountains and South America. 3/86; chiefly in temperate and alpine Himalaya, and Nepal, Bhutan and Sri Lanka.

Berberis Linn.

About 450; North and South America, Eurasia and North Africa. About 70; chiefly between 990 and 4,300 m in the Himalaya, often descending as low as 660 m, and Nepal, Bhutan and Bangla Desh.

angulosa Wall.

28 Giffen, M.H. 1936; Chaudhuri, R.K. *et al.* 1969; Maugini, E. & Moskova, R. 1971

aristata DC.

28 Giffen, M.H. 1936; Mehra, P.N. & Sreen, T.S. 1969, 1973c

90 BERBERIDACEAE

chitra Lindl.

var. *chitra*

28 Singhal, V.K. *et al.* 1980a

var. *occidentalis* Ahr.

28 Singhal, V.K. *et al.* 1980a

asiatica Roxb.

28 Malla, S.B., Bhattarai, S. *et al.* 1975

concinna Hook. f.

28 Giffen, M.H. 1936

levis Franch.

28 Giffen, M.H. 1936

lycium Royle

28 Giffen, M.H. 1936

var. *lycium*

28 Singhal, V.K. *et al.* 1980a

var. *subfascicularis* Ahr.

28 Singhal, V.K. *et al.* 1980a

tinctoria Lesch.

28 Sobha, V. & Ramchandran, K. 1980

umbellata Wall. ex G. Don

28 Singhal, V.K. *et al.* 1980a

vulgaris Linn.

28 Langlet, O.F.J. 1929; Tischler, G. 1928; Dermen, H. 1931b; Giffen, M.H. 1936; Delav, C. 1947; Contandriopoulos, J. 1962

var. *brachybotrys* Edgew.

28 Mehra, P.N. & Sareen, T.S. 1969, 1973c

Mahonia Nutt.

70; Himalaya to Japan and Sumatra, North and Central America. 15; chiefly in the Himalaya, and Nepal—a few cultivated.

acanthifolia G. Don

28 Malla, S.B. *et al.* 1976

leschenaultii Takeda

28 Arora, C.M. 1960

napaulensis DC.

Berberis nepalensis Spreng.

28 Chaudhuri, R.K. *et al.* 1969 Maugini, E. & Moskova, R. 1971

BETULACEAE S. F. Gray

2/95; North temperate, tropical mountains, Andes and Argentina. 2/6; temperate and subtropical Himalaya (from 1,000 to 4,660 m), and Bhutan.

Alnus Mill.

35; North temperate, South to Assam and Indo-China, and Andes. 2; temperate Himalaya, Assam and Punjab (up to 2,700 m).

nepalensis D. Don

56 Mehra, P.N. & Hans, A.S. 1969, 1972;

Mehra, P.N. & Sareen, T.S. 1969, 1973b

Betula Linn.

60; North temperate and Arctic. 4; Eastern and temperate North Western Himalaya (from 1,000 to 4,660 m) and Assam, and Bhutan.

<i>alnoides</i> Buch.-Ham.*	<i>utilis</i> D. Don
28 Mehra, P.N. & Sareen, T.S. 1969, 1973b ; Mehra, P.N. & Hans, A.S. 1972	28 Woodworth, R.H. 1930a, 1931 ; Flovik, K. 1940
<i>cylindrostachys</i> Gamble**	56 Mehra, P. N. & Sareen, T.S. 1969, 1973b
28 Mehra, P.N. & Hans, A.S. 1969, 1972	

BIGNONIACEAE Juss.

120/650 ; tropics, a few temperate. 35/50 ; mostly in Assam and Peninsular India, and Nepal, Pakistan and Sri Lanka—many cultivated.

<i>Adenocalymma</i> Mart. <i>ex</i> Meissn. <i>corr.</i> Endl.	<i>diversifolia</i>
40 ; tropical America. 2 ; cultivated.	40 Venkatasubban, K. R. 1944
<i>calycina</i>	<i>gracilis</i>
40 Venkatasubban, K.R. 1944	80 Venkatasubban, K. R. 1944
<i>Amphilophium</i> Kunth	<i>megapotamica</i> Spreng.
8 ; warm America. 1 ; cultivated.	40 Venkatasubban, K.R. 1944
<i>mutisii</i> HBK	<i>Campsis</i> Lour.
44 Venkatasubban, K.R. 1944	2 ; East Asia and]Eastern United States. 2 ; cultivated.
<i>Anemopaegma</i> Mart. <i>ex</i> Meissn.	<i>grandiflora</i> (Thunb.) Loisel.****
30 ; tropical America. A few cultivated.	36 Sugiura, T. 1936a ; Raghavan, T.S. & Venkatasubban, K.R. 1940b
<i>chamberlaynii</i> (Sims) Bureau <i>ex</i> K. Schum.	40 Bowden, W.M. 1945a
<i>Bignonia chamberlaynii</i> Sims	
40 Venkatasubban, K.R. 1944	<i>grandiflora</i> (Thunb.) K. Schum.
<i>Bignonia</i> Linn.***	<i>chinensis</i> Voss
1 ; North America. Cultivated.	36, 38 Venkatasubban, K.R. 1944
<i>caprolata</i> Linn.	40 Sax, K. 1933 ; Bowden, W.M. 1940a
40 Bowden, W. M. 1940a, 1945a	

*The combination *Betula alnoides* should be attributed to D. Don.

**The combination *Betula cylindrostachys* should be attributed to Lindl.

***Except for one species-*Bignonia caprolata*, other species have been transferred to various other genera (DFPI : 23).

****The combination *Campsis grandiflora* should be attributed to K. Schum. (DFPI : 31).

92 BIGNONIACEAE

Tecoma grandiflora Del.*

38 Venkatasubban, K.R. 1944

radicans (Linn.) Seem.

32 Kondo, K. 1972a

40 Sax, K. 1933; Raghavan, T.S. & Venkatasubban, K.R. 1940b; Venkatasubban, K.R. 1944

Tecoma radicans Juss.

40 Venkatasubban, K.R. 1944

Catalpa Scop.

11; East Asia, America and West Indies.
1; cultivated.

bignonioides Walt.

40 Smith, E.C. 1941; Delay, C. 1947; Mehra, P.N. & Bawa, K.S. 1969

syringaeifolia Sims

40 Scheu (Tischler, G. 1935 - 1936); Venkatasubban, K.R. 1944

Clytostoma Miers

12; tropical America. A few cultivated.

purpurea

Bignonia purpurea Hook.

40 Venkatasubban, K.R. 1944

Crescentia Linn.

5; tropical America. 1; cultivated.

cujete Linn.

36 Sarkar, A.K., Datta, N. *et al.* 1978

40 Venkatasubban, K.R. 1944; Simmonds, N.W. 1954

Dollechandrone (Fenzl) Seem.

9; tropical East Africa, Madagascar, tropical Asia and Australia. 6; Deccan Peninsula, Western and Central India and the Andamans, and Sri Lanka a few cultivated.

cynanchoides Cham.

40 Bedi, Y.S. *et al.* 1980

felcata Seem.

40 Bir, S.S., Gill B.S. & Bedi, Y.S. 1979

platycalyx Baker

40 Venkatasubban, K.R. 1944

spathacea K. Schum.

rheedii Seem.

40 Venkatasubban, K.R. 1944, 1945a

stipitata Benth.

40 Venkatasubban, K.R. 1944

Doxantha Miers

1; tropical America. Cultivated.

unguis-cati Rehd.

80 Bowden, W.M. 1945a; Joshi, A.B. & Hardas, M.W. 1956c

Bignonia unguis-cati Linn.

40 Simmonds, N.W. 1954

80 Venkatasubban, K.R. 1944

Bignonia tweediana Lindl.

80 Bowden, W.M. 1940b; Venkatasubban, K.R. 1944

Haplophragma Dop

4; South East Asia to Sumatra, 1; Assam hills and the Andamans.

adenophyllum Dop

Heterophragma adenophyllum Seem.

40 Venkatasubban, K.R. 1945a

Jacaranda Juss.

50; Central and South America and West Indies. 1; cultivated.

acutifolia Humb. & Bonpl.

36 Mehra, P.N. & Bawa, K.S. 1969

mimosifolia D. Don

36 Venkatasubban, K.R. 1944; Kedhar-nath, S. 1950; Nanda, P.C. 1962

66 Pathak, G.N. *et al.* 1949

*The combination *Tecoma grandiflora* should be attributed to Loisel.

Kigelia DC.

1 ; tropical Africa. Cultivated.

pinnata DC.

40 Bowden, W.M. 1940a, 1945a; Venkatasubban, K.R. 1944; Simmonds, N.W. 1954

Markhamia Seem. ex Baill.

12 ; tropical Africa and Asia. 2 ; cultivated.

hildebrandia

40 Venkatasubban, K.R. 1945a

platycalyx Sprague

40 Venkatasubban, K.R. 1945a

Millingtonia Linn. f.

1 ; South East Asia. Cultivated and naturalized.

hortensis Linn. f.

30 Narasinga Rao, V. 1936; Goldblatt, P. 1976

Oroxylum Vent.

2 ; South China, South East Asia and Indo-Malesia. 1 ; throughout the greater part of India, and Sri Lanka.

indicum Vent.

28 Ghatak, J. 1956; Mangenot, S. & Mangenot, G. 1962
30 Venkatasubban, K.R. 1944; Mehra, P.N. & Bawa, K.S. 1969
38 Goldblatt, P. 1976

Pajanelia DC.

1 ; Indo-Malesia. Khasi Hills, Western Ghats and Andamans, and Bangla Desh.

longifolia K. Schum.**mitis juv. DC.**

40 Venkatasubban, K.R. 1944

Pandorea Spach.

8 ; East Malaysia and Central Australia. 2 ; cultivated.

jasminoides (Lindl.) K. Schum.**Tecoma jasminoides Lindl.**

38 Nakajima, G. 1936

Parmentiera DC.

8 ; Mexico to Columbia. 2 ; cultivated.

caribaea Seem.

40 Venkatasubban, K.R. 1944; Simmonds, N.W. 1954

edulis DC.

40 Venkatasubban, K.R. 1945a

Phaedranthus Miers

1 ; Mexico. Cultivated.

baccinatorius (DC.) Miers**Bignonia cherere Lindl.**

40 Venkatasubban, K.R. 1944

Phyllarthron DC.

13 ; Madagascar and Comoro Islands. 1 ; cultivated.

comorense DC.

40 Venkatasubban, K.R. 1944

Pyrostegia C. Presl

5 ; tropical South America. 1 ; cultivated.

venusta (Ker-Gawl.) Miers**ignea C. Presl**

60 Joshi, A.B. & Hardas, M.W. 1956c

Bignonia venusta Ker-Gawl.

c. 50 Raghavan, T.S. & Venkatasubban, K.R. 1940b

Saritasia Dugand

1 ; Columbia. Cultivated.

magnifica (Bull) Dugand

Bignonia magnifica Bull

40 Venkatasubban, K.R. 1944

Spathodea Beauv.

2 ; tropical Africa. 1 ; cultivated.

campanulata Beauv.

26 Raghvan, T.S. & Venkatasubban, K.R. 1940b ; Mehra, P.N. & Bawa, K.S. 1969

36 Nanda, P.C. 1962

38 Mangenot, S. & Mangenot, G. 1962

nilotica Seem.

26 Venkatasubban, K.R. 1945a

Stereospermum Cham.

24 ; tropical Africa and Asia. 4 ; Deccan Peninsula, Bihar, Orissa, 2 throughout moist parts of India, and Sri Lanka.

personatum Chatterjee

40 Mehra, P. N. & Bawa, K.S. 1969

suaveolens DC.

40 Venkatasubban, K.R. 1944

xylocarpum Wight

40 Venkatasubban, K.R. 1944

xylocarpum Benth. & Hook.*

36 Bir, S.S., Gill, B.S. & Bedi, Y.S. 1979

Tabebuia Gomes ex DC.

100 ; Mexico to North Argentina and West Indies. About 10 ; cultivated.

cheloides Sims

40 Venkatasubban, K.R. 1944

donnell-smithii J.N. Rose

40 Sarkar, A.K., Chakraverty, M. *et al.* 1978

guyanae Hemsl.

40 Venkatasubban, K.R. 1944

pallida Miers

40 Simmonds, N.W. 1954

pentaphylla Gomes

40 Pathak, G.N. *et al.* 1949

rosea DC.

40 Venkatasubban, K.R. 1944

serratifolia D. Don

38 Venkatasubban, K.R. 1945a

40 Simmonds, N.W. 1954

spectabilis Nichols.

40 Venkatasubban, K.R. 1945a

Tanacetum Swarz

7 ; Central and tropical South America and West Indies. 2 ; cultivated.

albiflorum DC.

40 Venkatasubban, K.R. 1944

Tecoma Juss.

16 ; Florida, West Indies and Mexico to Argentina. About 7 ; cultivated.

chrysantha DC.

38 Venkatasubban, K.R. 1944

rosea Bertol.

38 Venkatasubban, K.R. 1944

serratifolia G. Don

38 Venkatasubban, K.R. 1944

smithii W. Wats.

36 Sugiura, T. 1931, 1936a; Venkatasubban, K.R. 1944

stans (Linn.) Juss.

36 Mehra, P.N. & Singh, A 1963; Sanjappa, M. & Sathyananda, N. 1979

40 Venkatasubban, K.R. 1944

*The combination *Stereospermum xylocarpum* should be attributed to Wight (FBI,4 : 383).

Stenlobium stans (Linn.) Seem.

40 Bowden, W.M. 1940a, 1945a

tagitahuana Vis.

40 Vilmorin, R. de & Simonet, M. 1927b ;
Raghavan, T.S. & Venkatasubban, K.R.
1940b

Tecomaria Spach

2 ; tropical East and South Africa. 2 ;
cultivated.

capensis (Thunb.) Spach.

Tecoma capensis Lindl.

34 Nakajima, G. 1936 ; Venkatasubban,
K.R. 1944

shirensis

34 Pai, O.J. 1964

BISCHOFIACEAE (Muell.-Arg.) Airy Shaw

1/2 ; tropical Asia. 1/1 ; tropical Himalaya southwards to Peninsular India.

Bischofia Blume

2 ; 1 in India, China and Formosa to
Polynesia, 1 in Central and South East

China. 1 ; tropical Himalaya southwards
to Peninsular India

javanica Blume

196 Mehra, P.N. & Hans, A.S. 1969, 1972 ;
Mehra, P.N. 1972 ; Hans, A.S. 1973

BIXACEAE Link.

1/4 ; tropics. 1/1 ; cultivated and naturalized.

Bixa Linn.

3-4 ; tropical America and West Indies.
1 ; cultivated and naturalized.

orellana Linn.

14 Janaki Ammal, E.K. (D. 1945) ; Gros,
J.-P. 1965 ; Mukherjee, P. 1975d
16 Simmonds, N.W. 1954

BOMBACACEAE Kunth

20/180 ; tropics, especially America. 7/8 ; tropical Eastern Himalaya, hotter parts of
India and Malabar, and Sri Lanka—some cultivated.

Adansonia Linn.

10 ; palaeotropics. 1 ; cultivated.

digitata Linn.

c.96 Riley, H.P. 1960
c.144 Miège, J. 1960a
c.144, 144 Baker, H.G. & Baker, I. 1968

144 Miège, J. & Burdet, H.M. 1968 ;
Miège, J. 1974

Bombax Linn.

8 ; tropical Africa and Asia. 2 ; 1 in
Western Peninsula and Andaman Islands, 1
throughout India, and Sri Lanka.

96 BOMBACACEAE

ceiba Linn.*

- 72 Baker, H.G. & Baker, I. 1968
 92 Mehra, P.N. & Sareen, T.S. 1969,
 1973c; Mehra, P.N. 1972
 96 Sareen, T.S. & Kumari, S. 1973

malabaricum DC.

- c.72 Janaki Ammal, B.K. (D.1945)

Ceiba Mill.

10; tropical America, 1; Western and Southern India, and Sri Lanka.

pentandra (Linn.) Gaertn.

- 72,80 Heyn, A.N.J. 1936
 80 Mangenot, S. & Mangenot, G. 1962
 88 Gill, B.S. *et al.* 1979b

var. *pentandra* Fruct.

- 72, 74, 75,
 76, 80 Baker, H.G. & Baker, I. 1968

Chorisia Kunth

5; tropical South America. 1; cultivated.

speciosa St - Hil.

- 72 Baker, H.G. & Baker, I. 1968
 86 Sareen, T.S. & Kumari, S. 1973

Durio Adans.

27; Burma and West Malaysia. 1; cultivated.

zibethinus Linn**

- 28 Datta, P.C. & Biswas C. 1969
 56 Mangenot, S. & Mangenot G. 1958, 1962

Ochroma Swartz

1; South Mexico to Bolivia and West Indies. Cultivated.

pyramidale (Cav. ex Lam.) Urban

- 90 Bawa, K.S. 1973

Jagopus Swartz

- c. 88 Mangenot, S. & Mangenot, G. 1962

Pachira Aubl.

2; tropical America. 1; cultivated.

aquatica Aubl.

- 88 Sarkar, A.K., Datta, R. *et al.* 1975

BORAGINACEAE Juss.

100/2,000; tropics and temperate, with the chief centre in Mediterranean. 39,145; chiefly in temperate and alpine Himalaya and drier parts of Southern, Western and Northern India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Anchusa Linn.

50; Europe, North Africa and West Asia.
 2; 1 in alpine Sikkim (between 3,300 and 3,600 m), 1 cultivated.

italica Retz.

- 32 Smith, S.G. 1931, 1932; Strey, M. 1931;
 Sugura, T. 1931, 1936b, 1940b; Lewita-

- ky, G.A. 1940; Markova, M. & Ivanova,
 P. 1971

Arnebia Forsk.

25; Mediterranean, tropical Africa and Himalaya. 5; North Western Himalaya (between 2,100 and 4,200 m) and Western India, and Pakistan.

**Bombax ceiba auct.*, non Linn. is a synonym of *B. malabaricum* DC. (FHD : 145-146).

**The combination *Durio zibethinus* was made by Murr. (Willis : 395).

aspidissima (Lehm.) DC.

8 Malik, C.P. *et al.* 1959b

griffithii Boiss.

8 Malik, N.A. & Ahmad, A.J. 1963

Asperugo Linn.

1 ; Europe. Punjab and Kashmir.

procumbens Linn.

48 Reese, G. 1953 ; Löve, A. & Löve, D. 1956b ; Májovský, J. *et al.* 1970b ; Delaj, J. 1972 ; Lovka, M. & Sušnik, F. 1973

Borago Linn.

3 ; Mediterranean, Europe and Asia. † ; cultivated.

officinalis Linn.

16 Strey, M. 1931 ; Tarnavski, I.T. 1948 ; Britton, D.M. 1951 ; Contandriopoulos, J. 1957c ; Fernandes, A. & Leitao, M.T. 1972 ; Gill, L.S. 1972

Cynoglossum Linn.

50 - 60 ; temperate and subtropics. 13 ; chiefly in temperate and tropical Himalaya (up to 3,960m), and Pakistan, Bhutan and Sri Lanka.

coelestinum Lindl.

24 Zhukova, P.G. 1967b

Paracaryum coelestinum Voss.

c. 24 Strey, M. 1931

glochidiatum Wall.

24 Britton, D.M. 1951

wallichii G. Don

24 Mehra, P.N. & Vasudevan, K.N. 1972

lancoletum Forsk.

24 Mehra, P.N. & Vasudevan, K.N. 1972

microglochis Benth.

24 Mehra, P.N. & Vasudevan, K.N. 1972

nervosum Benth. & Hook.

24 Britton, D.M. 1951

petiolatum A. DC.

24 Mehra, P.N. & Vasudevan, K.N. 1972

zeylanicum Thunb. *ex* Lehm.

24 Britton, D.M. 1951

furcatum Wall.

24 Mehra, P.N. & Vasudevan, K.N. 1972 ; Sanjappa, M. & Sathyananda, N. 1979

Eriptrichum Schrad.

65 ; temperate. 4 ; Eastern and Western Himalaya between 2,330 and 5,330 m).

canum (Benth.) Kitam.

strictum Decne

24 Mehra, P.N. & Vasudevan, K.N. 1972

Hellotropium Linn.

About 250 ; tropics and temperate. 21 ; chiefly in drier parts of Punjab, Deccan Peninsula and Gangetic Delta, and Pakistan and Sri Lanka.

arborescens Linn.

18 Britton, D.M. 1951

peruvianum Linn.

18 Pal, P.K. 1957

bacciferum Forsk.

ssp. lignosum (Vatke) Kazmi

lignosum Vatke

32 Faruqi, S.A. 1961

var. *tuberosum* (Boiss.) Kazmi

tuberosum Boiss.

32 Faruqi, S.A. 1961

undulatum Vahl

22 Malik, N.A. & Ahmad, A.J. 1963

32 Malik, C.P. *et al.* 1959c ; Faruqi, S.A. 1961

curassavicum Linn.

24 Subramanyam, K. & Kamble, N.P. 1967

26 Heiser, C.B. & Whitaker, T.W. 1948 ; Britton, D.M. 1951 ; Sarkar, A.K. *et al.* 1973a

28 Pal, P.K. 1957

var. *curassavicum*

32 Frohlich, M.W. & Colburn, W.T. 1980

var. *oculatum* (Heller) Johnston & Tidestrom

26 Frohlich, M.W. & Colburn, W.T. 1980

ellipticum Ledeb.

eschwaldi Steud.

64 Ahuja, M.R. 1955 ; Malik, C.P. *et al.* 1959c

indicum Linn.

22 Britton, D.M. 1951 ; Pal, P.K. 1957 ;
Bhattacharya, G.N. 1968

24 Bridges, S. 1969

64 Ahuja, M.R. & Natarajan, A.T. 1957

ophioglossum Stocks

2 Faruqi, S.A. 1961

ovatifolium Forsk.

32 Pal, P.K. 1957, 1963

56 Nordenstam, B. 1969

rariflorum Stocks

24 Faruqi, S.A. 1961

scabrum Retz.

28 Sanjappa, M. & Sathyananda, N. 1979

strigosum Willd.

26 Malik, C.P. *et al.* 1959c

32 Faruqi, S.A. 1961

64 Bir, S.S. & Sidhu, M. 1974

subulatum Hochst.

28 Faruqi, S.A. 1961

supinum Linn.

16 Britton, D.M. 1951 ; Malik, C.P. 1960b ;
Fernandes, A. & Leitao, M.T. 1972

zeylanicum Lam.

28 Shetty, B.V. & Subramanyam, K. 1971

Lappula v. Wolf

50 ; temperate Eurasia and Australia, 5 in
North America. 4 ; Himalaya (up to 4,000
m).

glochidiata (Wall.) Brand

Portaceryum glochidiatum Benth.

24 Mehra, P.N. & Vasudevan, K.N. 1972

Lindelofia Lehm.

10 ; Central Asia, Afghanistan and
Himalaya. 5 ; Himalaya (between 3,300
and 5,000 m).

angustifolia Brand

24 Mehra, P.N. & Vasudevan, K.N. 1972

longiflora (Benth.) Bail.

c. 24 Strey, M. 1931

24 Mehra, P.N. & Vasudevan, K.N. 1972

Lithospermum Linn.

60 ; temperate. 3 ; Kashmir, and
Pakistan.

arvense Linn.

28 Löve, A. & Löve, D. 1944b ; Britton,
D.M. 1951 ; Araratyan, A.G. (Fedorov) ;
Hanelt, P. & Schultze - Motel, J. 1962 ;
Gadella, T.W.J. & Kliphuis, E. 1970a ;
Markova, M.L. & Ivanova, P. 1974

officinale Linn.

28 Strey, M. 1931 ; Tischler, G. 1934 ;
Britton, D.M. 1951 ; Mulligan, G.A.
1957 ; Gadella, T.W.J. & Kliphuis, E.
1966 ; Podlech, D. & Dieterle, A. 1969 ;
Delay, J. 1972 ; Van Loon, J. Chr. &
Kieft, B. 1980

28,56 Májovský, J. *et al.* 1970b

tenniflorum Linn.

28 Strey, M. 1931

Lycopsis Linn.

3 ; Europe and Asia. 1-2 ; Kashmir,
and Pakistan.

arvensis Linn.

c. 48 Löve, A. & Löve, D. 1936b

48 Gadella, T.W.J. & Kliphuis, E. 1970a

c. 54 Svensson, H. G. 1925 ; Tischler, G.
1934 ; Rohweder H. 1937

orientalis Linn.

16 Strey, M. 1931 ; Bhat, B. K. *et al.* 1974b

Maharanga DC.

9 ; Eastern Himalaya to South West
China. 3 ; Eastern and Central Himalaya,
and Nepal (up to 4,330 m).

bicolor A. DC.

14 Malla, S.B. *et al.* 1976

Mertensia Ro h

50 ; North temperate and from South to Mexico and Afghanistan. 8 ; Himalaya (between 1,660 and 5,330m), and Pakistan.

elongata Benth. & Clarke

24 Britton, D.M. 1951

Myosotis Linn.

50 ; temperate Eurasia, mountains of tropical Africa, South Africa, Australia and New Zealand. 6 ; Himalaya (up to 4,000 m), and Pakistan.

arvensis (Linn.) Hill

36 Blaise, S. 1969

48 Taylor, R.L. & Mulligan, G.A. 1968 ;
Van Loon, J. Chr. 1980

50, 54 Sorsa, V. 1962

52 Merxmüller, H. & Grau, J. 1963 ;
Gadella, T.W.J. & Kliphuis, E. 1967 ;
Przywara, L. 1978

c. 54 Geitler, L. 1936

54 Löve, A. & Löve, D. 1956b

intermedia Link

c. 48 Strey, M. 1931 ; Tischler, G. 1934

48 Rohweder, H. 1937

ssp. arvensis

52 Blaise, S. & Roux, G. 1971

caespitosa Schultz

22, 44 Merxmüller, H. & Grau, J. 1963

c. 80 Strey, M. 1931 ; Tischler, G. 1934 ;
Rohweder, H. 1937

88 Przywara, L. 1978

sylvatica Ehrh. & Hoffm.

14, 18, 24, 32 Löve, A. & Löve, D. 1961a

18 Britton, D.M. 1951 ; Löve, A. & Löve, D.
1956b ; Merxmüller, H. & Grau, J. 1963 ;
Gadella, T.W.J. & Kliphuis, E. 1964,
1967

18, 20, 22 Grau, J. 1964

18, 20, 22, 32 Blaise, S. 1965

18, 24, 32 Griesinger, R. 1937

18, 32 Geitler, L. 1936

22 Májovksy, J. *et al.* 1970b

c. 24 Sorsa, V. 1963b

48 Araratyan, A.G. (Fedorov)

ssp. sylvatica

18 Przywara, L. 1978

stricta Link *ex* Roem. & Schult.

c. 36 Löve, A. & Löve, D. 1956b

48 Przywara, L. 1978

Nonea Medik.

35 ; Mediterranean. 2 ; Maharashtra and Punjab.

palla (Linn.) DC.

14 Malik, C.P. 1960b

14, 28 Malik, C.P. *et al.* 1959a ; Malik, C.P.
1960a

20 Fuernkranz, D. 1967 ; Speta, 1971a

Onosma Linn.

150 ; Mediterranean to Himalaya and China. 15 ; chiefly in Himalaya (up to 4,500 m), and Nepal.

echlroides Linn.

12 Teppner, H. 1971 (1972)

14 Kieft, B. & Van Loon, J. Chr. 1978

arenarium Waldst. & Kit.

12 Bakšay, L. 1957b Teppner, H. 1971
(1972)

ssp. arenarium

20 Teppner, H. 1971

Symphytum Linn.

25 ; Europe and from Mediterranean to Caucasia. 1 ; cultivated.

asperum Lepech.

32 Gadella, T.W.J. & Kliphuis, E. 1969,
1971c, 1973, 1975b ; Gadella, T.W.J.
et al. 1974 ; Basler, A. 1972 ; Gviniash-
vili, TS. N. 1972

40 Britton, D.M. 1951

Trichodesma R. Br.

35 ; tropical and subtropical Africa, Asia and Australia. 6 ; chiefly in drier parts of

100 BORAGINACEAE

Punjab, Western, Central and Southern India, 1 endemic to Eastern Himalaya, and Pakistan and Sri Lanka.

amplexicaule Roth

14 Chopde, V.P. 1965

indicum (Linn.) R. Br.

22 Malik, C.P. *et al.* 1959a; Baquar, S.R. *et al.* 1965

22, 44 Pal, M. 1964

zeylanicum R. Br.

24 Monsinkai, S.W. 1958; Shetty, B.V. 1961; Keighery, G.J. 1975

BRASSICACEAE Burn.

(=CRUCIFERAE Juss.)

375/3,200; widely distributed throughout the globe, abundant in North temperate zone, with Mediterranean as the major centre. 61/168; mostly in temperate and alpine Himalaya (up to 5,940m), some in plains of Northern India, a few in the hills of Southern India, and Nepal, Pakistan, Bhutan, Bangla Dosh and Sri Lanka.

Alliaria Scop.

5; Europe and temperate Asia. 1; Western Himalaya.

petiolata (Bieb.) Cavara & Grande

36 Bacz - Major, A.B. 1934; Gadella, T.W.J. & Kliphuis, E. 1963

36, 42, 43 Gadella, T.W.J. & Kliphuis, E. 1966

42 Curran, P.L. 1968

officinalis Andr. & Bieb.

c. 36 - 40 Winge, O. 1917b

c. 42 Jaretzky, R. 1932; Tischler, G. 1934

42 Pólya, L. 1949; Easterly, N.W. 1963; Laane, M.M. 1971

Arabisopsis Heynh.

13; temperate Eurasia to East Africa and North America. 8; Himalaya (between 1,650 and 4,620 m), 1 descending as low as 660m, and Bhutan.

himalaica (Edgew.) Schulz

16 Naqshi, A.R. & Javid, G.N. 1976

mollissima (C. A. Mey) Busch.

16 Naqshi, A. R. & Javid, G.N. 1976

thaliana (Linn.) Heynh.

6 Titova, N.N. (Fedorov)

(6) 10 Hara, H. 1952

10 Winge, O. 1925; Jaretzky, R. 1928a; Manton, I. 1932; Hedberg, O. 1957; Böcher, T.W. & Larsen, K. 1958b; Steinitz - Sears, L.M. 1962, 1963; Sorsa, V. 1963b; Mulligan, G.A. 1964; Poljakova, T. (Fedorov); Mesicek, J. 1967; Gadella, T.W.J. & Kliphuis, E. 1971a, 1972; Leute, G. - H. 1974; Jonsell, B. 1976; Hedberg, I. & Hedberg, O. 1977

wallichii (Hook. f. & Thoms.) Busch.

14 Polatschek, A. 1968

16 Gintner, T.N. & Ivanov, V.I. 1968

18 Naqshi, A.R. & Javid, G.N. 1976

Arabis Linn.

120; temperate Eurasia, Mediterranean, tropical African mountains and North America. 7 8; Himalaya (between 1,500 and 5,300m) and Punjab, and Pakistan.

alpina Linn. *

16 Jaretzky, R. 1928a; Sakai, K. 1935a; Böcher, T.W. 1938a; Rollins, R.C. 1941; Böcher, T.W.

**Arabis alpina* auct. non Linn., FBI, 1: 135 is a synonym of *Arabis pterosperma* Edgew. (FEH, 3: 43).

& Larsen, K. 1950; Löve, A. & Löve, D. 1956b; Haköay, L. 1957b; Jørgensen, C.A. *et al.* 1958; Sokolovskaya, A.P. & Strelkova, O.S. 1960; Mulligan, G.A. 1964; Skalińska, M. (Skalińska, M. *et al.* 1966); Burdet, H.M. 1967; Sharma, A. & Sarkar, A.K. 1967-1968; Titz, W. 1968; Chaudhuri, R.K. *et al.* 1969; Delay, J. 1970a; Gadella, T.W.J. & Kliphuis, E. 1970b; Contandriopoulos, J. & Gamisans, J. 1974; Jongsell, B. 1976; Hedberg, I. & Hedberg, O. 1977

16, 16+1 Titz, W. 1967

albida Stev.

16 Jaretsky, R. 1928a; Mulligan, G.A. 1964

amplexicaulis Edgew.

32 Naqshi, A.R. & Javeid, G.N. 1976

aureiculata Lam.

16 Mattick (Tischler, G. 1950); Titz, W. 1973

glabra (Linn.) Bernh.

12 Titz, W. 1967; Taylor, R.L. & Mulligan, G.A. 1968; Rodman, J.E. & Bhargava, M. 1976

16 Titz, W. 1968

var. *glaberrima* (Hook. f. & Thoms.) Naqshi & Javeid

16 Naqshi, A.R. & Javeid, G.N. 1976

tenuirostris Schulz

16 Naqshi, A.R. & Javeid, G.N. 1976

Armoracia Gaertn., Mey. & Schreb.

3; South East Europe to Siberia. 1; cultivated.

rusticana Gaertn., Mey. & Schreb.

lapathifolia Gilib.

32 Manton, I. 1932

Barbarea R. Br.

20; North temperate. 3; Himalaya (between 2,000 and 4,300m), 1 cultivated.

intermedia Bor.

16 Mant I. on, 1932

varna Asch.

16 Manton, I. 1932

vulgaris R. Br.

14-16 Tischler, G. 1934

16 Manton, I. 1932; Smith, F.H. 1938; Löve, A. & Löve, D. 1956b; Mulligan, G.A. 1959; Easterly, N.W. 1963; Fansen, P.V. & Nadcau, P. 1976; Hill, L.M. 1978

var. *taurica* DC.

arcuata Reichb.

16 Chouksanova (Fedorov); Zakharyeva, O.I. & Astanova, S.B. 1968

praecox Fries

16 Jaretsky, R. 1932

Brassica Linn.

50; Europe, Mediterranean and Asia. 8; cultivated in warmer and temperate parts of India, and Nepal and Pakistan.

campestris Linn.

20 Takamine, N. 1916; Karpechenko, G.D. (Fedorov); Shimotomai, N. 1925; Nagai, K. & Sasaoka, T. 1930a, b; U, N. 1935; Alam, Z. 1936; Frandsen, K.J. 1943; Heiser, C.B. & Whitaker, T.W. 1948; Olsson, G. 1954; Löve, A. & Löve, D. 1956b; Mitsukuri, Y. 1957; Mulligan, G.A. 1959; Röbbelen, G. 1960; Currao, P.L. 1962, 1968; Sorsa, V. 1962; Taylor, R.L. & Mulligan, G.A. 1968; Shive, J.B. Jr 1969; Dasgupta, P. 1970; Harberd, D.J. 1972; Sarashima, M. 1973; Mukherjee, P. 1975b, 1976; Kamala, T. 1978; Mlyniec, W. *et al.* 1979

20+2 Kamala, T. 1974

20(30) Ramanujam, S. 1940

20,40 Srinivasachar, D. 1968

22 Venkateswarlu, J. & Kamala, T. 1973; Sarkar, A.K., Chakraverty, M. *et al.* 1960

var. *brown sarsen*

20,40 Chowdhury, J.B. *et al.* 1968

var. *dichotoma*

- 18,20 Mukherjee, P. 1977a
20 Mukherjee, P. 1971

var. *rapa* (Linn.) Hartm.*rapa* Linn.

- 20 Karpechenko, G.D. (Fedorov); Shimotomai, N. 1925; Morinaga, T. 1929; Nagai, K. & Sasaoka, T. 1930a; Morris, L.E. & Richharia, R.H. 1937; Richharia, R.H. 1937b; Sikka, S.M. 1940; Mitsukuri, Y. 1956, 1957; Podlech, D. & Diesterle, A. 1969; Aryavand, A. 1977b

var. *sarson* Prain

- 18,20,22 Mukherjee, P. 1977a
20 Mukherjee, P. 1971

var. *toria*

- 18,20 Mukherjee, P. 1977a
20 Mukherjee, P. 1971

campestris x *napus*

- 29 Mlyniec, W. *et al.* 1979

campestris x *nigra*

- 18 Prakash, S. 1973a

campestris x *nigra* amphidiploid

- 36 Prakash, S. 1973a

campestris x *oleracea*

- 19,28,29,58 Sarashima, M. 1973

var. *oleifera* (n=10) x *napus* var. *oleifera* (n=19)

- 29 Kamala, T. 1976

ssp. *oleifera* brown sarson x *nigra*

- 18 Prakash, S. 1973a

ssp. *oleifera* var. yellow sarson x *tournefortii*

- 20 Narain, A. & Prakash, S. 1972

ssp. *japonica* x *nigra*

- 18 Prakash, S. 1973b

ssp. *oleifera* var. *toria* x *nigra*

- 18 Prakash, S. 1973b

juncea (Linn.) Coss.*

- 36 Karpechenko, G.D. (Fedorov); Shimotomai, N. 1925; Nagai, K. & Sasaoka, T. 1930a; Haga, T. 1938; Sikka, S.M. 1940; Frandsen, K.J. 1943; Mitsukuri, Y. 1957; Mulligan, G.A. 1959; Curran, P.L. 1962; Prakash, S. 1973b; Mukherjee, P. 1975a, b, 1976

juncea (Linn.) Czern.

- 36 Harberd, D.J. 1972; Verma, S.C. & Rees, H. 1974; Kamala, T. 1978

juncea Hook. f. & Thoms.

- 36 Sarkar, A.K. *et al.* 1973a

var. *gracilis*

- 16 Kamala, T. 1978

napus Linn.

- 19,38,76 Thompson, K.F. 1979

- 20 Aryavand, A. 1976

- 32 Laibach, F. 1907; Karpechenko, G.D. (Fedorov); Frandsen, N.H. & Wings, O. 1932; Morris, L.E. & Richharia, R.H. 1937; Frandsen, K.J. 1943

- 38 Morinaga, T. & Fukushima, E. 1930; Nagai, K. & Sasaoka, T. 1930a; U, N. 1935; Morinaga, T. & Kuriyama, H. 1937; Howard, H.W. 1938; Skovsted, A. 1939; Sikka, S.M. 1940; Mitsukuri, Y. 1956, 1957; Bijok, K. 1959; Curran, P.L. 1962; Harberd, D.J. 1972; Verma, S.C. & Rees, H. 1974; Kamala, T. 1978; Mlyniec, W. *et al.* 1979

- 40,60,63,

- 65,67,68 Tokumasu, S. 1972

napus x *oleracea* var. *capitata* (2x & 4x)

- 28,37,55 Chiang, B.Y. *et al.* 1978

*The combination *Brassica juncea* was made by Czern. (HFDD : 54; FHD : 188-189).

var. *oleifera*

38 Kamala, T. 1978

var. *oleifera* (n=19) x *campestris* var. *oleifera* (n=10)

29 Kamala, T. 1976

var. *oleifera* x *chinensis* var. *chinensis* (n=10)

29 Kamala, T. 1976

nigra (Linn.) K. Koch

16 Karpachenko, G.D. (Fedorov); Nagai, K. & Sasaoka, T. 1930a; Manton, I. 1932; Tischler, G. 1934; U, N. 1935; Haga, T. 1938; Sikka, S.M. 1940; Frandsen, K.J. 1943; Heiser, C.B. & Whitaker, T.W. 1948; Mizushima, U. & Katsuo, K. 1958; Röbbelen, G. 1960; Curran, P.L. 1962; Easterly, N.W. 1963; Harberd, D.J. 1972; Mukherjee, P. 1975b, 1976; Kamala, T. 1978

oleracea Linn.

18 Karpechenko, G.D. (Fedorov); Winge, O. 1925; Shimotomai, N. 1925; Karpechenko, G.D. & Sorokina (Fedorov); Nagai, K. & Sasaoka, T. 1930a, b; Manton, I. 1932; U, N. 1935; Catchside, D.G. (Tischler, G. 1938); Morris, L.E. & Richharia, R.H. 1937; Richharia, R.H. 1937a; Haga, T. 1938; Frandsen, K.J. 1943; Sen, S. 1955a; Mitsukuri, Y. 1956; Yarnell, S.H. 1956; Constantinopoulos, J. 1957b; Röbbelen, G. 1960; Willa, A.B. 1966; Delay, J. 1967; Harberd, D.J. 1972; Mukherjee, P. 1975b, 1976; Kamala, T. 1978

18,36 Sorokina, O.N. (Fedorov); Howard, H.W. 1939; Horák, J. *et al.* 1971

var. *botrytis* Linn.

18 Hussein, M.M. & Abobakr, M.A. 1975

var. *capitata* Linn.

18 Sarashita, M. 1973; Hussein, M.M. & Abobakr, M.A. 1975; Chiang, B.Y. *et al.* 1979

18,20 Datta, P.C. & Deb, A. 1976

capitata Linn.18 Turkov, V.D. *et al.* 1974var. *italica*

18 Hussein, M.M. & Abobakr, M.A. 1975

tournefortii Gouan

20 Sikka, S.M. 1940; Olston, G. 1954; Waisel, Y. 1962; Narain, A. & Prakash, S. 1968, 1972; Harberd, D.J. 1972; Prakash, S. 1974

tournefortii x *nigra*

18 Narain, A. & Prakash, S. 1972

tournefortii x *oleracea*

19 Narain, A. & Prakash, S. 1972

trilocularis Hook f. & Thoms.

20 Alam, Z. 1936; Sikka, S.M. 1940

Braya Sternb. & Hoppe

20; North circumpolar, Alps, Central Asia and Himalaya. 2; Himalaya (up to 6,000 m).

rosea (Turcz.) Bunge

42 Bocher, T.W. 1966, 1973

Capsella Medik.

5; temperate and subtropics. 1; temperate India.

bursa-pastoris (Linn.) Medik.

16,32 Shull, G.H. 1937; Easterly, N.W. 1963

32 Røsenberg, O. 1904; Marchal, E. 1920; Tischler, G. 1934, 1937; Rohwedder, H. 1937; Vaarama, A. 1943; Heiser, C.B. & Whitaker, T.W. 1948; Löve, A. & Löve, D. 1956b; Mulligan, G.A. 1957; Böcher, T.W. & Larsen, K. 1958b; Gadella, T.W.J. & Kliphuis, B. 1967; Hsu, C.-C. 1968; Taylor, R.L. & Mulligan, G.A. 1968; Björkqvist, I. *et al.* 1969; Májovský, J. *et al.* 1970b; Lovka, M. *et al.* 1971; Feráková, V. 1972; Jonnell, B. 1976; Aryavand, A. 1977b; Sanjappa, M. & Sathyananda, N. 1979

32,40 Mukherjee, P. 1975b

Cardamine Linn.

About 160 ; cosmopolitan, chiefly centred in temperate zone, 13 ; mostly Himalayan (up to 3,960 m), and Nepal, Bhutan and Sri Lanka.

africana Linn.

- 16 Jonell, B. 1976 ; Hedberg, I. & Hedberg, O. 1977

impatiens Linn.

- 16 Manton, I. 1932 ; Tischler, G. 1934 ; Rohweder, H. 1937 ; Banach (Skalińska, M. 1950) ; Hara, H. 1952 ; Banach-Pogon, E. 1955 ; Lövkvist, H. 1956, 1957 ; Ellis, R.P. & Jones, B.M.G. 1970

pratensis Linn.

- 16,20,30,
32,36,40,
c.48,c.64,
72-76 Landolt, E. & Urbanska-Worytkiewicz, K. 1971 (1972)
16,30,32,40 Guinocbet, M. 1946
16,30,42-48,
56-64,72-76 Lövkvist, B. 1953
24,72 Senjaninowa (Fedorov)
28-32,56-64,
70-80 Berg, C.C. 1967
30 Lawrence, W.J.C. 1930, 1931c ; Laane, M.M. 1967 ; Dersch, G. 1969 ; Ellis, R.P. & Jones, B.M.G. 1970 ; Spasskaya, N.A. 1971
30-76 Lövkvist, B. 1947
30-90, c.96 Lövkvist, B. 1956
30, 32,38,
44,58,68,
64,72,76,
78 Banach, E. 1950
30,56 Hussein, F. 1948,1955
c.32 Manton, I. 1932
32 Gadella, T.W.J. *et al.* 1970 ; Lovka, M. *et al.* 1971
32,64 Tischler, G. 1934 ; Rohweder, H. 1937 ; Love, A. & Löve, D. 1944b
40,48 Souchon, C. & Tomassone, R. 1971
42 Schotzman, H.D. 1970
56 Howard, H.W. 1948 ; Jørgensen, C.A. *et al.* 1958 ; Sokolovskaya, A.P. (Fedorov)
56,58 Dale, A. & Elkington, T.T. 1974
60 Sharma, A. & Sarker, A.K. 1967-1968
64 Flovik, K. 1940
c.70 Sokolovskaya, A.P. (Fedorov)

scutata Thunb.

- 32 Mukherjee, P. 1973b

hirsuta Linn.

- 16 Manton, I. 1932 ; Tischler, G. 1934 ; Banach (Skalińska, M. 1950a) ; Banach-Pogon, E. 1955 ; Löve, A. & Löve, D. 1956b ; Lövkvist, B. 1956, 1957 ; Pritchard, G.G. 1957 ; Larsen, K. 1960 ; Mulligan, G.A. 1965 ; Gadella, T.W.J. & Kliphuis, E. 1966 ; Thurling, N. 1968 ; Dahlgren, R. *et al.* 1971 ; Persson, J. 1971 ; Bhat, B. K. *et al.* 1974a ; Jonell, B. 1976 ; Hedberg, I. & Hedberg, O. 1977

- 16,32 Mukherjee, P. 1975b

- 32 Mattick (Tischler, G. 1950)

ssp. flexuosa (With.) Hara

- 32 Hara, H. 1952

Cardaria Desv.

1 ; Mediterranean and West Asia. North Western India.

draba (Linn.) Desv.

- 64 Manton, I. 1932 ; Mulligan, G.A. & Frankton, C. 1962

Lepidium draba Linn.

- 64 Manton, I. 1932 ; Heiser, C.B. and Whitaker, T.W. 1948

ssp. draba

- 64 Natarajan, G. 1978

Cheiranthus Linn.

10 ; Mediterranean and North temperate. 1 ; cultivated.

cheiri Linn.

- 12 Koul, A.K. & Wakhlu, A.K. 1974
14 Jaretsky, R. 1928a ; Manton, I. 1932 ; Sakai, K. 1935a

Chorispora R. Br. *ex DC.*

10 ; East Mediterranean and Central Asia. 3 ; Western Himalaya and Punjab.

tenella DC.

- 14 Jaretsky, R. 1929 ; Manton, I. 1932 ; Baqar, S.R. & Abid Askari, S.H.

1970a, b ; Rodman, J.E. & Bhargava, M. 1976

Cochlearia Linn.

25 ; North temperate, South to Eastern Himalaya and Java Mountains. 3 ; Gangetic valleys and Eastern Himalaya.

flava Buch.-Ham.

14+ up to

5B Dubey, B.R. 1981

Conrugia Adans.

7 ; Mediterranean and Europe to Central Asia. 1 ; Kashmir.

planisiliqua Fisch. & Mey.

c.14 Manton, I. 1932

18 Naqshi, A.R. & Javed, G.N. 1976

Coronopus Linn.

10 ; throughout the world. 1 ; cultivated and naturalized.

didymus (Linn.) Smith

32 Jaretsky, R. 1932 ; Manton, I. 1932 ; Heiser, C.B. & Whitaker, T.W. 1948

Senebiera pinnatifida DC.

16 Mukherjee, P. 1975b

Crambe Linn.

25 ; Europe, Mediterranean, North Atlantic Islands, tropical Africa, West and Central Asia. 2 ; North Western Himalaya.

cardifolia Stev.

c. 120 Jaretsky, R. 1932 ; Manton, I. 1932

kotschyana Boiss.

30 Podlech, D. & Dieterle, A. 1969

Descursiata Webb & Berth.

55 ; cold and temperate America, Eurasia and South Africa. 2 ; temperate Western Himalaya and Punjab.

sophia (Linn.) Webb ex Prantl

20 Eaez-Major, A.B. 1934 (Tischler, G.1938)

28 Jaretsky, R. 1932 ; Baldwin, J.T. & Campbell, J.M. 1940 ; Löve, A. & Löve, D. 1956b ; Mulligan, G.A. 1961a ; Taylor, R.L. & Mulligan, G.A. 1968 ; Podlech, D. & Dieterle, A. 1969

28(56) Manton, I. 1932

Sisymbrium sophia Linn.

28 Tischler, G. 1934 ; Rohweder, H. 1937

Draba Linn.

300 ; North temperate and Arctic and in mountains of Central and South America, 20 ; Himalaya (between 1,900 and 5,600 m).

alpina Linn.*

c.64 Heilborn, Ö. 1927

64 Jørgensen, C.A. *et al.* 1958 ; Sokolovskaya, A.P. & Strelkova, O.S. 1960 ; Löve, A. & Löve, D. 1961b ; Zhukova, P.G. *et al.* 1973

64.80 Knaben, G. & Engelskjön, T. 1967

80 Fløvik, K. 1940 ; Heilborn, Ö. 1941 ; Löve, A. & Löve, D. 1956b

112 Sørensen, T. & Westergaard, M. (Löve, A. & Löve, D. 1948)

fladitzensis Wulf.

16 Heilborn, Ö. 1927 ; Löve, A. & Löve, D. 1948, 1956b ; Jørgensen, C.A. *et al.* 1958 ; Merxmüller, H. & Buttler, K.P. 1965 ; Böcher, T.W. 1966 ; Knaben, G. 1966 ; Buttler, K.P. 1967 ; Knaben, G. & Engelskjön, T. 1967 ; Zhukova, P.G. & Tikhonova, A.D. 1971, 1973 ; Mulligan, G.A. 1974b

lacana Linn.

32 Heilborn, Ö. 1927 ; Böcher, T.W. & Larsen, K. 1950 ; Löve, A. & Löve, D. 1956b ; Jørgensen, C.A. *et al.* 1958 ; Buttler, K.P. 1967 ; Mulligan, G.A. 1970 ; Laine, M.M. 1971 ; Laine, U. *et al.* 1974

maralis Linn.

c.32 Reese, G. 1952b ; Merxmüller, H. & Buttler, K.P. 1965

32 Murin, A. & Májovský, J. 1978

**Draba alpina* auct. non Linn. FBI, 1 : 142 is a synonym of *D. oreades* Schrenk (FEH, 3 : 44).

Erophila DC.

10; Europe and Mediterranean. 1;
Kashmir.

verna (Linn.) E. Mey.*

- 14 Winge, Ö. 1925, 1926b
14,28,30,
32,36,38,
52,58 Winge, Ö. 1933
14,30,64 Manton, I. 1932
14,30,64,
94 etc. Tischler, G. 1934
24,40 Griesinger, R. 1935
30,39 Mulligan, G.A. 1966
32 Löve, A. & Löve, D. 1956b
34,54 Winge, Ö. (Maude, P.F. 1939)

verna (Linn.) Cheval.

- c.60 Jonsell, B. 1976; Hedberg, J. & Hedberg, O. 1977

Draba verna Linn.

- 26 Easterly, N.W. 1963

Eruca Mill.

6; Mediterranean and North Africa. 1;
cultivated.

sativa Mill.

- 22 Manton, I. 1932; Bakšay, (Löve, A. & Löve, D. 1961b); Wills, A.B. 1966; Harberd, D.J. 1972; Bhat, B.K. *et al.* 1974a; Mukherjee, P. 1975b; Sikka, K. & Sharma, A.K. 1979

vesticaria (Linn.) Cav.**ssp. sativa (Miller) Thell.**

- 22 Dahlgren, R. *et al.* 1971

Erysimum Linn.

100; Mediterranean, Europe and Asia.
16; Himalaya (between 1,600 and 5,300 m), and Nepal - a few cultivated.

asperum (Nutt.) DC.

- 36 Mulligan, G.A. 1966

hieracifolium Linn.

- 16 Gadella, T. & Kliphuis, E. 1972
32 Jaretsky, R. 1928a; Tischler, G. 1934;
Löve, A. & Löve, D. 1956b
32,48 Polatschek, A. 1966a
48 Mulligan, G.A. 1959; Jankun, A. 1965;
Mulligan, G.A. & Frankton, C. 1967

malicentae Dunn.

- 16 Naqshi, A.R. & Javeid, G.N. 1976

odoratum Ehrh.

- 24 Bakšay (Löve, A. & Löve, D. 1961b)
32 Polatschek, A. 1966a; Holub, J. *et al.* 1970

pachycarpum Hook. f. & Thoms.

- 18 Mukherjee, P. 1975b

perofskianum Fisch. & Mey.

- 18 Naqshi, A.R. & Javeid, G.N. 1976
32 - 36 Manton, I. 1932

repandum Linn.

- 14 - 16 Manton, I. 1932
14,16 Polatschek, A. 1966a
14,28 Easterly, N.W. 1963
16 Löve, A. & Löve, D. 1956b; Bakšay (Löve, A. & Löve, D. 1961b); Mulligan, G.A. 1966; Anđev, M.E. 1978; Polatschek, A. 1978 (1979)

Enclidium R. Br.

2; East Europe to Central Asia. 1;
Kashmir and Punjab, and Pakistan.

syriacum R. Br.

- 14 Jaretsky, R. 1932; Polatschek, A.F. 1971

Farsetia Turra

15; Morocco to North Western India
and Central Africa. 4; Western India and
Upper Gangetic Plain, and Pakistan.

egyptiaca Turra

- c.72 Reese, G. 1957; Humphries, C.J. *et al.* 1978

*The combination *Erophila verna* should be attributed to Cheval. (DPPI : 64; Willis : 432).

jacquemontii Hook. f. & Thoms.

24 Malik, C.P. 1960b

Goldbachia DC.

6; temperate Asia. 1; Kashmir and Punjab.

laevigata DC.

14 Polatschek, A.F. 1971

28 Jaretsky, R. 1929; Manton, I. 1932

Hesperis Linn.

30; Europe, Mediterranean to Persia, Central Asia and West China. 1; cultivated.

matronalis Linn.

12,14 Delay, J. 1970a

14 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)

14,24 Bhattacharyya, N.K. 1968c, 1974

14,28 Datta, S. & Datta, K.B. 1975

16,28,32 Easterly, N.W. 1963

24 Löve, A. & Löve, D. 1956b; Bakšay, L. 1957b; Dvořák, F. 1964

24,26,28 Dvořák, F. 1965

24,28 Manton, I. 1932

28 Jaretsky, R. 1928a

Iberis Linn.

30; Europe and Asia. 3; cultivated.

amara Linn.

14 Manton, I. 1932; Resende, F. 1937; Bali, P.N. & Tandon, S.L. 1957; Tandon, S.L. & Bali, P.N. 1957a, b; Ene, L.S.O. 1971

14,15 Ene, L.S.O. 1968

14,16 Jaretsky, R. 1932

14,28 Datta, K.B. 1974

16 Jaretsky, R. 1928c

18,36 Bali, P.N. & Tandon, S.L. 1959a

28 Tandon, S.L. & Bali, P.N. 1958b

sempervirens Linn.

16 Quézel, P. 1957

22 Jaretsky, R. 1932; Simonet, M. 1932c (Löve, A. & Löve, D. 1961b)

umbellata DC.*

14 Jaretsky, R. 1932; Manton, I. 1932

16 Thomas (D. 1955)

umbellata Linn.

18 Bali, P.N. & Tandon, S.L. 1958a, 1959a; Datta, K.B. 1974

18,19,20,22 Ene, L.S.O. 1968

18,36 Bali, P.N. & Tandon, S.L. 1959c

Isatis Linn.

45; Europe and from Mediterranean to South West and East Asia. 1; cultivated.

tinctoria Linn.

28 Jaretsky, R. 1932; Manton, I. 1932; Gadeña, T.W.J. & Kliphuis, E. 1970a; Humphries, C.J. *et al.* 1978

Lepidium Linn.

150; cosmopolitan. 5 - 6; Himalaya (up to 4,600 m) and Punjab, 1 cultivated.

didymum Linn.

32 Bir, S.S. & Sidhu, M. 1975

latifolium Linn.

24 Manton, I. 1932; Tischler, G. 1934; Wulff, H.D. 1937a; Heiser, C.B. & Whitaker, T.W. 1948; Löve, A. & Löve, D. 1956b; Mulligan, G.A. 1957, 1961b; Favarger, C. 1961; Lessari, H. & Chariat-Panahi, S. 1979

perfoliatum Linn.

16 Manton, I. 1932; Titova, N.N. (Fedorov); Löve, A. & Löve, D. 1956b; Mul-

*The combination *Iberis umbellata* should be attributed to Linn.

ligan, G.A. 1957, 1961b; Hindáková (Fedorov); Májovský, J. *et al.* 1970a

sativum Linn.

- 16 Jaretsky, R. 1929; Reese, G. 1950
 c. 24 Reese, G. 1952b
 24 Vaarama, A. 1951; Kadu, V.K. 1980, 1981

virginicum Linn.

- 32 Jaretsky, R. 1932; Manton, I. 1932; Smith, F.H. 1938; Mulligan, G.A. 1961a, b; Easterly, N.W. 1963; Májovský, J. *et al.* 1970b

Lignariella Baehni

1; Tibet and Eastern Himalaya.

hobsonii (Pearson) Baehni

obscura (Dunn) Jafri

- 16 Naqshi, A.R. & Javeid, G.N. 1976

Lobularia Desv.

5; Central Verde and Canary Islands, Mediterranean and Arabia. 1; cultivated.

maritima (Linn.) Desv.

- 22 Horgen, L. 1969
 24 Jaretsky, R. 1928a; Lawrence, W.J.C. 1930; Manton, I. 1932; Larsen, K. 1955b; Puech, S. 1968; Bjorkqvist, I. *et al.* 1969; Kliphuis, E. & Wieffering, J.H. 1972; Sikka, K. 1977; Humphries, C.J. *et al.* 1978

Alyssum maritimum (Linn.) Lam.

- 24 Manton, I. 1932; Bali, P.N. & Tandon, S.L. 1958b, 1959b; Puech, S. 1963; Delay, J. 1969b; Van Loon, J. Chr. & de Jong, H. 1978
 24,48 Bali, P.N. & Tandon, S.L. 1959d

Malcolmia R. Br. *corr.* Spreng.

35; Mediterranean to Central Asia and Afghanistan. 4; Kashmir and Punjab, and Pakistan.

africana (Linn.) R. Br.

- 14 Jaretsky, R. 1928a
 28 Manton, I. 1932; Podlech, D. & Dietel, A. 1969; Bhat, B.K. *et al.* 1974a

strigosa Boiss.

- 14 Aryavand, A. 1976

Matthiola R. Br. *corr.* Spreng.

55; Atlantic Islands, West Europe and Mediterranean to Central Asia and South Africa. 2; cultivated.

incana R. Br.

- 14 Allen, I.M. 1924; Corner, E.J.H. 1927; Jaretsky, R. 1928a; Philp, J. & Huskins, C.L. 1931; Straub, J. 1937; Ross, J.G. & Miller, W.H. 1961
 14+1 - 2f Lesley, M.M. & Frost, H. 1928
 14+B Frost, H.B. 1931

ssp. *incana*

- 14 Dahlgren, R. *et al.* 1971

tristis R. Br.

- 12 Jaretsky, R. 1929

Moricandia DC.

8; Mediterranean to Baluchistan. 2; Punjab, and Pakistan.

arvensis (Linn.) DC.

- 24 Quézel, P. 1955
 28 Jaretsky, R. 1932; Manton, I. 1932; Reese, G. 1957; Bormejo, E.V. 1969—1970; Larsen, K. & Lagaard, S. 1971; Sikka, K. & Sharma, A.K. 1979

Neslia Desv.

2; South East Europe, Mediterranean and South West Asia. 1; Western Himalaya, and Pakistan.

paniculata (Linn.) Desv.

- 14 Jaretsky, R. 1928a; Tischler, G. 1934; Mulligan, G.A. 1957; Taylor, R.L. & Mulligan, G.A. 1968

Physorrhynchus Hook.

2; Persia to North Western India. 1; Punjab, and Pakistan.

brachycus Hook.

- 28 Podlech, D. & Dieterle, A. 1969
32 Baquar, S.R. 1969a

Raphanus Linn.

8; West and Central Europe and from Mediterranean to Central Asia. 2; cultivated.

caudatus Linn.

- 18 Manton, I. 1932; Harberd, D.J. 1972

sativus Linn.

- 18 Karpechenko, G.D. (Fedorov); Karpechenko, G.D. & Shavinskaya, S.A. (Fedorov); Manton, I. 1932; Morris, L.E. & Richbaria, R.H. 1937; Heiser, C.B. & Whitaker, T.W. 1948; Satō, Z. 1955; Morrison, J.W. & Rajhathy, T. 1960a; Harberd, D.J. 1972; Mukherjee, P. 1972, 1975b, 1979; Sikka, K. & Sharma, A.K. 1979

34,35,36,

- 37,38 McNaughton, I.H. 1973a

strain 'Contai Long'

- 18 Mukherjee, P. 1979

strain 'Contai Short'

- 18 Mukherjee, P. 1979

strain 'Desai Purple Long'

- 18 Mukherjee, P. 1979

strain 'Desai Red Long'

- 18 Mukherjee, P. 1979

strain 'Sutton's Chinese White'

- 18 Mukherjee, P. 1979

strain 'Sutton's Crimson French Breakfast'

- 18 Mukherjee, P. 1979

strain 'Sutton's Long Scarlet'

- 18 Mukherjee, P. 1979

strain 'Sutton's Long White'

- 18 Mukherjee, P. 1979

strain 'Sutton's Scarlet Globe'

- 18 Mukherjee, P. 1979

sativus (2x) x *Brassica oleracea* (2x)

- 18,36 McNaughton, I.H. 1973a
35-38 McNaughton, I.H. 1973a

Rorippa Scop.

76; distributed throughout the world, abundant in North and South temperate zones and tropical mountains. 5; mostly Himalayan (up to 3,300 m), and Pakistan and Sri Lanka.

indica (Linn.) Hiern

- 16,32 Sharma, A. & Sarkar, A. K. 1967-1968; Chaudhuri, R.K. *et al.* 1969
32 Hsu, C.-C. 1968
48 Podlech, D. & Dieterle, A. 1969

Nasturtium indicum (Linn.) DC.

- 16 Baquar, S.R. 1967-1968
56 Sarkar, A.K., Datta, R. *et al.* 1975

Nasturtium montanum Wall.

- 28 Mukherjee, P. 1975b

var. *benghalense* (DC.) Deb**Nasturtium indicum** (Linn.) DC.var. *benghalensis* DC.

- 24,28,
32,48 Mukherjee, P. 1975b
24,28,48 Mukherjee, P. 1975c

islandica (Oeder) Borbas

- 16 Jaretsky, R. 1932; Löve, A. 1954b; Löve, A. & Löve, D. 1956b; Jonzell, B. 1964, 1968, 1969; Taylor, R.L. & Mulligan, G.A. 1968; Tomšovic, P. 1974
16,32 Jørgensen, C.A. *et al.* 1958
32 Howard, H.W. 1947, 1953; Larsen, K. 1956b; Mulligan, G.A. 1964; Gadella, T.W.J. & Kliphuis, B. 1966

palustris (Linn.) Bess.

- 32 Jonzell, B. 1968, 1971; Javůrková-Krattochvilová, V. & Tomšovic, P. 1972; Naqshi, A.R. & Javed, G.N. 1976

Nasturtium palustre DC.

- 32 Scheerer, H. 1939; Rutland, J.P. 1941

nasturtium-aquaticum (Linn.) Hayek

- 32 Rollins, R.C. & Ruedenberg, L. 1971

Nasturtium officinale R. Br.

- 14 Easterly, N.W. 1963; Baquar, S.R. & Abid Askari, S.H. 1970a,b

- 32 Jaretsky, R. 1932; Howard, H.W. & Manton, I. 1946; Rahn, K. 1966; Björkqvist, I.
- et al.*
- 1969; Larsten, K. & Lagerd, S. 1971; Hess, H.E.
- et al.*
- 1972; Mukherjee, P. 1975b; Rodman, J.E. & Bhargava, M. 1976; Aryavand, A. 1977b

- 32,48,64 Manton, I. 1932; Fischler, G. 1934

sylvestris (Linn.) Boiss.

- 32 Manton, I. 1932; Pólya, L. 1948; Easterly, N.W. 1963; Javůrková-Kratochvilová, V. & Tomsovic, P. 1972; Naqshi, A.R. & Javeid, G.N. 1976

- 32,40,48 Jonsell, B. 1964, 1968

- 48 Howard, H.W. 1946, 1947, 1953; Löve, A. & Löve, D. 1956b; Gadella, T.W.J. & Kliphuis, E. 1967

Thlaspi Linn.

10; Mediterranean and Eurasia. 1; cultivated.

alba Linn.

- 24 Karpchenko, G.D. (Fedorov); Haga (Matsuura, H. 1939); Tschernak-Woess, E. & Doležal, R. 1953; Löve, A. & Löve, D. 1956b; Curran, P.L. 1962; Harberd, D.J. 1972; Sikka, K. & Sharma, A.K. 1979

Brassica alba (Linn.) Rabenh.

- 24 Nagai, K. & Sasooka, T. 1930a; Mukherjee, P. 1975b, 1976

Sisymbrium Linn.

90; temperate Eurasia, Mediterranean, South Africa, North America and Andes. 6; Himalaya and plains of Northern India, and Pakistan.

brassiciforme C.A. Mey

- 14 Chouksanova (Fedorov)

irio Linn.

- 14 Jaretsky, R. 1932; Titz, W. 1969b; Van Loon, J.C. 1974; Aryavand, A. 1977g; Lessani, H. & Charlat - Panahi, S. 1979

14,21,28,

- 42,56 Khoshoo, T.N. 1959, 1960c

- 14,28 Khoshoo, T.N. 1957, 1960b

- 14,28,42,56 Khoshoo, T.N. 1955b

- 28 Podlech, D. & Dieterle, A. 1969; Amin, A. 1973a

loeselii Just.*

- 14 Jaretsky, R. 1932; Mulligan, G.A. 1957

loeselii Linn.

- 14 Podlech, D. & Dieterle, A. 1969; Dvořák, F. & Dadáková 1975

orientale Linn.

- 14 Jaretsky, R. 1932; Diers, L. 1961

Tauscheria Fisch. ex DC.

2; Central Asia. 1; Western Himalaya (between 3,300 and 4,300 m).

lasiocarpa Fisch.**

- 14 Manton, I. 1932

lasiocarpa (Fisch. ex DC.) Boiss.

- 14 Naqshi, A.R. & Javeid, G.N. 1976

Thlaspi Linn.

60; mostly North temperate (and mountains) and Eurasia, a few in North and

*The combination *Sisymbrium loeselii* should be attributed to Linn. (FBI, 1:151).

**The combination *Tauscheria lasiocarpa* was made by DC. (FBI,1:164).

South America. 4; Himalaya (between 1,600 and 5,300 m).

alpestre Linn.

- 14 Manton, I. 1932; Löve, A. & Löve, D. 1944b, 1956b; Mattick (Tischler, G. 1950); Gadella, T.W.J. & Kliphuis, E. 1966; Polatschek, A. 1966a, 1972; Holmgren, P.K. 1971; Laane, M.M. 1971

arvensis Linn.

- 14 Jaretsky, R. 1932; Manton, I. 1932; Tischler, G. 1934, 1937; Rohwedder, H.

1937; Vaarama, A. (Löve, A. & Löve, D. 1942b); Vaarama, A. 1943; Löve, A. & Löve, D. 1944b, 1956b; Heiser, C.H. & Whitaker, T.W. 1948; Mulligan, G.A. 1957; Wiens, D. & Halleck, D. 1962; Sorsz, V. 1963b; Jawroska (Skallifaka, M. *et al.* 1964); Polatschek, A. 1966a; Gadella, T.W.J. & Kliphuis, E. 1966; Marin & Václavová (Fedorov); Pringle, J.S. 1969; Májovský, J. *et al.* 1970a; Pinkawa, D.J. *et al.* 1974; Anšov, M.E. 1976; Rodman, J.E. & Bhargava, M. 1976; Van Loon, J. Chr. & Kieft, B. 1980

BREXICEAE Lindl.

3/11; East Africa, Madagascar, Mascarene and New Zealand. 1/1; cultivated.

Brexia Nor. ex Thou.

9; coastal lowlands of tropical East Africa, Madagascar and Seychelles. 1; culti-

vated.

madagascariensis Thou. ex Ker-Gawl.

64 Schoenagel, E. 1931

BUDDLEJACEAE Wilhelm

About 6-10/150; tropics and warm temperate. 2/12; 4 native confined to Himalaya (up to 3,960 m), with 1 throughout India, and in Bhutan—some cultivated.

Buddleja Linn.

About 100; tropics and subtropics, abundant in East Asia. 11; chiefly Himalayan, and in Bhutan—some cultivated.

asiatica Lour.

- 30 Sugitara, T. 1936a, 1939
38 Moore, R.J. 1947, 1960, 1961; Janaki Ammal, E.K. 1954; Keenan, J. 1969b

neemala Buch.-Ham. ex Roxb.

- 38 Keenan, J. 1969b; Bedi, Y.S. *et al.* 1980

candida Dunn

- 76 Janaki Ammal, E.K. 1954; Moore, R.J. 1960, 1961; Keenan, J. 1969b

colvillei Hook. f. & Thoms.

- c.300 Moore, R.J. 1947
304 Janaki Ammal, E.K. 1954; Moore, R.J. 1960, 1961

304,456 Keenan, J. 1969b

c.380, c.456 Keenan, J. 1969a

hookeri Marq.

- 114 Keenan, J. 1969b

indleyana Fort.

- 38 Moore, R.J. 1947, 1960, 1961; Janaki Ammal, E.K. 1954; Gill, L.S. 1971*

112 BUDDLEJACEAE

madagascariensis Lam.

38 Mitra, K. 1964 ; Keenan, J. 1969b ; Bedi, Y.S. *et al.* 1980

Nicodemia madagascariensis (Lam.) Parker

38 Moore, R.J. 1947, 1960, 1961 ; Janaki Ammal, E.K. 1954

paniculata Wall.

38 Moore, R.J. 1960, 1961 ; Keenan, J. 1969b

76 Janaki Ammal, E.K. 1954

crispata Benth.

38 Moore, R.J. 1960, 1961 ; Keenan, J. 1969b

BURSERACEAE Kunth

16/500 ; tropics. 6/25 ; chiefly in Peninsular India and Bengal, and Pakistan, Bangla Desh and Sri Lanka.

Boswellia Roxb. *ex* Colebr.

24 ; tropical Africa, Madagascar and tropical Asia. 3 ; Western Himalaya to Southern India.

serrata Roxb. *ex* Colebr.

44 Gill, B.S., Bir, S.S. & Singhal, V.K. 1979a

Bursaria Jacq. *ex* Linn.

80 ; tropical America. 1 ; cultivated.

delpechiana Poiss.

24 Srivastava, G.N. & Srinath, K.V. 1965

Canarium Linn.

75 ; tropical Africa, Asia, North Australia and Pacific. 10 ; Sikkim, Assam, Bengal, Western Ghats and Andaman Islands, and Bangla Desh and Sri Lanka—a few cultivated.

bengalense Roxb.

104 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N. 1972

sikkimensis King

78 Mehra, P.N. & Khosla, P.K. 1969

strictum Roxb.

26 Mehra, P.N. & Khosla, P.K. 1969

Commiphora Jacq.

185 ; warm Africa, Madagascar and Arabia to Western India. 6 ; Western India, Assam and Bengal, and Pakistan and Bangla Desh.

berryi Engl.

26 Krishnaswamy, N. & Raman, V.S. 1949

condata Engl.

26 Shetty, B.V. 1961

wightii Bhandari

mukul (Hook.) Engl.

26 Sobti, S.N. & Singh, S.D. 1961

Garuga Roxb.

4 ; Himalaya to South China, Philippines, North Borneo, East Java, East Malaysia, North East Australia and Pacific. 2 ; Eastern Himalaya and deciduous forests throughout the greater part of India.

gambelii King

26 Mehra, P.N. & Khosla, P.K. 1969

planata Roxb.

26 Ghosh, R.B. 1961, 1966a

Profium Burm. f.

90 ; Madagascar to Malaysia and tropical America. 1 ; Assam, Bengal southwards to Andhra Pradesh.

serratum (Wall. ex Colebr.) Engl.

Bursera serrata Wall. ex Colebr.

22 Ghosh, R.B. 1961, 1969

BUXACEAE Dum.

4/100 ; tropics and temperate. 2/5 ; Himalaya, Assam, Punjab and Western Ghats, and Bhutan and Sri Lanka—a few cultivated.

Buxus Linn.

70 ; temperate Eurasia, tropical and South Africa, Madagascar to Malay Peninsula, Borneo, Philippines and Lesser Sunda Islands, North and Central America and West Indies. 3 ; Western Himalaya (between 1,600 and 3,000 m) and Punjab, and Bhutan a few cultivated.

sempervirens Linn.

28 Simonet, M. & Miedzzyrzecki, Ch. 1932 ; Natarajan, G. 1978 ; Uhríková, A. & Májovský, J. 1980

wallichiana Baill.

28 Simonet, M. & Miedzzyrzecki, Ch. 1932

Sarcococca Lindl.

16-20 ; Himalaya to Central China, Indo-China, Hainan, Formosa, North Philippine Islands, Southern India, Sri Lanka, Sumatra and Java. 3 ; Eastern Himalaya, Assam and Nilgiri, and Bhutan.

hookeriana Baill.

28 Kurosawa, S. 1971b

trinervia Wight

pruniformis Lindl.

28 Simonet, M. & Miedzzyrzecki, Ch. 1932 ; Choda, S.P. & Mehra, P.N. 1972

CABOMBACEAE A. Rich.

2/7 ; cosmopolitan (excluding Europe). 1/1 ; Khasi Hills, and Bhutan.

Brausea Scherb.

1 ; tropical America and Africa, India, temperate East Asia and Australia. Khasi

Hills, and Bhutan.

schroberi Gmel.

80 Lüve, A. & Lüve, D. 1964

CACTACEAE Juss.

About 50-150/over 2,000 ; confined to drier regions of American tropics. 7/18 ; naturalized in tropical parts, many cultivated.

Cereus Mill.

50 ; South America and West Indies.
4 ; cultivated.

grandiflorus Mill.

22 Sarkar, A.K., Datta, N. *et al.* 1976

hexagonus Haw.

66 Roy, R.P. & Mishra, N.C. 1961a

Epiphyllum Haw.

21 ; Mexico to tropical South America
and West Indies. 1 ; cultivated.

truncatum Haw.

24 Sugita, T. 1931, 1936b

Zygocactus truncatus (Haw.) K. Schum.

18 Matsuura, H. & Sutô, T. 1933
22 Remski, M.F. 1954
24 Stockwell, P. 1935

Mamillaria Haw.

2-300 ; South West United States to
Columbia and Venezuela, and West Indies.
1 ; cultivated.

compressa DC.

44 Remski, M.F. 1954 ; Satô, D. 1958 ;
Roy, R.P. & Mishra, N.C. 1961a

Nopalea Salm-dyck

7 ; America. 2 ; cultivated, 1 naturalized.

enchanthifera (Linn.) Salm-Dyck

22 Spencer, J.L. 1955 ; Roy, R.P. & Mishra,
N.C. 1961a

dejecta Salm-Dyck

22 Roy, R.P. & Mishra, N.C. 1961a

Opuntia Mill.

About 250 ; America and Galapagos. 5 ;
introduced, few have run wild.

dillenii (Ker-Gawl.) Haw.

22 Spencer, J.L. 1955
48 Sampathkumar, R. & Navaneetham, N.
1980
66 Carpio, M.D.A. 1952

elatior Mill.

44 Sanjappa, M. & Sathyananda, N. 1979
66 Roy, R.P. & Mishra, N.C. 1961a

engelmannii Salm-Dyck

66 Roy, R.P. & Mishra, N.C. 1961a

ficus-Indica (Linn.) Mill.

22 Spencer, J.L. 1955 ; Woodin, J.P. &
Powell, A.M. 1978a
88 Carpio, M.D.A. 1952 (D. 1955) ;
Pinkava, D.J. & McLeod, M.G. 1971 ;
McLeod, M.G. 1975

vulgaris Mill.

22 Spencer, J.L. 1955
33 Katagiri, S. 1953

monacantha Haw.

32 Sampathkumar, R. & Navaneetham, N.
1980
33 Katagiri, S. 1952 (D. 1955)

Pereskia Mill.

20 ; Mexico to tropical South America
and West Indies. 2 ; introduced.

sculeata Mill.

22 Katagiri, S. 1953 ; Ramaki, M.F. 1954 ;
Spencer, J.L. 1955 ; Arp, G.K. 1973a

grandifolia Haw.

22 Spencer, J.L. 1955

CAESALPINIACEAE R. Br.

About 152/over 2,800 : tropics and subtropics, abundant in America. 35/120 ; mostly in Western Peninsular India and tropical Eastern Himalaya, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka many cultivated.

Amherstia Wall.

1 ; Burma. Cultivated.

nobilis Wall.

24 Pantulu, J.V. 1943

Bauhinia Linn.

300 ; warm regions. 18 ; Northern India, Assam and Western Peninsula, a few throughout India, and Sri Lanka - many cultivated.

blakeana Dunn.

28 Sharma, A.K. & Raju, D.T. 1968

corniculata Benth.

28 Sharma, A.K. & Raju, D.T. 1968

galpini N.E. Brown

28 Atchison, E. 1951 ; Sharma, A.K. & Raju, D.T. 1968

glauca Wall. ex Benth.

28 Singhal, V.K. et al. 1980a

hookeri F. Muell.

28 Atchison, E. 1951

16, 18, 24,

26, 28 Sharma, A.K. & Raju, D.T. 1968

monandra Kurz

28 Sharma, A.K. & Raju, D.T. 1968

42 Pouqueques, M.L. de 1945a

petersiana C. Bolle

26, 28 Sharma, A.K. & Raju, D.T. 1968

purpurea Linn.

26, 28 Sharma, A.K. & Raju, D.T. 1968

28 Pantulu, J.V. 1942 ; Atchison, E. 1951 ; Raghavan, R.S. 1957 ; Berger, C.A. et al. 1958 ; Bir, S.S. & Sidhu, S. 1966, 1967 ; Mehra, P.N. & Sreen, T.S. 1973a ; Bir, S.S. & Kumari, S. 1980

acuminata Linn.

26 Singhal, V.K. et al. 1980b

28 Pantulu, J.V. 1942 ; Atchison, E. 1951 ; Sharma, A.K. & Raju, D.T. 1968 ; Bir, S.S. & Kumari, S. 1980

var. *purpurea*

28 Sharma, A.K. & Raju, D.T. 1968

rufescens Lam.

18, 22, 26,

28, 56 Sharma, A.K. & Raju, D.T. 1968

28 Atchison, E. 1951

tomentosa Linn.

28 Atchison, E. 1951 ; Sharma, A.K. & Raju, D.T. 1968 ; Bir, S.S. & Kumari, S. 1980

variabilis Hort.

28 Sharma, A.K. & Raju D.T. 1968

variegata Linn.

28 Atchison, E. 1951 ; Sharma, A.K. & Raju, D.T. 1968 ; Mehra, P.N. & Sreen, T.S. 1973a

var. *albo-flava* de Wit

28 Sharma, A.K. & Raju, D.T. 1968

var. *candida* Roxb.

28 Bir, S.S. & Kumari, S. 1978a, 1980

var. *variegata*

28 Sharma, A.K. & Raju, D.T. 1968

Brownea Jacq. corr. Murr.

25 ; tropical America and West Indies. 2 ; cultivated.

coccinea Jacq.

24 Atchison, E. 1951

Caesalpinia Linn.

100 ; tropics and subtropics. 9 ; chiefly in South Western India, a few in Himalaya,

2 throughout India, and Bangla Desh and Sri Lanka 1 cultivated.

bonduc (Linn.) Roxb.

24 Atchison, E. 1951

bonducella Fleming.

24 Pantulu, J.V. 1942; Bir, S.S. & Kumari, S. 1975

coriaria (Jacq.) Willd.

24 Ghose, A.K. 1952; Bir, S.S. & Kumari, S. 1980

decapetala (Roth) Alston

22 Malla, S.B., Bhattaral, S. *et al.* 1977b

crista Thunb.

24 Atchison, E. 1951

japonica Sieb. & Zucc.

22 Sakai, B. 1951

repularia Roxb.

24 Bir, S.S. & Kumari, S. 1973

mimosoides Lam.

24 Gajapathy, C. 1962a

mega (Linn.) Ait.

24 Atchison, E. 1951

pulcherrima Swartz

24 Senn, H.A. 1938; Jacob, K.T. 1940; Atchison, E. 1951; Berger, C.A. *et al.* 1958; Sreen, T.S., Kant, S. & Pratap, R. 1974; Bir, S.S. & Kumari, S. 1980

Poinciana pulcherrima Linn.

22 Bir, S.S. & Sidhu, S. 1966, 1967

var. *flava* Hort.

24 Bir, S.S. & Kumari, S. 1973, 1980

suppa Linn.

24 Ghose, A.K. 1952; Berger, C.A. *et al.* 1958; Bir, S.S. & Kumari, S. 1980

Cassia Linn.

About 500 - 600; tropics and warm temperate. 24; mainly in tropical Himalaya (up to 2,320 m) and Western Peninsular India,

and Pakistan and Sri Lanka several cultivated.

abens Linn.

26, 28, 56 Miège, J. 1962
28 Frahm-Leliveld, J.A. 1960b; Bir, S.S. & Kumari, S. 1975; Sanjappa, M. 1978

alata Linn.

12 Sonn, H.A. 1938
24 Irwin, H.S. & Turner, B.L. 1960
28 Pantulu, J.V. 1960a; Datta, S. & Datta, K.B. 1973

artemisioides Gaud. ex DC.

28, 42, 56 Randell, B.R. 1970
48 Rajan, S.S. 1952
56 Ahuja, M.R. & Natarajan, A.T. 1957; Irwin, H.S. & Turner, B.L. 1960; Tandon, S.L. & Bhat, R.N. 1970, 1971; Bir, S.S. & Kumari, S. 1975

auriculata Linn.

14, 16 Jacob, K.T. 1940
14, 16, 28 Irwin, H.S. & Turner, B.L. 1960
28 Pantulu, J.V. 1940, 1942, 1947, 1960a; Tandon, S.L. & Bhat, R.N. 1970, 1971; Pandey, R.M. & Pal, M. 1980b

blecuaris Linn.

28 D'Amato Avanzi, M.G. 1956; Irwin, H.S. & Turner, B.L. 1960; Bantel, G. 1974

corymbosa Lam.

28 Atchison, E. 1951; Irwin, H.S. & Turner, B.L. 1960

didymobotrya Fresen.

28 Sethi, M.L. 1930; Irwin, H.S. & Turner, B.L. 1960; Bir, S.S. & Kumari, S. 1980

eremophila A. Cunn.

28 Irwin, H.S. & Turner, B.L. 1960

exceles Schrad.

28 Bir, S.S. & Kumari, S. 1973

fatula Linn.

24 Tischler, G. 1921 - 1922; Nanda, P.C. 1962; Datta, R.M. & Jona, P.K. 1974

- 24, 28 Irwin, H.S. & Turner, B.L. 1960 ; Mehra, P.N. 1972
 26 Bir, S.S. & Sidhu, S. 1966
 28 Pantulu, J.V. 1946, 1947, 1960a ; Banerjee, S.K. & Banda, G.K. 1967 ; Bir, S.S. 1967 ; Bir, S.S. & Sidhu, S. 1967 ; Chatterjee, P. 1969 ; Tandon, S.L. & Bhat, R.N. 1970, 1971 ; Mehra, P.N. & Hans, A.S. 1971, 1972 ; Datta, S. & Datta, K.B. 1973 ; Mehra, P.N. & Sareen, T.S. 1973a ; Sarkar A.K. *et al.* 1973b
- fistula* x *nodosa*
 28 Banerjee, S.K. & Banda, G.K. 1967
- floribunda* Cav.
 28 Jacob, K.T. 1940
- laevigata* Willd.
 26 Chatterjee, P. 1969
 28 Irwin, H.S. & Turner, B.L. 1960 ; Tandon, S.L. & Bhat, R.N. 1970 ; Sarkar, A.K. *et al.* 1974
- italica* (Mill.) Lam. *ex* Andr.
obovata Collad.
 28 Frahm Leliveld, J.A. 1957 ; Irwin, H.S. & Turner, B.L. 1960 ; Baquar, S.R. *et al.* 1966
- ssp. micrantha* Brenan
obtusata Roxb.
 28 Ramanathan, K. 1950
- javanica* Linn.
 28 Jacob, K.T. 1940 ; Ramanathan, K. 1950 ; Atchison, E. 1951 ; Irwin, H.S. & Turner, B.L. 1960 ; Bir, S.S. & Sidhu, S. 1966, 1967 ; Tandon, S.L. & Bhat, R.N. 1971 ; Bir, S.S. & Kumari, S. 1980
- lechenaultiana* DC.
 48 Kawakami, I. 1930
- mimosoides* Linn.
 16 D'Amato Avanzl, M.G. 1956 ; Miège, J. 1960a ; Borgmann, E. 1964 ; Kodama, A. 1967
 16, 32 Kawakami, I. 1930 ; Irwin, H.S. & Turner, B.L. 1960
- var. dimidiata* Roxb.
 16 Sareen, T.S., Kant, S. & Pratap, R. 1974
- dimidiata* Roxb.
 16 Sugiura, T. 1936b ; Irwin, H.S. & Turner, B.L. 1960 ; Larsen, K. 1971
- var. wailichiana* Baker
 16 Bir, S.S., Kumari, S. & Sunita 1980
- nigricans* Vahl
 16 Miège, J. 1960a
- nodosa* Buch. Ham. *ex* Roxb.
 24 Atchison, E. 1951 ; Irwin, H.S. & Turner, B.L. 1960
 24, 28 Mehra, P.N. 1972
 28 Banerjee, S.K. & Banda, G.K. 1967 ; Chatterjee, P. 1969 ; Mehra, P.N. & Hans, A.S. 1969, 1971, 1972 ; Tandon, S.L. & Bhat, R.N. 1970, 1971
- obtusifolia* Linn.
 24 Frahm - Leliveld, J.A. 1960b
 26 Pantulu, J.V. 1947 ; Tandon, S.L. & Bhat, R.N. 1970, 1971 ; Gupta, P.K. & Gupta, R. 1971
 26, 28 Irwin, H.S. & Turner, B.L. 1960
 28 Pantulu, J.V. 1960a
- occidentalis* Linn.
 26 Muto, A. 1929 ; Frahm - Leliveld, J.A. 1960b ; Bir, S.S. & Sidhu, S. 1966, 1967 ; Sinha, S.S.N. *et al.* 1972 ; Sinha, S.S.N. & Prasad, R. 1973 ; Bir, S.S. & Sidhu, M. 1980
 26, 28 Irwin, H.S. & Turner, B.L. 1960 ; Miège, J. 1962 ; Mehra, P.N. 1972
 28 Senn, H.A. 1938 ; Pantulu, J.V. 1940, 1947, 1960a ; Turner, B.L. 1956 ; Hsu, C. - C. 1967 ; Chatterjee, P. 1969 ; Randell, B.R. 1970 ; Tandon, S.L. & Bhat, R.N. 1970, 1971 ; Gupta, P.K. & Gupta, R. 1971 ; Larsen, K. 1971 ; Sareen, T.S., Kant, S. & Pratap, R. 1974 ; Sarkar, A.K., Mallick, R. *et al.* 1977 ; Gill, L.S. 1978b ; Bir, S.S. & Kumari, S. 1980
- planisiliqua* Lam.
 28 Sareen, T.S., Kant, S. & Pratap, R. 1974
- pumila* Lam.
 28 Subbaiah, K.C. & Venkateswarlu, J. 1961 ; Bir, S.S. & Kumari, S. 1973

renigera Wall. ex Benth.

- 24 Atchison, E. 1951; Irwin, H.S. & Turner, B.L. 1960; Datta, R.M. & Jena, P.K. 1974
28 Chatterjee, P. 1969; Sreen, T.S., Kant, S. & Pratap, R. 1974; Bir, S.S. & Kumari, S. 1980

roxburghii DC.*marginata* Roxb.

- 24 Sarkar, A.K. *et al.* 1973b
28 Pantulu, J.V. 1942, 1947, 1960a; Atchison, E. 1951; Irwin, H.S. & Turner, B.L. 1960

siamca Lam.

- 26, 28 Tandon, S.L. & Bhat, R.N. 1971
28 Jacob, K.T. 1940; Pantulu, J.V. 1942; Atchison, E. 1951; D'Amato-Avanzi, M.G. 1956; Irwin, H.S. & Turner, B.L. 1960; Chatterjee, P. 1969; Tandon, S.L. & Bhat, R.N. 1970; Datta, S. & Datta, K.B. 1973

sophora Linn.

- 24 Kawakami, I. 1930; Ramanathan, K. 1955b
28 Pantulu, J.V. 1947, 1948, 1960a; Irwin, H.S. & Turner, B.L. 1960; Chatterjee, P. 1969; Tandon, S.L. & Bhat, R.N. 1970

purpurea Roxb.

- 20 Datta, R.M. 1933a; Ghose, S.L. & Alagh, R. 1933

variegata Burm. f.

- 28 Tandon, S.L. & Bhat, R.N. 1970, 1971; Bir, S.S. & Kumari, S. 1980
32 Nanda, P.C. 1962

glauca Lam.

- 28 Pantulu, J.V. 1942, 1947; Sampath, S. & Ramanathan, K. 1949; Atchison, E. 1951
28, 56 Irwin, H.S. & Turner, B.L. 1960; Pantulu, J.V. 1960a
56 Chatterjee, P. 1969

var. *suffruticosa* Chatt.*glauca* Lam.var. *suffruticosa* Koenig

- 56 Pantulu, J.V. 1947

tomentosa Linn.

- 24 Hua, H. 1904; Saxton, W.T. 1907;

Sugitara, T. 1931; Irwin, H.S. & Turner, B.L. 1960; Diels, L. 1961

foea Linn.

- 24 Sarkar, A.K. *et al.* 1973b
26 Datta, R.M. 1933a, c; Senn, H.A. 1938; Bir, S.S. & Sidhu, S. 1966, 1967; Tandon, S.L. & Bhat, R.N. 1970, 1971; Larsen, K. 1971
26, 28 Chatterjee, P. 1969
26, 52 Katayama, T. 1953; Midg, J. 1960b
28 Jacob, K.T. 1940; Sreen, T.S., Kant, S. & Pratap, R. 1974; Bir, S.S. & Sidhu, M. 1980

Ceratonia Linn.

1; Mediterranean. Cultivated.

albica Linn.

- 24 Almeida, J.L. 1948; Frahm-Lehfeld, J.A. 1957; Berger, C.A. *et al.* 1958

Colvillea Boj. ex Hook.

1; Madagascar. Cultivated.

racemosa Boj.

- 26 Bir, S.S., Kumari, S. & Sanita 1980
28 Atchison, E. 1951; Sanjappa, M. 1978

Delonix Rafin.

3; tropical Africa, Madagascar and Asia. 2; cultivated.

elata (Linn.) Gamble

- 28 Sanjappa, M. 1978

regia (Boj.) Rafin.

- 24 Pourques, M.L. de 1945a
28 Jacob, K.T. 1940; Atchison, E. 1951; Berger, C.A. *et al.* 1958; Roy, R.P. & Jha, R.P. 1960b; Mehta, P.N. & Sreen, T.S. 1973a; Sanjappa, M. 1978; Bir, S.S. & Kumari, S. 1980

Gleditsia Linn.

11; tropics and subtropics. 3; cultivated.

macrantha Desf.

28 Bir, S.S. & Kumari, S. 1978b

sinensis Lam.

28 Atchison, E. 1949a

triacanthos Linn.

28 Atchison, E. 1947a ; Berger, C.A. *et al.* 1958 ; Gordon, D. 1970 ; Fernandes, A. & Santos, M.F. 1971

Hardwickia Roxb.

1 ; Peninsular India.

bluata Roxb.

34 Sareen, T.S. & Kumari, S. 1973

Lasiobema (Korth.) Miq.

10 ; Himalaya to Japan, Indo-China, Java and Sumatra. 1 ; Western Himalaya.

retusum (Roxb.) de Wit

Bauhinia retusa Roxb.

24, 26, 28 Sharma, A.K. & Raju, D.T. 1968

28 Mehra, P.N. & Sareen, T.S. 1973a

Lysidice Hance

1 ; South China. Cultivated.

rhodostegia Hance

16 Atchison, E. 1951

Lysiphyllum (Benth.) de Wit

7 ; India to Australia. 1 ; Western Peninsula.

diphyllum (Buch. - Ham.) de Wit

Bauhinia diphylla Buch. - Ham.

24, 26, 28 Sharma, A.K. & Raju, D.T. 1968

28 Bir, S.S. & Kumari, S. 1980

Mazonevra Desf.

30 ; tropical Africa and Madagascar to Australia and Pacific. 4 ; Eastern Himalaya, Bihar and Western Peninsula, and Nepal, Bangla Desh and Sri Lanka.

cauculatum Wight & Arn.

22 Roy, R.P. & Saha, B.M.B. 1966

Parkinsonia Linn.

2 ; tropical America and South Africa. 1 ; cultivated and naturalized.

aculeata Linn.

28 Pantulu, J.V. 1942 ; Atchison, E. 1951 ; Berger, C.A. *et al.* 1958 ; Mitge, J. 1962 ; Mehra, P.N. & Sareen, T.S. 1973a ; Bandel, G. 1974

Peltophorum (Vogel) Benth.

12 ; tropics. 2 ; 1 Andamans, also cultivated, 1 cultivated.

pterotheca (DC.) Backer *ex* Heyne

26 Bir, S.S. & Kumari, S. 1975 ; Pilz, G.E. 1980

vogelianum Walp.

26 Bir, S.S. & Kumari, S. 1978b

Phanera Lour.

60 ; tropical Asia to Australia. 7 ; chiefly in Assam and Khasi Hills, 1 Western Ghats, 1 throughout hilly districts of India, and Bangla Desh - a few cultivated.

corymbosa (Roxb.) Benth.

28 Sharma, A.K. & Raju, D.T. 1968

macrostachya Benth.

Bauhinia macrostachya Walp.

28 Atchison, E. 1951

semibifida (Roxb.) Benth.

28 Sharma, A.K. & Raju, D.T. 1968

vahlii Benth.

Bauhinia vahlii Wight & Arn.

28 Bir, S.S. & Kumari, S. 1973

integrifolia (Roxb.) Benth.

28 Sharma, A.K. & Raju, D.T. 1968

Ptilostigma Hochst.

3 ; tropical Africa, Indo-Malesia and Queensland. 2 ; throughout the greater part of India, and Sri Lanka.

mahabanicum (Roxb.) Benth.

28, 42 Sharma, A.K. & Raju, D.T. 1968

120 CAESALPINIACEAE

racemosa (Lam.) Benth.

Bauhinia racemosa Lam.

- 22, 24, 28 Sharma, A.K. & Raju, D.T. 1968
28 Mehra, P.N. & Sareen, T.S. 1969, 1973a

Saraca Linn.

20 ; tropical Asia. 2 ; 1 Himalaya and Sri Lanka, also cultivated, 1 cultivated.

declinata Miq.

- 24 Atchison, E. 1951

indica Linn.*

- 24 Pantulu, J.V. 1943 ; Atchison, E. 1951 ; Simmonds, N.W. 1954 ; Mehra, P.N. & Hans, A.S. 1971, 1972 ; Bir, S.S. & Kumari, S. 1980

Schotia Jacq.

18 ; tropics and South Africa. 1 ; cultivated.

brachypetala Sond.

- 24 Turner, B.L. & Fearing, O.S. 1959 ; Riley, H.P. & Hoff, V.J. 1961

Sindora Miq.

21 ; 1 tropical Africa, 20, South East Asia, Hainan, West Malaysia, Celebes and Moluccas. 2 ; cultivated.

siamensis Teysm. ex Miq.

- 12 Arora, C.M. 1960

Tamarindus Linn.

1 ; tropical Africa. Throughout India, also cultivated.

indica Linn.

- 24 Paul, A.K. 1935, 1937 ; Atchison, E. 1951 ; Mehra, P.N. & Hans, A.S. 1971, 1972 ; Mehra, P.N. & Sareen, T.S. 1973a ; Sanjappa, M. 1978

CALLITRICHACEAE Link

1/25 ; cosmopolitan (excluding South Africa). 1/3 ; Himalaya (up to 3,300 m) to Deccan and Bengal, and Sri Lanka.

Callitriche Linn.

25 ; cosmopolitan (excluding South Africa). 3 ; Himalaya (up to 3,300 m) to Deccan and Bengal, and Sri Lanka.

stagnalis Scop.

- 10 Sokolovskaya, A.P. (Fedorov) ; Tischler, G. 1934 ; Schotsman, H.D. 1954, 1958, 1961a, b, 1967 ; Jones, H. 1953 ; Savidge, J.P. 1956a, b, 1960a, b ; Löve, A. & Löve, D. 1956b ; Hair (Mason, R. 1959) ; Bruzberg, E.J. & Hair, J.B. 1963 ;

Dersch, G. 1965 ; Skalińska, M. et al. 1968

- 10, 18, 20 Hedberg, I. & Hedberg, O. 1977
10, 20 Jørgensen, C.A. 1923

varna Linn.

- 16 Wingo, Ö. 1917b
20 Jørgensen, C.A. 1923 ; Sokolovskaya, A.P. (Fedorov) ; Tischler, G. 1934 ; Löve, A. & Löve, D. 1956b ; Jørgensen, C.A. et al. 1958 ; Savidge, J.P. 1960a ; Löve, A. & Löve, D. 1963b ; Löve, A. & Ritchie, J.C. 1966 ; Skalińska, M. et al. 1971

* *Saraca indica auct.* (non Linn.), FRI, 2 : 271 is a synonym of *S. asoca* (Roxb.) de Wilde (FRI : 224).

CAMPANULACEAE Juss.

35/over 780 ; temperate and subtropics, and mountains of tropics. 9/50 ; chiefly in Himalaya (up to 5,280 m), with a few extending to the plains, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Campanula Linn.

300 ; North temperate, especially Mediterranean, and tropical mountains. 15 ; Himalaya (up to 5,280 m), 1 extending to plains of Northern India, 1 in Western Ghats, and Nepal, Bhutan and Sri Lanka - a few cultivated.

cashmiriana Royle

28 Gadella, T.W.J. 1964

colorata Wall.

24 Kishore, H. 1951
28 Gadella, T.W.J. 1962, 1964 ; Podlech, D. & Damboldt, J. 1963 ; Sarkar, A.K., Datta, N. *et al.* 1976

latifolia Linn.

34 Marchal, E. 1920 ; Vilmorin, R. de & Simonet, M. 1927b ; Sugiura, T. 1938, 1942 ; Löve, A. & Löve, D. 1944b ; Gadella, T.W.J. 1962, 1963b ; Zhukova, P.G. 1967b ; Delay, J. 1971a ; Laane, M.M. 1971

34, 34+3

—JB Gadella, T.W.J. 1964

Codonopsis Wall.

30-40 ; Central and East Asia, Himalaya and Malaysia. 16 ; Himalaya (between 500 and 5,300 m), and Nepal, Bhutan and Bangla Desh.

ovata Benth.

16 Marchal, E. 1920 ; Gadella, T.W.J. 1966

rotundifolia Royle

16 Zhukova, P.G. 1967b

subsimplex Hook. f. & Thoms.

16 Rosén, W. 1931

Cyanoanthus Wall. ex Benth.

30 ; Himalaya, Tibet and South West China. 9 ; Himalaya (between 3,600 and 5,300 m), and Nepal and Bhutan.

lobatus Wall.

14 Kumar, V. & Chauhan, K.P.S.

microphyllus Edgew.

14 Kumar, V. & Chauhan, K.P.S.

linifolius Wall.

14 Kumar, V. & Chauhan, K.P.S. 1975

Laurentia Adans.

17 ; 2 in West United States, 15 in Mediterranean and South Africa. 1 ; cultivated.

longiflora (Linn.) Endl.

Isotoma longiflora Presl.

28 Sugiura, T. 1941

Peracarpa Hook. f. & Thoms.

1 ; Himalaya to Japan and Formosa, and Philippine Islands. 1 ; Himalaya (between 1,600 and 5,300 m), and Bhutan.

carnea (Wall.) Hook. f. & Thoms.

30 Hara, H. & Kurosawa, S. 1965 ; Kurosawa, S. 1966

c.30 Kurosawa, S. 1971b

Platycodon A. DC.

1 ; North East Asia. Cultivated.

grandiflorus (Jacq.) A. DC.

16 Marchal, E. 1920

18 Sugiura, T. 1940d, 1942 ; Suzuki, O. & Koriba, S. 1949 (D. 1955) ; Gadella, T.W.J. 1966 ; Pandey, R.M. & Pal, M. 1980a, b

28 Yamamoto (Kihara, H. *et al.* 1931)

122 CAMPANULACEAE

Wahlenbergia Schrad. ex Roth

About 150 ; tropics and South temperate zone. 7 ; Himalaya (up to 3,630 m), Bihar, Southern India, 1 throughout India, and Sri Lanka.

marginata (Thunb.) A. DC.

- 54, c.90 Borgmann, E. 1964
72 Gadella, T.W.J. 1966

gracilis DC.

- 18 Hsu, C. - C. 1967
36 Hsu, C. - C. 1968
64 Sugiura, T. 1942

CANELLACEAE Mart.

5/16 ; South America, West Indies, East Africa and Madagascar. 1/1 ; cultivated.

Canella P. Br.

2 ; South Florida, West Indies and tropical America. 1 ; cultivated.

alba Murr.

- 28 Goldblatt, P. 1976

CANNABACEAE Endl.

(=CANNABINACEAE Lindl.)

2/3 ; North temperate zone. 2/2 ; cultivated, 1 naturalized.

Cannabis Linn.

1 ; Central Asia. Cultivated and naturalized.

sativa Linn.

- 20 Strasburger, E. 1910a ; McPhee, H.C. 1924 ; Breslawetz, L.P. (Fedorov) ; Langlet, O.F.J. 1927b ; Sinoto, Y. 1928a, 1929b ; Medwedewa, G.B. (Fedorov) ; Mac Kay, E.L. 1939 ; Rybin, W.A. (Fedorov) ; Yamada, I. 1943 ; Kostoff, D. (Fedorov) ; Delay, C. 1947 ; Hoffmann, W. 1947 ; Pótya, L. 1949 ; Menzel, M.Y. 1964 ; Baqar, S.R. & Abid Askari, S.H. 1970a, b ; Bir, S.S. & Sidhu, M. 1975, 1980

- 20, 40, 80 Motegi, T. 1968

Hempulus Linn.

2 ; North temperate and South to Indo-China and South West United States. 1 ; cultivated.

hempulus Linn.

- 20 Tournois, J. 1914 ; Wings, Ö. 1914, 1917a, b, 1923, 1929 ; Bartlett, H.H. 1915 ; Kibara, H. 1929 ; Sinoto, Y. 1929a, b ; Kuhn (Tischler, G. 1931) ; Tischler, G. 1934 ; Nakajima, G. 1937b ; Ono, T. 1937, 1959 ; Golubinskii, E.N. (Fedorov) ; Pótya, L. 1949 ; Hara, H. 1952 ; Löve, A. 1954b ; Jacobson, P. 1957 ; Neve, R.A. 1958

- 20, 40 Májovský, J. et al. 1970b
40 Haynold, A. 1968

CAPPARIDACEAE Juss.

About 30/over 650 ; tropics and warm temperate. 5/38 ; mostly in Western and Southern India, with a few in tropical Himalaya, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Cadaba Forsk.

30 ; warm Africa, Madagascar, South West Asia to Sri Lanka, 1 from Java to North Australia. 4 ; Western Peninsula, North India, 1 throughout greater part of India, and Pakistan.

farinosa Forsk.

- 16 Milge, J. 1962
32 Baquar, S.R. *et al.* 1965

fruticosa (Linn.) Druce*ndica* Lam.

- 18 Raghavan, T.S. & Venkatasubban, K.R. 1941a

Capparis Linn.

About 250 ; warmer parts of the world. About 26 ; chiefly in Western and Southern India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

decidua Pax

- 44 Panikkar, A.O.N. 1962

grandis Linn.

- 42 Raman, V.S. & Kesavan, P.C. 1963a

sepiaria Linn.

- 40 Raghavan, T.S. 1938b
42 Sreen, T.S. & Kumari, S. 1973

spinosa Linn.

- 24 Schiller, J. 1928
38 Taylor, W.R. 1925 ; Kuhn, E. 1928b ;
Murin, A. & Chaudhri, I.I. 1970 ;
Amin, A. 1972

zeylanica Linn.

- 40 Raghavan, T.S. & Venkatasubban, K.R. 1941a

Crateva Linn.

9 ; tropics (excluding Australia and New Caledonia). 4 ; Eastern India, 1 throughout the greater part of India, and Nepal and Bangla Desh.

curvata Buch. - Ham.

- 26 Raghavan, R.S. & Arora, C.M. 1958

religiosa Forst. f.

- 26 Raghavan, T.S. & Venkatasubban, K.R. 1939a, 1940f ; Mehra, P.N. & Singh, A. 1963

Maerua Forsk.

100 ; tropics and South Africa to India. 2 ; Western Himalaya, and Southwards to Peninsular India.

arenaria Hook. f. & Thoms.

- 20 Raghavan, T.S. & Venkatasubban, K.R. 1941a

CAPRIFOLIACEAE Juss.

12/450 ; mostly North temperate and tropical mountains. 5/64 ; Himalaya (up to 5,600 m), a few in mountains of Southern India, and Nepal, Pakistan, Bhutan and Sri Lanka.

Leycesteria Wall.

6 ; Western Himalaya to South West China. 5 ; temperate Himalaya.

formosa Wall.

18 Malla, S.B., Bhattarai, S. *et al.* 1977b

Lonicera Linn.

200 ; North America (South to Mexico) and Eurasia (South to North Africa, Himalaya, Philippine Islands and South West Malaysia). 40 ; temperate Himalaya (between 1,500 and 5,600 m), a few in mountains of Southern India, and Nepal and Bhutan - a few cultivated.

hispidula Pall.

18 Pouques, M.L. de 1949 ; Janaki Ammal, E.K. & Saunders, B. 1952

japonica Thunb.

16 Sax, K. & Kribs, D.A. 1930 ; Janaki Ammal, E.K. & Saunders, B. 1952 ; Ferguson, I.K. 1966 ; Hommel, P.W.F.M. & Wieffering, J.H. 1979

kochensepulta Wall.

18 Sanjappa, M. 1979

macrantha (D. Don) Spreng.*macrantha* DC.

16 Mehra, P.N. & Bawa, K.S. 1969

microphylla Willd. ex Roem. & Schult.

36 Sax, K. & Kribs, D.A. 1930 ; Janaki Ammal, E.K. & Saunders, B. 1952 ; Rüdtenberg, L. & Green, P. 1966

nifida Wilson

18 Pouques, M.L. de 1949 ; Janaki Ammal, E.K. & Saunders, B. 1952 ; Rüdtenberg, L. & Green, P.S. 1969

orientalis Lam.

18 Sax, K. & Kribs, D.A. 1930 ; Janaki Ammal, E.K. & Saunders, B. 1952 ; Rüdtenberg, L. & Green, P. 1966, 1969

var. *discolor**discolor* Lindl.

18 Janaki Ammal, E.K. & Saunders, B. 1952

perichlymenum Linn.

18 Rutland, J.P. 1941
18, 36 Janaki Ammal, E.K. & Saunders, B. 1952
36 Hagerup, O. 1941b ; Pouques, M.L. de 1949 ; Laane, M.M. 1969a
54 Gadolla, T.W.J. & Kliphuis, E. 1963

quinquelocularis Harlow.

18 Sax, K. & Kribs, D.A. 1930 ; Pouques, M.L. de 1949 ; Bedi, Y.S. *et al.* 1980

rapicola Hook. f. & Thoms.

18 Janaki Ammal, E.K. & Saunders, B. 1952

tomentella Hook. f. & Thoms.

18 Janaki Ammal, E.K. & Saunders, B. 1952

webbiana Wall. ex DC.

36 Rüdtenberg, L. & Green, P. 1966

Viburnum Linn.

200 ; temperate and subtropics, especially Asia, North America, 16 in Malaysia. 17 ; Himalaya (between 1,000 and 4,330 m), a few in mountains of Southern India, and Nepal, Pakistan, Bhutan and Sri Lanka.

cylindricum Buch. - Ham. ex D. Don

18 Malla, S.B. *et al.* 1975

coriaceum Blume

18 Egolf, D.R. 1956, 1962 ; Mehra, P.N. & Singh, A. 1963 ; Kurosawa, S. 1966 ; Mehra, P.N. & Bawa, K.S. 1969

cotiniifolium D. Don

18 Pouques, M.L. de 1949 ; Egolf, D.R. 1956, 1962 ; Mehra, P.N. & Singh, A. 1963
38 Bedi, Y.S. *et al.* 1980

erubescens Wall.

32 Egolf, D.R. 1956, 1962 ; Kurosawa, S. 1966 ; Sharma, A. & Sarkar, A.K. 1967-1968 ; Mehra, P.N. & Bawa, K.S. 1969
48 Janaki Ammal, E.K. 1953

foetens Decne

16 Janaki Ammal, E.K. 1953 ; Egolf, D.R. 1956, 1962

foetidum Wall.

- 16 Janaki Ammal, E.K. 1953
 18 Egolf, D.R. 1956, 1962 ; Mehra, P.N. & Bawa, K.S. 1969

grandiflorum Wall.

- 16 Janaki Ammal, E.K. 1953 ; Egolf, D.R. 1956, 1962

malaba Hoch. - Ham. ex D. Don

- 18 Kurosawa, S. 1966 ; Bedi, Y.S. *et al.* 1980

stellulatum Wall. ex DC.

- 18 Mehra, P.N. & Singh, A. 1963

stellulatum Hemsl.*

- 18 Egolf, D.R. 1956, 1962

var. *involuta* Buch. Ham.

- 18 Malla, S.B., Bhattarai, S. *et al.* 1978a

olocastissimum Kor - Gawi.

- 16 Sharma, A. & Sarkar, A.K. 1967 1968
 23, 40 Egolf, D.R. 1956, 1962
 32 Mehra, P.N. & Bawa, K.S. 1969
 40 Janaki Ammal, E.K. 1953

punctatum Buch. Ham. ex D. Don

- 16 Nanda, P.C. 1962

simonsii Hook. f.

- 32 Mehra, P.N. & Bawa, K.S. 1969

CARICACEAE Dum.

4/55 ; tropical America and Africa. 1/1 ; cultivated.

Carica Linn.

45 ; warmer parts of America. 1 ; cultivated.

papaya Linn.

- 18 Hailborn, O. 1922a ; Meurman, O.

1925 ; Sugiyama, T. 1927 ; Asana, J.J. & Sutaria, R.N. 1929 ; Lindsay, R.H. 1930 ; Eichhorn, A. 1937b ; Kumar, L.S.S. & Abraham, A. 1942a ; Delay, C. 1947 ; Hsu, C. - C. 1968 ; Datta, P.C. 1971b ; Sarkar, A.K. *et al.* 1973b

- 36 Hofmeyer, J.D.J. 1945

CARPINACEAE (Spach) Kuprianova

3/47 ; North temperate. 1/2 ; temperate Himalaya.

Carpinus Linn.

35 ; North temperate, chiefly in East Asia. 2 ; temperate Himalaya (between 1,300 and 2,300 m).

laginea Lindl.

- 16 Mehra, P.N. & Sreen, T.S. 1969, 1973b

viminea Wall.

- 16 Mehra, P.N. & Sreen T.S. 1969, 1973b

* The combination *Viburnum stellulatum* should be attributed to Wall. ex DC. (FBH : 320).

CARYOPHYLLACEAE Juss.

70/1,750 ; throughout the world, 25/112 ; mostly in temperate parts, and Nepal, Pakistan, Bhutan, Bangla Desh, and Sri Lanka a few cultivated.

Arenaria Linn.

About 250 ; Northern Hemisphere and mountains of South America. 22 ; Himalaya (up to 6,000 m), 1 in Nilgiri, and Nepal, Pakistan and Bhutan.

serpyllifolia Linn.

- 20 Fernandes, A. & Leitao, M.T. 1971 ; Kliphuis, E. & Wieffering, J.H. 1979
20, 40 Griesinger, R. 1937 ; Wattstein, F. Von 1940 ; Woess, F. von 1941 ; Wilmstedt, K. 1955 ; Böcher, T.W. & Larsen, K. 1958b
40 Rohweder, H. (Tischler, G. 1938) ; Griesinger, R. 1937 ; Rohweder, H. 1937, 1939 ; Pólya, L. 1949 ; Mattick (Tischler, G. 1950) ; Gadella, T.W.J. & Kliphuis, E. 1966, 1968a, 1971a 1972 ; Fritsch, R.M. 1973 ; Petrova, A.V. 1975 ; Hindáková, M. & Májovský, J. 1977 ; Kieft, B. & Van Loon, J. Chr. 1978 ; Van Loon, J. Chr. 1980
40, 44 Blackburn, K.B. & Morton, J.K. 1957

sp. serpyllifolia

- 10, 40 Májovský, J. *et al.* 1970b
40 Dvořák, F., Grüll, F. *et al.* 1979

Cerastium Linn.

60 ; cosmopolitan. About 7 ; Himalaya (between 1,600 and 5,600 m) and Western Ghats (above 1,900 m), and Sri Lanka.

arvense Linn.

- 36 Humphries, C.J. *et al.* 1978
72 Uhríková, A. & Záborsky, J. 1980

cerastoides (Linn.) Britton

- 34, 38 Böcher, T.W. & Larsen, K. 1950
38 Favarger, C. & Söllner, R. 1949 ; Brett, O.E. 1953, 1955 ; Söllner, R. 1954 ; Löve, A. & Löve, D. 1956b ; Blackburn, K.B. & Morton, J.K.

1957 ; Jørgensen, C.A. *et al.* 1958

- c.38 Favarger, C. 1969a
40 Böcher, T.W. 1938a ; Sørensen & Westergaard (Löve, A. & Löve, D. 1948)

trigynum Vill.

- 36 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov) ; Mattick (Tischler, G. 1950)
38 Uhríková, A. *et al.* 1980

dahuricum Fisch.

- 30 Zhukova, P.G. 1967b
38 Fischer, L. 1944 ; Söllner, R. 1950 ; Brett, O.E. 1952, 1955 ; Löve, A. & Löve, D. 1975b

fontanum Baumg.*ssp. triviale* (Link) Jalas

- 144 Fernandes, A. & Leitao, M.T. 1971
Ugberogho, R.E. 1972
160±1 Favarger, C. 1969a

triviale Link

- c.110 Heitz, E. 1926 ; Tischler, G. 1934
126 Hagerup, O. 1944
144 Tischler, G. 1937 ; Rohweder, H. 1936, 1937, 1939

glomeratum Thuill.

- c.72 Favarger, C. 1969a
72 Rohweder, H. 1937, 1939 ; Brett, O.E. 1952, 1955 ; Söllner, R. 1952, 1954 ; Löve, A. & Löve, D. 1956b ; Blackburn, K.B. & Morton, J.K. 1957 ; Gadella, T.W.J. & Kliphuis, E. 1966

laetius Williams

- 72 Chatterjee, P. 1975

vulgatum Linn.

- 36 Tomkins, D.J. & Grant, W.F. 1978
72, 126,
144, 180 Blackburn, K.B. & Morton, J.K. 1957 ; Diers, L. 1961
136 Brett, O.E. 1950
137-147 Brett, O.E. 1955

- 140, c. 144 Taylor, R.L. & Mulligan, G.A. 1968
144 Heiser, C.B. & Whitaker, T.W. 1948

Cucubalus Linn.

1 ; North temperate. Temperate Himalaya (between 1,600 and 4,000 m) and Khasi Hills.

baccifer Linn.

- 24 Blackburn, K.B. 1928, 1933 ; Löve, D. 1942 ; Favarger, C. 1946 ; Blackburn, K.B. & Morton, J.K. 1957 ; Palková, M. 1959 ; Gadella, T.W.J. & Kliphuis, E. 1966 ; Hindáková, M. & Činčura, P. 1967 ; Fernandes, A. & Leitao, M.T. 1971 ; Petrova, A.V. 1975 ; Čoschmedjiev, I.V. 1976 ; Van Loon, J. Chr. & Kieft, B. 1980

Dianthus Linn.

About 300 ; Europe, Asia and Africa, with Mediterranean as the chief centre. 10 ; chiefly found in the Himalaya (above 1,600 m), and in Pakistan - a few cultivated.

anatolicus Boiss.

- 30 Puch (Fedorov)
90 Blackburn (Tischler, G. 1931) ; Gentscheff, G. 1937b

angustatus Royle

- 90 Gentscheff, G. 1937b

barbatus Linn.

- 30 Blackburn, K.B. 1928 ; Rohweder, H. 1929, 1934 ; Ishii, T. 1930 ; Sugiura, T. 1931, 1936b ; Gentscheff, G. 1937b ; Puch (Fedorov) ; Favarger, C. 1946 ; Blackburn, K.B. & Morton, J.K. 1957 ; Carolin, R.C. 1957 ; Kupfer, P.H. 1971

ssp. barbatus Linn.

- 30 Fernandes, A. & Leitao, M.T. 1971

caryophyllus Linn.

- 30 Andersson Kottb, I. & Gairdner, A.E. 1931 ; Favarger, C. 1946 ; Carolin, R.C. 1957 ; Ribaupierre, R. de 1957 ; Jones, K. & Hooper, S.S. 1968 ; Gadella, T.W.J. & Kliphuis, E. 1970a ; Van Loon, J. Chr. & de Jong, H. 1978

- 30, 60 Puch (Fedorov) ; Kakehi, M. 1972
30, 90 Gentscheff, G. 1937b
90 Rohweder, H. 1934

chinensis Linn.

- 30 Ishii, T. 1930 ; Shibukawa, T. 1930 ; Favarger, C. 1946
30, 60 Gentscheff, G. 1937b ; Puch (Fedorov)
60 Blackburn (Tischler, G. 1931) ; Rohweder, H. 1934

erinitus Smith

- 90 Gentscheff, G. 1937b

deltoides Linn.

- 30 Blackburn, K.B. 1928 ; Rohweder, H. 1929, 1934 ; Andersson Kottb, I. & Gairdner, A.E. 1931 ; Tischler, G. 1934 ; Gentscheff, G. 1937b ; Puch (Fedorov) ; Löve, A. 1942a (Fedorov) ; Favarger, C. 1946 ; Blackburn, K.B. & Morton, J.K. 1957 ; Carolin, R.C. 1957 ; Gviniaidze, Z.I. 1967 ; Petrova, A.V. 1975

seguieri Vill.

- 90 Rohweder, H. 1929, 1934 ; Gentscheff, G. 1937b ; Carolin, R.C. 1957

Drymaria Willd. ex Roem. & Schult.

44, chiefly in Mexico and West India, a few in Abyssinia, South Africa, Java, Australia, and India. 2 ; warmer parts of India, 1 introduced.

cordata Willd.

- 24 Gadella, T.W.J. 1972
36 Favarger, C. & Huynh 1965 ; Hsu, C. - C. 1968

Gypsophila Linn.

125 ; temperate Eurasia, (especially East Mediterranean), Egypt, 1 Australia and New Zealand. 4 ; temperate Himalaya (between 2,000 and 4,000 m), and Pakistan - a few cultivated.

cerastoides D. Don

- 30 Wenger - Razine, M. 1969 ; Chatterjee, P. 1975

- elegans* Bieb. Zhukova, P.G. & Tikhonova, A.D. 1971
 26 Wenger Razine, M. 1969; Gohil, R.N. & Bali, P.S. 1973
 34 Blackburn, K.B. 1928
- paniculata* Linn. 34 Vilmorin, R. de & Chopinet, R. 1954; Bakšay, L. 1956; Røed (Löve, A. & Löve, D. 1961b)
- Herniaria** Linn.
 35; Europe, Mediterranean to Afghanistan and South Africa. 2; 1 in Western Himalaya and Punjab, and Pakistan, 1 introduced.
- glabra* Linn.
 18 Schoerer, H. 1939; Löve, A. & Löve, D. 1944b; Blackburn, K.B. & Adams, A.W. 1955
 18, 36 Blackburn, K.B. & Morton, J.K. 1957
- nirsata* Linn.
 18 Fernandes, A. & Leitao, M.T. 1971
 36 Blackburn, K.B. & Morton, J.K. 1957
- Holosteum** Linn.
 6; temperate Eurasia. 1; Kashmir.
- umbellatum* Linn.
 20 Blackburn (Tischler, G. 1935-1936); Rohweder, H. 1939; Petrova, A.V. 1975; Atyavand, A. 1977a
- Lychnis** Linn.
 12; temperate Eurasia. About 6; Himalaya, 1 cultivated and 1 introduced.
- apetala* Linn.
Melandrium apetalum (Linn.) Fenzl
 24 Blackburn (Tischler, G. 1931); Löve, D. (Löve, A. & Löve, D. 1942b); Sørensen & Westergaard (Löve, A. & Löve, D. 1948); Nygren, A. 1949; Holmen, K. 1952; Jørgensen, C.A. *et al.* 1958; Zhukova, P.G. (Fedorov); Knaben, G. & Engelskjön, T. 1967; Johnson, A.W. & Pecker, J.G. 1968; Zhukova, P.G. & Petrovsky, V.V. 1971;
- chalconica* Linn.
 18 Zhukova, P.G. 1967b
 24 Blackburn, K.B. 1928; Sokolowa, H.W. (Fedorov); Sugiura, T. 1937b, 1939; Rohweder, H. 1939
 48 Rohweder, H. (Tischler, G. 1938); Lipaeva, L.I. (Fedorov)
- coronaria* (Linn.) Desr.
 24 Blackburn, K.B. 1928; Favarger, C. 1946; Fernandes, A. & Leitao, M.T. 1971; Van Loon, J. Chr. 1980
- githago* (Linn.) Scop.
Agrostemma githago Linn.
 24 Rohweder, H. 1939
 24, 48 Heiser, C.B. & Whitaker, T.W. 1948
 48 Blackburn, K.B. 1928; Tischler, G. 1934; Löve, D. 1942; Favarger, C. 1946; Löve, A. & Löve, D. 1956b; Blackburn, K.B. & Morton, J.K. 1957; Gvinianidze, Z.I. 1967; Gadella, T.W.J. & Kliphuis, E. 1970a; Májovský, J. *et al.* 1970b; Fernandes, A. & Leitao, M.T. 1971
- Polycarpon** Loeffl. *ex* Linn.
 16; cosmopolitan. 2; warmer parts of India.
prostratum (Forsk.) Aschers. & Schweinf.
 18 Sarkar, A.K. *et al.* 1973a; Sarkar, A.K., Datta, N. & Chatterjee, U. 1980
loeflingii Benth. & Hook. f.
 36 Pal, N. 1952
tetraphyllum Linn.
 54 Blackburn, K.B. & Morton, J.K. 1957
- Sagina** Linn.
 20 30; North temperate, mountains of Africa, Himalaya, New Guinea and Andes. 2; temperate and alpine Himalaya (between 2,300 and 5,300 m).

apetala Arduino

- 12 Blackburn (Wright, F.R.E. 1938);
Blackburn, K.B. & Morton, J.K.
1957; Diers, L. 1961; Fernandes, A.
& Leitao, M.T. 1971

procumbens Linn.

- 22 Wulff - Lindschau (Tischler, G. 1938);
Wulff, H.D. 1937b; Blackburn, K.B.
(Tischler, G. 1938); Rohweder, H.
1937, 1939; Löve, A. & Löve, D.
1956b; Blackburn, K.B. & Morton,
J.K. 1957; Gadella, T.W.J. & Kli-
phuis, E. 1966, 1971b; Taylor, R.L.
& Mulligan, G.A. 1968; Gadella,
T.W.J. *et al.* 1970; Poghosian, A.J.
et al. 1971

ssp. procumbens

- 22 Fernandes, A. & Leitao, M.T. 1971

Saponaria Linn.

30; temperate Eurasia, chiefly Mediter-
ranean. 2; introduced and cultivated.

calabrica Guss.

- 28 Blackburn, K.B. 1928; Blackburn,
K.B. & Boulton, I.J. 1930

officialis Linn.

- 28 Heitz, E. 1926; Rocón, T. 1927;
Blackburn, K.B. 1928; Tischler, G.
1934; Favarger, C. 1946; Pólya, L.
1949; Suzuka, O. & Koriba, S. 1949;
Blackburn, K.B. & Morton, J.K.
1957; Mulligan, G.A. 1959;
Khoshoo, T.N. & Bhatia, S.K. 1963;
Gadella, T.W.J. & Kliphuis, E. 1966;
Murin & Váňková (Fedorov);
Májovský, J. *et al.* 1970a

Silene Linn.

About 500; North temperate, abundant
in Mediterranean. 25; Himalaya (between
330 and 3,700 m), and Nepal and Pakistan
a few cultivated.

alba (Mill.) Krause

- 24 Gadella, T.W.J. & Kliphuis, E.
1970b; Van Loon, J.C. *et al.* 1971

Lychnis alba Mill.

- 24 Blackburn, K.B. 1923; Jensen, H.W.

1939; Mulligan, G.A. 1957; Crang,
R.E. & Dean, H.L. 1971

apetala Willd.

- 24 Blackburn, K.B. & Morton, J.K.
1957; Larsen, K. 1960; Van Loon,
J. Chr. & de Jong, H. 1978

areosa Koch

- 24 Podlech, D. & Dieterle, A. 1969

armeria Linn.

- 24 Blackburn, K.B. 1928; Favarger, C.
1946; Kožuharov, S.I. & Petrova,
A.V. 1974; Petrova, A.V. 1975

coeli-rosa (Linn.) Godron*Lychnis coeli-rosa* Linn.

- 24 Blackburn, K.B. 1928

colorata Poir.

- 24 Blackburn, K.B. & Morton, J.K.
1957; Damboldt, J. & Pfitos, D.
1966; Fernandes, A. & Queiros, M.
1970-1971; Fernandes, A. & Leitao,
M.T. 1971; Bari, E.A. 1973

conoides Linn.

- 20 Khoshoo, T.N. 1960a; Khoshoo,
T.N. & Bhatia, S.K. 1963b; Dam-
boldt, J. & Pfitos, D. 1968;
Podlech, D. & Dieterle, A. 1969; Bari,
E.A. 1973

- 24 Blackburn, K.B. 1928

cucubalus Wibel

- 24 Löve, A. & Löve, D. 1944b, 1956b;
Mulligan, G.A. 1957; Kumar, V. &
Chauhan, K.P.S.

- 48 Blackburn, K.B. & Morton, J.K.
1957; Larsen, K. 1960

gallica Linn.

- 24 Blackburn, K.B. 1928; Favarger, C.
1946; Heiser, C.B. & Whitaker, T.W.
1948; Blackburn, K.B. & Morton,
J.K. 1957; Larsen, K. 1960; Dam-
boldt, J. & Pfitos, D. 1968;
Björkqvist, I. *et al.* 1969; Májovský,
J. *et al.* 1970b; Dahlgren, R. *et al.*
1971; Bari, E.A. 1973; Kožuharov,
S.I. & Petrova, A.V. 1974; Van Loon,
J. Chr. & de Jong, H. 1978

var. gallica

- 24 Fernandes, A. & Leitao, M.T. 1971

indica Roxb.

- 24 Sharma, A. & Sarkar, A.K. 1967-1968

multicaulis Guss.

- 24 Meizheimer, V. 1974

noctiflora Linn.]

- 24 Heitz, E. 1926; Mulligan, G.A. 1959; Dvořák, F. & Dadáková, B. 1976; Dvořák, F. 1977; Kliphuis, E. & Wieffering, J.H. 1979

patens Linn.

- 24 Blackburn, K.B. 1928, 1929; Tischler, G. 1934; Rohweder, H. 1939; Viadesso, A. 1941 (Tischler, G. 1950); Favarger, C. 1946; Mattick (Tischler, G. 1950); Blackburn, K.B. & Morton, J.K. 1957; Gadella, T.W.J. & Kliphuis, E. 1968a

ssp. rutans

- 24 Fernandes, A. & Leitao, M.T. 1971

pendula Linn.

- 24 Heitz (Tischler, G. 1927); Blackburn, K.B. 1928; Vilmorin, R. de & Chopinet, R. 1954

tenax Willd.

- 24 Blackburn, K.B. 1928

venosa (Gilg.) Aschers. & Graebn.

- 24 Rohweder, H. 1939

hyfiata Smith

- 24 Heitz, E. 1926; Blackburn, K.B. 1928, 1929; Blackburn, K.B. & Boulton, I.I. 1930; Griesinger, R. 1937; Rohweder, H. 1939; Wettstein, F. von 1940; Mattick (Tischler, G. 1950); Garaiová, S. 1959; Májovský, J. *et al.* 1970a

Spergula Linn.

5; temperate zone. 2; warmer parts of India.

arvensis Linn.

- 18 Heitz, E. 1926; Tischler, G. 1934; Rohweder, H. 1936, 1939; Löve, A. & Löve, D. 1944b, 1956b; Heiser, C.B. & Whitaker, T.W. 1948; Blackburn,

K.B. & Morton, J.K. 1957; Taylor, R.L. & Mulligan, G.A. 1968; Fernandes, A. & Queiros, M. 1970-1971; Findlay, J.N. & McNeill, J.C. 1973; Fritsch, R.M. 1973

- 36 Gadella, T.W.J. & Kliphuis, E. 1971a

ssp. arvensis

- 18 Fernandes, A. & Leitao, M.T. 1971; Ferakova, V. 1972; Dvořák, F. & Dadáková, B. 1978b

fallax (Lowe) Krause

- 18 Ratter, J.A. 1967a

Spergularia (Pers.) J. Presl. & C. Presl.

40; cosmopolitan. 1; North Western India.

rubra (Linn.) J. Presl. & C. Presl.*Spergula rubra* (Linn.) D. Dietr.

- 36 Nordenskiöld (Löve, A. & Löve, D. 1942b); Ratter, J.A. 1959

Stellaria Linn.

About 120; cosmopolitan. 20; temperate and alpine Himalaya (up to 5,000 m) 1 descends to plains of Northern India, and Nepal, Pakistan, Bhutan and Sri Lanka.

aquatica Scop.

- 20 Hsu, C. - C. 1968

halimifolia Wuif.

- 33 Peterson, D. 1936; Mattick (Tischler, G. 1950)

graminea Linn.

- 26 Peterson, D. 1935, 1936; Rohweder, H. 1937, 1939; Tischler, G. 1937; Mattick (Tischler, G. 1950); Löve, A. & Löve, D. 1956b; Fernandes, A. & Leitao, M.T. 1971; Tomkins, D.J. & Grant, W.F. 1978
26, 39, 52 Gadella, T.W.J. & Kliphuis, E. 1971a
39 Gadella, T.W.J. & Kliphuis, E. 1967
52 Gadella, T.W.J. & Kliphuis, E. 1968a; Taylor, R.L. & Mulligan, G.A. 1968

media Linn.*

- 28 Pal, N. 1952
 36-42 Heitz, E. 1926
 40 Rocén, T. 1927; Blackburn, K.B. (Peterson, D. 1936); Negodi, G. 1936b; Mulligan, G.A. 1961a; Humphries, C.J. *et al.* 1978
 40-44 Tischler, G. 1937
 40, 44 Blackburn, K.B. & Morton, J.K. 1957
 42 Heiser, C.B. & Whitaker, T.W. 1948; Löve, A. & Löve, D. 1956b
 42, 44 Peterson, D. 1936
 44 Peterson, D. 1933; Tischler, G. 1934; Rohweder, H. 1937; Sinha, R.P. & Whitehead, F.H. 1965

media (Linn.) Vill.

- 40 Taylor, R.L. & Mulligan, G.A. 1968; Baquar, S.R. & Abid Askari, S.H. 1970a, b; Scholte, G.A.M. 1978b; Tomkins, D.J. & Grant, W.F. 1978
 40, 42 Gadella, T.W.J. & Kliphuis, E. 1967, 1971a
 40, 44 Scholte, G.A.M. 1978a
 44 Bir, S.S. & Sidhu, M. 1980

monosperma Ham.

- 52 Chatterjee, P. 1975

patens D. Don

- 26 Chatterjee, P. 1975

uliginosa Murr.**

- 24 Peterson, D. 1935, 1936; Rohweder, H. 1939; Blackburn, K.B. & Morton, J.K. 1957; Quézel, P. 1957
 24-26 Heitz, E. 1926
 26 Mattick (Tischler, G. 1950)

26-28 Tischler, G. 1934

ventita Kurz

- 24 Malla, S.B., Bhattarai, S. *et al.* 1977b
 26 Chatterjee, P. 1975

saxatilis Buch. - Ham. ex D. Don

- 28 Sharma, A. & Sarkar, A.K. 1967-1968

Vaccaria Medik.

4; Europe, Mediterranean and temperate Asia. 2; 1 throughout India, 1 cultivated.

pyramidata Medik.

- 24 Humphries, C.J. *et al.* 1978
 30 Löve, D. 1942; Khoshoo, T.N. & Bhatia, S.K. 1965; Gvinianidze, Z.I. 1967; Podlech, D. & Dieterle, A. 1969; Lessant, H. & Chariat Panahi, S. 1979
 30, 60 Favarger, C. 1946

Saponaria vaccaria Linn.

- 30 Mulligan, G.A. 1957; Khoshoo, T.N. 1960a; Khoshoo, T.N. & Bhatia, S.K. 1965

segetalis (Neck.) Garcke ex Aschers.

- 30 Blackburn, K.B. 1928; Blackburn, K.B. & Boulé, I.I. 1930

Saponaria vaccaria Linn.

- 30 Mulligan, G.A. 1957; Khoshoo, T.N. 1960a; Khoshoo, T.N. & Bhatia, S.K. 1965

CASUARINACEAE R. Br.

2/65; Mascarene, South East Asia to North East Australia and Polynesia. 1/3; East coast, and Bangla Desh, 1 also cultivated.

* The combination *Stellaria media* was made by Vill. (HFDD: 75; FD: 68).

** *S. uliginosa auct. pl.* (non Murr.), FBI, 1: 233, is a synonym of *S. alsine* Grimm (HFDD: 74; FEH, 3: 33).

132 CASUARINACEAE

Casuarina Adans.

45 ; tropical East Africa (? native), Mascarene, South East Asia, Malaysia, Australia and Polynesia. 3 ; East Coast, and

Bangla Desh, 1 also cultivated.

equisetifolia Linn.*

18 Swamy, B.G.L. 1948 ; Barlow, B.A. 1959

CELASTRACEAE R. Br.

55/850 ; tropics and temperate. 10/76 ; chiefly in Himalaya (up to 4,000 m) and Western Peninsula, and Bengal, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Cassine Linn.

40 ; South Africa, Madagascar and tropical Asia to Pacific. 2 ; 1 Western Ghats, 1 throughout the hotter parts of India, and Sri Lanka.

glauca (Rottb.) Kuntze

Elaeodendron roxburghii Wight & Arn.

34 Mehra, P.N. & Khosla, P.K. 1969 ; Sareen, T.S. Khosla, P.K. & Mehra, P.N. 1974

Celastrus Linn.

30 ; tropics and subtropics. 4 ; Himalaya (up to 2,000 m), Punjab, throughout hilly districts of India, Assam, and Bengal, and Nepal, Pakistan, Bangla Desh and Sri Lanka.

paniculatus Willd.

46 Raghevan, R.S. 1959b ; Adatia, R.D. & Gavde, G. 1962 ; Sareen, T.S., Khosla, P.K. & Mehra, P.N. 1974

Escaymus Linn.

176 ; subcosmopolitan with greatest number in Himalaya, China and Japan. 27 ; chiefly in temperate Himalaya (between 1,300 and 3,300 m), some in Western Peninsula, and Nepal, Bangla Desh and Sri Lanka.

bullatus Wall.

48 Mehra, P.N. & Khosla, P.K. 1969 ; Sareen, T.S., Khosla, P.K. & Mehra, P.N. 1974

echinatus Wall.

16 Mehra, P.N. & Khosla, P.K. 1969 ; Sareen, T.S., Khosla, P.K. & Mehra, P.N. 1974

fimbriatus Wall.

grandiflorus Wall.

32 Mehra, P.N. & Khosla, P.K. 1969 ; Sareen, T.S., Khosla, P.K. & Mehra, P.N. 1974

lacerus Buch. Ham.

32 Mehra, P.N. & Sareen, T.S. 1969 ; Sareen, T.S., Khosla, P.K. & Mehra, P.N. 1974

frigidus Wall.

32 Mehra, P.N. & Khosla, P.K. 1969 ; Sareen, T.S., Khosla, P.K. & Mehra, P.N. 1974

hamiltonianus Wall.

32 Mehra, P.N. & Sareen, T.S. 1969 ; Sareen, T.S., Khosla, P.K. & Mehra, P.N. 1974

pendulus Wall.

32 Mehra, P.N. & Sareen, T.S. 1969 ; Sareen, T.S., Khosla, P.K. & Mehra, P.N. 1974

* The combination *Casuarina equisetifolia* was made by J.R. & G. Forst. (DPPI : 34).

tingens Wall. ex Roxb.

- 32 Mehra, P.N. & Singh, A. 1963 ;
Singhal, V.K. *et al.* 1980a

Loeseneriella A.C. Smith

16 ; South China, South East Asia,
Indo-Malesia and Australia. 4 ; chiefly in
South Western Peninsula, and Bangla Desh
and Sri Lanka.

macrantha (Korth.) A.C. Smith

Hippocratea macrantha Korth.

- 28 Mehra, P.N. & Khosla, P.K.
1969

Lophopetalum Wight ex Arn.

4 ; Indo-China and West Malaysia. 3 ;
Western Peninsula, and Assam, and Bangla
Desh.

fimbriatum Wight

- 40 Mehra, P.N. & Khosla, P.K. 1969 ;
Sareen, T.S., Khosla, P.K. & Mehra,
P.N. 1974

Maytenus Molina

225 ; tropics. About 16 ; chiefly in
Himalaya and Western Peninsula, and Nepal,
Pakistan, Bhutan, Bangla Desh and Sri
Lanka.

acuminata (Linn. f.) Loes.

Gymnosporia acuminata Hook. f.

- 36 Mehra, P.N. & Khosla, P.K. 1969 ;
Sareen, T.S., Khosla, P.K. & Mehra,
P.N. 1974

emarginatus (Willd.) Ding - Hon

senegalensis (Lam.) Exell

- 52 Midge, J. & Josseland, N. 1972

Gymnosporia spinosa (Forsk.) Fiori

- 54 Adatia, R.D. & Gavde, G. 1962

rothiana (Walp) Raman

Gymnosporia rothiana Wight & Arn.*

- 24 Adatia, R.D. & Gavde, G. 1962

rufa (Wall.) Hara

Gymnosporia rufa Laws.

- 36 Mehra, P.N. & Khosla, P.K. 1969 ;
Sareen, T.S., Khosla, P.K. & Mehra,
P.N. 1974

CERATOPHYLLACEAE S.F. Gray

1/over 10 ; cosmopolitan. 1/1 - 2 ; throughout India, and Sri Lanka.

Ceratophyllum Linn.

10 ; throughout the world. 1-2 ; through-
out India, and Sri Lanka.

demeratum Linn.

- c.24 Tischler, G. 1934
24 Váchová, M. & Feráková, V. 1978,
1980
24, 48 Skalińska, M. *et al.* 1978
38 Bir, S.S. & Sidhu, M. 1978

* The combination *Gymnosporia rothiana* should be attributed to Laws. (FHD : 320).

CHENOPODIACEAE Vent.

About 102/over 1,400 ; chiefly in Australia, the Pampas, the Prairies, the Mediterranean coasts, the Karoo (South Africa), the Red Sea Shores, the South West Caspian coast, Central Asia (Caspian to Himalaya - deserts) and the salt steppes of East Asia. 18/46 ; chiefly in Western Himalaya, inhabit from the seacoast to 5,300 m in the Himalaya, and Nepal, Pakistan, Bangla Desh and Sri Lanka a few cultivated.

Acroglchin Schrad.

2 ; Northern India and China. 1 ; Western Himalaya and Khasi Hills (up to 2,000 m), and Nepal.

chenopodioides Schrad.

36 Josimovich, V.P. (Fedorov)

persicarioides (Poir.) Moq.

36 Kjellmark, S. 1934

Arthrocnemum Moq.

20 ; the coasts of Mediterranean to Australia, and warm North America. 2 ; Bengal, Circars, Gujarat, Bombay and Deccan Peninsula, and Sri Lanka.

glaucum (Dollé) Ung. Sternb.

36 Castro, D. de & Fontes, F.C. 1946 (D. 1955) ; Contandriopoulos, I. 1968 ; Labadie, J.P. 1976

indicum Moq.

18 Mahabale, T.S. & Solanky, I.N. 1954

Atriplex Linn.

200 ; temperate and subtropics. 5 - 6 ; Western Himalaya (up to 4,000 m), North Western India and Peninsular India, and Pakistan and Sri Lanka - 1 cultivated.

crassifolia C.A. Mey.

18 Mehra, P.N. & Malik, C.P. 1961b, 1963 ; Tandon, S.L. & Tawakley, M. 1970 ; Tawakley, M. & Tandon, S.L. 1974

hortensis Linn.

18 Tjebbes, K. 1928 ; La Cour, L.F. 1931 ; Kjellmark, S. 1934 ; Frankton,

C. & Bassett, I.J. 1968 ; Tandon, S.L. & Tawakley, M. 1970 ; Nassar, N.M. *et al.* 1973 ; Tawakley, M. & Tandon, S.L. 1974 ; Hindáková, M. & Schywarzová, T. 1980

annularis Royle

72 Mehra, P.N. & Malik, C.P. 1961b, 1963

rosea Linn.

18 Wulff, H.D. 1936 ; Mulligan, G.A. 1957 ; Bassett, I.J. & Crompton, C.W. 1970

stocksii Boiss.

36 Baquar, S.R. *et al.* 1966 ; Bassett, I.J. 1969

tatarica Linn.

18 Tarnavschij, I.T. 1948 ; Pólya, L. 1949 ; Bassett, I.J. 1969 ; Murin, A. & Chaudhri, I.I. 1970 ; Delay, J. 1971b

Axyris Linn.

7 ; South Russia to East Siberia and Korea. 1 ; Western Himalaya (between 2,600 and 4,600 m), and Pakistan.

amaranthoides Linn.

18 Mulligan, G.A. 1957 ; Löve, A. & Löve, D. 1964 ; Bassett, I.J. & Crompton, C.W. 1971

Beta Linn.

6 - 13 ; Europe and Mediterranean. 1 ; cultivated.

vulgaris Linn.

9, 18 Yu, M.H. 1980

- 9, 18, 27 Jong, J.H. De & Bock, T.S.M. De 1978
- 18 Winge, Ö. 1917a, b; Kuzmina, N.E. (Fedorov); Lewitsky, G.A. (Fedorov); Oksijuk, P. (Fedorov); Sugiura, T. 1927; Vilmorin, R. de & Simonet, M. 1927b; Delaunay, L. (Fedorov); Frywer, C. 1931; Sirotina, M. (Fedorov); Kachidze, N.T. (Fedorov); Wulff, H.D. 1936; Jaikovskar, N.E. (Fedorov); Josimovich, V.P. (Fedorov); Levan, A. 1942b; Delay, C. 1947; Titz, W. 1965; De, D. 1967; Walia, K. 1970; Bosermark, N.O. & Bormotov, V.E. 1971; Nassar, N.M. *et al.* 1973; Basu, R.K. & Mukherjee, K.K. 1975; Yu, M.H. 1977; Humphries, C.J. *et al.* 1978
- 18, 19, 38 (Hypertetraploid cell) Tsuchiya, T. & Nakamura, C. 1979
- 18, 26-39 Zaikovskaya, N.E. *et al.* 1975
- 18, 36 Walla, K. 1971
- 32, 35, 36, 37, 38, 39, 54 Hornsey, K.G. 1973
- 35, 36, 37 Turbin, N.U. & Bormotov, U.E. 1969
- 35, 37 Turbin, N.V. & Bormotov, V.E. 1968
- var. *orientalis*
- bengulensis* Roxb.
- 18 Mehra, P.N. & Malik, C.P. 1961b, 1963
- palanga* Basu & Mukherjee
- 18 Basu, R.K. & Mukherjee, K.K. 1975
- syn. *maritima* (Linn.) Arcang.
- maritima* L.
- 18 Winge, Ö. 1925; Sirotina, M. (Fedorov); Delay, J. 1967
- Chenopodium* Linn.
- About 100-150; temperate. 8-10; chiefly in Himalaya (up to 4,620 m), 2 occur throughout India, and Nepal, Pakistan, Bangla Desh and Sri Lanka - a few naturalized.
- album* Linn.
- 18 Winge, Ö. 1917a, b; Mauds, P.F. 1939; Löve, A. & Löve, D. 1944b, 1956b; Delay, C. 1947; Raghavan, R.S. & Arora, C.M. 1958; Josimovich, V.P. (Fedorov); Bhattacharya, S.S. *et al.* 1971; Dvořák, F. & Grüll, F. 1978
- 18, 36 Rohweder, H. 1937
- 18, 36, 54 Mehra, P.N. & Malik, C.P. 1961b, 1963
- 18, 42 Roy, R.P. & Thakur, V. 1961a
- 18, 54 De, D. 1967; Sharma, A. & Sarkar, A.K. 1967-1968
- 36 Cooper, G.O. 1935; Witte, M.B. 1947; Heiser, C.B. & Whitaker, T.W. 1948; Soraa, V. 1962; Labadie, J.P. 1976
- 54 Kjellmark, S. 1934; Cole (Löve, A. & Löve, D. 1961b); Löve, A. & Löve, D. 1961b; Giusti, L. 1964; Taylor, R.L. & Mulligan, G.A. 1968; Uotila, P. 1972, 1974; Dvořák, F. *et al.* 1975; Crompton, C.W. & Bassett, I.J. 1976; Bir, S.S. & Sidhu, M. 1980; Tanaka, R. & Tanaka, A. 1980
- 54, c. 54 Uotila, P. 1973
- var. *album*
- 54 Keener, C.S. 1970; Bassett, I.J. & Crompton, C.W. 1971
- ssp. *amaranticolor* Coste & Reynier
- amaranticolor* Coult. & Rose
- 36 Wulff, H.D. 1936
- giganteum* D. Don
- 54 Giusti, L. 1964
- ambrosioides* Linn.
- 16 Mehra, P.N. & Malik, C.P. 1963
- 16, 32, 48 ?, 64 Kawatani, T. & Ohno, T. 1950 (D. 1955)
- 32 Lorz, A. 1937; Voroshilov, V.N. (Fedorov); Raghavan, R.S. & Arora, C.M. 1958; Mehra, P.N. & Malik, C.P. 1961b; De, D. 1967; Hau, C.-C. 1968; Björkqvist, I. *et al.* 1969; Giusti, L. 1970; Uotila, P. 1973, 1974
- 36 Kjellmark, S. 1934; Heiser, C.B. & Whitaker, T.W. 1948; Josimovich, V.P. (Fedorov)
- 64 Suzuka, O. & Koriba, S. 1949 (D. 1955)
- botrys* Linn.
- 18 Mulligan, G.A. 1961a; Mehra, P.N.

& Malik, C.P. 1961b, 1963; Podlech, D. & Diesterle, A. 1969; Keener, C.S. 1970; Bassett, I.J. & Crompton, C.W. 1971; Uotila, P. 1973, 1974; Dvořák, F. *et al.* 1980; Schwarzová, T. 1980

betifolium Smith

- 18 Kjellmark, S. 1934; Cole, M.J. 1962; Thakur, V. & Gupta, S.R. 1969; Uotila, P. 1973
18, 36 Kawatani, T. & Ohno, T. 1962

asp. Monianum Aellen

- 18 Thakur, V. & Gupta, S.R. 1969

glaucum Linn.

- 18 Wulff, H.D. 1936; Pólya, L. 1949; Hara, H. 1952; Löve, A. 1954b; Kawatani, T. & Ohno, T. 1956; Mulligan, G.A. 1959; Podlech, D. & Diesterle, A. 1969; Uotila, P. 1973, 1974; Tanaka, R. & Tanaka, A. 1980; Schwarzová, T. 1980
36 Dvořák, F. *et al.* 1980

var. glaucum

- 18 Crompton, C.W. & Bassett, I.J. 1976

hybridum Linn.

- 18 Winge, O. 1917a, b; Kjellmark, S. 1934; Pólya, L. 1949; Löve, A. 1954b; Kawatani, T. & Ohno, T. 1956; Gadella, T.W.J. & Kliphuis, E. 1966
36 Cooper, G.O. 1935; Löve, A. 1954a

marale Linn.

- 18 Winge, O. 1917a, b; Rohweder, H. 1937; Heiser, C.B. & Whitaker, T.W. 1948; Kawatani, T. & Ohno, T. 1956; Diers, L. 1961; Mehra, P.N. & Malik, C.P. 1961b, 1963; Giusti, L. 1970; Dahlgren, R. *et al.* 1971; Kliphuis, E. & Wieffering, J.H. 1972; Uotila, P. 1973, 1974; Crompton, C.W. & Bassett, I.J. 1975, 1976; Dvořák, F. *et al.* 1980; Schwarzová, T. 1980

opulifolium Schrad.

- 18 Kawatani, T. & Ohno, T. 1956; Thakur, V. & Gupta, S.R. 1969; Crompton, C.W. & Bassett, I.J. 1976
36 Wulff, H.D. 1936

54 Mehra, P.N. & Malik, C.P. 1961b, 1963; Cole, M.J. 1962; Uotila, P. 1973, 1974; Dvořák, F. *et al.* 1979; Schwarzová, T. 1980

Eurotia Adans. *emend.* C.A. Mey.

8; North Africa, Central and East Europe, temperate Asia, West North America and North Mexico. 1; Western Himalaya (between 2,600 and 4,600 m).

ceratoides (Linn.) C.A. Mey.

- 36 Wulff, H.D. 1936; Josimovich, V.P. (Fedorov)

Haloxylon Bunge

10; West Mediterranean to Mongolia, South to Persia, Afghanistan, Burma and South West China. 3; Punjab and Peninsular India, and Pakistan.

recurvum Boiss. & Bunge

- 22 Baquar, S.R. *et al.* 1966

salsoricum (Moq.-Tand.) Bunge

- 18 Murin, A. & Chaudhri, I.I. 1970

Kochia Roth

90; Central Europe, temperate Asia, North and South Africa and Australia. 4; Western Himalaya, North Western India, and Peninsular India, and Pakistan - a few cultivated.

indica Wright

- 18 Ahuja, M.R. & Natarajan, A.T. 1957; Mehra, P.N. & Malik, C.P. 1961b, 1963; Bir, S.S. & Sidhu, M. 1980

prostrata (Linn.) Schrad.

- 18 Pope, C.L. & McArthur, E.D. 1977

scoparia Schrad.

- 18 Cooper, G.O. 1935; Wulff, H.D. 1936; Lorz, A. 1937; Mehra, P.N. & Malik, C.P. 1961b; Semiotrocheva, N.L. 1971; Popova, M.T. & Česáň-medjiev, I.V. 1978

telekophylla Voss.

- 18 Cooper, G.O. 1935 ; Wulff, H.D. 1936 ; Witte, M.B. 1947

Salsola Linn.

150 ; cosmopolitan, maritime or on salt steppes. 5 ; Punjab, Uttar Pradesh and Delhi, and Pakistan.

barysoma (Schult.) Dandy

- 18 Murin, A. & Chaudhri, I.I. 1970

kali Linn.

- 36 Cooper, G.O. 1935 ; Wulff, H.D. 1936, 1937a ; Lorz, A. 1937 ; Rohweder, H. 1937 ; Heiser, C.B. & Whitaker, T.W. 1948 ; Mulligan, G.A. 1961a ; Waisel, Y. 1962 ; Josimovich, V.P. (Fedorov) ; Gadella, T.W.J. & Kliphuis, E. 1966 ; Delay, J. 1969b ; Bassett, I.I. & Crompton, C.W. 1970

vermiculata Linn.

- 18 Reese, G. 1957

Spinacia Linn.

3 ; East Mediterranean to Central Asia and Afghanistan. 1 ; cultivated.

oleracea Linn.

- 12 Stompa, T.J. 1910, 1911 ; Strasburger, E. 1910b, 1911 ; Winge, O. 1917a, b ; Litardiere, R. de 1923 ; Langlet, O.F.J. 1927b ; Maeda, T. & Kato, K. 1929 ; Sinotô, Y. 1929b ; Tuschnjakova, M.M. (Fedorov) ; Haga, T. 1935 ; Lorz, A. 1937 ; Araratyan, A.G. (Fedorov) ; Gentscheff, G. & Gustafsson, Å. 1939 ; Delay, C. 1947 ;

- Rose, S. & Janick, I. 1961 ; Mehra, P.N. & Malik, C.P. 1961b ; De, D. 1967 ; Nassar, N.M. *et al.* 1973 ; Ramanna, M.S. 1976

- 18 Gupta, K.C. *et al.* 1968

Suaeda Forsk. ex Scop.

110 ; cosmopolitan. 4 ; North Western India, Upper Gangetic Plain, East and West Coasts, and Sri Lanka.

fruticosa Forsk.

- 18 Malik, C.P. & Tandon, S.L. 1959c, 1960 ; Delay, J. 1969b
18, 36 Delay, J. 1970d
18, 36, 54 Mehra, P.N. & Malik, C.P. 1961b, 1963
36 Joshi, A.C. 1935a, b ; Josimovich, V.P. (Fedorov)

maritima (Linn.) Dum.

- 18 Jinno, T. 1956b ; Hara, H. & Kurosawa, S. 1963b ; Sidhu, S.S. 1961 ; Subramanian, D. 1980c
36 Wulff, H.D. 1937a ; Tarnavski, I.T. 1938 ; Pólya, L. 1948 ; Tschermak-Woess, E. & Doležal, R. 1953 ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Jasimovich, V.P. (Fedorov) ; Delay, J. 1968b ; Laana, M.M. 1969b ; Bassett, I.I. & Crompton, C.W. 1976

nudiflora Moq.

- 36 Sidhu, S.S. 1961

ssp. *maritima*

- 36 Labadie, J.P. 1976

monica Forsk.

- 18 Sidhu, S.S. 1961 ; Subramanian, D. 1980c

CHLORANTHACEAE R. Br. ex Sims.

5/65 ; tropics and subtropics. 2/2 ; Eastern Himalaya, Assam, hills of Western Ghats and Andaman Islands, and Bhutan and Bangla Desh.

Sarcandra Gardn.

3 ; East Asia and Indo - Malesia. 1 ; hills of Western Ghats.

Irvingbaileyi Swamy

- 30 Shetty, B.V. 1961

CIRCAEASTERACEAE (Kuntze ex) Hutch.

1/1 ; temperate Asia. North Western Himalaya and Sikkim, and Bhutan.

Circaeaster Maxim.1 ; North Western Himalaya and Sikkim,
and Bhutan to North West China.**agrestis** Maxim.

30 Junell, S. 1930, 1931

CLEOMACEAE ? (Pax) Airy Shaw

12/over 275 ; tropics and subtropics. 1/16 ; mostly in drier regions, and in Pakistan and Sri Lanka.

Cleome Linn.About 150 ; tropics and subtropics. 16 ;
mostly in drier regions, and in Pakistan and
Sri Lanka - a few cultivated.**aspera** Linn.24 Rao, B.H. *et al.* 1979**brachycarpa** Vahl ex DC.56 Bhandari, A.K. & Bhandari, M.M.
1974
60 Baquar, S.R. *et al.* 1965**cheilanthifolia** Linn. f.20 Raghavan, T.S. 1937, 1938b
34 Raghavan, T.S. & Venkatasubban,
K.R. 1941a**gynandra** Linn.20 Raghavan, R.S. & Kambale, S.Y. 1979
32 Subramanyam, K. & Kambale, N.P.
1971
34 Sarkar, A.K., Datta, N. & Chatterjee,
U. 1980**Gynandropsis gynandra** (Linn.) Briq.34 Baquar, S.R. *et al.* 1966

36 Bir, S.S. & Sidhu, M. 1974

Gynandropsis pentaphylla DC.30 Sugiura, T. 1937b
32 Rao, V.S. 1936b
34 Raghavan, T.S. 1938a, b ; Roy, R.P.
& Saran, J. 1960**monophylla** Linn.22 Sugiura, T. 1936a, b ; Sanjappa, M.
1978**rutidosperma** DC.20 Sarkar, A.K., Chakraverty, M. *et al.*
1980**spinosa** Linn.20 Ufer, M. 1937 ; Kyhos, D.W. 1966
24 Sugiura, T. 1936a, b, 1937a
38 Taylor, W.R. 1925**viscosa** Linn.20 Janaki Ammal, E.K. 1933 ; Bir, S.S.
& Sidhu, M. 1975 ; Sanjappa, M.
1978
22 Baquar, S.R. & Husain, S.A. 1967**sp.**

48 Raman, V.S. & Kesavan, P.C. 1963b

CLUSIACEAE Lindl.

(=GUTTIFERAE Juss.)

40/1,000 ; chiefly in tropics. 8/57 ; chiefly in Eastern Himalaya, Assam, Bengal, and Western Peninsula, and Bhutan, Bangla Desh and Sri Lanka.

Calophyllum Linn.

112 ; 8 in Madagascar and Mauritius, 100 in Indo-Malesia, Indo-China, Pacific and tropical Australia, 4 in tropical America and West Indies. 16 ; chiefly in Peninsular India and East and West coast, and Bangla Desh and Sri Lanka.

inophyllum Linn.

32 Tixier, P. 1953 ; Hsu, C.-C. 1968 ; Sanjappa, M. & Sathyananda, N. 1979

Garcinia Linn.

400 ; tropics (especially Asia), and South Africa. 24 ; chiefly in Khasi Hills, Bengal and Peninsular India, and Bhutan, Bangla Desh and Sri Lanka.

cambogia Desr.

c. 58 Krishnaswamy, N. *et al.* 1954

indica Chois.

48 Thombre, M.V. 1964 ; Chennaveeriah, M.S. & Razdan, M.K. 1975
c. 54 Krishnaswamy, N. & Raman, V.S. 1949

mangostana Linn.

c. 76 Krishnaswamy, N. & Raman, V.S. 1949

96 Tixier, P. 1960 ; Chennaveeriah, M.S. & Razdan, M.K. 1975

speciosa Wall.

c. 55 Krishnaswamy, N. & Raman, V.S. 1949

xanthochymus Hook. f.*tinctoria* Dunn.

c. 80 Krishnaswamy, N. *et al.* 1954

Mammea Linn.

49 ; 1 tropical America and West Indies, 1 tropical Africa, 20 Madagascar, 27 Indo-Malesia and Pacific. 3 - 4 ; Western Ghats and Lushai Hills - a few cultivated.

slamensis T. Anders.*Ochrocarpus slamensis* T. Anders.

32 Tixier, P. 1953

Mesua Linn.

40 ; Indo-Malesia. 1 ; Eastern Himalaya, Assam, West Bengal, the Andamans and Western Ghats, also cultivated.

ferrea Linn.

32 Tixier, P. 1953

COBAEACEAE D. Don

1/18 ; America. 1/1 ; cultivated.

Cobaea Cav.

18 ; tropical America. 1 ; cultivated.

scandens Cav.

52 Flory, W. S. 1937a ; Janaki Ammal, E.K. (D. 1955) ; Grant, V. 1959 (Löve, A. & Löve, D. 1961b)

COCHLOSPERMACEAE Planch

2/20 25 ; tropics. 1/1 ; dry forests of India.

Cochlospermum Kunth

15 - 20 ; tropics. 1 ; dry forests of India.

gossypium DC.

12 Gill, B.S., Bir, S.S. & Singhal, V.K. 1979a

COMBRETACEAE R. Br.

20/600 ; tropics and subtropics. 6/32 ; widely distributed in India, with more species in Deccan Peninsula and Bengal, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Anogeisus Wall. ex Guill. & Perr.

11 ; tropical Africa, Arabia, India and South East Asia. 5 ; throughout the greater part of India, and Pakistan and Sri Lanka.

sericea Brandis

24 Gill, B.S., Bir, S.S. & Singhal, V.K. 1979a

Combretum Loefl.

250 ; tropics (excluding Australia). 10 ; Sikkim, Assam, Bengal, Punjab and Deccan Peninsula, and Nepal, Bangla Desh and Sri Lanka.

coccineum Lam.

36 Nanda, P.C. 1962

decandrum Roxb.

26 Mehra, P.N. & Khosla, P.K. 1969, 1972

latifolium Blume*extensum* Roxb.

26 Mehra, P.N. & Khosla, P.K. 1969, 1972

ovalifolium Roxb.

52 Gill, B.S., Bir, S.S. & Singhal, V.K. 1979a

Getonia Roxb.

1 ; Indo-Malesia. Peninsular India, Madhya Pradesh and Assam.

floribunda Roxb.*Calycopteris floribunda* Lam.

48 Gajapathy, C. 1962b

Quisqualis Linn.

17 ; tropics and South Africa, and Indo-Malesia. 2 ; 1 Deccan Peninsula, 1 cultivated.

densiflora Wall.52 Singhal, V.K. *et al.* 1980b*indica* Linn.

22 Rajagopalan, V.R. 1949

24 Sobti, S.N. & Singh, S.D. 1961

26 Sen, S. & Sen, N.K. 1954 ; Sen, S. 1955b ; Sarkar, A.K. *et al.* 1974*Terminalia* Linn.

250 ; tropics. 12 ; some almost throughout India, some in Eastern India and Deccan Peninsula, and Nepal, Bhutan and Sri Lanka - a few cultivated.

alata Heyne ex Roth*tomentosa* Wight & Arn.

14 Nanda, P.C. 1962

- 24 Janaki Ammal, E.K. 1962 ; Sobti, S.N. 1962a ; Sanjappa, M. & Raju, R. 1980
 48 Mehra, P.N. 1972
- arjuna* Wight & Arn.
 24 Janaki Ammal, E.K. 1962 ; Sanjappa, M. 1979
 26 Sen, S. 1955b
- bellirica* Roxb.
 24 Mehra, P.N. & Khosla, P.K. 1969, 1972 ; Mehra, P.N. 1972
 26 Sen, S. 1955b
 48 Janaki Ammal, E.K. 1962 ; Sobti, S.N. 1962a
- catappa* Linn.
 24 Simmonds, N.W. 1954 ; Sen, S. 1955b ; Riley, H.P. 1960 ; Chuang, T.I. *et al.* 1963

- chebula* Retz.
 14 Nanda, P.C. 1962
 24 Mehra, P.N. & Khosla, P.K. 1972
 24, 48 Janaki Ammal, E.K. 1962 ; Sobti, S.N. 1962a
 26 Sen, S. 1955b
 72 Gill, B.S., Bir, S.S. & Singhal, V.K. 1979a
- crenulata* Roth
 24 Mehra, P.N. & Khosla, P.K. 1969, 1972 ; Mehra, P.N. 1972 ; Sanjappa, M. 1979
- myriocarpa* Heurck & Muell.
 24 Mehra, P.N. & Khosla, P.K. 1969, 1972
- olivieri* Brandis
 24 Singhal, V.K. *et al.* 1980a

CONVOLVULACEAE Juss.

55/over 1,650 ; tropics and temperate. 22/170 ; chiefly in Southern and Western India, a few in Himalaya, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka - a few cultivated.

Aniseia Choisy

5 ; tropics, especially America. 1 ; throughout India.

martincensis Choisy

60 Miège, J. 1960a

Argyreia Lour.

90 ; Indo-Malesia, 1 in Australia. 50 ; mostly in Southern and Western India and tropical Eastern Himalaya (up to 1,650 m), and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

argentea Arn. *ex* Choisy

28 Sharma, A.K. & Chatterji, A.K. 1957, 1958c

campanulata Choisy

28 Vij, S.P. *et al.* 1974, 1977

cuneata Ker-Gawl.

30 Sampathkumar, R. 1971, 1979

hirsuta Arn.

30 Sampathkumar, R. 1971, 1979

hookeri Clarke

30 Majla, S.B., Saiju, H. *et al.* 1977

nervosa (Burm. f.) Boj.

30 Watanabe, K. 1939 (D. 1955)

Calystegia R. Br.

25 ; temperate and tropics. 1 ; Punjab to North Bengal, and Nepal and Sri Lanka.
hederacea Wall.

22 Nakajima, G. 1931 ; Vij, S.P. *et al.* 1977

Convolvulus Linn.

About 250 ; widely distributed throughout the world, abundant in temperate

regions. 12 ; chiefly in drier parts of Punjab, Western and Southern India, and Pakistan and Sri Lanka.

arvensis Linn.

- 24 Bir, S.S. & Neelam 1980
32, 48 Vij, S.P. & Singh, S. 1976
48 Khoshoo, T.N. & Usha Sachdeva 1961 ; Gill, L.S. 1972 ; Stace, C.A. 1973 ; Vij, S.P. *et al.* 1974 ; Queiros, M. 1978
50 Wolcott, G.B. 1937 ; Hagerup, O. 1941b ; Heiser, C.B. & Whitaker, T.W. 1948 ; Garajová, S. 1959 ; Sa'ad, F. 1967 ; Bir, S.S. & Sidhu, M. 1980

varicosus (A. Rich.) Bhandari

glomeratus Choisy

- 28 Baquar, S.R. & Husain, S.A. 1967

microphyllus Sieb. *ex* Spreng.

- 18 Bir, S.S. & Sidhu, M. 1980
24 Bir, S.S. & Neelam 1980
36 Baquar, S.R. *et al.* 1968

pluricaulis Choisy

- 18,36 Malik, C.P. & Tandon, S.L. 1959a ; Tandon, S.L. & Malik, C.P. 1959 ; Tandon, S.L. 1960 ; Malik, C.P. & Grover, I.S. 1968 ; Vij, S.P. & Singh, S. 1976
20 Singh, B. 1951
40 Baquar, S.R. *et al.* 1965

var. *pluricaulis*

- 18 Vij, S.P. *et al.* 1974

var. *macra*

- 36 Vij, S.P. *et al.* 1974

Cressa Linn.

5 ; tropics and subtropics. 1 ; throughout India, and Pakistan and Sri Lanka.

cretica Linn.

- 28 Baquar, S.R. *et al.* 1965 ; Sampathkumar, R. 1968 ; Murin, A. & Chaudhri, I.I. 1970 ; Vij, S.P. *et al.* 1974

Dichondra J.R. & G. Forst.

4 + 5 ; tropics and subtropics. 1 ; cultivated.

repens J.R. & G. Forst.

- 24 Hsu, C. - C. 1967
30 Covas, G. & Schnack, B. 1947 ; Hair, J.B. 1963

Evolvulus Linn.

About 100 ; tropics and subtropics, abundant in America. 2 ; 1 throughout India, 1 naturalized in hotter parts, and Sri Lanka.

alstonoides Linn.

- 22 Bir, S.S., Kumari, S. *et al.* 1978
26 Raghavan, R.S. 1959b ; Mehra, P.N. & Vasudevan, K.N. 1972 ; Vij, S.P. *et al.* 1973, 1977

nummularius Linn.

- 24 Tiwary, N.K. & Rao, V.S. 1936 ; Sharma, A.K. & Chatterji, A.K. 1957 ; Sampathkumar, R. 1968

Hewittia Wight & Arn.

1 2 ; tropical Africa, East Asia and Indo-Malesia. 1 ; Peninsular India.

sublobata (Linn. f.) Kuntze

- 30 Watanabe, K. 1939 ; Mangenot, S. & Mangenot, G. 1962 ; Sampathkumar, R. 1979

bicolor Wight & Arn.

- 30 Sharma, A.K. & Chatterji, A.K. 1957, 1958c

Ipomoea Linn.

About 500 ; tropics and warm temperate. About 64 ; chiefly in Southern, Western and Eastern India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka a few cultivated.

alba Linn.

- 30 Lewis, W.H. *et al.* 1967 ; Jones, A. 1968

bona-nox Linn.

- 30 Sharma, A.K. & Datta, P.C. 1958 ; Jones, A. 1964 ; Vij, S.P. *et al.* 1974, 1977

- angulata* Bojer*
 28 Jones, A. 1964
 30 Kano, T. 1929 (Sharma, A.K. & Datta, P.C. 1958)
- aquatica* Forsk.
 30 Watanabe, K. 1939 (Nakajima, G. 1963); Lewis, W.H. & Oliver, R.L. 1970; Krishnappa, D.G. 1971; Sampathkumar, R. 1971, 1979; Vij, S.P. *et al.* 1974, 1977
 30, 30+1 Krishnappa, D.G. 1967
- reptans* (Linn.) Poir.
 28, 30 Sampathkumar, R. 1968
 30 Rao, N.S. 1947a; Sharma, A.K. & Datta, P.C. 1958; Miège, J. 1960b; Jones, A. 1964
- arachnosperma* Welw.
pilosa Sweet
 30 Bir, S.S. & Kumari, S. 1975; Bir, S.S. & Kumari, S. *et al.* 1978
- arborescens* (HBK) G. Don
 30 King, J.R. & Bamford, R. 1937; Ting, Y.C. *et al.* 1957; Shibata, K. 1962a
 60 Jones, A. 1968
- asarifolia* (Desr.) Roem. & Schult.
 30 Ting, Y.C. *et al.* 1957; Sampathkumar, R. 1979
- repens* Lam.
 30 Mangenot, S. & Mangenot, G. 1962
 30, 60 Sampathkumar, R. 1969
- batatas* (Linn.) Lam.
 45, 90, 120 Sampathkumar, R. 1968
 84 Kano, T. 1929 (Rao, N.S. 1947a)
 90 King, J.R. & Bamford, R. 1937; Rao, N.S. 1947a; Ting, Y.C. & Kehr, A.E. 1953; Sharma, A.K. & Datta, P.C. 1958; Nishiyama, I. *et al.* 1961; Wedderburn, M.M. 1967; Magoon, M.L. *et al.* 1970; Vij, S.P. *et al.* 1977
- var. *batatas*
 90 Nishiyama, I. 1971
- cairica* (Linn.) Sweet
 28, 30 Sampathkumar, R. 1969
 30 King, J.R. & Bamford, R. 1937; Nakajima, G. 1963; Jones, A. 1964, 1968; Hsu, C. - C. 1967; Miège, J. & Jossierand, N. 1972; Sampathkumar, R. 1979
- palmata* Forsk.
 30 Sharma, A.K. & Datta, P.C. 1958
 30+0
 -1B Vij, S.P. *et al.* 1974
 30, 30+
 1B Vij, S.P. *et al.* 1977
- campanulata* Linn.
 30 Watanabe, K. 1939 (Sharma, A.K. & Datta, P.C. 1958)
- carnea* Jacq.
 30 Rao, N.S. 1947a; Ting, Y.C. *et al.* 1957; Sharma, A.K. & Datta, P.C. 1958; Venkateswarlu, J. & Ramana, T.V. 1962a; Jones, A. 1964; Vij, S.P. *et al.* 1974, 1977
 30, 32 Sampathkumar, R. 1968
- ssp. *fistulosa* (Mart. ex Choisy) Austin
crassicaulis (Benth.) Robins.
 30 Jones, A. 1964; Krishnan, R. *et al.* 1969; Sampathkumar, R. 1979
- fistulosa* Mart. ex Choisy
 30 Jones, A. 1964; Vij, S.P. *et al.* 1974, 1977
- chryseides* Ker
 30 Vij, S.P. *et al.* 1977
- coccinea* Linn.**
 28 Sharma, A.K. & Datta, P.C. 1958; Vij, S.P. *et al.* 1977
- optica* (Linn.) Roth
 28 Sampathkumar, R. 1979

* * The combination *Ipomoea angulata* was made by Lam, and it is a synonym of *I. hederifolia* Linn. (FHD : 471; HFDD : 325).

** *I. coccinea sensu* Clarke, FBI, 4 : 99, non Linn. is a synonym of *I. hederifolia* Linn. (HFDD : 325).

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dissecta Willd.

- 28 Sampathkumar, R. 1971
30 Miège, J. 1962

dichroa Choisy

- 30 Vij, S.P. *et al.* 1974, 1977

digitata Linn.*

- 30 King, J.R. & Bamford, R. 1937 ;
Sharma, A.K. & Datta, P.C. 1958 ;
Miège, J. 1962 ; Jones, A. 1964

erlocarpa R. Br.

- 30 Vij, S.P. *et al.* 1974, 1977

hispida Roem. & Schult.

- 30 Sharma, A.K. & Datta, P.C. 1958 ;
Miège, J. 1960a

gracilis R. Br.

- 30 Wedderburn, M.M. 1967
60 Ting, Y.C. *et al.* 1957 ; Nishiyama, I.
et al. 1961 ; Jones, A. 1970 ;
Nishiyama, I. 1971 ; Martin, F.W. &
Jones, A. 1972

grandiflora Parodi**

- 30 Sharma, A.K. & Datta, P.C. 1958

hederacea (Linn.) Jacq.***

- 30 Nakajima, G. 1936, 1963 ; King, J.R.
& Bamford, R. 1937 ; Wolcott, G.B.
1937 ; Ting, Y.C. *et al.* 1957 ;
Sharma, A.K. & Datta, P.C. 1958 ;
Vij, S.P. *et al.* 1974, 1977

hederifolia Linn.

- 28 Vij, S.P. *et al.* 1974, 1977 ; Sampath-
kumar, R. 1979
30 Borgmann, E. 1964

Quamoclit phoenicea Choisy

- 28, 30 Sampathkumar, R. 1968

hirsutula Jacq.

- 30 Vij, S.P. *et al.* 1977

iodica (Burm. f.) Merr.*cathartica* Poir.

- 30 Jones, A. 1964

congesta R. Br.

- 30 Jones, A. 1968 ; Hsu, C.-C. 1968 ;
Vij, S.P. *et al.* 1974, 1977 ; Sampath-
kumar, R. 1979

leardi Paxt.

- 30 Nakajima, G. 1936, 1963 ; King, J.R.
& Bamford, R. 1937 ; Sharma, A.K.
& Datta, P.C. 1958
32 Rao, K.V.R. 1940 (D. 1955)

littoralis Blume

- 60 Nishiyama, I. 1971

lobata (Cerv.) Thell.*versicolor* Moissn.

- 28, 30 Sharma, A.K. & Datta, P.C. 1958

Mina lobata Cerv.

- 30 Sugiura, T. 1931, 1936b

Quamoclit lobata House

- 28 King, J.R. & Bamford, R. 1937 ;
Jones, A. 1964

maxima Swartz****

- 30 Sampathkumar, R. 1979

mutabilis Lindl.

- 30 Vij, S.P. *et al.* 1974
30+0-
1B Vij, S.P. *et al.* 1977

nil (Linn.) Roth

- 30 Nagao, M. 1928 ; Yasui, K. 1928 ;
Kano, T. 1929 ; Nakajima, G. 1931 ;

* *Ipomoea digitata auct. pl.* (non Linn.), FBI, 4 : 202 is a synonym of *I. mauritiana* Jacq. (RHFC, 1 : 331-332).

** *I. grandiflora sensu* Clarke, FBI, 4 : 198 *pro parte* is a synonym of *I. macrantha* Roem. & Schult. (RHFC, 1 : 331).

*** *I. hederacea auct. pl.* [non (Linn.) Jacq.], FBI, 4 : 199 is a synonym of *I. nil* (Linn.) Roth (FHD, 472 ; RHFC, 1 : 332).

**** *I. maxima auct.*, non Swartz is a synonym of *I. sepiaria* Roxb. (Raizada, M.B. 1966).

King, J.R. & Bamford, R. 1937 ;
Diers, L. 1961 ; Lewis, W.H. *et al.*
1967 ; Jones, A. 1968 ; Martin, F.W.
1970 ; Vij, S.P. *et al.* 1974, 1977 ;
Sampathkumar, R. 1979

Pharbitis nil Choisy

30 Nagao, M. 1928 ; Yasui, K. 1928 ;
Kano, T. 1929 (Tischler, G. 1931) ;
Ting, Y.C. *et al.* 1957 ; Nakajima, G.
1963 ; Jones, A. 1964

obscura (Linn.) Ker Gawl.

30 Watanabe, K. 1939 ; (Nakajima, G.
1963) ; Sharma, A.K. & Datta, P.C.
1958 ; Jones, A. 1968 ; Nordenstam,
B. 1969 ; Vij, S.P. *et al.* 1977 ; Sam-
pathkumar, R. 1979

pes-caprae (Linn.) Roth*

30 Watanabe, K. 1939 ; Miège, J. 1960a ;
Chuang, T.I. *et al.* 1963 ; Jones, A.
1964

pes-caprae (Linn.) Sweet

30 Sampathkumar, R. 1968, 1971, 1979

pes-caprae (Linn.) R. Br.

bitida Forsk.

30 King, J.R. & Bamford, R. 1937 ;
Sugiura (Tischler, G. 1938) ; Sharma,
A.K. & Datta, P.C. 1958 ; Magoon,
M.L. *et al.* 1972

30, 60 Bai, K.V. *et al.* 1969

pes-tigridis Linn.

26, 28 Sampathkumar, R. 1968
28 Jones, A. 1964 ; Sampathkumar, R.
1978, 1979
30 Watanabe, K. 1939 ; Thombre, M.V.
1959b ; Miège, J. 1960a ; Jones, A.
1968 ; Vij, S.P. *et al.* 1974, 1977 ; Bir,
S.S. & Sidhu, M. 1980

var. *capitellata* Clarke

30 Bir, S.S. & Sidhu, M. 1978

pulchella Roth**

30 Rao, N.S. 1947a

purga (Wender) Hayne

24 28 Heitz, E. 1926

purpurea (Linn.) Roth

30 Kano, T. 1929 (Wolcott, G.B. 1937) ;
Nakajima, G. 1936 ; King, J.R. &
Bamford, R. 1937 ; Delay, C. 1947 ;
Sharma, A.K. & Datta, P.C. 1958 ;
Diers, L. 1961 ; Jones, A. 1964,
1968 ; Vij, S.P. *et al.* 1974, 1977 ;
Roy, R. 1979

32 Sampathkumar, R. 1979

quamoclit Linn.

30 Sharma, A.K. & Datta, P.C. 1958 ;
Vij, S.P. *et al.* 1974, 1977 ; Sampath-
kumar, R. 1979

Quamoclit pinnata Bojer

28, 30, 32 Sampathkumar, R. 1968

30 Kano, T. 1929 (Nakajima, G. 1931) ;
Kagawa, F. & Nakajima, G. 1930 ;
Nakajima, G. 1931 ; King, J.R. &
Bamford, R. 1937 ; Sharma, A.K. &
Datta, P.C. 1958 ; Jones, A. 1964

Quamoclit vulgaris Choisy

30 Kano, T. 1929 (Tischler, G. 1931) ;
Harvey 1966

quinata R. Br.

28 Sampathkumar, R. 1968

rumicifolia Choisy

30 Baquar, S.R. *et al.* 1966

sepiaria Koen.***

28, 30, 32 Sampathkumar, R. 1968

setosa Ker - Gawl.

30 Nakajima, G. 1931 ; King, J.R. &
Bamford, R. 1937 ; Wolcott, G.B.
1937 ; Sharma, A.K. & Datta, P.C.
1958 ; Jones, A. 1968

staphylina Roem. & Schult.

30 Sanjappa, M. 1979
32 Rao, K.V.R. 1940 (D 1955) ;
Sampathkumar, R. 1968, 1979

* The combination *Ipomoea pes-caprae* was made by R. Br. (RHFC, 1 : 334).

** The combination *I. pulchella* was made by Wight and it is a synonym of *I. caerulea* (Linn.) Sweet (FHD : 470).

*** The combination *I. sepiaria* was made by Roxb. (RHFC, 1 : 338).

tiliacea (Willd.) Choisy

- 30 Nishiyama, I. *et al.* 1961
60 Ting, Y.C. *et al.* 1957; Jones, A. 1964, 1968

triflora Linn.

- 30 Nishiyama, I. *et al.* 1961; Nishiyama, I. 1971; Jones, A. 1964; Martin, F.W. & Jones, A. 1972

turbinata Lag.*muricata* (Linn.) Jacq.

- 30 Vij, S.P. *et al.* 1974, 1977; Sampathkumar, R. 1979

Calonyction muricatum G. Don

- 30 Sampathkumar, R. 1968

uniflora Roem. & Schult.*Anisela martinicensis* (Jacq.) Choisy

- 60 Miège, J. 1960a

violacea Linn.

- 30 King, J.R. & Bamford, R. 1937; Nakajima, G. 1963; Vij, S.P. *et al.* 1974, 1977

rubro-coerulea Hook.

- 30 Nakajima, G. 1931; King, J.R. & Bamford, R. 1937; Sharma, A.K. & Datta, P.C. 1958

tricolor Cav.

- 30 King, J.R. & Bamford, R. 1937; Sharma, A.K. & Datta, P.C. 1958; Jones, A. 1964, 1968

Jacquemontia Choisy

120; tropics (mostly America). 2; 1 in Assam and Western Peninsula, 1 cultivated.

caerulea Choisy

- 18 Sampathkumar, R. 1968, 1969

pentastha (Jacq.) G. Don

- 18 Lewis, W.H. & Oliver, R.L. 1970; Robertson, K.R. 1970; Vij, S.P. *et al.* 1977; Sampathkumar, R. 1979
20 Jones, A. 1968

violacea Choisy

- 18 Sharma, A.K. & Chatterji, A.K. 1957, 1958c; Raman, V.S. & Kesavan, P.C. 1963b

Lettsomia Roxb.*bella* Clarke*

- 28 Sampathkumar, R. & Ayyangar, K.R. 1980

Merremia Dennst. ex Endl.

80; warm regions. Over 15; mostly in warm parts of India, and Pakistan, Bangla Desh and Sri Lanka.

aegyptia (Linn.) Urban

- 28 Lewis, W.H. *et al.* 1967
28, 30 Vij, S.P. *et al.* 1977
30 Jones, A. 1968; Vij, S.P. *et al.* 1974

pentaphylla Hall. f.

- 30 Miège, J. 1962; Sampathkumar, R. 1968

Ipomoea pentaphylla Jacq.

- 30 Thombre, M.V. 1959b

dissecta (Jacq.) Hall. f.

- 30 Jones, A. 1968; Vij, S.P. *et al.* 1974, 1977
32 Sampathkumar, R. 1979

Ipomoea sinuata Ort.

- 30 Jones, A. 1964

gangetica (Linn.) Cufodont

- 30 Bhat, R.P. 1974, 1976; Sanjappa, M. 1979

emarginata Hall. f.

- 26, 30 Sampathkumar, R. 1968
28 Sharma, A.K. & Chatterji, A.K. 1957, 1958c
30 Sanjappa, M. 1979

hederacea (Burm. f.) Hall. f.

- 30 Baquar, S.R. 1967-1968; Sampathkumar, R. 1979

* *Lettsomia bella* Clarke has been transferred to *Argyreia*.

tridentata Hall. f.

- 22, 32 Sampathkumar, R. 1968
30 Sanjappa, M. 1979

tridentata (Linn.) Hall. f.

- ssp. *angustifolia* (Jacq.) Van Ooststr.
30 Jones, A. 1968

tuberosa (Linn.) Rendle

- Ipomoea tuberosa* Linn.
30 Sharma, A.K. & Datta, P.C. 1958

Mina Cerv.

1; Mexico to tropical South America.
Cultivated.

lobata Cerv.

- 30 Sugiura, T. 1931, 1936b

Operculina Silva Manso

25; tropics, 2; 1 sub-Himalayan tracts,
1 throughout India, and Sri Lanka.

turpethum (Linn.) Silva Manso

- 30 Watanabe, K. 1939 (D. 1955);
Sampathkumar, R. 1979

Ipomoea turpethum R. Br.

- 30 Watanabe, K. (Sharma, A.K. &
Datta, P.C. 1958)

Porana Burm. f.

25; 3 in Africa, 20 in South East Asia
and Indo-Malesia, 1 in Australia, 1 in
America. 5; chiefly in Eastern Himalaya
(up to 2,640 m in the Himalaya), and Nepal,

Bhutan and Sri Lanka - a few cultivated.

malabarica Clarke

- 28, 30 Sampathkumar, R. 1968

paniculata Roxb.

- 26 Sharma, A.K. & Chatterji, A.K. 1957,
1958c; Vij, S.P. *et al.* 1974, 1977

racemosa Roxb.

- 28 Mehra, P.N. & Vasudevan, K.N.
1972

Quamoelit Mill.*coccinea* (Linn.) Moench*

- 28 Kagawa, F. & Nakajima, G. 1930
(Tischler, G. 1935-1936); Nakajima,
G. 1931; King, J.R. & Bamford, R.
1937; Wolcott, G.B. 1937; Jones,
A. 1964

Rivea Choisy

5; India and South East Asia. 2;
mostly in drier parts of India, and Pakistan
and Sri Lanka.

hypocrateriformis Choisy

- 28 Bir, S.S. & Kumari, S. 1975; Bir,
S.S., Kumari, S. *et al.* 1978
30 Sampathkumar, R. 1971, 1979

Turbina Rafin.

10; tropical America. 1; introduced
and naturalized.

corymbosa (Linn.) Rafin.

- 30 Von Reinhard, F. 1972

CORIARIACEAE DC.

1/15; Eurasia, New Zealand, Central and South America. 1/1; temperate and subtropical
Himalaya, and Nepal and Bhutan.

* *Quamoelit coccinea* is now placed under *Ipomoea*.

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Coriaria Linn.

15 ; Mediterranean to Japan, New Zealand and Mexico to Chile. 1 ; temperate and subtropical Himalaya, and Nepal and

Bhutan.

nepalensis Wall.

40 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N. & Sarsen, T.S. 1969

CORNACEAE Dum.

12/100 ; North and South temperate, and tropical mountains. 4/11 ; Himalaya and Western Peninsular India, and Nepal, Bhutan and Sri Lanka.

Bothrocaryum (Kochne) Pojark.

3 ; Himalaya to North East Asia, and North East America. 1 ; Eastern Himalaya and Assam Hills.

controversum (Hemsl.) Pojark.

Cornus controversa Hemsl.

20 Dermen, H. 1932 ; Clay, S.N. & Nath, J. 1971

Cornus Linn.

macrophylla Wall.*

22 Mukherjee, A. & Ware, G.H. 1979

Dendrobenthamia Hutch.

12 ; Himalaya and East Asia. 1 ; Himalaya, and Bhutan (between 1,300 and

2,300 m).

capitata (Wall. ex Roxb.) Hutch.

22 Wanscher, J.H. 1933

Cornus capitata Wall.

22 Wanscher, J.H. 1933

Swida Opiz

36 ; North temperate, 3 in Mexico and 1 in North Andes. 3-4 ; Himalaya (between 1,300 and 2,600 m), and Nepal and Bhutan.

sanguinea (Linn.) Opiz

Cornus sanguinea Linn.

22 Dermen, H. 1932 ; Meurman (Löve, A. & Löve, D. 1942b) ; Pölya, L. 1949 ; Clay, S.N. & Nath, J. 1971

CORYLACEAE Mirbel.

1/15 ; North temperate. 1/3 ; Himalaya (between 1,800 and 3,500 m), and Nepal, 1 cultivated.

Corylus Linn.

15 ; North temperate. 3 ; Himalaya

(between 1,800 and 3,500 m), and Nepal, 1 cultivated.

* *Cornus macrophylla* Linn. has been transferred to *Swida*.

avellana Linn.

- 22 Wetzel, G. 1927, 1928, 1929 ;
Jaretsky, R. 1930 ; Danielsson, B.
1945
28 Woodworth, R.H. 1929 ; Tischler, G.
1934 ; Delay, C. 1947 ; Poucques,
M.L. de 1950 ; Danielsson-Santesson,
B. 1952

columna Linn.

- 14-20, 22 Kasapligil, B. 1968
28 Woodworth, R.H. 1929 ; Mehra,
P.N. & Sareen, T.S. 1973b

ferox Wall.

- 22 Kasapligil, B. 1968

CRASSULACEAE DC.

About 35/1,500 ; cosmopolitan, most abundant in South Africa. 7/74 ; chiefly in alpine Himalaya (up to 5,940 m), and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka - a few cultivated.

Echeveria DC.

150 ; South United States to Argentina.
4 ; cultivated.

agavoides Lem.

- 112 Wolf-Lindschau (Tischler, G. 1938)

secunda Booth

- 64 Rowley (D. 1955)

Kalanchoë Adans.

About 200 ; tropical and South Africa
to China and Java, 1 tropical South America.
10 ; Chiefly in hills of Southern India and
tropical Himalaya, and Bhutan, Bangla
Desh and Sri Lanka - a few cultivated.

integra (Medik.) O. Kuntze**spathulata** DC.

- 34, 68 Baldwin, J.T. 1938

laciniata (Linn.) DC.

- 34, 68 Baldwin, J.T. 1938

pinnata (Lam.) Pers.

- 36 Friedmann, F. 1971
40 Toyohuku, T. 1935 ; Baldwin, J.T.
1938 ; Uhl, C.H. 1948 ; Banerji, L
& Sen, S. 1956 ; Sarkar, A.K. *et al.*
1973a
40, 40+B Warden, J.W. 1959

Bryophyllum calycinum Salisb.

- 34, 34+4B Warden, J.W. 1958 ; Warden, J.
1959
40 Taylor, W.R. 1926 ; Toyohuku, T.
1935

Sedum Linn.

600 ; North temperate, 1 in Peru. 51 ;
Himalaya (between 1,000 and 6,000 m), and
Nepal, Pakistan and Bhutan.

ewersii Led.

- 20 Malik, N.A. & Ahmad, A.J. 1963
22 Baldwin, J.T. 1937 ; Uhl (Löve, A.
& Löve, D. 1961b)

japonicum Siebold

- 38 Charles, H.U. & Moran, R. 1972 ;
Uhl, C.H. & Moran, R. 1972

recurvatum Willd.

- 38 Sharma, A. & Sarkar, A.K. 1967-
1968

rosea (Linn.) Scop. ex Sprague

- 18 Sokolovskaya, A.P. & Strelkova, O.S.
(Fedorov)
22 Toyohuku, T. 1935 ; Sörensen &
Westergaard (Löve, A. & Löve, D.
1948) ; Jørgensen, C.A. *et al.* 1958 ;
Engelskjøn, T. & Schweitzer, H.J.
1970 ; Engelskjøn, T. & Knaben, G.
1971 ; Charles, H.U. & Moran, R.
1972

150 CRASSULACEAE

- 22, 33 Banach - Pogan, E. 1958
 22, 36 Uhl, C.H. 1952
 32 Wiens, D. & Halleck, D. 1962
 36 Taylor, R.L. & Mulligan, G.A. 1968
- rhodiola* DC.
 22 Levan, A. 1933; Toyohuku, T. 1935;
 Matsuura, H. 1939
- Rhodiola rosea* Linn.
 22 Májovský, J. et al. 1970b

Tiliaea Linn.

40; almost cosmopolitan. 2; subtropical Himalaya, Punjab and Hills of Peninsular India, and Pakistan.

pharnaceoides Hochst.

16 Skovsted, A. 1934b

CUCURBITACEAE Juss.

Above 110/640; chiefly in tropics, absent in colder regions. 40/104; chief centre in Eastern Himalaya (ascending up to 2,640 m in Himalaya), and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka - several cultivated.

Benincasa Savi

1; tropical Asia. Cultivated.

hispida (Thunb.) Cogn.

- 24 McKay, J.W. 1930, 1931; Whitaker, T.W. 1933b; Kozhuchow, Z.A. (Fedorov); Resende, F. 1937; Kurita, M. 1939

certifera Savi

- 24 Yamamoto, Y. (Kihara, H. et al. 1931); Whitaker, T.W. 1933b; Bhaduri, P.N. & Bose, P.C. 1947; Delav, C. 1947
 40 McKay, J.W. 1931

Bryonia Linn.

4; Europe, Asia, North Africa and Canary Islands. 1; North Western India.

aspera Stev. ex Ledeb.

- 40 Aryavand, A. 1980
 60 Pohlmann, J. 1977

Bryonopsis Arn.

laciniosa Naud.*

- 24 McKay, J.W. 1930, 1931; Kozhuchow, Z.A. (Fedorov); Resende, F. 1937; Delav, C. 1947; Roy, R.P. & Mishra, A.R. 1962

Citrullus Schrad. ex Eckl. & Zeyh.

3; Africa, Mediterranean and tropical Asia. 2; cultivated.

colocynthis (Linn.) Schrad.

- 22 Whitaker, T.W. 1933b; Pangalo (Fedorov); Baquar, S.R. et al. 1965; Angbel, I. 1969; Murin, A. & Chaudhri, I.I. 1970
 22, 44 Shimotsuna, M. 1961b
 24 Kozhuchow, Z.A. (Fedorov)

colocynthis x vulgaris

- 22 Singh, A.K. 1978

lanatus (Thunb.) Mansf.

- 22 Matsubayashi, M. 1954; Shimotsuna, M. 1958

**Bryonopsis laciniosa* auct. pl. non Naud. (FUGP, 1: 381; Chakravarty, 1959, Rec. Bot. Survey India, 17: 135) is a synonym of *Diplocyclos palmatus* (Linn.) Jeffrey (HFDD: 197; FHD: 177).

vulgata Schrad.

- 14 Delay, C. 1947
 22 Kozhuchow, Z.A. (Fedorov); Lewitsky (Fedorov); McKay, J.W. 1930, 1931; Passmore, S.F. 1930; Whitaker, T.W. 1930; Bennett, L.S. 1936; Yamaha, G. & Suematsu, S. 1936; Kurita, M. 1939; Khoshoo, T.N. & Vij, S.P. 1963; Anghel, I. 1969; Trivedi, R.N. & Roy, R.P. 1970
 22, 44 Shimotsuma, M. 1961b

Coccinia Wight & Arn.

30; tropics and South Africa, 1 tropical India, Malaysia. 1; throughout India, also cultivated in hotter parts.

grandis (Linn.) Voigt

- 24 Bhar, N.C. & Datta, K.B. 1981

indica Wight & Arn.

- 24 Bhaduri, P.N. & Bose, P.C. 1947; Chakravorty, A.K. 1948b
 24 (♂ 22+XY,
 ♀ 22+XX)
 36 (♂ 33+
 XXY) Kumar, L.S.S. & Vishveshwaraiah, S. 1952
 ♂ 24 (22A+XY)
 ♀ 24 (22A+2X)
 ♂ 48 (44A+2X
 +2Y)
 ♀ 48 (44A+4X)
 ♂ 36 (33A+2X
 +1Y)
 ♀ 36 (33A
 +3X) D'Cruz, R. *et al.* 1972

Cephalandra indica Naud.

- 22+XY Roy, R.P. & Mishra, A.R. 1962
 24 Sarkar, A.K., Chakraverty, M. *et al.* 1980

Corallocarpus Welw. *ex* Hook. *f.*

15; tropical Africa, India and Madagascar. 5; Peninsular and North Western India, Punjab, Madhya Pradesh, Uttar Pradesh, Bengal and Bihar.

coocarpus Dalz. & Gibs.

- 24, 26, 28 Singh, A.K. 1975

Ctenolepis Hook. *f.*

2; tropical Africa and India. 2; Punjab, Gujarat and Peninsular India, and Pakistan and Sri Lanka.

garcinii (Linn.) Hook. *f.**blastanta garcinii* Cogn.

- 24 Singh, A.K. 1974a

Cucumis Linn.

About 25; mostly African, a few Asian. 7; chiefly in hotter parts of India, and Pakistan.

callosus (Rottl.) Cogn.

- 14 Singh, A.K. & Roy, R.P. 1974
 24 Bir, S.S. & Sidhu, M. 1980

trigonus Roxb.

- 14 Janaki Ammal (D. 1945); Dane, F. & Tsuchiya, T. 1976
 24 Bir, S.S. & Sidhu, M. 1974

hardwickii Royle

- 14 Singh, A.K. & Roy, R.P. 1974, 1975c; Dane, F. & Tsuchiya, T. 1976

- 14+1-2B Singh, A.K. & Yadava, K.S. 1978a

melo Linn.

- 20, 22, 24 Chandola, R.P. *et al.* 1965
 24 Kozhuchow, Z.A. (Fedorov); Lewitsky (Fedorov); McKay, J.W. 1930, 1931; Passmore, S.F. 1930; Whitaker, T.W. 1930, 1933b; Morinaga, T. & Fukushima, E. 1931a; Yamaha, G. & Suematsu, S. 1936; Kurita, M. 1939; Bhaduri, P.N. & Bose, P.C. 1947; Delay, C. 1947; Batra, S. 1952; Macchia, F. & Pasucci, G. 1961; Roy, R.P. & Mishra, A.R. 1962; Vasil, I.K. 1962; Sen, R. & Datta, K.B. 1976

var. *agrestis* Naud.

- 24 Singh, A.K. & Roy, R.P. 1974
 24, 48 Singh, A.K. & Roy, R.P. 1975b

pubescens Willd.

- 24 Ayyangar, K.R. 1969; Sujappa, M. 1979

var. culta Royle*melo* Linn.**var. momordica** Duthie

- 24 Singh, A.K. & Roy, R.P. 1974
 24, 48 Singh, A.K. & Roy, R.P. 1975b
 24 1-1
 -3B Singh, A.K. & Yadava, K.S. 1978a

var. utilissimus

- 24 Singh, A.K. & Roy, R.P. 1974

var. ghermi

- 24 Singh, A.K. & Roy, R.P. 1974

var. mask melon

- 24 Singh, A.K. & Roy, R.P. 1974

var. pbut

- 24 Trivedi, R.N. & Roy, R.P. 1970

prophetaurum Linn.

- 24 Kozhuchow, Z.A. (Fedorov); Hagerup, O. 1932; Delay, C. 1947; Mitge, J. 1960a; Baquar, S.R. *et al.* 1965; Trivedi, R.N. & Roy, R.P. 1970
 24, 48 Dane, F. & Tsuchiya, T. 1976

sativus Linn.

- 14 Kozhuchow, Z.A. (Fedorov); Lewitsky (Fedorov); Heimlich, L.F. 1927; Passmore, S.F. 1930; Whitaker, T.W. 1930; Yamaha, G. & Suematsu, S. 1936; Kurita, M. 1939; Bhaduri, P.N. & Bose, P.C. 1945, 1947; Delay, C. 1947; Imazu, T. & Fujishita, N. 1956; Macchia, F. & Pacucci, G. 1961; Roy, R.P. & Mishra, A.R. 1962; Ayyangar, K.R. 1969; Trivedi, R.N. & Roy, R.P. 1970; Turkov, V.D. *et al.* 1975
 14, 28 Shiffriess, O. 1942
 24 Singh, A.K. & Roy, R.P. 1973a
 28 Turkov, V.D. & Shelepana, G.A. 1973

var. Pickling Cucumber

- 24 Singh, A.K. & Roy, R.P. 1974

Cucurbita Linn.

15; America. 3; cultivated.

maxima Duch.

- 24 Rau, N.S. 1929a
 40 Castetter, E.F. 1926, 1930; Erwin, A.T. & Haber, E.S. 1930; Passmore, S.F. 1930; Whitaker, T.W. 1930, 1956; Ruttle, M.L. 1931b; Bhaduri, P.N. & Bose, P.C. 1947; Delay, C. 1947; Lauber, H. 1947; Pearson, O.H. *et al.* 1951; Weiling, F. 1959
 44-48 Lewitsky (Fedorov)
 48 Kozhuchow, Z.A. (Fedorov)

moschata Duch.*

- 24 Yamaha, G. & Suematsu, S. 1936
 40 Erwin, A.T. & Haber, E.S. 1930; Ruttle, M.L. 1931b; Whitaker, T.W. 1933b; Nakajima, G. 1936; Delay, C. 1947; Pearson, O.H. *et al.* 1951
 44-48 Lewitsky (Fedorov)
 48 Kozhuchow, Z.A. (Fedorov); Castetter, E.F. 1930; Whitaker, T.W. 1930, 1956, 1959

pepo Linn.

- 22 Doutreligne, J. (Fedorov)
 24 Lundegårdh, H. 1914b
 28 Delay, C. 1947
 40 Kozhuchow, Z.A. (Fedorov); Castetter, E.F. 1930; Erwin, A.T. & Haber, E.S. 1930; Whitaker, T.W. 1930, 1956; Ruttle, M.L. 1931b; Weiling, F. 1959; Varghese, B.M. 1971
 40-42,
 44-46 Lewitsky (Fedorov)
 80 Janaki Ammal, E.K. (D.1955)

Cyclanthera Schrad.

15; tropical America. 1; cultivated and naturalized.

pedata Schrad.

- 32 McKay, J.W. 1930, 1931; Whitaker, T.W. 1933b; Kozhuchow, Z.A. (Fedorov); Dangcard, P. 1937; Resende, F. 1937

* The combination *Cucurbita moschata* should be attributed to Poir. (HFDD : 197).

Edgaria Clarke

1 ; Eastern Himalaya (between 1,600 and 2,600 m).

darjeelingensis Clarke

20 Sarkar, A.K. *et al.* 1974

Gomphogyne Griff.

2 ; Eastern Himalaya to Central China and Indo-China. 2 ; Eastern Himalaya (between 1,600 and 2,500 m), Assam and Manipur.

cristiformis Griff.

32 Roy, R.P. & Trivedi, R.N. 1966

Gymnopetalum Arn.

3 ; South China and Indo-Malesia. 3 ; Eastern India, Eastern Himalaya and Southern India.

cochinchinense Kurz

22 Islam, A.S. & Saha, B. 1951

Kedrostis Medik.

35 ; tropics and subtropical Africa, Madagascar, tropical Asia and Malaysia. 1 ; Peninsular India.

rostrata (Rottl.) Cogn.

26 Raghavan, R.S. & Arora, C.M. 1958

Lagenaria Ser.

7 ; 1 pantropics, 5 tropical Africa and 1 Madagascar. 1 ; cultivated.

stercoraria (Mol.) Standl.

22 Kerandren, M. 1968

leucantha (Duch.) Rusby

22 Roy, R.P. *et al.* 1969

vulgaris Ser.

22 McKay, J.W. 1930, 1931 ; Whitaker,

T.W. 1930 ; Yamamoto, Y. (Kihara, H. *et al.* 1931) ; Kozhuchow, Z.A. (Fedorov) ; Yamaha, G. & Suematsu, S. 1936 ; Kurita, M. 1939 ; Delay, C. 1947 ; Lauber, H. 1947

Luffa Mill.

About 6 ; tropics. 6 ; Eastern, Western and Southern India, and Pakistan, Bangla Desh and Sri Lanka, 3 cultivated.

acutangula (Linn.) Roxb.

26 McKay, J.W. 1930, 1931 ; Doutreligne (Fedorov) ; Kozhuchow, Z.A. (Fedorov) ; Bhaduri, P.N. & Bose, P.C. 1947 ; Delay, C. 1947 ; Dutt, B. & Roy, R.P. 1971, 1976

52 Roy, R.P. *et al.* 1968 ; Roy, R.P. & Dutt, B. 1972

4x × 2x

39 Roy, R.P. & Dutt, B. 1972

acutangula × graveolens

52 Dutt, B. & Roy, R.P. 1976

egyptiaca Mill.

24 Sarkar, A.K., Chakraverty, M. *et al.* 1977

26 Morinaga, T. *et al.* 1929 ; McKay, J.W. 1931 ; Asana, J.J. & Sutarja, R.N. 1932 ; Bhaduri, P.N. & Bose, P.C. 1945, 1947 ; Miège, J. 1962

24, 26 Sharma, A.K. & Sharma, A. 1957

cylindrica (Linn.) Roem.*

22 Passmore, S.F. 1930

26 McKay, J.W. 1931 ; Doutreligne, J. (Fedorov) ; Whitaker, T.W. 1933b ; Kozhuchow, Z.A. (Fedorov) ; Yamaha, G. & Suematsu, S. 1936 ; Kurita, M. 1939 ; Delay, C. 1947 ; Dutt, B. & Roy, R.P. 1969

echinata Roxb.

26 Hardas, M.W. & Joshi, A.B. 1954 ; Dutt, B. & Roy, R.P. 1971

39 Agarwal, P.K. *et al.* 1979

26, 52 Roy, R.P. & Ghosh, J. 1971

* *Luffa cylindrica* auct. pl. non Roem. is a synonym of *Luffa egyptiaca* Mill. (HFDD ; 200).

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graveolens Roxb.

- 26 Ahuja, M.R. 1955 ; Dutt, B. & Roy, R.P. 1969, 1971, 1976

operculata (Linn.) Cogn.

- 26 Heiser, C.B. 1978

Melothria Linn.*

assamica

- 48 Singh, A.K. 1974b

telosperma Cogn.

- 24 Kumar, L.S.S. & Vishveshwaraiah, S. 1951

Momordica Linn.

45 ; palaeotropics. 7 ; chiefly Southern and Eastern India, and Pakistan and Sri Lanka, 1 cultivated.

halaemina Linn.

- 22 McKay, J.W. 1931 ; Whitaker, T.W. 1933b ; Resende, F. 1937 ; Delay, C. 1947 ; Miège, J. 1960a ; Riley, H.P. 1960 ; Trivedi, R.N. & Roy, R.P. 1972

charantia Linn.

- 22 McKay, J.W. 1930, 1931 ; Yamamoto, Y. (Kihara, H. *et al.* 1931) ; Whitaker, T.W. 1933b ; Kozhuchow, Z.A. (Fedorov) ; Yamaha, G. & Suematsu, S. 1936 ; Resende, F. 1937 ; Kurita, M. 1939 ; Mehra, P.N. 1945 ; Bhaduri, P.N. & Bose, P.C. 1947 ; Riley, H.P. 1960 ; Shibata, K. 1962a ; Trivedi, R.N. & Roy, R.P. 1972 ; Wanjari, K.B. & Phadnis, B.A. 1973b ; Sen, R. & Datta, K.B. 1975 ; Ayyangar, K.R. & Sampathkumar, R. 1978

4x x 2x

- 33 Trivedi, R.N. & Roy, R.P. 1973

cochinchinensis (Lour.) Spreng.

- 28 Sen, R. & Datta, K.B. 1975

dioica Roxb.

- 28 Richbaria, R.H. & Ghosh, P.N. 1953 ; Riley, H.P. 1960 ; Trivedi, R.N. & Roy, R.P. 1978
42 Agarwal, P.K. & Roy, R.P. 1976 ; Trivedi, R.N. 1978
56 Sen, R. & Datta, K.B. 1975

tuberosa Cogn.

- 22 Ayyangar, K.R. & Sampathkumar, R. 1978

Mukia Arn.

4 ; palaeotropics. 2 : 1 Southern India, 1 throughout India, and Sri Lanka.

maderaspatana (Linn.) Roem.

- 24 Baquar, S.R. & Husain, S.A. 1967

Melothria maderaspatana (Linn.) Cogn.

- 22 Bir, S.S. & Sidhu, M. 1980
22, 22+1
- 2B Kumar, L.S.S. & Vishveshwaraiah, S. 1951
24 Sarkar, A.K. *et al.* 1974 ; Singh, A.K. 1974b

Pracitrullus Pang.

1 ; India.

fistulosus (Stocks) Pang.

Citrullus fistulosus Stocks

- 24 Shimotsuna, M. 1961a ; Khoshoo, T.N. & Viji, S.P. 1963 ; Angbel, I. 1969

Citrullus vulgaris

var. *fistulosus* Stocks**

- 24 Trivedi, R.N. & Roy, R.P. 1970

Sechium P. Br.

1 ; tropical America. Cultivated.

edule (Jacq.) Swartz

- 24 Sugiura, T. 1938, 1940b ; Sobti, S.N.

* The species dealt under *Melothria* have been transferred either to *Mukia* or to *Sesua* (DFPI : 106).

** The combination *Citrullus vulgaris* var. *fistulosus* was made by Duthie.

& Singh, S.D. 1961 ; Sanjappa, M. 1979

28 Varghese, B.M. 1973

Solenia Lour.

1 2 ; tropical Asia and Malaysia. Throughout India.

heterophylla Lour.

Melothria heterophylla (Lour.) Cogn.

22 Hsu, C. - C. 1968 ; Malla, S.B., Bhattarai, S. *et al.* 1978b

26 Sarkar, A.K. *et al.* 1973a

48 Kumar, L.S.S. & Vishveshwaraiah, S. 1951

Thladiantha Bunge

15 ; East Asia to Malaysia. 2 ; Eastern Himalaya, Assam and Bengal.

dubia Bunge*

18 Kozhuchow, Z.A. (Fedorov) ; Delay, C. 1947

Trichosanthes Linn.

About 15 - 24 ; Indo-Malesia and Australia. 15 24 ; chiefly in Eastern Himalaya, and Sri Lanka.

angulata Linn.

22 McKay, J.W. 1931 ; Kozhuchow, Z.A. (Fedorov) ; Nakajima, G. 1936 ; Resende, F. 1937 ; Sarkar, A.K., Datta, N. & Chatterjee, U. 1975 ; Datta, S.K. & Basu, R.K. 1978 ; Singh, A.K. & Roy, R.P. 1979

22, 33, 44 Singh, A.K. & Roy, R.P. 1975a

22+2 - 4B Sen, R. & Datta, K.B. 1973

angulata x *cucumerina*

22 Roy, R.P. *et al.* 1972 ; Singh, A.K. & Roy, R.P. 1979

angulata x *lobata*

22 Singh, A.K. & Roy, R.P. 1979

bracteata (Lam.) Voigt

44 Thakur, G.K. 1973

palmata Roxb.

22, 44 Varghese, B.M. 1972

44 Rangaswami, K. 1949

66 Singh, A.K. & Roy, R.P. 1973b

cucumerina Linn.

22 Roy, R.P. & Mishra, A.R. 1962 ; Datta, S.K. & Hasu, R.K. 1978 ; Singh, A.K. & Roy, R.P. 1979

diolca Roxb.

22 Das, M.C. 1933 ; Bhaduri, P.N. & Bose, P.C. 1947 ; Patel, G.I. 1952

22, 44 Islam, A.S. *et al.* 1974

lobata

22 Singh, A.K. & Roy, R.P. 1979

lobata x *cucumerina*

22 Singh, A.K. & Roy, R.P. 1979

multiloba Miq.**

22

(♂. 20+XY) Kurita, M. 1939

wallichiana (Sér.) Wight

22 Malla, S.B., Saiju, H. *et al.* 1977

Zehneria Endl.

30 ; palaeotropics. 5 ; Eastern Himalaya, Southern India, 1 throughout India, and Sri Lanka.

scabra (Linn. f.) Sond.

Melothria perpusilla (Blume) Cogn.

48 Kumar, L.S.S. & Vishveshwaraiah, S. 1951

umbellata Thwaites

24 Sarkar, A.K., Datta, R. *et al.* 1975

* *Thladiantha dubia* Bunge *sensu* FBI, 2 : 631 is a synonym of *T. calcinata* Cogn. (FEH : 325).

** *Trichosanthes multiloba sensu* Clarke, FBI, 2 : 607 is a synonym of *T. wallichiana* (Sér.) Wight (FEH : 325 - 326).

CUSCUTACEAE Dum.

1/170 ; cosmopolitan. 1/about 12 ; mostly in North Western Himalaya (up to 4,000 m), and Pakistan, Bangla Desh and Sri Lanka.

Cuscuta Linn.

170 ; tropics and temperate. About 12 ; mostly in North Western Himalaya (up to 4,000 m), and Pakistan, Bangla Desh and Sri Lanka.

capitata Roxb.

20 Mehra, P.N. & Vasudevan, K.N. 1972

chinensis Lam.

56 Sampathkumar, R. 1979

europaea Linn.

14 Tischler, G. 1934 ; Finn, W.W. (Fedorov) ; Reese, G. 1952b ; Laane, M.M. 1969a ; Skalińska, M. *et al.* 1971

hyalina Roth

28 Vij, S.P. *et al.* 1974
60 Singh, V.K. & Roy, S.K. 1970

planiflora Tenore

14 Mehra, P.N. & Vasudevan, K.N. 1972
28 Singh, V.K. & Roy, S.K. 1970

reflexa Roxb.

28 Finn, W.W. (Fedorov)
32 Raghavan, R.S. 1957 ; Kaul, M.L.H. & Bhan, A.K. 1974
32, 48 Kaul, M.L.H. & Bhan, A.K. 1977
32+0 - 1f Vij, S.P. *et al.* 1974
36 Bir, S.S., Kumari, S. *et al.* 1978
42 Sharma, A.K. & Chatterji, A.K. 1957, 1958c

sharmanam Mukerjee & Bhattach.

32 Mukerjee, S.K. & Bhattacharyya, P.K. 1970

DAPHNIPHYLLACEAE Muell.

1/10 ; East Asia and Malaysia. 1/4 ; temperate Himalaya and Western Ghats.

Daphniphyllum Blume

10 ; China, Japan, Formosa and Indo-Malesia. 4 ; temperate Himalaya and Western Ghats.

himalayense Muell. - Arg.

32 Mehra, P.N. & Hans, A.S. 1969, 1972

DATISCEAE Lindl.

1/2 ; dry West Eurasia and dry North America. 1 ; Western Himalaya, and Nepal (up to 2,000 m).

Datisca Linn.

2 : 1 Mediterranean to Himalaya and Central Asia, 1 South West United States

and North West Mexico. 1 ; Western Himalaya, and Nepal (up to 2,000 m).

cannabina Linn.

22♂ Sinoto, Y. 1928a

DILLENACEAE Salisb.

10/400 ; tropics and subtropics. 4/24 ; chiefly in Western Peninsula and Assam, many in Sri Lanka, and Nepal, Pakistan, Bhutan and Bangla Desh.

Acrotrema Jack

10 ; Indo-Malesia, especially Sri Lanka.
1 ; Western Ghats.

arnottianum Wight

26 Sobha, V. & Ramachandran, K. 1980

Dillenia Linn.

60 ; Mascarene, South East Asia, Indo-Malesia, North Queensland and Fiji. 8 ; tropical forests of India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

indica Linn.

54 Nalivaschko (Fedorov)

56 Gill, B.S. *et al.* 1979a

pentagyna Roxb.

26 Sobha, V. & Ramachandran, K. 1980

Tetracera Linn.

40 ; tropics. 4 ; Eastern India, Western Ghats and the Andamans, and Sri Lanka.

laevis Vahl

26 Sobha, V. & Ramachandran, K. 1980

DIPSACACEAE Juss.

8/150 ; chiefly North temperate Eurasia and tropics and South Africa. 3/12 ; Himalaya (between 1,000 and 4,000 m), 1 Deccan, and Pakistan, Bhutan and Sri Lanka.

Dipsacus Linn.

15 ; Eurasia, Mediterranean and tropical Africa. 7 ; Himalaya (between 1,300 and 4,000 m), 1 in Deccan, and Bhutan and Sri Lanka, 1 cultivated.

fulvum Linn.

16 Risse, K. 1929 ; Braun (Tischler, G. 1935-1936)

16, 18 Ferguson, I.K. 1965

18 Kachidze, N.T. (Fedorov) ; Heiser, C.B. & Whitaker, T.W. 1948 ; Pouques, M.L. de 1949 ; Verlaque, R. 1980

incanis Wall.

18 Kachidze, N.T. (Fedorov)

Scabiosa Linn.

100 ; temperate Eurasia, Mediterranean,

mountains of East Africa, and South Africa. 4 ; Himalaya (between 1,000 and 4,000 m), and Pakistan - 1 cultivated.

atropurpurea Linn.

16 Risse, K. 1926, 1929 ; Braun (Tischler, G. 1935-1936)

ssp. *atropurpurea*

16 Verlaque, R. 1977

olivieri Coult.

16 Chouksanova (Fedorov)

18 Podlech, D. & Diesterle, A. 1969

var. *olivieri*

18 Verlaque, R. 1980

speciosa Royle

18 Kachidze, N.T. (Fedorov)

DIPTEROCARPACEAE Blume

15/580 ; palaeotropics, chiefly Indo-Malesia. 8/76 ; tropical Himalaya, Eastern India, Western Peninsula and Andaman Islands, many in Sri Lanka, and in Bangla Desh.

Dipterocarpus Gaertn. f.

76 ; Sri Lanka and India to West Malaysia and Bali. 17 ; Eastern India, Western Ghats, Andaman Islands, and Bangla Desh and Sri Lanka.

alatus Roxb.

20 Tixier, P. 1953 ; Roy, R.P. & Jha, R.P. 1959

22 Roy, R.P. & Jha, R.P. 1961b, 1965a

tuberculatus Roxb.

20, 30 Tixier, P. 1960

turbatus Gaertn. f.

20 Tixier, P. 1960

Hopea Roxb.

90 ; South China, South East Asia and Indo-Malesia. 12 ; South Western India, and Bangla Desh and Sri Lanka.

odorata Roxb.

14 Roy, R.P. & Jha, R.P. 1959, 1960a, 1962a 1965a

20 Tixier, P. 1953

wightiana Wall.

14 Jong, K. & Lethbridge, A. 1967

Shorea Roxb. ex Gaertn.

180 ; Sri Lanka to South China, West Malaysia, Moluccas and Lesser Sunda Islands. 10 ; tropical Himalaya, Assam, Punjab, Uttar Pradesh, Bihar, Bengal, Madhya Pradesh, Andhra Pradesh and South Western India, and Bangla Desh and Sri Lanka.

robusta Gaertn. f.

14 Nanda, P.C. 1962 ; Roy, R.P. & Jha, R.P. 1965a ; Mehra, P.N. & Sreen, T.S. 1969, 1973c

roxburghii G. Don*talura* Roxb.

14 Roy, R.P. & Jha, R.P. 1961b, 1965a

Vatica Linn.

76 ; Southern India, Sri Lanka, Siam, Indo-China, Hainan and Malaysia (excluding Lesser Sunda Islands). 5 ; Eastern Himalaya, Assam and Southern India, and Sri Lanka.

grandiflora Dyer

20 Roy, R.P. & Jha, R.P. 1959, 1960b

22 Roy, R.P. & Jha, R.P. 1961b

DROSERACEAE Salisb.

4/105 ; 1 genus cosmopolitan, the rest more local. 2/4 ; throughout the greater part of India, and Sri Lanka.

Aldrovanda Linn.

1 ; Central Europe, Caucasia, East and South East Asia, Timor and Queensland.

Calcutta.

vesiculosa Linn

38 Kondo, K. 1969

48 Jankun (Skalińska, M. *et al.* 1966)

Drosera Linn.

100 ; tropics and temperate (especially Australia and New Zealand). 3 ; throughout the greater part of India, and Sri Lanka.

burmannii Vahl

20 Narasimhachar, S.G. 1949 ; Venkata-

subban, K.R. 1950 ; Kondo, K. 1971

indica Linn.

28 Venkatasubban, K.R. 1950 ; Kondo, K. 1966

peltata Smith

40 Venkatasubban, K.R. 1950 ; Kondo, K. 1969

EBENACEAE Gürke

3/500 ; tropics (especially Indo-Malesia). 1/58 ; chiefly in Peninsular and Eastern India, and Pakistan, Bangla Desh and Sri Lanka.

Diospyros Linn.

About 500 ; warm regions. 58 ; chiefly in Peninsular and Eastern India, and Pakistan, Bangla Desh and Sri Lanka.

cordifolia Roxb.

30 Bedi, Y.S. *et al.* 1980

discolor Willd.

30 Namikawa, J. *et al.* 1932 ; Chatterji, A.K. 1964a

ebenum Koen.

90 Delay, C. 1947

embryopteris Pers.

30 Pathak, G.N. *et al.* 1949 ; Nanda, P.C. 1962 ; Chatterji, A.K. 1964a

kaki Linn. *f.*

c.54 - 56 Yasui, K. 1915

90 Namikawa, J. & Higashi, M. 1928 ; Namikawa, J. *et al.* 1932

lotus Linn.

30 Namikawa, J. & Higashi, M. 1928 ; Namikawa, J. *et al.* 1932

marmorata Parker**oocarpa** Thwaites

30 Chatterji, A.K. 1964a

melanoxylon Roxb.

30 Bir, S.S., Gill, B.S. & Bedi, Y.S. 1979

montana Roxb.

30 Sobti, S.N. & Singh, S.D. 1961 ; Chatterji, A.K. 1964a ; Mehra, P.N. & Bawa, K.S. 1969

EHRETIACEAE Lindl.

13/400 ; tropics and subtropics. 5/32 ; subtropical Himalaya, Eastern India, Peninsular India, a few throughout India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Carmona Cav.

1 ; Peninsular India.

retusa (Vahl) Masam.**Ehretia buxifolia** Roxb.

32 Britton, D.M. 1951

Cordia Linn.

250 ; warm regions. 18 ; subtropical Himalaya, Khasi Hills, Western India, Madhya Pradesh, Western Peninsula, Bengal and Andamans, a few throughout India, and Pakistan, Bangla Desh and Sri Lanka.

cylindrostachya Roem. & Schult.

36 Bir, S.S., Gill, B.S. & Hedi, Y.S. 1979

ghuraf (Forsk.) Ehrenb. & Aschers.**rothii** Roem. & Schult.

c.72 Britton, D.M. 1951

wallichii G. Don

42 Gajapathy, C. 1962b

Ehretia P. Br.

50 ; warm regions, chiefly Old World. 9 ; subtropical Himalaya, North Western and South Western India, a few throughout India, and Nepal, Bhutan and Pakistan.

acuminata R. Br.

30 Bhattacharya, G.N. 1968

36 Sarkar, A.K., Datta, R. *et al.* 1975

aspera Roxb.

16 Baquar, S.R. & Abid Askari, S.H. 1970a, b

canarensis Miq.*

26 Gajapathy, C. 1962b

laevis Roxb.

26 Mehra, P.N. & Singh, A. 1963

ELAEAGNACEAE Juss.

3/50 ; Northern Hemisphere, chiefly on steppes and coasts. 2/10 ; Himalaya (up to 4,000 m), Assam, 1 Bengal and Deccan Peninsula, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

Elaeagnus Linn.

45 ; Europe, Asia and North America. 8 ; Himalaya (up to 2,300 m), 1 Bengal and Deccan Peninsula, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

angustifolia Linn.

12 Sobolewska, H. 1926 ; Labadie, J.P. 1976

28 Araratyan, A.G. (Fedorov)

conferta Roxb.

28 Malla, S.B. *et al.* 1979

umbellata Thunb.**

28 Fyfe (D. 1945)

Hippophaë Linn.

3 ; temperate Eurasia. 2 ; Himalaya (between 1,600 and 4,000 m).

rhamnoides Linn.

12, 24 Darmer, G. 1947

20 Sobolewska, H. 1926

24 Tischler, G. 1934 ; Araratyan, A.G. (Fedorov) ; Rousi, A. 1971

ssp. rhamnoides Linn.

24 Leveque, M. & Gorenflot, R. 1969

salicifolia D. Don

24 Rousi, A. 1971

* The combination *Ehretia canarensis* should be attributed to Gamble (FHO : 481).

** *Elaeagnus umbellata* Thunb. *sensu* Hook. f. FBI, 5 : 201 is a synonym of *E. parvifolia* wall. ex Royle (FEH, 2 : 87).

ELAEOCARPACEAE DC.

12/350 ; tropics and subtropics. 3/40 ; chiefly in Eastern Himalaya and Western Peninsula, and Bhutan, Bangla Desh and Sri Lanka - a few cultivated.

Elaeocarpus Linn.

200 ; East Asia, Indo-Malesia, Australia, and Pacific. 35 ; chiefly in Eastern Himalaya and Western Peninsula, and Bhutan, Bangla Desh and Sri Lanka - a few cultivated.

lancaefolius Roxb.

30 Mehra, P.N. & Sreen, T.S. 1973c

sikkimensis Mast.

24 Arora, C.M. 1961

Muntingia Linn.

3 ; tropical South America and West Indies. 1 ; cultivated.

calabura Linn.

28 Bawa, K.S. 1973

ELATINACEAE Dum.

2/40 ; tropics and temperate. 2/6 ; chiefly in Western Peninsula, and Pakistan and Sri Lanka.

Bergia Linn.

25 ; tropics and temperate. 4 ; North Western India and Western Peninsula, 1 throughout India, and Pakistan and Sri Lanka.

ammanoides Roth

24 Hagerup, O. 1932 ; Raghavan, T.S. & Srinivasan, V.K. 1940c

ceyensis Linn.

18 Raghavan, T.S. & Srinivasan, V.K.

1940c, d

suffruticosa Fenzl

36 Hagerup, O. 1932 ; Raghavan, T.S. & Srinivasan, V.K. 1940c

Elatine Linn.

20 ; tropics and temperate. 2 ; Western Peninsula.

trifandra Schkuhr

c. 40 Frisvadahl, A. 1927 ; Löve, A. 1954b

ELLISIOPHYLLACEAE Honda

1/1 ; India to Formosa, Philippines and New Guinea. 1/1 ; North Eastern India, and Nepal.

Ellisiophyllum Maxim.

1 ; India to Japan, Formosa and Philippine Islands, and East New Guinea, North Eastern India, and Nepal.

planatum (Wall.) Makino

16 Borgmann, E. 1964

18 Kurosawa, S. 1966, 1971b

ERICACEAE Juss.

50/1,350 ; cosmopolitan, except in deserts, usually confined to high altitude regions in tropics, almost absent from Australasia. 12/153 ; chiefly in Eastern Himalaya (up to 5,500 m in Himalaya), and Nepal, Bhutan, and Bangla Desh.

Agapetes D. Don ex G. Don

80 ; Eastern Himalaya to South East Asia and Malayan Peninsula. About 34 ; chiefly in Eastern Himalaya, and Bhutan.

serpens (Wight) Sleumer

Pentapterygium serpens Klotz.

24 Callan, H.G. 1941

Arctostaphylos Adans.

70 ; West North and Central America, 1 North temperate and circumpolar. 1 ; cultivated.

ava-ava (Linn.) Spreng.

52 Hagerup, O. 1928 ; Jørgensen, C.A. et al. 1958 ; Packer, J.G. 1964 ; Murfn, A. & Májovský, J. 1976

72 Tischler, G. 1934

Gaultheria Kalm ex Linn.

200 ; circumpacific (West to Western Himalaya and Southern India), 2 East North America and 8 in Brazil. 12 ; Himalaya (between 1,300 and 4,300 m), 1 also in Southern India, and Nepal, Bhutan and Sri Lanka.

fragrantissima Wall.

44 Mehra, P.N. & Bawa, K.S. 1969

griffithiana Wight

44 Callan, H.G. 1941

Lyonia Nutt.

30 ; Himalaya, East Asia, North

America and West Indies. 2 ; Himalaya (between 1,000 and 4,300 m), and Nepal and Bhutan.

ovalifolia (Wall.) Drude

24 Chuang, T.I. et al. 1963 ; Mehra, P.N. & Bawa, K.S. 1969

Pieris D. Don

10 ; East Asia and North America. 1 ; Eastern Himalaya and Khasi Hills, and Nepal and Bhutan (between 2,000 and 3,300 m).

formosa D. Don

24 Mehra, P.N. & Bawa, K.S. 1969

Rhododendron Linn.

500 - 600 ; North temperate etc., concentrated in East Asia from South China to the Himalaya and Japan and lesser abundance in temperate North America, a few in arctic regions, a few in South Europe, 5 Caucasia, over 250 in Malaysia. 80 ; mostly Himalayan (between 1,300 m and 5,300 m), and Nepal and Bhutan.

anthopogon D. Don*

26 Janaki Ammal, E.K. et al. 1950

micranthum Maxim

26 Janaki Ammal, E.K. et al. 1950

arboresum Smith

26 Janaki Ammal, E.K. et al. 1950 ; Mehra, P.N. & Bawa, K.S. 1969

* *Rhododendron anthopogon* auct. incl. Clarke in FB1, 3 : 473 is a synonym of *R. hypenanthum* Balf.

- barbatum* Wall.
 26 Janaki Ammal, E.K. *et al.* 1950
 var. *smithii* (Nutt. ex Hook.) Clarke
smithii Nutt.
 26 Janaki Ammal, E.K. *et al.* 1950
basiniflorum Watt. ex Hutch
 26 Janaki Ammal, E.K. *et al.* 1950
boottii Nutt.
 26 Janaki Ammal, E.K. *et al.* 1950
camelliflorum Hook. f.
 26 Janaki Ammal, E.K. *et al.* 1950
campanulatum Don
 26 Janaki Ammal, E.K. *et al.* 1950
 var. *wallichii* Hook. f.
 26 Mehra, P.N. & Bawa, K.S. 1969
wallichii Rhod.
 26 Janaki Ammal, E.K. *et al.* 1950
batemanii Hook.
 26 Janaki Ammal, E.K. *et al.* 1950
campylocarpum Hook. f.
 26 Janaki Ammal, E.K. *et al.* 1950
chaetomallum Balf. f. & Forrest.
 26 Janaki Ammal, E.K. *et al.* 1950
clliatum Hook. f.
 26 Janaki Ammal, E.K. *et al.* 1950
cinnabarinum Hook. f.
 78 Janaki Ammal, E.K. *et al.* 1950
cunninghami T. More
 26 Mehra, P.N. & Bawa, K.S. 1969
dalhousiae Hook. f.
 26 Janaki Ammal, E.K. *et al.* 1950
edgeworthii Hook. f.
 26 Janaki Ammal, E.K. *et al.* 1950
elliottii Watt
 26 Janaki Ammal, E.K. *et al.* 1950
falconeri Hook. f.
 26 Janaki Ammal, E.K. *et al.* 1950
eximium Nutt.
 26 Janaki Ammal, E.K. *et al.* 1950
formosum Wall.
 26 Janaki Ammal, E.K. *et al.* 1950
fulgens Hook. f.
 26 Janaki Ammal, E.K. *et al.* 1950
glaucum Hook. f.
 26 Janaki Ammal, E.K. *et al.* 1950
grande Wight
 26 Mehra, P.N. & Bawa, K.S. 1969 ;
 Mehra, P.N. 1972
griffithianum Cooper*
 26 Janaki Ammal, E.K. *et al.* 1950
hodgsonii Hook. f.
 26 Janaki Ammal, E.K. *et al.* 1950 ;
 Mehra, P.N. & Bawa, K.S. 1969
hookeri Nutt.
 26 Janaki Ammal, E.K. *et al.* 1950
johnstonianum Watt.
 26 Janaki Ammal, E.K. *et al.* 1950
keysii Nutt.
 78 Janaki Ammal, E.K. *et al.* 1950
lanatum Hook. f.
 26 Janaki Ammal, E.K. *et al.* 1950
lepidotum Wall. ex G. Don
 26 Janaki Ammal, E.K. *et al.* 1950
 var. *obovatum* Hook. f.
obovatum Hook. f.
 26 Janaki Ammal, E.K. *et al.* 1950
lucidum Nutt.
 26 Janaki Ammal, E.K. *et al.* 1950
macabeum Watt.
 26 Janaki Ammal, E.K. *et al.* 1950
macranthum G. Don
 26 Nakamura, M. 1931 ; Janaki Ammal,
 E.K. *et al.* 1950
maedemii Hook. f.
 52, 78 Janaki Ammal, E.K. *et al.* 1950

* The combination *Rhododendron griffithianum* should be attributed to Wight (FEH. 2 : 97).

164 ERICACEAE

var. *calophylla*

calophyllum Nutt.

26 Janaki Ammal, E.K. *et al.* 1950

manipurensis Balf. *f.* & Watt.

78, 156 Janaki Ammal, E.K. *et al.* 1950

niveum Hook. *f.*

26 Janaki Ammal, E.K. *et al.* 1950

nuttallii Booth

26 Janaki Ammal, E.K. *et al.* 1950

parryae Hutch.

26 Janaki Ammal, E.K. *et al.* 1950

patulum Ward

52 Janaki Ammal, E.K. *et al.* 1950

pedunculatum Hook. *f.*

26 Janaki Ammal, E.K. *et al.* 1950

polyandrum Hutch.

78 Janaki Ammal, E.K. *et al.* 1950

riparium Ward

26, 52 Janaki Ammal, E.K. *et al.* 1950

setosum D. Don

26 Janaki Ammal, E.K. *et al.* 1950

shepherdii Nutt.

26 Janaki Ammal, E.K. *et al.* 1950

thomsonii Hook. *f.*

26 Janaki Ammal, E.K. *et al.* 1950

triflorum Hook. *f.*

26 Janaki Ammal, E.K. *et al.* 1950

vaccinifolius Hook. *f.*

26 Janaki Ammal, E.K. *et al.* 1950

virgatum Hook. *f.*

26 Janaki Ammal, E.K. *et al.* 1950

wightii Hook. *f.*

26 Janaki Ammal, E.K. *et al.* 1950

ERYTHROXYLACEAE Kunth

2/250 ; tropics. 1/7 ; South Western India, Bengal, Khasi Hills and Andaman Islands, and Sri Lanka.

Erythroxylum P. Br.

About 250 ; tropics and subtropics, chiefly America and Madagascar. 7 ; South Western India, Bengal, Khasi Hills and Andaman Islands, and Sri Lanka.

coca Lam.

24 Heitz, E. 1929 ; Janaki Ammal, E.K. (D. 1945) ; Plowman, T. *et al.* 1978a, b

kunthianum Wall.

24 Mehra, P.N. & Khosla, P.K. 1969 ; Plowman, T. *et al.* 1978a

EUPHORBIACEAE Juss.

About 300/5,000 ; cosmopolitan, absent in arctic regions. 72/466 ; mostly in tropical and subtropical Eastern Himalaya and the mountains of Southern and Western India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka - some cultivated.

Acalypha Linn.

About 450 ; tropics and subtropics. 12 ; chiefly in the mountains of Southern and Western India, and Nepal and Sri Lanka - a few cultivated.

alnifolia Klein

- 20 Datta, N. 1967 ; Krishnappa, D.G. & Reshme, R.V. 1980

australis Linn.

- 14 Hsu, C. C. 1968

brachystachya Hornem.

- 20, 24 Champault, A. 1970
24 Datta, N. 1967

ciliata Forsk.

- 20 Harvey 1966 ; Champault, A. 1970

hispida Burm. f.

- c. 112 Perry, B.A. 1943
112 Datta, N. 1967 ; Kothari, N.M. *et al.* 1980

112, c. 112,

- c. 168 Champault, A. 1970

indica Linn.

- 14 Thombre, M.V. 1959b
18 Sharma, A.K. & Jash, M. 1958c
20 Gajapathy, C. 1961 ; Datta, N. 1967
28 Sanjappa, M. 1979

lanccolata Linn.

- 28 Sanjappa, M. 1979

fallax Muell. Arg.

- 38 Datta, N. 1967
42 Banerji, I. 1950

malabarica Linn.

- 28 Sanjappa, M. 1979

racemosa Wall. ex Baill.**paniculata** Miq.

- 20 Datta, N. 1967 ; Gajapathy, C. 1961 ; Krishnappa, D.G. & Reshme, R.V. 1980

wilkesiana Muell. Arg.

- c. 200 Gill, B.S. *et al.* 1971, 1973

Alchornea Swartz

70 ; tropics. 3 ; Central and Eastern

Himalaya, Assam, Andhra Pradesh and Andaman Islands, and Nepal and Bhutan.

tiliaefolia Muell. Arg.

- 18 Mehra, P.N. & Hans, A.S. 1969

Aleurites J.R. & G. Forst.

8 ; tropical Asia, Malaysia and Pacific. 4 ; cultivated.

cordata R. Br.

- 22 Bakhtaje, K. (Fedorov) ; Lapin, V.K. (Fedorov) ; Perry, B.A. 1943 ; Stockar, A. 1946

fordii Hemsl.

- 22 Bakhtaje, K. (Fedorov) ; Graner, E.A. 1935 ; Lapin, V.K. (Fedorov) ; Perry, B.A. 1943 ; Stockar, A. 1946 ; Bedi, Y.S. *et al.* 1980

rotundifolia Willd.

- 22 Sharma, K.D. 1955 ; Datta, N. 1967
44 Lapin, V.K. (Fedorov) ; Perry, B.A. 1943 ; Stockar, A. 1946 ; Bedi, Y.S. *et al.* 1980

montana Wils.

- 22 Lapin, V.K. (Fedorov) ; Perry, B.A. 1943 ; Stockar, A. 1946 ; Hans, A.S. 1973 ; Bedi, Y.S. *et al.* 1980

Andrachne Linn.

20 ; South America, West Indies, Cape Verde Island, Mediterranean to Australia. 5 ; Himalaya (up to 2,640 m), and Nepal and Pakistan.

aspera Spreng.

- 24 Humphries, C.J. *et al.* 1978

cordifolia Muell. Arg.

- 22 Gill, B.S., Chawla, A. & Kanwal, R. 1970 ; Gill, B.S. *et al.* 1971, 1973
24 Choda, S.P. & Mehra, P.N. 1972

telepholoides Linn.

- 24 Reese, G. 1957

Antidesma Linn.

About 170 ; Old World tropics and subtropics. with the chief centre in Asia. 15 ;

chiefly in tropical Eastern Himalaya and Peninsular India, and Nepal, Bhutan, Sri Lanka and Bangla Desh.

venosum Tul.

- 26 Mangenot, S. & Mangenot, G. 1962 ;
Hans, A.S. 1973

Aporosa Blume *corr.* Blume

75 ; Indo-Malesia to Solomon Islands, 9 ; Sikkim, Assam Hills, Western Ghats, Andaman and Nicobar Islands, and Bangla Desh and Sri Lanka.

roxburghii Baill.

- 52 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Hans, A.S. 1973

Baccaurea Lour.

80 ; Indo-Malesia and Polynesia, 2 ; 1 Western Ghats, 1 wild or cultivated in sub-Himalayan tracts, Assam and the Andamans, and Bangla Desh.

aspida (Roxb.) Muell. - Arg.

- 26 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Hans, A.S. 1973

Baliospermum Blume

6 - 8 ; India, South East Asia, Malay Peninsula, Java and Sumhawa. 6 ; Eastern Himalaya, 1 extending to North Western Himalaya, Bengal, Bihar, Madhya Pradesh and Western Peninsula, and Bangla Desh.

micranthum Muell. - Arg.

- 22 Sarkar, A.K., Datta, N. *et al.* 1978

montanum (Willd.) Muell. Arg.

- 44 Sarkar, A.K., Datta, N. *et al.* 1976

axillare Blume

- 28 Perry, B.A. 1943

Blachia Baill.

12 ; India, the Andamans, South East Asia and Philippine Islands. 5 ; Southern India and the Andamans, and Sri Lanka.

calycina Benth.

- 36 Krishnappa, D.G. & Reshme, R.V.
1980

Breynia J.R. & G. Forst.

25 ; China, South East Asia, Indo-Malesia, Australia and New Caledonia. 3 ; tropical Himalaya, Assam and Western Peninsula, 1 throughout tropical India, and Nepal, Bangla Desh and Sri Lanka.

nitosa (Bull.) Pax & Hoffm.

- 52 Krishnappa, D.G. & Reshme, R.V.
1980

retusa (Dennst.) Alston

patens Benth.*

- 26 Sarkar, A.K., Datta, N. *et al.* 1978
52 Mehra, P.N. & Hans, A.S. 1969

patens Rolfe

- 52 Kothari, N.M. *et al.* 1980

rhamnoides Muell. - Arg.

- 52 Bir, S.S., Gill, B.S. & Bedi, Y.S.
1979 ; Kothari, N.M. *et al.* 1980 ;
Krishnappa, D.G. & Reshme, R.V.
1980

Melanthesa rhamnoides (Retz.) Blume

- 52 Datta, N. 1967 ; Sarkar, A.K. &
Datta, N. 1980

Bridelia Willd. *corr.* Spreng.

60 ; Africa and Asia. 15 ; chiefly in tropical Himalaya, and Nepal, Bhutan and Sri Lanka.

montana Willd.

- 26 Mehra, P.N. & Hans, A.S. 1969

* The combination *Breynia patens* should be attributed to Rolfe (FHD : 333).

pubescens Kurz

- 26 Mehra, P.N. & Hans, A.S. 1969

retusa Spreng.

- 26 Datta, N. 1967 ; Sarkar, A.K. & Datta, N. 1980
-
- 28 Perry, B.A. 1943

scandens Gehrtn.

- 26 Krishnappa, D.G. & Reshme, R.V. 1980

stipulata Blume*

- 26 Datta, N. 1967 ; Sarkar, A.K. & Datta, N. 1980

Chrozophora Neck. ex Juss. corr. Benth. & Hook. f.

12 ; Mediterranean, tropical Africa to India. 3 ; Kashmir, Punjab, Deccan, 1 tropical India, and Pakistan and Sri Lanka.

obliqua (Vahl) A. Juss.

- 22 Gill, B.S., Chawla, A. & Karwal, R. 1971, 1973
-
- 44 Malik, C.P. 1960b ; Choda, S.P. & Mehra, P.N. 1972

plicata A. Juss.

- 22 Bhaduri, P.N. & Kar, A.K. 1949

prostrata Dalz. & Gibs.

- 22 Abraham, V. 1964

rotleri Klotz.**

- 22 Raman, V.S. & Kesavan, P.C. 1963a ; Datta, N. 1967

tiactoria (Linn.) A. Juss.

- 22 Murin, A. & Chaudhri, I.I. 1970
-
- 48 Sharma, K.D. 1955

Cleca Linn.

1 ; tropics, origin probably coastal forests of North East Brazil. Cultivated.

acida (Linn.) Merr.

- 26 Raghavan, R.S. 1959b ; Sarkar, A.K., Datta, N. et al. 1976

Phyllanthus acidus (Linn.) Skeels

- 26 Krishnappa, D.G. & Reshme, R.V. 1980

Claoxylon A. Juss.

80 ; palaeotropics. About 10 ; chiefly in Southern India, and Bangla Desh and Sri Lanka.

khastanum Hook. f.

- 96 Sarkar, A.K., Datta, N. et al. 1978

longipetiolatum Kurz

- 108 Mehra, P.N. & Hans, A.S. 1969 ; Hans, A.S. 1973

Cleistanthus Hook. f. ex Planch.

140 ; palaeotropics. 11 ; Bihar, Orissa, Madhya Pradesh, Peninsular India, and Bangla Desh and Sri Lanka.

collinus Benth.

- 22 Datta, N. 1967 ; Sarkar, A.K. & Datta, N. 1980

Codiaeum A. Juss.

15 ; Malaysia, Polynesia, North Australia. 1 ; cultivated.

variegatum Blume

- 48, 72, 96 Pancho, J.V. & Hilario, F.I. 1963
-
- 72, 80, 96
-
- 100, 108,
-
- 112, 116,
-
- 120 Sharma, A.K. & Dal, A.K. 1958a
-
- 80 Gill, B.S., Chawla, A. & Karwal, R. 1970
-
- 80, 100,
-
- 120 Kothari, N.M. et al. 1980
-
- 80, 120 Gill, B.S. et al. 1971
-
- 90 Sharma, A.K. & Jash, M. 1958c
-
- 124 Datta, N. 1967

var. *pictum* Miell. Arg.

- 60, 80,
-
- 100, 120 Gill, B.S., Chawla, A. & Karwal, R. 1973

* The specific epithet should be *stipularis* (FBH : 176).** The combination *Chrozophora rotleri* should be attributed to Spreng. (FHD : 334).

Croton Linn.

About 750 ; tropics and subtropics, 17 ; mostly in Southern and Western India, and Bhutan, Bangla Desh and Sri Lanka a few cultivated.

booplandianum Baill.

- 20 Patil, R.P. 1958 ; Sharma, A.K. & Jash, M. 1958c ; Gajapathy, C. 1962a ; Pal, M. 1964 ; Datta, N. 1967 ; Bhojwani, S.S. & Johri, B.M. 1971 ; Gill, B.S., Chawla, A. & Kanwal, R. 1971, 1973 ; Choda, S.P. & Mehra, P.N. 1972 ; Hans, A.S. 1973 ; Bir, S.S. & Sidhu, M. 1980

sparsiflorus Morong

- 16 Sanjappa, M. 1979
20, 40, 50 Kothari, N.M. *et al.* 1980

undatus Geisel

- 20 Mehra, P.N. & Hans, A.S. 1969

joufra Roxb.

- 20 Mehra, P.N. & Hans, A.S. 1969

klotschianum Wight

- 20 Datta, N. 1967 ; Kothari, N.M. *et al.* 1980

oblongifolius Roxb.

- 20 Bedi, Y.S. *et al.* 1980

roxburghianus Bal.

- 20 Mehra, P.N. & Hans, A.S. 1969, 1972

tiglium Linn.

- 20 Mehra, P.N. & Hans, A.S. 1969, 1972

Drypetes Vahl

200 ; tropics, also South Africa and subtropical East Africa. About 20 ; chiefly in Deccan Peninsula and Andaman and Nicobar Islands, and Bangla Desh and Sri Lanka.

roxburghii (Wall.) Durus.**Putranjiva roxburghii** Wall.

- 14 Perry, B.A. 1943 ; Sanjappa, M. 1979
38 Sharma, A.K. & Jash, M. 1958c ;

Datta, N. 1967 ; Sarker, A.K. & Datta, N. 1980

- 40 Raghavan, R.S. 1959b
42 Gill, B.S., Chawla, A. & Kanwal, R. 1971, 1973

Emblica Gaertn.

4 ; Madagascar, East Asia and Indo-Malesia. 2 ; 1 Southern India, 1 throughout tropical India, and Sri Lanka.

officinalis Gaertn.

- 98 Raghavan, R.S. 1957 ; Mehra, P.N. 1972 ; Mehra, P.N. & Hans, A.S. 1972 ; Hans, A.S. 1973
98, 98 -
104 Janaki Ammal, E.K. & Raghavan, R.S. 1958
104 Datta, N. 1967 ; Sarker, A.K. & Datta, N. 1980
196 Mehra, P.N. & Hans, A.S. 1969

Phyllanthus emblica Linn.

- 28 Perry, B.A. 1943
98 Raghavan, R.S. (Fedorov)

Endospermum Benth.

12 13 ; South East Asia, Malaysia and Fiji. 3 ; Eastern India.

chinense Benth.

- 48 Mehra, P.N. & Hans, A.S. 1969, 1972

Euphorbia Linn.

About 2,000 ; cosmopolitan abundant in subtropics and warm temperate regions. 60 ; mostly in Southern and Western India and the Himalaya, inhabit from seacoast to 5,000 m in the Himalaya, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka - a few cultivated.

antiquorum Linn.

- 60 Choda, S.P. & Mehra, P.N. 1972 ; Mehra, P.N. & Choda, S.P. 1973 ; Krishnappa, D.G. & Reshme, R.V. 1980
700 Chaudhuri, M. 1968 (?)

biloba Linn.

- 32 Sarkar, A.K., Datta, N. *et al.* 1976

chamaesyce Linn.**prostrata** Ait.

- 12 Urbatsch, L.E. *et al.* 1975
 18 Datta, N. 1967; Choda, S.P. & Mehra, P.N. 1972; Brunel, J.F. & Laplace, A. 1977; Mehra, P.N. & Choda, S.P. 1978; Sarkar, A.K. & Datta, N. 1979
 20 Murin, A. & Chaudhri, I.I. 1970

clarksonii Hook. f.

- 22 Choda, S.P. & Mehra, P.N. 1972; Mehra, P.N. & Choda, S.P. 1978

cristata Heyne

- 18 Datta, N. 1967; Sarkar, A.K. & Datta, N. 1979
 90 Krishnappa, D.G. & Reshme, R.V. 1980

dracunculoides Lam.

- 16 Malik, C.P. 1960b; Gill, B.S., Chawla, A. & Kanwal, R. 1971, 1973; Choda, S.P. & Mehra, P.N. 1972; Mehra, P.N. & Choda, S.P. 1978
 16, 40 Humphries, C.J. *et al.* 1978

falcata Linn.

- 16 Pólya, L. 1950
 36 D'Amato, F. 1939

fulgens Karw. & Klotz.

- 28 Perry, B.A. 1943

gesciculata Ortega.

- 28 Moyer, L.S. 1934; Perry, B.A. 1943; Datta, N. 1967; Gill, B.S., Chawla, A. & Kanwal, R. 1971, 1973; Choda, S.P. & Mehra, P.N. 1972; Mehra, P.N. & Choda, S.P. 1978; Sarkar, A.K. & Datta, N. 1979; Bir, S.S. & Sidhu, M. 1980; Krishnappa, D.G. & Reshme, R.V. 1980

granulata Forsk.

- 22 Podlech, D. & Dieterle, A. 1969.
 40 Hagerup, O. 1932; Perry, B.A. 1943

helioscopia Linn.

- 12 Nemeec, B. 1910
 42 Harrison, H.H. (Tischler, G. 1931); Tischler, G. 1934, 1937; Rohweder,

H. 1937; Bhalla, V. 1941a; Löve, A. & Löve, D. 1942a, 1944b; Perry, B.A. 1943; Gadella, T.W.J. & Kliphuis, E. 1968a; Baucr, Z. 1971; Gill, B.S., Chawla, A. & Kanwal, R. 1971, 1973; Choda, S.P. & Mehra, P.N. 1972; Sarkar, A.K., Datta, N. *et al.* 1976; Mehra, P.N. & Choda, S.P. 1978; Krishnappa, D.G. & Reshme R.V. 1980

heterophylla Linn.

- 28, 56 Brunel, J.F. & Laplace, A. 1977
 38, 56 Mehra, P.N. & Choda, S.P. 1978
 54 Sharma, K.D. 1955
 54, 56 Choda, S.P. & Mehra, P.N. 1972
 56 Moyer, L.S. 1934; Perry, B.A. 1943; Sharma, A.K. & Jash, M. 1958c; Diers, L. 1961; Datta, N. 1967; Sarkar, A.K. & Datta, N. 1979; Kothari, N.M. *et al.* 1980

hirta Linn.

- 12 Chopra, V.P. 1965
 18 Datta, N. 1967; Gill, B.S., Chawla, A. & Kanwal, R. 1970, 1971, 1973; Choda, S.P. & Mehra, P.N. 1972; Brunel, J.F. & Laplace, A. 1977; Mehra, P.N. & Choda, S.P. 1978; Krishnappa, D.G. & Reshme, R.V. 1980
 20 Raghavan, R.S. & Arora, C.M. 1958

hypericifolia Linn.

- 16 Malte, M. 1908; Krishnappa, D.G. & Reshme, R.V. 1980
 28 Perry, B.A. 1943; Choda, S.P. & Mehra, P.N. 1972
 56 Gill, B.S., Chawla, A. & Kanwal, R. 1970, 1971

parviflora Linn.

- 16 Sarkar, A.K. & Datta, N. 1979
 16, 28 Datta, N. 1967

hyssopifolia Linn.

- 12 Brunel, J.F. & Laplace, A. 1977

laeta Heyne ex Roth**rothiana** Spreng.

- 18 Perry, B.A. 1943
 20, 20+28 Krishnappa, D.G. & Reshme, R.V. 1980

maddenii Boiss.

- 16 Choda, S.P. & Mehra, P.N. 1972;

- Mehra, P.N. & Choda, S.P. 1978
- microphylla* Lam.*
20 Chopde, V.P. 1965
- millii* Ch. des Moul.
40 Datta, N. 1967; Sarkar, A.K. & Datta, N. 1979
42 Gill, B.S., Chawla, A. & Kanwal, R. 1970, 1971, 1973
- splendens* Boj. ex Hook.
24 Weniger, W. 1917
36 Sugitara, T. 1936a; Bowden, W.M. 1940a
40 Matsuura, H. & Saito, T. 1935; Choda, S.P. & Mehra, P.N. 1972; Mehra, P.N. & Choda, S.P. 1978; Kothari, N.M. et al. 1980
- bujari* Hook.
40 Sharma, A.K. & Jash, M. 1958c; D'Amato (Löve, A. & Löve, D. 1961b)
- nerifolia* Linn.
60 Sharma, A.K. & Jash, M. 1958c; Datta, N. 1967
80 Gill, B.S., Chawla, A. & Kanwal, R. 1970, 1971, 1973
90 Mehra, P.N. & Choda, S.P. 1978
90, 180 Choda, S.P. & Mehra, P.N. 1972
- nivalis* Buch. - Ham.
60 Choda, S.P. & Mehra, P.N. 1972; Mehra, P.N. & Choda, S.P. 1978
- orbiculata* HBK
- bambaiensis* Santap.
24 Datta, N. 1967; Sarkar, A.K. & Datta, N. 1979
- microphylla* Heyne
28 Choda, S.P. & Mehra, P.N. 1972; Mehra, P.N. & Choda, S.P. 1978
- peplus* Linn.
16 Rohweder, H. 1937; Tischler, G. 1937; Perry, B.A. 1943; Löve, A. & Löve, D. 1944b; Heiser, C.B. & Whitaker, T.W. 1948; Shimoyam, S. 1959; Gadella, T.W.J. & Kliphuis, E. 1963, 1968a; Björkqvist, I. et al. 1969; Bauer, Z. 1971; Dahlgren, R. et al. 1971; Cardon, M.A. 1973; Fritsch, R.M. 1973
- pitosa* Linn.
18 Perry, B.A. 1943
32 Choda, S.P. & Mehra, P.N. 1971; Mehra, P.N. & Choda, S.P. 1978
- pilulifera* Linn.**
18 Sharma, A.K. & Jash, M. 1958c
- prolifera* Ham.
28 Gill, B.S., Chawla, A. & Kanwal, R. 1971, 1973
- pulcherrima* Willd. ex Klotz.
28 Moyer, L.S. 1934; Perry, B.A. 1943; Sharma, K.D. 1955; Sharma, A.K. & Jash, M. 1958c; Datta, N. 1967; Bemping, M. & Sink, K. 1968; Choda, S.P. & Mehra, P.N. 1972; Mehra, P.N. & Choda, S.P. 1978; Sarkar, A.K. & Datta, N. 1979
28, 30 Gill, B.S., Chawla, A. & Kanwal, R. 1971, 1973
28, 56 Ewart, L.C. & Walker, D.E. 1960
44 Kothari, N.M. et al. 1980
- royiana* Boiss.
more than
60 Bhalla, V. 1941b
120 Choda, S.P. & Mehra, P.N. 1972; Mehra, P.N. & Choda, S.P. 1978
- sercata* Linn.
18 Datta, N. 1967
- sikkimensis* Boiss.
24 Sharma, A. & Sarkar, A.K. 1967-1968
- thymifolia* Burm.***
18 Datta, N. 1967; Choda, S.P. & Mehra, P.N. 1972; Mehra, P.N. &

* *Euphorbia microphylla* Heyne (FBI, 5 : 252), non Lam. is a synonym of *E. orbiculata* HBK (SFUGP : 248).

** *E. pilulifera* auct. pl. (non Linn.), FBI, 5 : 250 is a synonym of *E. hirta* Linn.

*** The combination *E. thymifolia* should be attributed to Linn. (FHD : 339).

- Choda, S.P. 1978 ; Sarkar, A.K. & Datta, N. 1979
 19 Hsu, C. - C. 1967
- frucali* Linn.
 20 Tjio, J.H. 1948 ; Sharma, A.K. & Jash, M. 1958c ; Miège, J. 1960a ; Datta, N. 1967 ; Sarkar, A.K. & Datta, N. 1979
- wallichii* Linn.*
 20 Choda, S.P. & Mehra, P.N. 1972 ; Mehra, P.N. & Choda, S.P. 1978
- Excoecaria* Linn.
 40 ; tropical Africa and Asia. 8 ; Western and Central Himalaya, Assam, Khasi Hills, Western Peninsula, coastal regions of India, Andaman and Nicobar Islands, and Nepal, Bangla Desh and Sri Lanka.
acevifolia F. Didr.
 22 Bir, S.S., Gill, B.S. & Bedi, Y.S. 1979
 24 Perry, B.A. 1943
- agallocta* Linn.
 130 Sidhu, S.S. 1961
 140 Datta, N. 1967
- bicolor* Hassk.
 22 Sharma, A.K. & Jash, M. 1958c ; Datta, N. 1967 ; Kothari, N.M. *et al.* 1980
- Glochidion* J.R. & G. Forst.
 300 ; Madagascar (few), tropical Asia to Queensland and Polynesia (many) and tropical America (few). 38 ; chiefly in Eastern Himalaya and Western Peninsula, and Nepal, Bhutan, Bangla Desh and Sri Lanka.
acuminatum Muell. Arg.
 52 Mehra, P.N. & Hans, A.S. 1969, 1972 ; Hans, A.S. 1973
- arborescens* Blume
 52 Mehra, P.N. & Hans, A.S. 1969, 1972 ; Hans, A.S. 1973
- assamica* Hook. f.
 52 Mehra, P.N. & Hans, A.S. 1969
- khasicum* Hook. f.
 52 Mehra, P.N. & Hans, A.S. 1969
- sphaerogynum* Kurz
 52 Mehra, P.N. & Hans, A.S. 1969, 1972
- velutinum* Wight
 52 Mehra, P.N. & Hans, A.S. 1969
- Hevea* Aubl.
 12 ; tropical America. 1 ; cultivated.
brasiliensis Muell. Arg.
 34 Bingham, W.N. 1931
 36 Ramser, H. 1935 ; Paddock, E.F. 1943 ; Perry, B.A. 1943 ; Baldwin, J.T. 1947 ; Datta, N. 1967
 72, 144 Mendes, L.O.T. 1946 (D. 1955)
- Homonoia* Lour.
 10 ; South China, South East Asia, Indo-Malesia. 5 ; Eastern Himalaya, Bengal, Central and South Western India.
riparia Lour.
 44 Bedi, Y.S. *et al.* 1980
- Hura* Linn.
 2 ; Mexico to tropical South America and West Indies. 1 ; introduced.
crepitans Linn.
 36 Miège, J. 1962
 44 Datta, N. 1967 ; Bawa, K.S. 1973
- Jatropha* Linn.
 About 175 ; tropics and subtropics and also in North America and South Africa. 10 ; 5 indigenous to Southern and Western India, 2 naturalized, and Sri Lanka - a few cultivated.

* The combination *Euphorbia wallichii* should be attributed to Hook. f.

curcas Linn.

- 22 Perry, B.A. 1943 ; Miller, K.I. & Webster, G.L. 1962 ; Datta, N. 1967 ; Gill, B.S., Chawla, A. & Kanwal, R. 1971, 1973 ; Hans, A.S. 1973 ; Kothari, N.M. *et al.* 1980
44 Mehra, P.N. & Hans, A.S. 1969

gossypifolia Linn.

- 20 Sharma, A.K. & Jash, M. 1958c
22 Perry, B.A. 1943 ; Miller, K.I. & Webster, G.L. 1962 ; Nanda, P.C. 1962 ; Datta, N. 1967 ; Sanjappa, M. 1979 ; Kothari, N.M. *et al.* 1980

basata Jacq.

- 20 Sharma, A.K. & Jash, M. 1958c
22 Miller, K.I. & Webster, G.L. 1962 ; Gill, B.S., Chawla, A. & Kanwal, R. 1971, 1973 ; Sarkar, A.K., Chakraverty, M. *et al.* 1977

panduracifolia Andr.

- 22 Hardas, M.W. & Joshi, A.B. 1954 ; Sharma, K.D. 1955 ; Datta, N. 1967 ; Kothari, N.M. *et al.* 1980

heterophylla Heyne

- 22 Krishnappa, D.G. & Reshme, R.V. 1980

maheswarali Subr. & Nair

- 22 Kothari, N.M. *et al.* 1980

multifida Linn.

- 22 Perry, B.A. 1943 ; Miller, K.I. & Webster, G.L. 1962 ; Datta, N. 1967 ; Kothari, N.M. *et al.* 1980

podagrica Hook.

- 22 Datta, N. 1967 ; Kothari, N.M. *et al.* 1980 ; Krishnappa, D.G. & Reshme, R.V. 1980

tanjorensis Ellis & Soroja

- 22 Krishnappa, D.G. & Reshme, R.V. 1980

Joannesia Vell.

3 ; Venezuela and North Brazil. 1, cultivated.

princeps Vell.

- 22 Sarkar, A.K., Datta, N. & Chatterjee, U. 1978

Kirganellia Juss.

3 ; palaeotropics. 2 ; plains of India, and Andaman Islands, and Sri Lanka and Pakistan.

reticulata (Poir.) Baill.

- 26 Datta, N. 1967 ; Mehra, P.N. & Hans, A.S. 1969 ; Krishnappa, D.G. & Reshme, R.V. 1980 ; Sarkar, A.K. & Datta, N. 1980

Phyllanthus reticulatus Poir.

- 26 Webster, G.L. & Ellis, J.R. 1962 ; Bedi, Y.S. *et al.* 1980
28 Sharma, A.K. & Jash, M. 1958c

var. *reticulatus*

- 26 Brunel, J.F. 1976, 1977

Macaranga Thou.

280 ; tropical Africa, Madagascar, Indo-Malesia, Australia and Pacific. About 12 ; chiefly in Eastern Himalaya, a few in Peninsular India and Andaman Islands, and Bangla Desh and Sri Lanka.

denticulata Muell. - Arg.

- 22 Mehra, P.N. & Hans, A.S. 1969 ; Hans, A.S. 1973

gambiel Hook. f.

- 22 Mehra, P.N. & Hans, A.S. 1969

indica Wight

- 22 Mehra, P.N. & Hans, A.S. 1969, 1972 ; Kothari, N.M. *et al.* 1980

peltata (Roxb.) Muell. Arg.

- 22 Mehra, P.N. & Hans, A.S. 1969

pusulata King

- 22 Mehra, P.N. & Hans, A.S. 1972 ; Hans, A.S. 1973

tanarius Muell. - Arg.

- 22 Chuang, T.I. *et al.* 1963 ; Whitmore, I.C. *et al.* 1970

Mallotus Lour.

142 ; 2 in tropical Africa and Madagascar, 140 in East and South East Asia, Indo-Malesia to New Caledonia and Fiji, North and East Australia. 24 ; chiefly in Eastern

Himalaya and Western Peninsular India, and Nepal, Pakistan, Bangla Desh and Sri Lanka.

albus Muell. Arg.*

- 66 Mehra, P.N. 1972 ; Mehra, P.N. & Hans, A.S. 1972 ; Hans, A.S. 1973

var. *occidentalis* Hook. f.

- 66 Krishnappa, D.G. & Reshme, R.V. 1980

muricatus Bedd.

- 22 Krishnappa, D.G. & Reshme, R.V. 1980

nepalensis Muell. - Arg.

- 44 Mehra, P.N. & Hans, A.S. 1969, 1972
88 Bedi, Y.S. *et al.* 1980

philippinensis Muell. Arg.**

- 22 Datta, N. 1967 ; Mehra, P.N. & Hans, A.S. 1969, 1972 ; Gill, B.S., Chawla, A. & Kanwal, R. 1971, 1973

repens Muell. - Arg.

- 22 Datta, N. 1967

roxburghianus Muell. - Arg.

- 22 Mehra, P.N. & Hans, A.S. 1969 ; Hans, A.S. 1973

Mamihot Mill.

170 ; South West United States to tropical South America. 4 ; cultivated.

dichotoma Ule

- 36 Doughty, L.R. 1939 (D. 1955) ; Perry, B.A. 1943

esculenta Crantz

- 36 Perry, B.A. 1943 ; Magoon, M.L. *et al.* 1966, 1968, 1969 ; Datta, N. 1967 ; Schmer, S.H. 1968 ; Jos, J.S. & Nair, S.G. 1979

- 38 Liu, M. - C. & Chen, W. H. 1978

dulcis Pax

- 36 Doughty, L.R. 1939 (D. 1955)

palmata Muell. - Arg.

- 36 Bowden, W.M. 1940a, 1945a ; Perry, B.A. 1943

utilissima Pohl

- 32, 36 Abraham, A. 1944b
34 Sharma, A.K. & Jash, M. 1958c
36 Graner, E.A. 1941 ; Perry, B.A. 1943 ; Simmonds, N.W. 1954 ; Abraham, A. *et al.* 1964
36 (72, 144) Graner, E.A. 1942

esculenta x *glaziovii*

- 36 Magoon, M.L. *et al.* 1966

glaziovii Muell. Arg.

- 34 Sharma, A.K. & Jash, M. 1958c
36 Doughty, L.R. 1939 (D. 1955) ; Perry, B.A. 1943 ; Datta, N. 1967 ; Krishnan, R. *et al.* 1970b

Mercurialis Linn.

8 ; Mediterranean, temperate Eurasia to North Siam. 1 2 ; Eastern Himalaya and Assam.

annua Linn.

- 12 Malte, M. 1908
14 Strasburger, E. 1909 ; Yampolsky, C. 1925
16 Strasburger, E. 1910b ; Sztajgerwaldówna, M. 1929 ; Tischler, G. 1934 ; Perry, B.A. 1943 ; Ehrenberg, L. 1945 ; Delay, C. 1947 ; Pólya, L. 1949 ; Tschermak-Woess, E. & Hasitschka, G. 1954 ; Ehrendorfer, F. 1963 ; Gadella, T.W.J. & Kijphuis, E. 1963 ; Mitra, K. 1964

- 32, 48, 64,
80, 96, 112 Durand, B. 1962
48 Thomas, R.G. 1958

* The correct binomial for Indian taxon *Mallotus albus sensu* Muell. - Arg., FBI, 5 : 429 is *M. tetra-coccus* (Roxb.) Kurz (FHD : 345).

** The correct specific epithet is *philippensis* (FHD : 344).

Ielocarpa Sieb. & Zucc.

- 48 Morinaga, T. *et al.* 1929 ; Chuang, T.J. *et al.* 1963

Microcoeca Benth.

14 ; tropical Africa, Madagascar, India and Malaya. 3 ; Peninsular India, Rajasthan, Uttar Pradesh, Bihar and Bengal.

mercurealis (Linn.) Benth.

- 20 Datta, N. 1967
20, 40, 60 Champault, A. & Durand, B. 1968 ;
Champault, A. 1970
40 Brunel, J.F. & Laplace, A. 1977

Mischodon Thwaites

1 ; Southern India, and Sri Lanka.

zeylanicus Thwaites

- 48 Datta, N. 1967 ; Sarkar, A.K. & Datta, N. 1980

Ostodes Blume

4 ; Eastern Himalaya, South East Asia, Sumatra, Java and North Borneo. 2 ; Eastern Himalaya and Southern India, and Bhutan and Sri Lanka.

paniculata Blume

- 20 Mehra, P.N. & Hans, A.S. 1969

Pedilanthus Neck. ex Poit.

14 ; Florida and Mexico to tropical South America and West Indies. 1 ; cultivated.

tithymaloides (Linn.) Poit.

- 34 Datta, N. 1967 ; Sarkar, A.K. & Datta, N. 1979 ; Kothari, N.M. *et al.* 1980 ; Ghosh, B. 1981
34, 36 Dressler, R.L. 1957
36 Perry, B.A. 1943 ; Banerji, I. 1951a ; Sharma, A.K. & Jash, M. 1958c

var. *variegata* Hort.

- 34 Sarkar, A.K. & Datta, N. 1979

Phyllanthus Linn.

About 600 ; tropics and subtropics, absent in Europe and North Asia. 50 ; chiefly in Southern and Western India and Eastern Himalaya, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

debilis Buch. Ham.

- 14 Krishnappa, D.G. & Reshma, R.V. 1980
24 Brunel, J.F. & Fonteneau, A.M. 1980

discoides Muell. Arg.

- 26 Bedi, Y.S. *et al.* 1980

distichus Muell. Arg.

- 28 Thombre, M.V. 1959a

fraternus Webster

- 26 Datta, N. 1967 ; Sarkar, A.K. & Datta, N. 1980

macraei Muell. Arg.

- 52 Krishnappa, D.G. & Reshma, R.V. 1980

maderaspatensis Linn.

- 26 Raman, V.S. & Kesavan, P.C. 1963b ; Mibge, J. & Jossierand, N. 1972 ; Hassall, D.C. 1978 ; Sanjappa, M. 1979
52 Arora, C.M. (Janaki Ammal, E.K. & Raghavan, R.S. 1958) ; Champault, A. 1970 ; Brunel, J.F. 1976

niruri Linn.*

- 14 Hsu, C. C. 1967
26 Raghavan, R.S. 1957 ; Chuang, T.I. *et al.* 1963 ; Champault, A. 1970 ; Bir, S.S. & Sidhu, M. 1980
28 Sharma, A.K. & Jash, M. 1958c

parvifolius Buch. Ham.

- 24 Malla, S.B. *et al.* 1975

* *Phyllanthus niruri* auct. pl. (non Linn.), *FBI*, 5 : 298, is a synonym of *P. fraternus* Webster (HFDD : 462).

rheedii Wight

- 26 Datta, N. 1967 ; Sarkar, A.K. & Datta, N. 1980

simplex Retz.

- 26 Sarkar, A.K. & Datta, N. 1980

speciosus Jacq.

- 26 Kothari, N.M. *et al.* 1980

urinaria Linn.

- 14 Chuang, T.I. *et al.* 1963
52 Raghavan, R.S. & Arora, C.M. 1958 ; Webster, G.L. & Elia, J.R. 1962 ; Datta, N. 1967 ; Gill, B.S., Chawla, A. & Kanwal, R. 1973 ; Sarkar, A.K. & Datta, N. 1980

52, c. 52 Champault, A. 1970

virgatus Forst. f.**simplex** Retz.

- 24 Choda, S.P. & Mehra, P.N. 1972
26 Datta, N. 1967

Redia Casar.**singampattiana** Sebastine & Henry*

- 42 Gajapathy, C. 1962a

Ricinus Linn.

1 ; tropical Africa and Asia. Wild or cultivated throughout India.

commersonii Linn.

- 10(Haploid) Narain, A. & Singh, P. 1968 ; Jelenkovic, G. *et al.* 1980
20 Némec, B. 1910 ; Taylor, W.R. 1926 ; Hagerup, O. 1932 ; Ghimpu, V. 1933 ; Yamaha, G. & Suemarsu, S. 1936 ; Doulat, E. 1943 ; Perry, B.A. 1943 ; Delay, C. 1947 ; Simmonds, N.W. 1954 ; Sharma, K.D. 1955 ; Jakob, K.M. 1:56, 1957 ; Datta, N. 1967 ; Hau, C. C. 1968 ; Gill, B.S., Chawla, A. & Kanwal, R. 1971, 1973 ; Hans, A.S. 1973 ; Paris, H.S. *et al.* 1978, 1980 ; Bir, S.S. & Sidhu, M. 1980

var. **Arusa**

10 (Haploid),

- 20 Habib, A.F. & Sindagi, S.S. 1975

Sapium P. Br.

120 ; tropics and subtropics. 5 ; Himalaya and Eastern India, and Bhutan and Bangla Desh, 1 cultivated.

baccatum Roxb.

- 44 Mehra, P.N. & Hans, A.S. 1969, 1972 ; Hans, A.S. 1973

eugeniaefolium Buch. Ham.

- 44 Mehra, P.N. & Hans, A.S. 1969, 1972

indicum Willd.

- 64 Datta, N. 1967

insigne Benth.

- 44+0-3B Gill, B.S., Chawla, A. & Kanwal, R. 1971, 1973

sebiferum (Linn.) Roxb.

- 36 Perry, B.A. 1943
44 Hans, A.S. 1973
80 Sarkar, A.K., Datta, N. & Chatterjee, U. 1975
88 Gill, B.S., Chawla, A. & Kanwal, R. 1971, 1973 ; Mehra, P.N. 1972 ; Mehra, P.N. & Hans, A.S. 1972

Sauropus Blume

40 ; South East Asia and Indo-Malesia. 10 ; Eastern Himalaya, a few in South Western India, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

androgynus (Linn.) Merr.

- 50 Sampathkumar, R. & Navaneetham, N. 1981
52 Kothari, N.M. *et al.* 1980

Sebastiania Spreng.

95 ; tropical America, Atlantic United States, 1 tropical West Africa, India to

* *Redia singampattiana* has been transferred to *Cleidion* Blume.

176 EUPHORBIACEAE

South China and Australia, 3 West Malaysia. 1; from Bihar southwards to Peninsular India, and Sri Lanka.

chamaelea Muell. - Arg.

28 Datta, N. 1967

34 Kothari, N.M. *et al.* 1980

Securinega Comm. ex Juss.

25; temperate and subtropics. 2-3; chiefly in drier parts of India, and Pakistan and Sri Lanka.

leucopyrus (Willd.) Muell. - Arg.

Flueggea leucopyrus Willd.

56 Bir, S.S., Gill, B.S. & Bedi, Y.S. 1979

virosa (Roxb. ex Willd.) Pax & Hoffm.*

26 Gajapathy, C. 1962a; Datta, N. 1967; Hans, A.S. 1973; Sarkar, A.K. & Datta, N. 1980

48 Hsu, C. - C. 1968

virosa (Roxb. ex Willd.) Baill.

26 Brunel, J.P. & Laplace, A. 1977

Flueggea virosa Baill.

16 Sanjappa, M. & Sathyananda, N. 1979

26 Webster, G.L. & Ellis, J.R. 1962

Suregada Roxb. ex Rottl.

40; tropics to South Africa, Madagascar, South East Asia to Formosa and Indo-Malesia. 3; foothills of Eastern Himalaya, Bengal, Circars, Deccan Peninsula and Andaman Islands, and Bangla Desh and Sri Lanka.

multiflora (Juss.) Baill.

Gelonium multiflorum Juss.

22 Banerji, I. 1951a; Datta, N. 1967

Synadenium Boiss.

15; warm Africa, Madagascar and

Mascarene. 1; cultivated.

granitii Hook. f.

34 Sharma, A.K. & Jash, M. 1958c

36 Raman, V.S. & Kesavan, P.C. 1963b; Datta, N. 1967; Jones, K. & Smith, J.B. 1969

Synostemon F. Muell.

13; 1 Madagascar to South East Asia and Indo-Malesia, 12 Australia. 1; coromandel coasts.

bacciforme Webster

48 Datta, N. 1967; Sarkar, A.K. & Datta, N. 1980

Tragla Linn.

100; tropics and subtropics. 6; chiefly in Peninsular India, 1 throughout India, and Sri Lanka.

cannabina Linn. f.

48 Kothari, N.M. *et al.* 1980

hispida Willd.

48 Kothari, N.M. *et al.* 1980

involuta Linn.

20 Trivedi, R.N. & Mukherjee, S. 1980

var. *angustifolia* Hook. f.

56 Datta, N. 1967

var. *involuta*

56 Datta, N. 1967

muelleriana Linn.**

96 Kothari, N.M. *et al.* 1980

Trewia Linn.

2; Western Himalaya and Sri Lanka to South East Asia and Hainan, scarce in West Malaysia. 2; 1 hotter parts of India, 1 Western Peninsula.

* The combination *Securinega virosa* should be attributed to Baillon (HFDD : 464; FHD : 348).

** The combination *Tragla muelleriana* should be attributed to Pax & Hoffm.

pediformis Linn.22 Bhaduri, P.N. & Kar, A.K. 1949 ;
Datta, N. 1967 ; Mehra, P.N. &Hans, A.S. 1969, 1972 ; Gill, B.S.,
Chawla, A. & Kanwal, R. 1971
1973, Hans, A.S. 1973

EUPTELEACEAE Van Tiegh.

1/2 ; East Asia. 1/1 ; Assam.

Euptelea Sieb. & Zucc.2 ; Assam, South West and Central
China and Japan. 1 ; Assam.*pleiosperma* Hook. f. & Thoms.

28 Ratter, J.A. & Milne C. 1973a

EURYALACEAE J. G. Agardh

2/3 - 4 ; tropical East Asia and tropical South America. 2/2 ; 1 Kashmir, Eastern India,
Bihar and Rajasthan, 1 cultivated.*Euryale* Salisb.1 ; China and South East Asia. 1 ;
Kashmir, Eastern India, Bihar and
Rajasthan.*ferox* Salisb.58 Langlet, O.F.J. & Söderberg, E. 1927 ;
Langlet, O.F.J. 1936 ; Sokolovskaya,
A.P. (Fedorov) ; Gupta, P.P. & Roy,
S.K. 1972, 1973a, b*Victoria* Schomb.2 - 3 ; tropical South America. 1 ;
cultivated.*amazonica* (Poepp.) Sow.

20 Gupta, P.P. 1977a

regia Lindl.20 Langlet, O.F.J. & Söderberg, E. 1927 ;
Langlet, O.F.J. 1936 ; Delay, C.
1947

FABACEAE Lindl.

(=PAPILIONACEAE Giseke)

About 482/12,000 ; cosmopolitan, abundant in tropics and subtropics. About 120/790 ;
chiefly in Western Peninsular India and the Himalaya, occur from sea coast to 5,610 m in the
Himalaya and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka some cultivated.

Abrus Adans.

12 ; tropics. 2 ; tropical India, ascending up to 990 m in the Himalaya, and Bangla Desh and Sri Lanka.

fruticulosus Wall.

44 Pritchard, A.J. & Gould, K.F. 1964

pulchellus Wall.

22 Sobti, S.N. & Singh, S.D. 1961

24 Sharma, A. & Sarkar, A.K. 1967-1968 ; Chaudhuri, R.K. *et al.* 1969

precatorius Linn.

22 Tschekow, W.P. (Fedorov) ; Senn, H.A. 1938 ; Poucques, M.L. de 1945a ; Riley, H.P. 1960 ; Von Reinhard, F. 1972

Aeschynomene Linn.

About 150 ; tropics and subtropics. 3 ; hotter parts of India, ascending up to 1,650 m in the Himalaya, and Bangla Desh and Sri Lanka.

aspera Linn.

36 Srivastava, M.G. 1959

40 Sanjappa, M. & Sathyananda, N. 1979

indica Linn.

40 Kawakami, I. 1930 ; Berger, C.A. *et al.* 1958 ; Srivastava, M.G. 1959 ; Bir, S.S. & Sidhu, S. 1966, 1967

Alhagi Gagneb.

5 ; Mediterranean and Sahara to Central Asia and Himalaya. 1 ; drier parts of North Western India and Uttar Pradesh.

parwalhagi (Bieb.) Desv.

16 Sanjappa, M. & Bhatt, R.P. 1976

camelorum Fisch.

16 Titova (Fedorov) ; Punthir, N.S. & Koul, A.K. 1964-1965 ; Baquar, S.R. *et al.* 1965 ; Lessani, H. & Chariat-Panahi, S. 1979

manifera Desv.

16 Murin, A. & Chaudhuri, I.I. 1970

Alysicarpus Neck. *ex* Desv.

25 ; warmer parts of Africa to Australia. 15 ; tropical India, ascending up to 1,650 m in the Himalaya, and Pakistan and Sri Lanka.

bupteurifolius (Linn.) DC.

16 Rao, H.K.S. 1954 ; Bir, S.S. & Sidhu, S. 1966, 1967 ; Mehra, P.N. & Dhanwan, H. 1971 ; Bhatt, R.P. 1974 ; Sanjappa, M. & Bhatt, R.P. 1976 ; Bir, S.S. & Sidhu, M. 1980

var. **gracilis** Baker

16 Bir, S.S. & Kumari, S. 1978a

glumaceus (Vahl) DC.

16 Bhatt, R.P. 1974 ; Sanjappa, M. & Bhatt, R.P. 1976

20 Midge, J. 1960a

var. **heyneanus** Baker^{*}

16 Sanjappa, M. & Bhatt, R.P. 1976

var. **heyneanus** (Baker) Raizada**rugosus** DC.var. **heyneanus** Baker

16 Sareen, T.S. & Singh, P.D. 1975, 1976 ; Sareen, T.S. & Trehan, R. 1977

var. **styractifolius** (Baker) Raizada**rugosus** DC.var. **styractifolius** Baker

16 Sareen, T.S. & Singh, P.D. 1976 ; Sareen, T.S. & Trehan, R. 1976, 1977

scarlosus Grah. *ex* Thwaites

16 Sanjappa, M. & Bhatt, R.P. 1976

hamosus Edgew.

16 Sareen, T.S. & Singh, P.D. 1975

procumbens (Roxb.) Schindl.

16 Bir, S.S. & Kumari, S. 1973 ; Bhatt, R.P. 1974 ; Sanjappa, M. & Bhatt, R.P. 1976, 1978

* The combination *Alysicarpus glumaceus* var. *heyneanus* should be attributed to Raizada. The basionym combination *A. rugosus* var. *heyneanus* was made by Baker (SFUGP : 47).

- longifolius* Wight & Arn.
 16 Rao, H.K.S. 1954 ; Bir, S.S. & Kumari, S. 1973 ; Bhatt, R.P. 1974 ; Sanjappa, M. & Bhatt, R.P. 1976, 1978
- monilifer* (Linn.) DC.
 16 Rao, H.K.S. 1954 ; Bir, S.S. & Sidhu, S. 1966, 1967 ; Bhatt, R.P. 1974 ; Sanjappa, M. & Bhatt, R.P. 1976, 1978 ; Sareen, T.S. & Trehan, R. 1977 ; Bir, S.S. & Sidhu, M. 1980
- pubescens* Law.
 16 Rao, H.K.S. 1954
- racemosus* Benth.
 16 Sanjappa, M. & Sathyananda, N. 1979
- rugosus* DC.
 16 Rao, H.K.S. 1954 ; Shetty, B.V. 1961 ; Bir, S.S. & Sidhu, S. 1966, 1967 ; Sanjappa, M. & Bhatt, R.P. 1976, 1977
- tetragonolobus* Edgew.
 16 Bhatt, R.P. 1974 ; Sareen, T.S. & Singh, P.D. 1973 ; Sanjappa, M. & Bhatt, R.P. 1976, 1978
- vagnalis* (Linn.) DC.
 16 Rao, H.K.S. 1954 ; Frahm-Leliveld, J.A. 1957 ; Bir, S.S. & Sidhu, S. 1966, 1967 ; Mitra, K. & Datta, N. 1967 ; Bhatt, R.P. 1974 ; Sanjappa, M. & Bhatt, R.P. 1976, 1978
 20 Gadella, T.W.J. & Kliphuis, F. 1964
- nummularifolius* (Linn.) DC.
 16 Sareen, T.S. & Singh, P.D. 1975, 1976
 20 Hsu, C. C. 1968
- vagnalis* DC.
 var. *nummularifolius* Baker
 16 Bir, S.S. & Kumari, S. 1978b
- var. *stocksii* ?
 16 Sareen, T.S. & Singh, P.D. 1976
- wallichii* Wight & Arn.
 16 Sanjappa, M. & Bhatt, R.P. 1977

Andira Juss.

- 35 ; tropical America and Africa. 1 ;

cultivated.

inermis (Swartz) HBK.

- 20 Atchison, E. 1951
 22 Von Reinhard, F. 1970 ; Bawa, K.S. 1973

Arachis Linn.

- 15 ; Brazil and Paraguay. 1 ; cultivated.

hypogaea Linn.

- 40 Kawakami, I. 1930 ; Husted, L. 1931, 1933, 1936 ; Yamamoto (Kihara, H. *et al.* 1931) ; Ghimpu, V. 1933 ; Gregory, W.C. 1946 ; Mendes, A.J.T. 1947 ; Frahm-Leliveld, J.A. 1953, 1957 ; Carpentier, S. 1954 ; Johansen, E.L. & Smith, B.W. 1956 ; Krapovickas, A. & Rignoi, V.A. 1957 ; Kumar, L.S.S. & D'Cruz, R. 1957 ; Kumar, L.S.S. *et al.* 1957 ; Raman, V.S. & Kesavan, P.C. 1963e ; Kodama, A. 1967, 1970b ; Mukherji, C. 1973 ; Stalker, H.T. *et al.* 1979

Argyrolobium Eckl. & Zeyh.

- 70 ; Africa, Mediterranean to India. 2 ; temperate and tropical regions of North Western India.

flaccidum Jaub. & Spach

- 26 Bir, S.S. & Sidhu, S. 1966, 1967

Astragalus Linn.

- 2,000 ; cosmopolitan, except Australia, mostly on steppes and prairies etc. About 76 ; confined to temperate and alpine Himalaya, abundant in North Western Himalaya, a few extending to the plains of India, and Nepal, Bhutan, Pakistan and Bangla Desh.

alpinus Linn.

- 16 Favarger, C. 1949b, 1963 ; Sorsa, V. 1963b ; Hedberg, I. & Hedberg, O. 1964 ; Hedberg, O. 1967 ; Favarger, C. & Kupfer, P. 1968 ; Laine, U. *et al.* 1974
 16, 32 Ledingham G.F. 1960 ; Ledingham, G.F. & Fehselt, M.D. 1964
 32 Holmen, K. 1962 ; Mosquin, T. &

Hayley, D.E. 1966 ; Sokolovskaya, A.P. 1968 ; Zhukova, P.G. (Fedorov) ; Johnson, A.W. & Packer, J.G. 1968 ; Mulligan, G.A. & Porsild, A.E. 1969 ; Zhukova, P.G. & Tikhonova, A.D. 1973 ; Zhukova, P.G. *et al.* 1973

var. *alpinus*

16 Spellenberg, R. 1976

***ambrosioides* Benth.**

16 Mehra, P.N. & Dhawan, H. 1971

caudoleanus* Boiss.

16 Aryavand, A. 1975

***chlorostachys* Lindl.**

16 Ledingham, G.F. 1960 ; Ledingham, G.F. & Rever, B.M. 1963

***coluteocarpus* Boiss.**

16 Ledingham, G.F. & Rever, B.M. 1963 ; Podlech, D. & Dieterle, A. 1969

***contortuplicatus* Linn.**

16 Tschchow, W.P. (Fedorov)

***densiflorus* Kar. & Kir.**

16 Lipaeva, L.I. (Fedorov)

frigidus* (Linn.) A. Gray*

16 Löve, A. & Löve, D. 1944b ; Knaben, G. 1950 ; Löve, A. 1954b ; Ledingham, G.F. 1960 ; Sorsa, V. 1963b ; Zhukova, P.G. (Fedorov) ; Mesicek, J. & Sojak, J. 1969 ; Zhukova, P.G. & Tikhonova, A.D. 1973

***frigidus* (Linn.) Bunge**

16 Sokolovskaya, A.P. 1968 ; Zhukova, P.G. *et al.* 1973

***hamosus* Linn.**

32 Chuzanova, N.A. 1967 ; Kuzmanov, B. & Georgieva, S. 1976
44 Delay, J. 1971a ; Martinez, A.P. 1974
48 Tschchow, W.P. (Fedorov) ; Kreuter, E. 1930 ; Wanscher, J.H. 1934b ; Fernandes, A. & Santos, M.F. 1971

***khasianus* Benth.**

16 Malla, S.B. & Saiju, H. *et al.* 1977

***leucocephalus* Grab.**

16 Bir, S.S. & Sidhu, S. 1966, 1967 ; Mehra, P.N. & Dhawan, H. 1971

***macropterus* DC.**

16-2B Podlech, D. & Dieterle, A. 1969
32 Lipaeva, L.I. (Fedorov)

***sikkimensis* Benth.**

16 Tschchow, W.P. (Fedorov)
64 Ledingham, G.F. 1960

***stipulatus* D. Don**

64 Ledingham, G.F. 1960

***tibetanus* Benth.**

16 Lipaeva, L.I. (Fedorov) ; Ledingham, G.F. & Rever, B.M. 1963

***Atylosia* Wight & Arn.**

21 ; tropical Asia and Australia, 1 tropical Africa and Madagascar. 16 : mostly in Western Peninsular India, a few in tropical and subtropical Himalaya, and Nepal and Sri Lanka.

***albicans* (Wight & Arn.) Benth.**

22 Gajapathy, C. 1962a ; Pundir, R.P.S. & Singh, R.B. 1978 ; Rao, N.K. 1978

***barbata* Baker**

22 Tschchow, T. & Kartaschowa, N. 1932

***cajaniifolia* Haines**

22 Pundir, R.P.S. & Singh, R.B. 1978 ; Rao, N.K. 1978

***kubensis* Dalz.**

22 Bir, S.S. & Kumari, S. 1973

***lineata* Wight & Arn.**

22 Deodikar, G.B. & Thakur, C.V. 1956 ; Kumar, L.S.S. *et al.* 1958 ; Shrivastava, M.P. *et al.* 1973 ; Pundir, R.P.S. & Singh, R.B. 1978

* The combination *Astragalus caudoleanus* should be attributed to Royle *ex* Benth.

** The combination *A. frigidus* should be attributed to Bunge.

platycarpa Benth.

- 22 Bir, S.S. & Kumari, S. 1973 ; Pundir, R.P.S. & Singh, R.B. 1978

ragosa Wight & Arn.

- 22 Sanjappa, M. & Sathyananda, N. 1979

scarabaeoides Benth.

- 22 Bir, S.S. & Sidhu, S. 1966, 1967 ; Roy, R.P. & Mishra, U. 1968 ; Sareen, T.S. & Trehan, R. 1977 ; Pundir, R.P.S. & Singh, R.B. 1978 ; Sanjappa, M. 1978

Cantharospermum scarabaeoideum (Linn.) Bail.

- 22 Mehra, P.N. & Dhawan, H. 1971

sericea Benth.

- 22 Deodikar, G.B. & Thakur, C.V. 1956 ; Pundir, R.P.S. & Singh, R.B. 1978

trinervia (DC.) Gamble

- 22 Pundir, R.P.S. & Singh, R.B. 1978

volubilis (Bláncó) Gamble

- 22 Pundir, R.P.S. & Singh, R.B. 1978 ; Rao, N.K. 1978

Baphia Afzel.

65 ; warm Africa, Madagascar, I Borneo. 1 ; cultivated.

nitida Lodd.*

- 44 Mangenot, S. & Mangenot, G. 1957, 1958, 1962

Bolusanthus Harms

1 ; South Africa. Cultivated.

speciosus Harms

- 16 Bir, S.S. & Kumari, S. 1978b
18 Turner, B.L. & Fearing, O.S. 1959 ; Riley, H.P. 1960

Brya P. Br.

7 ; Central America and West Indies. 1 ; cultivated.

ebenus DC.

- 20 Pal, M. 1964 ; Sarkar, A.K., Chakraverty, M. *et al.* 1977 ; Bir, S.S. & Kumari, S. 1980

Butea Roxb. ex Willd.

30 ; Indo-Malesia and China. 3 ; Central and Southern India, Eastern Himalaya, I plains of India, and Nepal, Bangla Desh and Sri Lanka a few cultivated.

minor Buch. Ham.

- 18 Sanjappa, M. & Sathyananda, N. 1979

monosperma (Lam.) Taub.

- 18 Raghavan, R.S. & Arora, C.M. 1958 ; Nanda, P.C. 1962 ; Bir, S.S. & Sidhu, S. 1966, 1967 ; Mitra, K. & Datta, N. 1967 ; Mehra, P.N. & Sareen, T.S. 1973a ; Sanjappa, M. & Bhatt, R.P. 1976

18-|-f Kotharnath, S. 1950

- 32 Datta, P.C. & Saha, N. 1973b

superba Roxb.

- 18 Bir, S.S. & Kumari, S. 1978a

Cajanus Adans. *mut.* DC.

About 1 or 2 ; tropical Africa and Asia. Cultivated.

cajan (Linn.) Millsp.

- 22 Kumar, L.S.S. *et al.* 1958 ; Roy, R.P. & Jha, R.P. 1960b ; Datta, P.C. & Saha, N. 1973b ; Shrivastava, M.P. *et al.* 1973 ; Gill, L.S. 1978b ; Sinha, S.S.N. & Kumar, P. 1979 ; Bir, S.S. & Kumari, S. 1980

- 22, 44, 66 Pathak, G.N. & Yadava, R.S. 1951

indicus Sprong.

- 22 Roy, B. 1933 ; Krishnaswamy, N. & Ayyangar, R. 1935d ; Tjo, J.H. 1948 ; Frahm-Lellveld, J.A. 1953, 1957

cv. 'Pant A2'

- 22 Pundir, R.P.S. & Singh, R.B. 1978

* The combination *Baphia nitida* should be attributed to Afzel. (Willis : 121).

Calopogonium Desv.

10; Central and South America and West Indies. 1; introduced.

mucronoides Desv.

36 Frahm-Leliveld, J.A. 1953, 1957; Shibata, K. 1962a

Calpurnia E. Mey.

6; Africa. 2; 1 in Deccan and Western Peninsula, 1 cultivated.

hologyne E. Mey.

18 Mehra, P.N. & Hans, A.S. 1969, 1971

Campylotropis Bunge

65; East and South Asia. About 9; Himalaya and Bengal, and Nepal.

speciosa (Royle ex Schindler) Schindler**Lespedeza eriocarpa** DC.

18 Mehra, P.N. & Dhawan, H. 1971

Canavalia Adans. *mut.* DC.

50; tropics and subtropics, especially America and Africa. 8; Eastern Himalaya and Peninsular India, and Sri Lanka.

ensiformis DC.

22 Kawakami, I. 1930; Simmonds, N.W. 1954; Shibata, K. 1962a; Bhandari, N.N. *et al.* 1969; Sastrapradja, S. *et al.* 1975

gladiata (Jacq.) DC.

22 Tschekow, W. & Kartaschowa, N. (Fedorov); Poucques, M.L. de 1945a; Sastrapradja, S. *et al.* 1975
22, 44 Covas, G. 1949b
44 Shibata, K. 1962a

maritima (Aubl.) Thou.

22 Von Reinhard, F. 1972; Sastrapradja, S. *et al.* 1975

obtusifolia DC.

22 Frahm-Leliveld, J.A. 1960b

lineata DC.

22 Jinno, T. 1956b
22, 44 Hsu, C. - C. 1968

rosea (Swartz) DC.

22 Midge, J. 1960a

virosa Wight & Arn.

22 Kedharnath, S. 1950; Bhandari, N.N. *et al.* 1969; Subramanian, D. 1972; Sastrapradja, S. *et al.* 1975

Caragana Fabr.

80; Central Asia, Himalaya and China. 10; Himalaya (between 1,600 and 5,600 m).

brevispina Benth.

16 Tschekow, W.P. (Fedorov); Singhal, V.K. *et al.* 1980a

conferta Benth. ex Hook.

16 Moore, R.J. 1968b

decorticans Hemsl.

16 Frahm-Leliveld, J.A. 1962b

gerardiana Royle

16 Malla, S.B. & Bhattarai, S. *et al.* 1978b

nepalensis Kitamura

16 Malla, S.B. *et al.* 1979

pygmaea Poir.*

16 Frahm-Leliveld, J.A. 1962b

Castanospermum A. Cunn.

1; subtropical Australia. Cultivated.

australe A. Cunn.

26 Sampath, S. & Ramanathan, K. 1949; Nanda, P.C. 1962

Centrosemia (DC.) Benth.

45; America. 2; introduced.

pubescens Benth.

20 Frahm-Leliveld, J.A. 1953, 1957

* The combination *Caragana pygmaea* should be attributed to DC. (DFPI : 32).

Cicer Linn.

20 ; North Africa, Abyssinia and East Mediterranean to Central Asia. 2 3 ; 1 cultivated, 1 Himalaya (between 2,970 and 4,950 m).

arictinum Linn.

14 Dombrovskaya Sludskaya, L.N. (Fedorov) ; Rau, N.S. 1929b ; Frahm-Leliveld, J.A. 1957 ; Fürnkranz, D. 1968

14, 16 Dixit, P.D. 1932a

16 Hrubý, K. 1932b ; Milovidov, P.F. 1932 ; Tschchow, W.P. (Fedorov) ; Avdulov, N.P. (Fedorov) ; Senn, H.A. 1938 ; Iyengar, N.K. 1939 ; Thomas, P.T. & Revell, S.H. 1946 ; Meenakshi, G. & Subramaniam, M.K. 1960 ; Phadnis, B.A. & Narkhede, M.N. 1969 ; Mercy, S.T. *et al.* 1974 ; Sarbhoy, R.K. & Sinha, R.P. 1978 ; Ahmad, S. & Godward, M.B.E. 1980

16, 24 Meenakshi, G. & Subramaniam, M.K. 1966

16, 32 Phadnis, B.A. & Narkhede, M.N. 1972

16, 32, 33 Oke, J.G. 1955

32 Sen, N.K. & Jana, M.K. 1956 ; Meenakshi, G. & Subramaniam, M.K. 1967

songaricum Steph. ex DC.

14 Iyengar, N.K. 1939

16 Mercy, S.T. *et al.* 1974

Clitoria Linn.

40 ; tropics and subtropics. 3 ; Eastern Himalaya and Western India, 1 tropical parts, and Sri Lanka.

biflora Dalz.

14, 15 Srivastav, P.K. & Raina, S.N. 1980

16 Sanjappa, M. & Dasgupta, A. 1977 ; Bir, S.S. & Kumari, S. 1978a

ternatea (Linn.) Baker*

16 Tschchow, W. & Kartaschowa, N.

(Fedorov) ; Jacob, K.T. 1940 ; Frahm-Leliveld, J.A. 1953, 1957 ; Saroja, D.B.O. 1961 ; Shibata, K. 1962a

ternatea Linn.

14 Bir, S.S. & Kumari, S. 1978a, 1980

15, 16 George, M. & George, K. 1978

16 Roy, R.P. & Saran, J. 1960 ; Mitra, K. & Datta, N. 1967 ; Sinha, S.S.N. & Prasad, R. 1973 ; Sanjappa, M. & Dasgupta, A. 1977 ; Lackey, J.A. 1980

16, 18 Vishwanathan, M.V. 1969-1970

32 Krishnan, R. 1968

var. *pleniflora* Fanzl.

f. *pleniflora*

16, 18 Srivastava, P.N. & Raina, S.N. 1980

Crotalaria Linn.

More than 550 ; tropics and subtropics. About 86 ; chiefly in Southern and Western India, a few in tropical and subtropical Himalaya, occur from the sea coast to 2,310 m in the Himalaya, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka a few cultivated.

albida Heyne

16 Bir, S.S. & Sidhu, S. 1966, 1967 ; Ghosh, T.K. & Choudhary, S.S. 1967

anagyroides HBK.

16 Kawakami, I. 1930 ; Rao, Y.S. 1950a ; Favarger, C. & Huynh, K.L. 1965 ; Huynh, K.L. 1965 ; Datta, R.M. & Ganguly, P.K. 1967 ; Sarkar, A.K. *et al.* 1973b ; Gupta, R. & Gupta, P.K. 1978a, b ; Raina, S.N. & Verma, R.C. 1979

angulata Mill.

biflora Linn.

16 Sanjappa, M. 1978

barbata Grah.

16 Mohandas, A. & Kuriachan, P.I. 1979

* The combination *Clitoria ternatea* should be attributed to Linn. (FHD : 239).

184 FABACEAE

- barbata* Schweinf.
16 Miège, J. 1960a; Chennaveeraiah, M.S. & Patil, B.C. 1972
- heteroana* DC.
fulva Roxb.
16 Eichhorn, A. 1937a; Dasgupta, A. 1981
- biolata* Schrank
alata Buch. - Ham. ex D. Don
16 Kawakami, I. 1930; Berger, C.A. et al. 1958
- bluaria* Linn. f.
16 Rao, Y.S. 1950a; Dasgupta, A. 1981
- boarnea* Fyson
16 Mohandas, A. & Kuriachan, P.I. 1979
- brevideus* Benth.
var. *intermedia*
16 Gupta, R. & Gupta, P.K. 1978a
- brevifolia*
16 Raghavan, T.S. & Venkatasubban, K.R. 1943; Gupta, R. & Gupta, P.K. 1978a, b; Raina, S.N. & Verma, R.C. 1979; Verma, R.C. & Raina, S.N. 1980
- brownel* Bert. ex DC.
0 - 2B Gupta, R. & Gupta, P.K. 1977
16 Srivastava, M.G. 1958a, b; Kempanna, C. 1960; Gupta, R. & Gupta, P.K. 1978a, b; Raina, S.N. & Verma, R.C. 1979; Verma, R.C. & Raina, S.N. 1980
16 + 1B Gupta, R. & Gupta, P.K. 1978a
- burbia* Buch. - Ham. ex Benth.
16 Ramanathan, K. 1955b; Malik, C.P. 1960b; Magoon, M.L. et al. 1963; Datta, R.M. & Choudhury, P.C. 1964-1965b, 1966; Baquar, S.R. et al. 1965; Raina, S.N. & Verma, R.C. 1979; Verma, R.C. & Raina, S.N. 1980
- burtii* Baker
16 Gupta, R. & Gupta, P.K. 1978a
- calycina* Schrank
16 Frahm-Leliveld, J.A. 1960b; Boulier D. et al. 1970; Mehra, P.N. & Dhawan, H. 1971
- capensis* Jacq.
14 Datta, R.M. & Ghoshal, K.K. 1969
14, 16 Datta, R.M. & Ghoshal, K.K. 1963
- comanestiana* Volk. & Schweinf.
16 Gupta, R. & Gupta, P.K. 1978a, b
- cytisoides* Roxb. ex DC.
Priotropis cytisoides Wight & Arn.
16 Hardas, M.W. & Joshi, A.B. 1954; Mehra, P.N. & Hans, A.S. 1969, 1971
- dowildemaniana* Wilczek
asp. *oxyrhyncha*
16 Gupta, R. & Gupta, P.K. 1978a
- evoluloides* Wight
16 Mohandas, A. & Kuriachan, P.I. 1979
- falcata* Vahl ex DC.
16 Miège, J. 1960b
20 Datta, R.M. & Mondal, N. 1968
- ferruginea* Grah. ex Benth.
16 Datta, R.M. & Biswas, P.K. 1963; Datta, R.M. & Choudhury, P.C. 1964-1965a; Datta, R.M. & Ghoshal, K.K. 1969; Mehra, P.N. & Dhawan, H. 1971
18 Datta, R.M. & Ghoshal, K.K. 1963
48 Larsen, K. 1971; Mangotra, R.B. & Koul, A.K. 1979
- var. *pitulissima* Benth.
16 Chennaveeraiah, M.S. & Patil, B.C. 1972, 1973
- filipes* Benth.
16 Subramanyam, K. & Kamble, N.P. 1967; Chennaveeraiah, M.S. & Patil, B.C. 1972
- formosa* Grah.
16 Mohandas, A. & Kuriachan, P.I. 1979
- fysonii* Dunn.
16 Sanjappa, M. 1978
- grahamiana* Wight & Arn.
16 Bagchi, S. 1966; Chennaveeraiah, M.S. & Patil, B.C. 1972, 1973; Gupta, R. &

- Gupta, P.K. 1978a ; Raina, S.N. & Verma, R.C. 1979
- greenwayii* Baker
16 Gupta, R. & Gupta, P.K. 1978a
- keyniana* Grah. ex Wight & Arn.
16 Dasgupta, A. 1981
- hirata* Willd.
16 Bir, S.S. & Kumari, S. 1978a
- hirta* Willd.
16 Rao, Y.S. 1950a ; Tandon, S.L. & Bhat, R.N. 1970
- incana* Linn.
14 Senn, H.A. 1938 ; Atchison, E. 1950 ; Rao, Y.S. 1943, 1947, 1950a ; Krapovickas, A. & Krapovickas, A.M.F. 1957 ; Shibata, K. 1962b ; Magoon, M.L. *et al.* 1963 ; Hsu, C.-C. 1968 ; Patil, B.C. & Chennaveeraiah, M.S. 1971, 1975 ; Chennaveeraiah, M.S. & Patil, B.C. 1972 ; Gupta, R. & Gupta, P.K. 1978a ; Raina, S.N. & Verma, R.C. 1979
16 Gupta, R. & Gupta, P.K. 1978b
- ssp. incana*
14 Boulter, D. *et al.* 1970 ; Gupta, R. & Gupta, P.K. 1978a
- ssp. purpurascens*
14 Gupta, R. & Gupta, P.K. 1978a
- intermedia* Kotschy
16 Atchison, E. 1950 ; Kempanna, C. 1960 ; Sybenga, J. 1960 ; Shibata, K. 1962b ; Gupta, R. & Gupta, P.K. 1978a ; Raina, S.N. & Verma, R.C. 1979 ; Verma, R.C. & Raina, S.N. 1980
- jucea* Linn.
16 Breslawetz, L.P. *et al.* (Fedorov) ; Ramantujam, S. *et al.* 1933 ; Banerji, I. & Samai, K.K. 1936 ; Roy, R.P. & Jha, R.P. 1960b ; Datta, R.M. & Biswas, P.K. 1962 ; Shibata, K. 1962b ; Magoon, M.L. *et al.* 1963 ; Datta, R.M. & Ganguly, P.K. 1967 ; Gupta, P.K. & Gupta, R. 1971, 1978 ; Bhatt, R.F. 1974, 1976 ; Gupta, R. & Gupta, P.K. 1978a ; Raina, S.N. & Verma, R.C. 1979 ; Verma, R.C. & Raina, S.N. 1980 ; Mandot, S.K. & Basu, R.K. 1981
- 16, 32, 64
128 Bairathi, M.K. & Nathawat, G.S. 1980
32 Gupta, A.K. & Sinha, R.P. 1978
0-2B Gupta, R. & Gupta, P.K. 1977
- kirkii* Baker
16 Gupta, R. & Gupta, P.K. 1978a
- laburnifolia* Linn.
16 Ramantujam, S. *et al.* 1933 ; Raghavan, T.S. & Venkatasubban, K.R. 1943 ; Turner, B.L. & Fearing, O.S. 1959 ; Boulter, D. *et al.* 1970 ; Ayyangar, K.R. & Sampathkumar 1975 ; Gupta, R. & Gupta, P.K. 1978a ; Raina, S.N. & Verma, R.C. 1979
- lanata* Bedd.
16 Kempanna, C. 1960
- lanceolata* E. Mey.
16 Raghavan, T.S. & Venkatasubban, K.R. 1943 ; Magoon, M.L. *et al.* 1963 ; Tandon, S.L. & Bhat, R.N. 1970 ; Gupta, R. & Gupta, P.K. 1978a, b ; Raina, S.N. & Verma, R.C. 1979 ; Verma, R.C. & Raina, S.N. 1980
- leschenaultii* DC.
16 Chennaveeraiah, M.S. & Patil, B.C. 1972, 1973 ; Gupta, R. & Gupta, P.K. 1978a
- linifolia* Linn. f.
16 Bir, S.S. & Kumari, S. 1978a
- madurensis* Wight
16 Mohandas, A. & Kuriachan, P.I. 1979
- medicaginea* Lam.
16 Rao, Y.S. 1943, 1950a ; Raghavan, R.S. & Arora, C.M. 1958 ; Magoon, M.L. *et al.* 1963 ; Ghosh, T.K. & Choudhary, S.S. 1965 ; Bir, S.S. & Sidhu, S. 1966, 1967 ; Larsen, K. 1971 ; Raina, S.N. & Verma, R.C. 1979
16 - 3B Gupta, R. & Gupta, P.K. 1978a
32 Ghosh, T.K. & Choudhary, S.S. 1967
0-3B Gupta, R. & Gupta, P.K. 1977

var. *luxurians* (Benth.) Baker

- 14 Sarkar, A.K., Datta, N. & Chatterjee, U. 1980
 16 Gupta, P.K. & Gupta, R. 1971 ; Sareen, T.S. & Trehan, R. 1976

mysorensis Roth

- 16 Rao, Y.S. 1943 ; Shibata, K. 1962b ; Bir, S.S. & Sidhu, S. 1966, 1967 ; Datta, R.M. & Ghoshal, K.K. 1969 ; Gupta, P.K. & Gupta, R. 1971 ; Sinha, R.P. & Gupta, A.K. 1973 ; Gupta, R. & Gupta, P.K. 1978a, b ; Raina, S.N. & Verma, R.C. 1979
 18 Datta, R.M. & Ghoshal, K.K. 1963

nana Burm.

- 16 Chennaveeraiah, M.S. & Patil, B.C. 1972 ; Mohandas, A. & Kuriachan, P.I. 1979

niteus HBK

- 16, 32 Chennaveeraiah, M.S. & Patil, B.C. 1972

orixensis Rottl. ex Willd.

- 16 Rao, Y.S. 1943 ; Tandon, S.L. & Bhat, R.N. 1970 ; Chennaveeraiah, M.S. & Patil, B.C. 1972, 1973

ovalifolia Wall.

- 16 Mohandas, A. & Kuriachan, P.I. 1979

pallida Ait.

- 16 Gupta, R. & Gupta, P.K. 1978a ; Raina, S.N. & Verma, R.C. 1979 ; Bir, S.S. & Kumari, S. 1980

laburnoides Klotz.

- 16 Boulter, D. *et al.* 1970 ; Gill, L.S. & Abubakar, A.M. 1975

mucronata Desv.

- 14, 16, 20 Datta, R.M. & Mondal, N. 1969
 16 Shibata, K. 1962b ; Subramanyam, K. & Kamble, N.P. 1966 ; Mitra, K. & Datta, N. 1967 ; Tandon, S.L. & Bhat, R.N. 1970 ; Patil, B.C. & Chennaveeraiah, M.S. 1971, 1975 ; Sarkar, A.K. *et al.* 1973b ; Gupta, R. & Gupta, P.K. 1978a, b ; Raina, S.N. & Verma, R.C. 1979

striata DC.

- 16 Senn, H.A. 1938 ; Rao, Y.S. 1950a ; Frahm-Leliveld, J.A. 1957 ; Turner,

B.L. & Irwin, H.S. 1961 ; Shibata, K. 1962b ; Magoon, M.L. *et al.* 1963 ; Ayyangar, K.R. & Sampathkumar, R. 1975 ; Gupta, R. & Gupta, P.K. 1978a, b ; Sanjappa, M. 1978 ; Raina, S.N. & Verma, R.C. 1979 ; Sarkar, A.K., Chakraverty, M. *et al.* 1980

paniculata Willd.

- 16 Sanjappa, M. & Sathyananda, N. 1979 ; Dasgupta, A. 1981

paulina Schrank

- 16 Datta, R.M. & Mondal, N. 1968
 32 Shibata, K. 1962b ; Chennaveeraiah, M.S. & Patil, B.C. 1972

petitiانا A. Rich.

- 16 Gupta, R. & Gupta, P.K. 1978a

prostrata Rottl. ex Willd.*prostrata* Roxb.

- 16 Ghosh, T.K. & Choudhary, S.S. 1966, 1967

pulcherrima Roxb.

- 16 Dasgupta, A. 1981

pumila Ort.

- 16 Roy, R.P. & Mishra, U. 1979

pusilla Heyne

- 16 Bir, S.S. & Kumari, S. 1975

quinquefolia Linn.

- 16 Rao, Y.S. 1943 ; Magoon, M.L. *et al.* 1963 ; Boulter, D. *et al.* 1970 ; Subramanian, D. 1972 ; Gupta, R. & Gupta, P.K. 1978a

ramosissima Roxb.

- 16 Shetty, B.V. & Subramanyam, K. 1971 ; Dasgupta, A. 1981

retusa Linn.

- 16 Kawakami, I. 1930 ; Frahm-Leliveld, J.A. 1960b ; Midge, J. 1960b ; Magoon, M.L. *et al.* 1963 ; Datta, R.M. & Neogy, A.K. 1965 ; Harvey 1966 ; Elias, T.S. 1967 ; Subramanyam, K. & Kamble, N.P. 1967 ; Boulter, D. *et al.* 1970 ; Datta, R.M. & Neogy, A.K. 1970 ; Tandon, S.L. & Bhat, R.N. 1970 ; Subramanian, D. 1972 ; Bhatt, R.P. 1974, 1976 ; Raina, S.N. & Verma, R.C. 1979 ; Verma, R.C. & Raina, S.N. 1980

- 16+1B Gupta, R. & Gupta, P.K. 1978a
0-2B Gupta, R. & Gupta, P.K. 1977
- alicifolia* Wight & Arn.
16 Dasgupta, A. 1981
- saltiana* Andr.*
16 Atchison, E. 1950; Srivastava, M.G. 1958a, b; Chuang, T.I. *et al.* 1963; Datta, R.M. & Biswas, P.K. 1963; Bir, S.S. & Sidhu, S. 1966, 1967; Gupta, R. & Gupta, P.K. 1978a, b; Raina, S.N. & Verma, R.C. 1979
- sessiliflora* Linn.
16 Bir, S.S. & Kumari, S. 1973
- shevaroyensis* Gamble
16 Chennaveeraiah, M.S. & Patil, B.C. 1972, 1973
- spectabilis* Roth
16 Atchison, E. 1950; Datta, R.M. & Mondal, N. 1968, 1969; Boulter, D. *et al.* 1970
- sericea* Retz.
0-2B Gupta, R. & Gupta, P.K. 1977
16 Rao, Y.S. 1943; Roy, R.P. & Singh, R.P. 1958, 1959; Miège, J. 1960b; Magoon, M.L. *et al.* 1963; Bir, S.S. & Sidhu, S. 1966, 1967; Subramanyam, K. & Kamble, N.P. 1966; Datta, R.M. & Ganguly, P.K. 1967; Tandon, S.L. & Bhat, R.N. 1970; Sinha, R.P. & Gupta, A.K. 1973; Sinha, S.S.N. & Prasad, R. 1973; Sarker, A.K., Datta, R. *et al.* 1975; Gupta, R. & Gupta, P.K. 1978a, b; Raina, S.N. & Verma, R.C. 1979
32 Gupta, A.K. & Sinha, R.P. 1978
- tecta* Roth
16 Mohandas, A. & Kuriachan, P.I. 1979
- tetragona* Roxb.
16 Mehra, P.N. & Dhawan, H. 1971
- trifoliatrum* Willd.
16 Rao, Y.S. 1943
- triquetra* Dalz.
16 Chennaveeraiah, M.S. & Patil, B.C. 1972; Dasgupta, A. 1981
- umbellata* Wight
16 Mehra, P.N. & Dhawan, H. 1971; Mohandas, A. & Kuriachan, P.I. 1979
- verrucosa* Linn.
16 Atchison, E. 1950; Datta, R.M. & Biswas, P.K. 1962, 1963; Magoon, M.L. *et al.* 1963; Tandon, S.L. & Bhat, R.N. 1970; Subramanian, D. 1972; Ayyangar, K.R. & Sampathkumar, R. 1975; Gupta, R. & Gupta, P.K. 1978a; Sanjappa, M. 1978; Raina, S.N. & Verma, R.C. 1979; Verma, R.C. & Raina, S.N. 1980
- walkerii* Arn.
16 Raina, S.N. & Verma, R.C. 1979
- wightiana* Grah.
16 Chennaveeraiah, M.S. & Patil, B.C. 1972, 1973
- willdenowiana* DC.
16 Mohandas, A. & Kuriachan, P.I. 1979
- Cyamopsis* DC.
About 3-4; tropical and subtropical Africa, Arabia and India. 1; cultivated.
- tetragonoloba* (Linn.) Taub.
14 Bir, S.S. & Sidhu, S. 1966, 1967; Gupta, P.K. & Gupta, R. 1971; Sohoo, M.S. & Gill, K.S. 1975; Sarbhoy, R.K. 1977a; Bir, S.S. & Kumari, S. 1980; Sarbhoy, R.K. 1980b
- psoraloides* DC.
14 Ayyangar-Rangaswamy, G.N. & Krishnaswamy, N. 1933; Frahm-Leliveld, J.A. 1953; Simmonds, N.W. 1954; Vlg. B.K. 1963; Roy, R.P. & Mishra, U. 1968; Biswas, A.K. & Bhattacharya, N.K. 1969
15 Singh, A. 1972

* *Crotalaria saltiana* auct. pl. (non Andr.) is a synonym of *C. pallida* Ait. (SFUGP : 48).

Dalbergia Linn. f.

300 ; tropics and subtropics, and South Africa. About 27 ; chiefly in Himalaya and South Western Peninsula, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka - a few cultivated.

assamica Benth.

- 20 Mehra, P.N. & Hans, A.S. 1969, 1971, 1972

confrata Grah.

- 20 Mehra, P.N. & Hans, A.S. 1969, 1971, 1972

lanceolaria Linn.

- 20 Atchison, E. 1951 ; Mehra, P.N. & Hans, A.S. 1972 ; Sarkar, A.K. *et al.* 1974 ; Bir, S.S. & Kumari, S. 1975 ; Sanjappa, M. & Dasgupta, A. 1977

latifolia Roxb.

- 20 Atchison, E. 1951 ; Mehra, P.N. & Hans, A.S. 1971, 1972 ; Mehra, P.N. 1972

*melanoxylo*n Guill. & Perr.

- 20 Atchison, E. 1951

paniculata Roxb.

- 20 Atchison, E. 1951

sericea G. Don

- 20 Mehra, P.N. & Hans, A.S. 1971, 1972 ; Mehra, P.N. & Sareen, T.S. 1973a

sissoo Roxb.

- 20 Patil, R.P. 1958 ; Nanda, P.C. 1962 ; Mehra, P.N. & Hans, A.S. 1971, 1972 ; Mehra, P.N. & Sareen, T.S. 1973a

stipulacea Roxb.

- 20 Mehra, P.N. & Hans, A.S. 1969, 1971 ; Sarkar, A.K., Datta, R. *et al.* 1975

volubilis Roxb.

- 20 Sanjappa, M. & Dasgupta, A. 1977

Derris Lour.

80 ; tropics. 28 ; chiefly in Eastern Himalaya and Western Peninsula, and

Bangla Desh and Sri Lanka - a few cultivated.

ferruginea Benth.

- 22 Srinath, K.V. & Sarwar, M. 1964

malaccensis Prain

- 22 Heyn, A.N.J. 1938 ; Atchison, E. 1949b

- 22, 24 Toxopeus H.J. 1952

microptera Benth.

- 22 Mehra, P.N. & Hans, A.S. 1969, 1971

robusta Benth.

- 22 Mehra, P.N. & Hans, A.S. 1969, 1971, 1972 ; Sarkar, A.K., Datta, R. *et al.* 1975 ; Sanjappa, M. & Dasgupta, A. 1977

scandens (Roxb.) Benth.

- 22 Bir, S.S. & Kumari, S. 1978a, 1980

trifoliata Lour.*uliginosa* Benth.

- 20 Sidhu, S.S. 1968
22 Tjio, J.H. 1948
24 Toxopeus, H.J. 1952

Desmodium Desv.

About 450 ; tropics and subtropics. About 50 ; mostly in tropical Eastern Himalaya and Western Peninsular India, and Nepal, Pakistan, Bangla Desh and Sri Lanka.

enjanifolium (HBK) DC.

- 22 Potar, P.P. & Ukio Urata 1967

concinnum DC.

- 22 Mehra, P.N. & Dhawan, H. 1971

dichotomum (Willd.) DC.

- 22 Potar, P.P. & Ukio Urata 1967 ; Bhatt, R.P. 1974 ; Sanjappa, M. & Bhatt, R.P. 1976

distortum (Aubl.) Macbr.

- 22 Sanjappa, M. & Bhatt, R.P. 1977

elegans DC.*tiliaefolium* (D. Don) G. Don

- 22 Bir, S.S. & Sidhu, S. 1967 ; Potar,

- P.P. & Ukio Urata 1967 ; Mehra, P.N. & Sareen, T.S. 1973a
- floribundum* G. Don
 22 Larsen, K. 1971 ; Bir, S.S. & Kumari, S. 1974
- gangeticum* (Linn.) DC.
 22 Miège, J. 1960a ; Bir, S.S. & Sidhu, S. 1966, 1967 ; Potar, P.P. & Ukio Urata 1967 ; Bhatt, R.P. 1974 ; Bhaumik, G.H. 1976 ; Sanjappa, M. & Bhatt, R.P. 1976 ; Sareen, T.S. & Trehan, R. 1977 ; Bir, S.S. & Sidhu, M. 1980 ; Sarkar, A.K., Chakraverty, M. *et al.* 1980
- gyroides* DC.
 20 Pritchard, A.J. & Gould, K.F. 1964
 22 Young, J.O. 1940 ; Potar, P.P. & Ukio Urata 1967
- heterocarpon* (Linn.) DC.
 22 Larsen, K. 1971
- polycarpum* DC.
 22 Bhaumik, G.H. 1976 ; Sanjappa, M. & Bhatt, R.P. 1976 ; Bir, S.S. & Kumari, S. 1978a
- heterophyllum* (Willd.) DC.
 22 Pritchard, A.J. & Gould, K.F. 1964
- intortum* (Mill.) F.W. Urb.
 22 Pritchard, A.J. & Gould, F.W. 1964 ; Potar, P.P. & Ukio Urata 1967
 22, 24 Bhaumik, G.H. 1976
- laxiflorum* DC.
 22 Mehra, P.N. & Dhawan, H. 1971 ; Bir, S.S. & Talwar, K. 1973, 1974 ; Bhatt, R.P. 1974, 1976
- diffusum* DC.
 22 Bhaumik, G.H. 1976
- maenlosum* DC.
 22 Bir, S.S. & Kumari, S. 1978a
- microphyllum* (Thunb.) DC.
 22 Bir, S.S. & Kumari, S. 1975
- motorium* (Houtt.) Merr.
 20, 22 Potar, P.P. & Ukio Urata 1967
- 22 Larsen, K. 1971
- gyrans* DC.
 22 Young, J.O. 1940 ; Bir, S.S. & Kumari, S. 1975
- neo-mexicanum* A. Gray
 22 Sanjappa, M. & Bhatt, R.P. 1976
- oojelnense* (Roxb.) Chashi
 24 Sanjappa, M. & Dasgupta, A. 1977
- podocarpum* DC.
 22 Mehra, P.N. & Dhawan, H. 1971
- ssp. oxyphyllum* (DC.) Ohashi
 22 Kurosawa, S. 1971b
- pulchellum* (Linn.) Benth.
Phyllodium pulchellum (Linn.) Desv.
 22 Sanjappa, M. 1979
- racemosum* DC.
 22 Funabiki, K. 1958
- rotundifolium* (Michx.) DC.*
 22 Young, J.O. 1940 ; Turner, B.L. 1956
- rotundifolium* Baker
 22 Sanjappa, M. & Bhatt, R.P. 1976
- rufescens* DC.
 22 Bir, S.S. & Sidhu, S. 1966, 1967
- sambucense* DC.
 22 Bir, S.S. & Kumari, S. 1978a
- sequax* Wall.
 22 Mehra, P.N. & Dhawan, H. 1971
- tortuosum* (Swartz) DC.
 22 Senn, H.A. 1938 ; Young, J.O. 1940 ; Potar, P.P. & Ukio Urata 1967
- triangulare* (Retz.) Merr.
cephalotes Wall.
 var. *congestum* Prain
 22 Sanjappa, M. & Bhatt, R.P. 1976
- Dendrolobium triangulare* (Retz.) Schindler
 22 Sanjappa, M. & Bhatt, R.P. 1977
- triflorum* (Linn.) DC.
 18 Sanjappa, M. & Bhatt, R.P. 1977

* The combination *Desmodium rotundifolium* should be attributed to Baker (FBI, 2 : 172).

- 22 Frahm-Lelivejd, J.A. 1957 ; Pritchard, A.J. & Gould, K.F. 1964 ; Bir, S.S. & Kumari, S. 1975 ; Bhaumik, G.H. 1976 ; Sanjappa, M. & Bhatt, R.P. 1976

triquetrum DC.

- 22 Young, J.O. 1940

ssp. *pseudotriquetrum* Prain*pseudotriquetrum* DC.

- 22 Mehra, P.N. & Dhawan, H. 1971

velutinus (Willd.) DC.

- 22 Potar, P.P. & Utko Urata 1967 ; Mehra, P.N. & Dhawan, H. 1971 ; Sanjappa, M. & Bhatt, R.P. 1977

latifolium DC.

- 22 Young, J.O. 1940 ; Bir, S.S. & Kumari, S. 1973 ; Bhaumik, G.H. 1976

Dioclea Kunth

50 ; tropical America, 1 tropical Africa and Asia. 1 ; Assam and Bengal, and Bangla Desh and Sri Lanka.

reflexa Hook. f.

- 22 Mangenot, S. & Mangenot, G. 1958, 1962

Dolichos Linn.

70 ; warmer parts. 3 ; Western Peninsular India, with 1 extending to the Himalaya, and Sri Lanka, 1 cultivated.

trilobus Linn.*falcatus* Klein ex Willd.

- 20 Marechal, R. 1969, 1970

Dumasia DC.

9 ; South Africa, Indo-Malesia and East Asia. 2 ; Himalaya, Khasi Hills, and Hills of Western Peninsula, and Sri Lanka.

cordifolia Benth.

- 22 Bir, S.S. & Kumari, S. 1975

villosa DC.

- 20 Bir, S.S. & Talwar, K. 1973, 1974

Dysolobium (Benth.) Prain

4 ; tropical Eastern Himalaya to China and Malaysia.

grande (Buch. Ham. ex Benth.) Prain*Phaseolus velutinus* Grah. ex Baker

- 22 Bir, S.S. & Kumari, S. 1978a

Edwardsia Salisb.

6 ; India, Hawaii, New Zealand, Juan Fernandez and Chile. 2 ; plains and low Hills of North Western India and Hills of Karnataka, and Nepal.

mollis Royle*Sophora mollis* Grah. ex Baker

- 18 Bir, S.S. & Kumari, S. 1973

Eleiotis DC.

1 ; India and Sri Lanka. Bihar, Madhya Pradesh and Western Peninsula.

sororia (Linn.) DC.

- 22 Bir, S.S. & Kumari, S. 1978a

Erythrina Linn.

100 ; tropics and subtropics. About 16 ; Himalaya, Upper Gangetic Plains, Assam, Bengal and South Western India, and Bangla Desh and Sri Lanka many cultivated.

arborescens Roxb.

- 42 Mehra, P.N. & Hans, A.S. 1969, 1971, 1972 ; Mehra, P.N. & Sreen, T.S. 1969, 1973a

blakei Hort.

- 42 Hardas, M.W. & Joshi, A.B. 1954 ; Nanda, P.C. 1962 ; Bir, S.S. & Sidhu, S. 1966, 1967 ; Mehra, P.N. & Sreen, T.S. 1973a ; Bir, S.S. & Kumari, S. 1980

caffra Thunb.

- 42 Atchison, E. 1947c ; Singhal, V.K. et al. 1980a

crista-galli Linn.

- c. 40 Tschachow, W. & Kartaschowa, N. (Fedorov)

- 40, 42, 44 Krukoff, B.A. 1969
 42 Atchison, E. 1947c
 c. 44 Tschchow, W. & Kartaschowa, N.
 (Fedorov)
- fusca* Lour.
 42 Atchison, E. 1947c; Krukoff, B.A.
 1969; Mehra, P.N. & Hans. A.S.
 1969, 1971, 1972
- humeana* Spreng.
 42 Atchison, E. 1947c
- mysorensis* Camb.
 42 Atchison, E. 1951; Sanjappa, M. &
 Sathyananda, N. 1979
- stricta* Roxb.
 42 Mehra, P.N. & Hans, A.S. 1969,
 1971, 1972
- suberosa* Roxb.
 42 Atchison, E. 1947c; Nanda, P.C.
 1962; Krukoff, B.A. 1969; Mehra,
 P.N. & Hans, A.S. 1972; Sanjappa,
 M. 1978
 42+0 -
 2B Mehra, P.N. & Hans, A.S. 1969
 42+1 -
 2B Mehra, P.N. & Hans, A.S. 1971
 42+2B Mehra, P.N. 1972
 84 Mehra, P.N. & Sareen, T.S. 1969,
 1973a
- variegata* Linn.
 44 Datta, P.C. & Saha, N. 1973b
- var. *orientalis* (Linn.) Merr.
 42 Mehra, P.N. & Sareen, T.S. 1973a
- indica* Lam.
 42 Rao, Y.S. 1945; Atchison, E. 1947c;
 Nanda, P.C. 1962
 44 Poucques, M.L. de 1945a; Sarkar,
 A.K., Datta, N. *et al.* 1976
- var. *pecta* (Linn.) Blatt. & Mill.
 42 Bir, S.S. & Kumari, S. 1978a, 1980
- var. *marmorata* (Planch.) Blatt. & Mill.
 42 Bir, S.S. & Kumari, S. 1978a, 1980

- vespertilio* Benth.
 42 Atchison, E. 1947c, 1951; Krukoff,
 B.A. 1969
- Flemingia* Roxb. (in Ait.)
 35; tropics. 12 26; chiefly in tropical
 Himalaya, with 3 in Western Ghats, and
 Nepal, Bangla Desh and Sri Lanka.
- macrophylla* (Willd.) Prain ex Merr.
congesta Roxb.
 22 Frahm-Leliveld, J.A. 1957
- semialata* Roxb.
 22 Bir, S.S. & Kumari, S. 1975
- Maughania macrophylla* (Willd.) Kuntze
 20 Larsen, K. 1971
- strobilifera* R. Br.*
 22 Chuang, T.I. *et al.* 1963
- strobilifera* (Linn.) Ait.
fruticulosa Wall. ex Benth.
 22 Bir, S.S. & Sidhu, S. 1966, 1967
- Maughania strobilifera* (Linn.) J. St. - Hill. ex O.
 Kuntze
 22 Malla, S.B. *et al.* 1975
- vestita* Benth.
 22 Bir, S.S. & Sidhu, S. 1966, 1967
- Galactia* P. Br.
 140; tropics and subtropics. 1; Western
 Ghats, and Sri Lanka.
- tenuiflora* Wight
 20 Pritchard, A.J. & Gould, K.F. 1964
 22 Frahm-Leliveld, J.A. 1960b
- Gliricidia* Kunth
 10; tropical America and West Indies.
 1; introduced.
seplum (Jacq.) Steud.**
 20 Atchison, E. 1951

* The combination *Flemingia strobilifera* should be attributed to Ait. (FHD : 255).

** The combination *Gliricidia seplum* should be attributed to Walp. (DFPI : 72).

- 22 Simmonds, N.W. 1954 ; Rao, C.K. 1972, 1979

sepium (Jacq.) Walp.

- 20 Gill, L.S. & Abubakar, A.M. 1975
22 Sarkar, A.K., Chakraverty, M. *et al.* 1978

maculata (HBK) Steud.

- 20 Sampath, S. & Ramanathan, K. 1949 ; Sarkar, A.K., Datta, R. *et al.* 1975 ; Sanjappa, M. & Bhatt, R.P. 1976

Glycine Linn.

10 ; tropical and warm temperate Africa and Asia. 3 ; Western Peninsula, with 1 extending to the Himalaya, and Sri Lanka, 1 cultivated.

javanica Linn.*

- 20 Ramanathan, K. 1950 ; Sanjappa, M. & Sathyamanda, N. 1979
22, 44 Pritchard, A.J. & Gould, K.F. 1964
44 Kasha, K.J. 1967

max (Linn.) Merr.

- 20, 40, 60,
80 Beversdorf, W.D. & Bingham, E.T. 1977
40 Veatch, C. 1934 ; Sakai, B. 1951 ; Pritchard, A.J. & Gould, K.F. 1964 ; Kodama, A. 1967, 1970b ; Biswas, A.K. & Bhattacharyya, N.K. 1968, 1969 ; Kao, K.N. *et al.* 1970 ; Datta, P.C. & Saha, N. 1973b ; Palmer, R.G. 1974b ; Biswas, A.K. 1975, 1977
40, 41, 42 Palmer, R.G. 1976
40, 41 - 44
c. 80 Palmer, R.G. 1974a
40 - 45 Palmer, R.G. & Heer, H. 1976
40, 80 Biswas, A.K. & Bhattacharyya, N.K. 1972
80 Tang, P.S. & Loo, W.S. 1940

hispidula Maxim.

- 38 Yamaha, G. & Sinoto, Y. 1925
40 Fukuda, Y. 1933 ; Senn, H.A. 1938

soja hispida Moench

- 38 Ghimpu, V. 1933
40 Karpechenko, G.D. (Fedorov)

soja max Piper

- 40 Veatch, C. 1934

soja Sieb. & Zucc.**

- 38 Yamaha, G. & Suematsu, S. 1936
40 Kawakami, I. 1930 ; Fukuda, Y. 1933 ; Senn, H.A. 1938 ; Levan, A. 1940a ; Sakai, B. 1951 ; Oinuma, T. 1952a ; Frahm-Lellveld, J.A. 1957

Glycyrrhiza Linn.

18 ; temperate and subtropical America, temperate Eurasia, North Africa and South East Australia. 1 ; cultivated.

glabra Linn.

- 16 Tschekow, W.P. (Fedorov) ; Lessani, H. & Chariat-Panahi, S. 1979

Goniogyna DC.

1 ; India, Pakistan and Sri Lanka. Throughout tropical India.

hirta (Willd.) Ali

- 16 Sanjappa, M. & Dasgupta, A. 1977

Heylandia latiflora DC.

- 16 Rao, Y.S. 1950a

Hedysarum Linn.

150 ; North temperate. 9 ; Himalaya (up to 5,300 m), 1 cultivated.

coronarium Linn.

- 16 Lewinsky (Tischler, G. 1937) ; Larsen, K. 1955b ; Sacristán, M.D. 1966

* *Glycine javanica auct. pl.* (non Linn.) is a synonym of *G. wightii* (Wight & Arn.) Verdc.

** *G. soja sensu* Baker, FBI, 2 : 184 (non Sieb. & Zucc.) is a synonym of *G. max* (Linn.) Merr. *G. soja* Sieb. & Zucc. is a native of Eastern Asia and is distinct from *G. max*. (HFDD : 141).

Indigofera Linn.

About 700 ; warmer parts. About 54 ; chiefly in the plains and Western Peninsular India, ascending up to 1,650 m in the Himalaya, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka - a few cultivated.

angulosa Edgew.

- 32 Sanjappa, M. & Bhatt, R.P. 1977, 1980

axill Linn.

- 12 Senn, H.A. 1938

argentea Linn.

- 16 Ramanathan, K. 1955b ; Singh, A.K. & Yadava, K.S. 1978b

arrecta Hochst.

- 16 Frahm-Leliveld, J.A. 1953, 1957, 1960a ; Sanjappa, M. & Bhatt, R.P. 1980
16+2B Sanjappa, M. & Bhatt, R.P. 1977

articulata Gouan

- 16 Frahm-Leliveld, J.A. 1966

aspalathoides Vahl

- 16 Dasgupta, A. 1981
32 Singh, A. & Roy, R.P. 1970

astragalisa DC.

- 16 Frahm-Leliveld, J.A. 1960a ; Singh, A. & Roy, R.P. 1970 ; Bhatt, R.P. 1974 ; Sanjappa, M. & Bhatt, R.P. 1976 ; Rao, C.K. 1979

atropurpurea Buch. - Ham.

- 16 Mehra, P.N. & Dhawan, H. 1971

barbari Gamble

- 16 Pritchard, A.J. & Gould, K.F. 1964 ; Dasgupta, A. 1981

castioides Rottl.

- 16 Mitra, K. & Datta, N. 1967

coerulea Roxb.

- 16 Singh, A. & Roy, R.P. 1970

colutea (Burm. f.) Merr.

- 16 Frahm-Leliveld, J.A. 1966 ; Sanjappa,

M. & Bhatt, R.P. 1977

viscosa Lam.

- 16 Hagerup, O. 1932 ; Roy, R.P. & Singh, A. 1969 ; Singh, A. & Roy, R.P. 1970 ; Bir, S.S. & Kumari, S. 1980

cordifolia Heyne ex Roth

- 16 Ramanathan, K. 1955b ; Bir, S.S. & Sidhu, S. 1966 ; Frahm-Leliveld, J.A. 1966 ; Singh, A. & Roy, R.P. 1970 ; Bhatt, R.P. 1974 ; Sanjappa, M. & Bhatt, R.P. 1976 ; Singh, A.K. & Yadava, K.S. 1978b
28 Bir, S.S. & Sidhu, S. 1967

cylindracea Wall.

- 16 Mehra, P.N. & Dhawan, H. 1971

dalzellii

- 16 Dasgupta, A. 1981

dosna Buch. Ham, ex D. Don

- 16 Sampath, S. & Ramanathan, K. 1949 ; Berger, C.A. *et al.* 1958
48 Frahm-Leliveld, J.A. 1960a, 1962a

dathiei Drum. ex Naik

- 16 Sanjappa, M. & Bhatt, R.P. 1976, 1980

glabra Linn.

- 16 Singh, A. & Roy, R.P. 1970

glandulosa Willd.

- 16 Bir, S.S. & Kumari, S. 1973 ; Bhatt, R.P. 1974 ; Bhatt, R.P. & Sanjappa, M. 1975 ; Sanjappa, M. & Bhatt, R.P. 1976

heterantha Wall. ex Brandis

- 16 Baqar, S.R. & Abid Askari, S.H. 1970a, b
48 Frahm-Leliveld, J.A. 1960a ; Sanjappa, M. & Bhatt, R.P. 1977, 1980

gerardiana Wall. ex Baker

- 16 Bir, S.S. & Sidhu, S. 1966, 1967 ; Bir, S.S. & Kumari, S. 1980
48 Kreuter, E. 1929, 1930 ; Frahm-Leliveld, J.A. 1957

hirsuta Linn.*

- 16 Frahm-Leliveld, J.A. 1953, 1960a ;
Hsu, C. - C. 1968 ; Singh, A. & Roy,
R.P. 1970 ; Sanjappa, M. & Bhatt,
R.P. 1977

hochatetteri Baker

- 16 Frahm-Leliveld, J.A. 1962a ; Singh,
A. & Roy, R.P. 1970 ; Singh, A.K.
& Yadava, K.S. 1978b
32 Bhatt, R.P. 1974 ; Bhatt, R.P. &
Sanjappa, M. 1975 ; Sanjappa, M. &
Bhatt, R.P. 1976

kuruppiana

- 16 Dasgupta, A. 1981

linifolia (Linn. f.) Retz.

- 16 Roy, R.P. & Saran, J. 1960 ; Bir,
S.S. & Sidhu, S. 1966, 1967 ; Singh,
A. & Roy, R.P. 1970 ; Bhatt, R.P.
1974 ; Bhatt, R.P. & Sanjappa, M.
1975 ; Sanjappa, M. & Bhatt, R.P.
1976 ; Singh, A.K. & Yadava, K.S.
1978b ; Shastri, M.B. 1979 ; Sarkar,
A.K., Chakraverty, M. *et al.* 1980

var. *campbelli* Gamble

- 16 Bhatt, R.P. & Sanjappa, M. 1975 ;
Sanjappa, M. & Bhatt, R.P. 1976

lunaei Ali

- 16 Singh, A. & Roy, R.P. 1970 ; Bhatt,
R.P. 1974 ; Bhatt, R.P. & Sanjappa,
M. 1975 ; Sanjappa, M. & Bhatt,
R.P. 1976 ; Rao, C.K. 1979

emecaphylla Linn.

- 16 Ramanathan, K. 1955b ; Bir, S.S. &
Sidhu, S. 1966, 1967 ; Singh, A.K.
& Yadava, K.S. 1978b

mysorensis Rottf.

- 16 Dasgupta, A. 1981

neglecta

- 16 Roy, R.P. & Singh, A. 1969

nummularifolia (Linn.) Livera *ex* Alston

- 16 Frahm-Leliveld, J.A. 1960a ; Rao,
C.K. 1979

echinata Willd.

- 16 Pritchard A.I. & Gould, K.F. 1964 ;
Bir, S.S. & Kumari, S. 1975

oblongifolia Forsk.

- 14 Baquar, S.R. *et al.* 1966
16 Frahm-Leliveld, J.A. 1966 ; Singh,
A. & Roy, R.P. 1970 ; Bhatt, R.P.
1974 ; Sanjappa, M. & Bhatt, R.P.
1976 ; Singh, A.K. & Yadava, K.S.
1978b

parviflora Heyne *ex* Wight & Arn.

- 14 Hagerup, O. 1932 ; Frahm-Leliveld
J.A. 1962a
16 Sanjappa, M. 1978 ; Shastri, M.B.
1980 ; Dasgupta, A. 1981

pedicellata Wight & Arn.

- 16 Dasgupta, A. 1981

pentaphylla Linn.

- 16 Bir, S.S. & Kumari, S. 1978a

pulchella Roxb.**

- 16 Patil, R.P. 1958 ; Bir, S.S. & Sidhu,
S. 1966, 1967 ; Sreen, T.S. & Trehan,
R. 1977

semitrijuga Forsk.

- 16 Frahm-Leliveld, J.A. 1966

sessitiflora DC.

- 32 Hagerup, O. 1932 ; Frahm-Leliveld,
J.A. 1966 ; Singh, A. & Roy, R.P.
1970 ; Singh, A.K. & Yadava, K.S.
1978b ; Yadava, K.S. & Singh, A.K.
1978

spicata Forsk.

- 16 Sanjappa, M. & Bhatt, R.P. 1980
16, 32 Pritchard, A.I. & Gould, F.W. 1964
32 Frahm-Leliveld, J.A. 1960a

endecaphylla Jacq.

- 32 Frahm-Leliveld, J.A. 1953, 1957 ;
Simmonds, N.W. 1954
36 Kishore, H. 1951

suffruticosa Mill.

- 16 Frahm-Leliveld, J.A. 1957, 1960a ;
Krapovickas, A. & Krapovickas,

* *Indigofera hirsuta* *auct. pl.* (non Linn.), FBI, 2 : 98, *pro parte* is a synonym of *I. astragalina* DC. (HFDD : 142).

** *I. pulchella* *sensu* Baker, FBI, 2 : 101, *pro parte* (non Roxb.) is a synonym of *I. cassioides* Rottf. *ex* DC. (HFDD : 143).

- A.M.F. 1957; Chuang, T.I. *et al.* 1963; Roy, R.P. & Singh, A. 1969; Singh, A. & Roy, R.P. 1970
- 32 Kawakami, I. 1930; Shibata, K. 1962b
- sumatrana* Gaertn.
- 16 Frahm-Leliveld, J.A. 1953, 1957; Shibata, K. 1962b; Roy, R.P. & Singh, A. 1969; Singh, A. & Roy, R.P. 1970
- tenuifolia* Rottl.
- 16 Singh, A. & Roy, R.P. 1970
- thectoria* Linn.
- 16 Ramanathan, K. 1950; Frahm-Leliveld, J.A. 1960a; Midge, J. 1962; Singh, A. & Roy, R.P. 1970; Sinha, S.S.N. & Prasad, R. 1973; Bhatt, R.P. 1974; Bhatt, R.P. & Sanjappa, M. 1975; Sanjappa, M. & Bhatt, R.P. 1976; Singh, A.K. & Yadava, K.S. 1978b
- trifoliata* Linn.*
- 16 Bir, S.S. & Kumari, S. 1973; Bhatt, R.P. & Sanjappa, M. 1975; Sanjappa, M. & Bhatt, R.P. 1976
- trigonelloides* Jaub. & Spach**
- 16 Ramanathan, K. 1955b
- trita* Linn. f.
- 16 Bhatt, R.P. 1974; Bhatt, R.P. & Sanjappa, M. 1975; Sreen, T.S. & Singh, P.D. 1975; Sanjappa, M. & Bhatt, R.P. 1976; Singh, A.K. & Yadava, K.S. 1978b; Rao, C.K. 1979
- ssp. subulata* (Vahl ex Foir) Ali
- subulata* Vahl
- 16 Roy, R.P. & Singh, A. 1969; Singh, A. & Roy, R.P. 1970; Sanjappa, M. & Bhatt, R.P. 1977
- var. scabra* (Roth.) Meikle
- 16, 32 Frahm-Leliveld, J.A. 1966
- var. subulata*
- 16 Frahm-Leliveld, J.A. 1960a
- uniflora* Buch. Ham.
- 16 Dasgupta, A. 1981
- vicioides*
- 16 Sanjappa, M. & Bhatt, R.P. 1980
- wightii* Grah.
- 16 Dasgupta, A. 1981
- zollingeriana* Miq.
- zeysmannii* Miq.
- 32 Atchison, E. 1951; Datta, P.C. & Maiti, R.K. 1968c
- Inocarpus* J.R. & G. Forst.
- 4; New Guinea and Polynesia. 1; cultivated.
- edulis* J.R. & G. Forst.
- 20 Atchison, E. 1951
- Lablab* Adans.
- Probably 1; tropical Africa. Cultivated.
- purpureus* Linn.***
- 22 Maréchal, R. 1970
- purpureus* (Linn.) Sweet
- 22 Lackey, J.A. 1980
- niger* Medik.
- 22 Maréchal, R. & Otoul, E. 1966
- Dolichos lablab* Linn.
- 20 Vasil, I.K. 1962; Pritchard, A.J. & Gould, K.F. 1964; Saroca, T.S., Kent, S. & Pratap, R. 1974
- 22 Karpechenko, G.D. (Fedorov); Kachidze (Tischler, G. 1927); Kawakami, I. 1930; Senn, H.A. 1938; Frahm-Leliveld, J.A. 1953, 1957; Roy, R.P. & Saran, J. 1959; Sen, N.K. & Marimuthu, K.M. 1960;

* *Indigofera trifoliata* auct. pl. (non Linn.), FBI, 2 : 96 *pro parte* is a synonym of *I. prostrata* Willd. (HFDD : 145).

** *I. trigonelloides* auct. pl., FBI, 2 : 94 (non Jaub. & Spach) is a synonym of *I. sesaliflora* DC. (SFUGP : 54).

*** The combination *Lablab purpureus* should be attributed to Sweet (FHD : 268).

Bir, S.S. & Sidhu, S. 1966, 1967 ;
Datta, P.C. & Saha, N. 1973b ;
Sarbhoj, R.K. & Sinha, R.P. 1978 ;
Bir, S.S. & Kumari, S. 1980

- 24 Rau, N.S. 1929b ; Roy, B. 1933 ;
Ayyangar-Rangaswami, G.N. &
Krishnaswamy, N. 1936 ; Mehra, B.
1940a

Lathyrus Linn.

About 130 ; North temperate and
mountains of tropical Africa and South
America. 9 ; confined to Northern India and
temperate Himalaya (up to 3,300 m), and
Pakistan a few cultivated.

aphaca Linn.

- 14 Corti, R.N. 1930 ; Simonet, M. 1932a ;
Senn, H.A. 1938 ; Trankowsky, D.A.
(Fedorov) ; Datta, P.C. 1955a, b ;
Bir, S.S. & Sidhu, S. 1966, 1967 ;
Roy, R.P. & Singh, M.K. 1968 ;
Singh, M.K. 1969a, b ; Fernandes, A.
& Santos, M.F. 1971 ; Fouzdar, A.
& Tandon, S.L. 1975 ; Al-Mayah,
A. R.A. & Al. Shehbaz, I. 1977 ;
Das, A. & Shani, D.K. 1977 ; Bir,
S.S. & Kumari, S. 1980 ; Lavania,
U.C. & Sharma, A.K. 1980b ; Van
Loon, J. Chr. & Kieft, B. 1980
- 28 Singh, M.K. & Singh, U. 1969

cleora Linn.

- 14 Simonet, M. 1932a ; Senn, H.A.
1938 ; Lavania, U.C. & Sharma, A.K.
1980b

clymenum Linn.

- 14 Lavania, U.C. & Sharma, A.K.
1980b

hirsutus Linn.

- 14 Simonet, M. 1932a ; Senn, H.A.
1938 ; Sciple, R.S. & Johnston, G.W.
1963 ; Singh, M.K. 1969b

inconspicuus Linn.*

- 14 Senn, H.A. 1938b ; Podlech, D. &
Dieterle, A. 1969 ; Bhat, B.K. *et al.*

1974a ; Al-Mayah, A. R.A. & Al-
Shehbaz, I. 1977

luteus Baker

- 14 Nagl, W. 1962

ochrus DC.

- 14 Simonet, M. 1932a ; Senn, H.A.
1938 ; Trankowsky, D.A. (Fedorov) ;
Kodama, A. 1970b ; Fouzdar, A. &
Tandon, S.L. 1975

odoratus Linn.

- 14 Winge, O. 1919 ; Latter, J. 1926 ;
Maeda, T. 1928 ; Kawakami, I. 1930 ;
Melderis, A. & Viksne, A. 1931 ;
Hrubý, K. 1932b ; Simonet, M.
1932a ; Fabergé, A.C. 1937 ; Senn,
H.A. 1938 ; Trankowsky, D.A. (Fedo-
rov) ; Datta, P.C. 1955a, b ; Sharma,
A.K. & Datta, P.C. 1959 ; Bir, S.S.
& Sidhu, S. 1966, 1967 ; Chaudhuri,
F.R. 1966 ; Kapoor, B.M. 1966b ;
Roy, R.P. & Singh, M.K. 1968 ;
Singh, M.K. 1969a, b ; Kodama, A.
1970b, 1972 ; Fouzdar, A. & Tandon,
S.L. 1972, 1975 ; Datta, P.C. 1975 ;
Das, A. & Shani, D.K. 1977 ; Lava-
nia, U.C. & Sharma, A.K. 1979,
1980 b ; Bir, S.S. & Kumari, S. 1980 ;
- 14, 15 Ohri, D. *et al.* 1979
- 14, 28 Tatuno, S. & Kodama, A. 1965
- 28 Fabergé, A.C. 1935 ; Singh, M.K. &
Singh, U. 1968

pratensis Linn.

- 9, 14, 16,
21, 28 Simola, L.K. 1964
- 14 Melderis, A. & Viksne, A. 1931 ;
Tischler, G. 1934 ; Trankowsky, D.A.
(Fedorov) ; Uhríková & Murin
(Fedorov) ; Laane, M.M. 1969a ;
Singh, M.K. 1969a ; Lepper, L.
1970b ; Májovský, J. *et al.* 1970a ;
Maugini, E. & Moskova, R. 1971 ;
Kožuharov, S.I. *et al.* 1972 ; Dvořák,
F. & Dadáková 1975 ; Al-Mayah,
A. - R.A. & Al-Shehbaz, I. 1977
- 14, 28 Larsen, K. 1953, 1954a, 1957
- 28 Crane, M.H. 1950 ; Marks, G.F.

* *Lathyrus inconspicuus* auct. non Linn., FBI, 2 : 180 is a synonym of *L. erectus* Lag.

1950 ; Larsen, K. & Lagaard, S. 1971 ;
Van Loon, J. Chr. & de Jong, H.
1978

sativus Linn.

- 14 Corti, R.N. 1931 ; Simonet, M.
1932a ; Roy, B. 1936 ; Senn, H.A.
1938 ; Trankowsky, D.A. (Fedorov) ;
Bhattacharjee, S.K. 1954 ; Datta,
P.C. 1955a, b ; Frahm-Lelivold, J.A.
1957 ; Roy, R.P. & Singh, M.K.
1968 ; Singh, M.K. 1969a, b ; Verma,
S.C. & Grewal, S.S. 1972 ; Fouzdar,
A. & Tandon, S.L. 1975 ; Das, A. &
Shani, D.K. 1977 ; Verma, S.C. &
Ohri, D. 1978 1979a ; Bir, S.S. &
Kumari, S. 1980 ; Lavania, U.C. &
Sharma, A.K. 1980b
- 28 Singh, M.K. & Singh, U. 1968

sphaericus Retz.

- 14 Simonet, M. 1932a ; Senn, H.A.
1938 ; Trankowsky, D.A. (Fedorov) ;
Kishore, H. 1951 ; Larsen, K. 1954a ;
Matveeva, T.S. & Tikhonova, A.D.
(Fedorov) ; Singh, M.K. 1969a ;
Dahlgren, R. *et al.* 1971 ; Fernandes,
A. & Santos, M.F. 1971 ; Fouzdar,
A. & Tandon, S.L. 1975 ; Krusheva,
R.M. 1975 ; Das, A. & Shani, D.K.
1977 ; Kieft, B. & Van Loon, J.
Chr. 1978 ; Bir, S.S. & Kumari, S.
1980 ; Lavania, U.C. & Sharma, A.K.
1980b

var. *sphaericus*

- 14 Kožuharov, S.I. *et al.* 1973

tingitanus Linn.

- 14 Melderis, A. & Viksne, A. 1931 ;
Simonet, M. 1932a ; Senn, H.A.
1938 ; Trankowsky, D.A. (Fedorov) ;
Singh, M.K. 1969a ; Fernandes, A.
& Santos, M.F. 1971 ; Verma, S.C.
1978

Lens Mill.

10 ; Mediterranean and West Asia. 1 ;
cultivated.

galiharis Medik.

- 14 Mettin, D. 1960 ; Sinha, S.S.N. &
Acharia, S.S. 1972a, b, 1975 ; Sinha,
S.S.N. 1977 ; Popova, M.T. & Cosch-

medjiev, I.V. 1978 ; Bir, S.S. &
Kumari, S. 1980

esculenta Moench

- 12 Suzuka, O. 1953
14 Sakamura, T. 1920 ; Heitz, E. 1926 ;
Miranda, F. 1931 ; Senn, H.A. 1938 ;
Janaki Ammal, E.K. (D. 1945) ; Bhat-
tacharjee, S.K. 1953 ; Sarbhoy, R.K.
1980c
- 28 Singh, M.K. *et al.* 1973

var. *macrosperma* (Baumg) Bar

- 14 Sinha, S.S.N. & Keswani, R. 1973

esculenta Moench

var. *macrosperma*

- 14 Naithani, S.P. & Sarbhoy, R.K. 1973

var. *microsperma* (Baumg) Bar

- 14 Sinha, S.S.N. & Keswani, R. 1973 ;
Ahmad, N. 1977

esculenta Moench

var. *microsperma*

- 14 Naithani, S.P. & Sarbhoy, R.K.
1973

Leapedeza Michx.

100 ; Himalaya to China and Japan,
Australia and temperate North America.
15 ; Himalaya (between 660 and 3,300 m), a
few introduced and cultivated.

cuneata G. Don

- 20 Hanson, C.H. & Cope, W.A. 1955 ;
Lee, Y.N. 1969
20, 22 Clewell, A.F. 1971

floribunda Bunge

- 22 Pierce, W.P. 1939

jucea Pers.

- 20 Sareen, T.S. & Singh, P.D. 1975,
1976

jucea Pers.

f. *variegata* (Camb.) Ohashi

variegata Camb.

- 18 Cooper, D.C. 1936a ; Pierce, W.P.
1939

stenocarpa Maxim.

- 18 Mehra, P.N. & Dhawan, H. 1971
22 Singhal, V.K. *et al.* 1980a

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stipulacea Maxim.

- 20 Cooper, D.C. 1936a; Hanson, C.H. 1953

striata (Thunb.) Hook. & Arn.

- 22 Pierce, W.P. 1939; Young, J.O. 1940

Kummerowia striata (Thunb.) Schindl.

- 22 Sakai, B. 1951 (D. 1955)

tomentosa Sieb.

- 20 Cooper, D.C. 1936a

Lotus Linn.

100; temperate Eurasia, Asia and Africa. 3; Himalaya, and Nepal and Pakistan, 1 introduced and cultivated.

corniculatus Linn.

- 12 Kawakami, I. 1930; Tischler, G. 1934, 1937; Rohweder, H. 1937; Senn, H.A. 1938; Hara, H. 1952; Larsen, K. 1958a; Žertová, A. 1960; Grant, W.F. et al. 1961, 1962; Favarger, C. & Huynh 1964; Zajacová, V. 1962
- 12, 24 Tschchow, W. & Kartaschowa, N. (Fedorov); Guinochet, M. 1945; Kishore, H. 1951; Favarger, C. 1953; Larsen, K. 1954a; Bent, F.C. 1962
- 24 Dawson, C.D.R. 1941; Milovidov, P.F. 1941; Larsen, K. 1954b, 1955a; Löve, A. & Löve, D. 1956b; Bubar, J.S. 1957; Shibata, K. 1957; Palková, M. 1959; Ujhelyi, J. 1960; Zajacová, V. 1962; Larsen, K. & Žertová, A. 1963; Favarger, C. & Huynh 1964; Harney, P. & Grant, W.F. 1964; Titz, W. 1964; Wernsman, E.A. et al. 1964; Žertová, A. 1964; Gilot, J. 1965; Grant, W.F. 1965, 1967; Polatschek, A. 1966a; Gadella, T.W.J. & Kliphuis, E. 1967, 1968a, 1970a, b, 1972; Przywara, L. & Schmager, J. 1967; Curran, P.L. 1968; Zandstra, I.I. & Grant, W.F. 1968; Gadella, T.W.J. et al. 1970; De Vries, W. 1972; Kozuharov, S.I. et al. 1972; Cheng, R.I. - J. & Grant, W.F. 1973; Fritsch, R.M. 1973; Findley, J.N. & McNeill, J. 1974; Dvořák, F. & Dadačková, B. 1978a; Van Loon, J. Chr. & de Jong, H. 1978; Brand, C.V.D. et al. 1979;

Dvořák, F., Grill, F. et al. 1979; Kliphuis, E. & Wieffering, J.H. 1979; Van Loon, J. Chr. & Kieft, B. 1980

26 Matlack (Tischler, G. 1950)

32 Kodama, A. 1967

var. *corniculatus*

12 Al-Mayah, A. R.A. & Al-Schebbaz, I. 1977

24 Chrtkova-Zertova, A. et al. 1971

var. *japonicus* Regel

japonicus (Regel) K. Larsen

12 Larsen, K. 1955a; Bubar, J.S. 1957 (Grant, W.F. 1965); Grant, W.F. et al. 1961, 1962; Harney, P. & Grant, W.F. 1965

Jacobaeus Linn.

14 Larsen, K. 1955a; Bubar, J.S. 1957 (Grant, W.F. 1965); Grant, W.F. 1965

Lupinus Linn.

200; America and Mediterranean. About 5; cultivated.

albus Linn.

30 Olszewska, M.J. 1954b

c. 40 Smet, E. de 1914

48 Sawchenko (Fedorov); Atabekova, A.I. (Fedorov)

48, 50 Tuschnjakowa, M.M. (Fedorov)

50 Senn, H.A. 1938; Malheiros, N. 1942; Olszewska, M.J. 1954a; Atabekova, A.I. (Fedorov); Gilot, J. 1965; Gustafsson, Å. & Gadd, I. 1965; Pazy, B. et al. 1977

c. 50 Larsen, K. & Lagaard, S. 1971

angustifolius Linn.

40 Wingo, Ö. 1925; Sawchenko (Fedorov); Tuschnjakowa, M.M. (Fedorov); Malheiros, N. 1942; Atabekova, M.M. (Fedorov); Gilot, J. 1965; Gustafsson, Å. & Gadd, I. 1965; Fernandes, A. & Santos, M.F. 1971; Larsen, K. & Lagaard, S. 1971

48 Kawakami, I. 1930

var. *angustifolius*

40 Pazy, B. et al. 1977

hirsutus Linn.

24 de Zeeuw, J. 1936

fedora Linn.

- c. 46 Heitz, E. 1926
- 46 de Zeeuw, J. 1936
- 48 Kawakami, I. 1930
- 50, 52 Atabekova, A.I. (Fedorov)
- 52 Sawchenko (Fedorov); Tuschnjakowa, M.M. (Fedorov); Malheiros, N. 1942; Olszewska, M.J. 1954b; Atabekowa, A.I. (Fedorov); Gilot, J. 1965; Gustafsson, Å. & Gadd, I. 1965; Pazy, B. *et al.* 1977
- 52, 104 Troll, H.J. *et al.* 1963

metaballs Sweet

- 42 Milovidov, P.F. 1926
- 48 Wings, Ö. 1925; Sawchenko (Fedorov); Tuschnjakowa, M.M. (Fedorov); Malheiros, N. 1942; Atabekova, M.M. (Fedorov); Heiser, C.B. 1963; Gustafsson, Å. & Gadd, I. 1965

Macrotylium (Benth.) Urb.

8; tropical America. 2; 1 naturalized, 1 cultivated.

atropurpureum (DC.) Urb.

Phaseolus atropurpureus DC.

- 22 Pritchard, A.J. & Gould, K.F. 1964; Singh, A. & Roy, R.P. 1970; Sarbhoy, R.K. 1977b, 1978a, 1980a; Sinha, S.S.N. & Roy, H. 1979a, b

lathyroides (Linn.) Urb.

var. *lathyroides*

Phaseolus lathyroides Linn.

- 22 Pritchard, A.J. & Gould, K.F. 1964; Roy, R.P. & Singh, A. 1969; Singh, A. & Roy R.P. 1970; Larsen, K. 1971; Joseph, L.S. & Bouwkamp J.C. 1978

var. *semierectum* (Linn.) Urb.

Phaseolus lathyroides

var. *semierectum*

- 22 Biswas, M.R. & Dana, S. 1975

semierectus Linn.

- 22 Senn, H.A. 1938; Turner, B.L. 1956; Sarbhoy, R.K. 1977b, 1978a, b, 1980a; Sanjappa, M. & Sathyananda, N. 1979

Macrotyloma (Wight & Arn.) Verdc.

25; Africa and Asia. 1; almost throughout India, and Sri Lanka, sometimes cultivated.

uniflorum (Lam.) Verdc.

Dolichos uniflorus Lam.

- 20 Marechal, R. & Otuole, B. 1965

var. *uniflorus*

- 20 Marechal, R. 1970

Medicago Linn.

100; temperate Eurasia, Mediterranean and South Africa. About 10; Northern India, and Himalaya (up to 4,290 m), and Pakistan a few cultivated.

falcata Linn.

- 16 Ledingham, G.F. 1940; Bolton, I.L. & Greenshields, I.E.R. 1950; Sinskaja & Malceva (Fedorov); Lesins, K. & Lesins, I. 1964; Kožuharov, S.J. & Kuzmanov, V.A. 1965; Simon, J.P. & Simon, A. 1965; Gillies, C.B. 1970a; Kliphuis, E. 1977
- 16, 32 Fryer, J.R. 1930; Sinskaya, E.N. (Fedorov); Lesins, K. 1952; Mariani, A. 1963
- 32 Karpechenko (Tischler, G. 1927); Ghimpu, V. 1929b, 1930; Tschchow, W.P. (Fedorov); Tischler, G. 1934; Cooper, D.C. 1935b; Sinskaya, E.N. (Fedorov); Julen, G. 1944; Pogan (Skalińska, M. *et al.* 1966); Májovský, J. *et al.* 1970b

sativa Linn.

ssp. *falcata* (Linn.) Arcang.

- 32 Van Loon, J. Chr. & Kieft, B. 1980

var. *procumbens* Schmalh.

- 16 Kožuharov, S.J. *et al.* 1973

laciniata (Linn.) Mill.

- 16 Ghimpu, V. 1929b, 1930; Fryer, J.R. 1930; Tschchow, W.P. (Fedorov); Heyn, C. 1956; Reese, G. 1957; Simon, J.P. & Simon, A. 1965; Lesins, K. & Erac, A. 1968; Van Loon J.C. 1974; Abdelguerfi, A. & Guittoneau, G.-G. 1979

repulna Linn.

- 16 Karpechenko (Tischler, G. 1927); Ghimpu, V. 1928, 1929b, e, 1930; Fryer, J.R. 1930; Tischler, G. 1934; Cooper, D.C. 1935b; Heiser, C.B. & Whitaker, T.W. 1948; Pólya, L. 1948; Löve, A. & Löve, D. 1956b; Mulligan, G.A. 1957; Gadella, T.W.J. & Kliphuis, E. 1966, 1968a, 1970b; Murin & Václavá (Fedorov); Podlech, D. & Dieterle, A. 1969; Májovský, J. *et al.* 1970a; Fernandes, A. & Santos, M.F. 1971; Kožuharov, S.I. *et al.* 1972; Labadie, J.P. 1976; Sareen, T.S. & Trehan, R. 1976, 1977; Natarajan, G. 1978; Abdelguerfi, A. & Guittoneau, G. G. 1979; Kliphuis, E. & Wieffering, J.H. 1979; Bir, S.S. & Kumari, S. 1980; Van Loon, J. Chr. & Kieft, B. 1980
- 16, 32 Tschchow, W.P. (Fedorov); Sinskaya, E.N. (Fedorov); Heyn, C. 1956; Mariani, A. 1963; Kodama, A. 1967
- 28, 32 Kodama, A. 1967, 1970b
- 32 Lesins, K. 1952

minima Linn.*

- 16 Ghimpu, V. 1928, 1929b, e, 1930; Tischler, G. 1934

minima (Linn.) Bart.

- 16 Simon, J.P. & Simon, A. 1965; Fernandes, A. & Santos, M.F. 1971; Kožuharov, S.I. *et al.* 1972; Abdelguerfi, A. & Guittoneau, G.-G. 1979; Van Loon, J. Chr. 1980

minima (Linn.) Grufb.

- 16 Májovský, J. *et al.* 1970a

orbicularis (Linn.) Bart.

- 16 Ghimpu, V. 1928, 1929b, e, 1930; Fryer, J.R. 1930; Larsen, K. 1955b; Heyn, C. 1956; Heyn, C.C. 1963; Mariani, A. 1963; Kožuharov, S.I. & Kuzmanov, V.A. 1965; Simon, J.P. & Simon, A. 1965; Strid, A. 1971; Labadie, J.P. 1976; Abdelguerfi, A. & Guittoneau, G.-G. 1979; Van Loon,

J. Chr. 1980; Van Loon, J. Chr. & Kieft, B. 1980

32 Lesins, K. 1952

ssp. *orbicularis*

16 Fernandes, A. & Santos, M.F. 1971

polymorpha Linn.

14 Fernandes, A. & Santos, M.F. 1971; Gillies, C.B. 1971; Van Loon, J. Chr. & de Jong, H. 1978

14, 16 Heyn, C. 1963

16 Labadie, J.P. 1979; Bir, S.S. & Kumari, S. 1980

var. *apiculata* (Willd.) van Ooststr. & Reichgelt*apiculata* Willd.

16 Ghimpu, V. 1929b, 1930

var. *polymorpha*

14 Simon, J.P. & Simon, A. 1965

denticulata Willd.

16 Ghimpu, V. 1929b, 1930; Sinskaya, E.N. (Fedorov)

hispida Gaertn.

14 Fryer, J.R. 1930; Tschchow, W.P. (Fedorov); Larsen, K. 1956b; Lesins, K. & Lesins, I. 1962; Mariani, A. 1963

14, 16 Heiser, C.B. & Whitaker, T.W. 1948; Heyn, C. 1956

lappacea Desr.

16 Ghimpu, V. 1929b, 1930

sativa Linn.

16 Bolton, I.L. & Greenshields, J.E.R. 1950; Roy, R.P. & Saran, J. 1960; Buss, G.R. & Cleveland, R.W. 1968a, b; Gillies, C.B. 1968

16, 32 Lesins, K. 1952, 1968; Obajimi, A.O. & Bingham, E.T. 1973

32 Karpechenko (Fedorov); Ghimpu, V. 1928, 1929e, 1930; Fryer, J.R. 1930; Kawakami, I. 1930; Reeves, R.G. 1930; Tschchow, W.P. (Fedorov); Romanov, I.D. (Fedorov); Senn, H.A. 1938; Skovsted, A. 1939; Ledingham, G.F. 1940; Sinskaya, E.N. (Fedorov); Juién, G. 1944;

* The combination *Medicago minima* should be attributed to Grufb.

- Fyfe, J.L. 1957; Lesins, K. 1958; Sinskay & Malceva (Fedorov); Palková, M. 1959; Dalessandri, K. & Erbisch, F.H. 1967; Gadella, T.W.J. & Kliphuis, E. 1970a; Gillies, C.B. 1970b; Armstrong, K.C. 1971; Al-Mayah, A.-R.A. & Al-Shehbaz, I. 1977; Tomkins, D.J. & Grant, W.F. 1978
- 32, 32+2B Biswas, A.K. & Bhattacharyya, N.K. 1968
- 32, 64 Tomé, G.A. 1947; Mariani, A. 1963
- 48 Bingham, E.T. & Binek, A. 1969; Ciurdarescu, G. 1970; Mariani, A. 1975
- 2x × 6x**
- 32 Bingham, E.T. & Binek, A. 1969
- 4x × 6x**
- 32, 34, 35, 36, 37, 38, 40, 56 Bingham, E.T. & Binek, A. 1969
- 2n = 32 × 2n = 64**
- 33-65 Sadasivaiah, R.S. & Lesins, K. 1974
- sativa 2x × falcata 4x**
- 24 Binek, A. & Bingham, E.T. 1970
- sativa 3x × falcata 4x**
- 28 - 40 Binek, A. & Bingham, E.T. 1970
- ssp. sativa**
- 32 Strid, A. 1971; Fernandes, A. & Santos, M.F. 1971; Kliphuis, E. & Wieffering, J.H. 1979

Melilotus Mill.

25; temperate and subtropical Eurasia and Mediterranean. 3; Northern India and the Himalaya (up to 4,000 m), with 1 extending to Peninsular India.

alba Medik.

- 16 Castetter, E.F. 1925; Smith, H.B. 1927b; Fryer, J.R. 1930; Tschschow, W.P. (Fedorov); Clarke, A.E. 1934; Tischler, G. 1934; Rohweder, H.

- 1937; Heiser, C.B. & Whitaker, T.W. 1948; Löve, A. & Löve, D. 1956b; Ledingham, G.F. 1957; Mulligan, G.A. 1957; Bhattacharyya, N.K. 1958a; Kita, F. *et al.* 1959; Malik, C.P. 1960b; Bir, S.S. & Sidhu, S. 1966, 1967; Kita, F. 1966; Sharma, A. & Sarkar, A.K. 1967-1968; Gadella, T.W.J. & Kliphuis, E. 1968a Taylor, R.L. & Mulligan, G.A. 1968; Kao, K.N. *et al.* 1970; Fernandes, A. & Santos, M.F. 1971; Kožuharov, S.I. *et al.* 1972, 1973; Mulligan, G.A. & Cody, W.J. 1973; Labadie, J.P. 1976; Al-Mayah, A.-R.A. & Al-Shehbaz, I. 1977; Tomkins, D.J. & Grant, W.F. 1978; Javůrková, V. 1979

- 16, 24, 36 Atwood, S. 1936
- 32 Lesins, K. 1952

indica (Linn.) All

- 16 Fryer, J.R. 1930; Tschschow, W.P. (Fedorov); Clarke, A.E. 1934; Heiser, C.B. & Whitaker, T.W. 1948; Bhaskaran, S. & Swaminathan, M.S. 1958; Bhattacharyya, N.K. 1958a; Sikka, S.M. *et al.* 1958; Kita, F. 1966; Fernandes, A. & Santos, M.F. 1971; Al-Mayah, A.-R.A. & Al-Shehbaz, I. 1977; Bir, S.S. & Kumari, S. 1980

parviflora Desf.

- 16 Malik, C.P. 1960b

officinalis (Linn.) Med.*

- 16 Fryer, J.R. 1930; Tschschow, W.P. (Fedorov); Clarke, A.E. 1934; Tischler, G. 1934; Romanenko (Fedorov); Milovidov, P.F. 1941; Löve, A. & Löve, D. 1944b; Pólya, L. 1949; Kita, F. 1966; Garajová (Fedorov); Aryavand, A. 1975
- 32 Lesins, K. 1952

officinalis (Linn.) Desr.

altissima Thuill.

- 16 Scherer, H. 1939; Wipf, L. 1939; Löve, A. & Löve, D. 1944b; Kita F. 1966

* The combination *Melilotus officinalis* should be attributed to Desr.

Milletia Wight & Arn.

180; tropics and subtropics (few America). 12; chiefly in Eastern Himalaya and Assam, and Bangla Desh a few cultivated.

auriculata Baker

- 20 Datta, P.C. & Maiti, R.K. 1968c ;
Sanjappa, M. & Dasgupta, A. 1977
22 Bir, S.S. & Kumari, S. 1973

brandisiana Kurz

- 22 Singhal, V.K. *et al.* 1980a

cimerea Benth.

- 16 Mehra, P.N. & Hans, A.S. 1969,
1971

ovalifolia Kurz

- 20 Atchison, E. 1951 ; Sanjappa, M. &
Dasgupta, A. 1977
22 Pal, N. 1960 ; Sareen, T.S., Kant, S.
& Pratap, R. 1974 ; Sareen, T.S. &
Singh, P.D. 1976 ; Bir, S.S. &
Kumari, S. 1980

peguensis Ali

- 22 Rao, C.K. 1979

pendula Benth.

- 22 Bir, S.S. & Kumari, S. 1978b

thouningii Baker

- 16 Atchison, E. 1951
22 Sarkar, A.K., Datta, N. *et al.* 1978

Mucuna Adans.

About 120; tropics and subtropics. 12; chiefly in tropical Eastern Himalaya and Nepal, Bangla Desh and Sri Lanka.

deeringiana (Bort) Merr.

- 22 Datta, P.C. & Saha, N. 1973b

Stizolobium deeringianum Bort

- 22 Schnack, B. & Fernandez, O. 1946

gigantea (Willd.) DC.

- 28 Sastrapradja, S. *et al.* 1974

monosperma DC.

- 22 Thombre, M.V. 1959b

nigricans (Lour.) Steud.

- 22 Bir, S.S. & Kumari, S. 1978b

pruriens (Linn.) DC.

- 22 Sampath, S. & Ramanathan, K. 1949;
Frahm-Leliveld, J.A. 1953, 1957 ;
Thombre, M.V. 1958 ; Von Reinhard,
F. 1972 ; Bir, S.S. & Kumari, S.
1980 ; Lackey, J.A. 1980

prurita Hook.

- 22 Sanjappa, M. & Dasgupta, A. 1977

f. cochinchinensis (Lour.) Backer**cochinchinensis** Chev.

- 22 Hardas, M.W. & Joshi, A.B. 1954 ;
Thombre, M.V. 1958

f. pruriens

- 22 Sastrapradja, S. *et al.* 1974

f. utilis (Wall. ex Wight) Backer

- 22 Sastrapradja, S. *et al.* 1974

Mundulea Benth.

30; Madagascar, 1 tropical Africa, Southern India and Sri Lanka. 1; South Western India.

sericea (Willd.) Greenway*

- 22 Turner, B.L. & Fearing, O.S. 1959

sericea Chev.**suberosa** (DC.) Benth.

- 20 Atchison, E. 1951
22 Frahm-Leliveld, J.A. 1953, 1957

Myroxylon Linn. *f.*

2; tropical South America. 1; cultivated.

balsamum (Linn.) Harmsvar. **perelrae** (Royle) Bajfl.**perelrae** Klotz.

- 28 Atchison, E. 1951

* The combination *Mundulea sericea* should be attributed to Chev. (FHD : 260 ; DFPI : 111).

Ononis Linn.

75 ; Canaries , Mediterranean, Europe to Central Asia. 1 ; temperate Western Himalaya and Kashmir.

hircina Jacq.

32 Laane, M.M. 1969a

arvensis Linn.

24 Chouksanova (Fedorov)

32 Tischler, G. 1934

Ormosia G. Jacks.

50 ; tropics, 3 ; South Western India and Assam, and Nepal and Bangla Desh.

robusta Wight

16 Mehra, P.N. & Hans, A.S. 1969, 1971, 1972

Ornithopus Linn.

10 ; subtropics, South America, tropical Africa, Mediterranean and West Asia. 1 ; introduced.

perpusillus Linn.

14 Griesinger, R. & Klinkowski, M. 1939 ; Scheerer, H. 1939 ; Maude, P.F. 1940 ; Milovidov, P.F. 1941 ; Gadella, T.W.J. & Kliphuis, E. 1968a ; Richards, A.J. 1972

Ongelmia Benth.

1 ; hilly areas of tropical India, also cultivated.

oojelenensis (Roxb.) Hoehr.

22 Sareen, T.S. & Trehan, R. 1976, 1977

24 Mehra, P.N. & Sareen, T.S. 1969, 1973a

Oxytropis DC.

300 ; North temperate. 7 ; Western Himalaya (from 2,300 to 5,600 m), 1 extending to Sikkim.

lapponica Gaud.

48 Tschschow, W.P. (Fedorov) ; Löve, A. 1954b

microphylla (Pall.) DC.**chiliophylla** Royle

16 Ledingham, G.F. & Rever, B.M. 1963

Pachyrhizus Rich. ex DC.

6 ; tropics. 2 ; cultivated.

erosus (Linn.) Urb.**angulatus** Rich.

22 Roy, B. 1933 ; De, D.N. & Prasad, D.N. 1966, 1967 ; Diwas, A.K. & Bhattacharyya, N.K. 1968, 1970 ; De, D.N. & Ray, D.K. 1968

tuberosus Spreng.

22 Senn, H.A. 1938

Paracalyx Ali

4 ; tropics and North East Africa, Socotra, India and South East Asia. 1 ; Madhya Pradesh, Southern and Western India.

scariosa (Roxb.) Ali**Cylista scariosa** Roxb.

22 Thombre, M.V. 1959a

Parochetus Buch. Ham. ex D. Don

1 ; mountains of tropical Africa and Asia. Alpine temperate and subtropical Himalaya, Assam and Western Ghats, and Sri Lanka.

communis Buch.-Ham.

16 Clarke, A.E. 1934 ; Berger, C.A. et al. 1958

Phaseolus Linn.

A few species native to South America, most of them are cultivated in warmer regions of hemispheres. 4 ; cultivated widely in hilly areas, 1 cultivated in agri-horticultural gardens.

cochimbensis Linn.

22 Nagl, W. 1962 ; Thomas, H. 1964 ;

Sinha, S.S.N. & Roy, H. 1979b ;
Haq, M.N. *et al.* 1980

multiflorus Willd.

22 Karpechenko, G.D. (Fedorov) ; Senn,
H.A. 1938 ; Sarbhoy, R.K. 1977b,
1978a, b, 1980a ; Joseph, L.S. &
Bouwkamp, J.C. 1978

24 Kleinmann, A. 1923

vulgaris Linn.

22 Karpechenko, G.D. (Fedorov) ; Wien-
stein (Fedorov) ; Katayama, Y. 1928 ;
Kawakami, I. 1930 ; Tschchow, W.
& Kartaschowa, N. (Fedorov) ;
Malinowski, E. 1935 ; Senn, H.A.
1938 ; Takagi, N. 1938 ; Berger, C.A.
et al. 1958 ; Shibata, K. 1962a ;
Thomas, H. 1964 ; Maréchal, R. &
Otoul, E. 1965, 1966 ; Lamprocht, H.
1966 ; Maréchal, R. 1970 ; Smartt,
J. 1970 ; Sarbhoy, R.K. 1977b,
1978a, b ; Bhattacharya, S. 1978b, c ;
Sinha, S.S.N. & Roy, H. 1979b ;
Haq, M.N. *et al.* 1980 ; Srivastava,
H.K. 1980

22, 24 Datta, P.C. & Saha, N. 1973b ;
Biswas, A.K. & Bhattacharyya, N.K.
1976

var. *climbing*

22 Sarbhoy, R.K. 1980a

var. *dwarf*

22 Sarbhoy, R.K. 1980a

vulgaris x *coccineus*

22, 44 Haq, H.N. *et al.* 1980

sp.

44 Dana, S. 1964

sp.

44 Krishnan, R. & De, D.N. 1968b, c

sp.

44 Sarbhoy, R.K. 1977b, 1978a, b,
1980a

Piptanthus Sweet

8 ; Central Asia, Himalaya and China.
1 ; temperate Himalaya and Assam, and

Nepal and Bhutan (between 2,300 and
3,000 m).

nepalensis Sweet*

18 Tschchow, W.P. (Fedorov) ; Berger,
C.A. *et al.* 1958

Pfiscidia Linn.

10 ; Florida, Mexico and West Indies.
2 ; introduced.

piscipula (Linn.) Sarg.

22 Atchison, E. 1951

Pisum Linn.

6 ; Mediterranean and West Asia. 1 ;
cultivated.

sativum Linn.

7, 9, 11,
12, 14

(in culture) Ghosh, P. & Sharma, A.K. 1979

12 + 2,

13 + 1,

14, 14 + 1,

15 Saccardo, F. 1971

13 + 1,

14 + 1

14

Saccardo, F. & Monti, L.M. 1970
Cannon, W.A. 1903 ; Němec, B. 1904,
1910 ; Strasburger, E. 1911 ; Saka-
mura, T. 1916, 1920 ; Bateson, W. &
Fellw, C. 1920 ; Dombrowskaya, L.
(Fedorov) ; Wings, Ö. 1925 ; Heitz,
E. 1926 ; Dombrowskaya-Sludskaya,
L.N. (Fedorov) ; Håkansson, A.
1929a ; Buntén, I. 1930 ; Kawakami,
I. 1930 ; Lewitsky, G.A. (Fedorov) ;
Lufkov, A.N. (Fedorov) ; Kotliarew-
skaja, M. (Fedorov) ; Melderis, A. &
Vikane, A. 1931 ; Sansome E.R.
1933 ; Kraevoi, S. Ya (Fedorov) ;
Sutton, E. 1935, 1937 ; Arabekova,
A.I. (Fedorov) ; Senn, H.A. 1938 ;
Berger, C.A. *et al.* 1958 ; Kawano,
S. 1965 ; Gottschalk, W. & Miluti-
novic, M. 1970 ; Kodama, A. 1970b ;
Ben-Ze'ev, N. & Zohary, D. 1973 ;
Goswami, H.K. 1973 ; Joshi, M.C.

* The combination *Piptanthus nepalensis* should be attributed to D. Don (DFPI : 133).

- & Chauhan, K.P.S. 1973; Hung, Vo & Nagy-Porpaczy, B. 1974; Milutinović, M. 1974; Müller, D. 1974, 1976a, b; Gottschalk, W. & Konvicka, O. 1975; Fouzdar, A. & Tandon, S.L. 1976; Al-Mayah, A.-R.A. & Al-Shehbaz, I. 1977; Goswami, H.K. 1977; Sarbhoy, R.K. & Sinha, R.P. 1978; Gottschalk, W. & Kaul, M.L.H. 1980
- 14, 15 Das, K. & Kalloo 1970; Gottschalk, W. & Milutinović, M. 1973
- 14, 28 Tatuno, S. & Kodama, A. 1965
- 14, 28, 56, 112 Kodama, A. 1975
- 14, 30 Lutkov, A.N. (Fedorov)
- 30 Håkansson, A. 1936
- var. *arvensis* (Linn.) Poir.
- arvensis* Linn.
- 14 Winge, Ö. 1925; Vaarama, A. (Fedorov); Fouzdar, A. & Tandon, S.L. 1976

Pongamia Adans. *mut.* Vent.

1; Indo-Malesia. Throughout the greater part of India and Andamans, and Sri Lanka.

pinnata (Linn.) Merr.*

- 22 Raghavan, R.S. & Arora, C.M. 1958

pinnata (Linn.) Pierre

- 20 Atchison, E. 1951
- 22 Mehra, P.N. & Hans, A.S. 1971, 1972; Sarbhoy, R.K. 1977c

glabra Vent.

- 22 Patel, J.S. & Narayana, G.V. 1937

Derris indica (Lam.) Bennet

- 22 Sanjappa, M. & Bhatt, R.P. 1976; Bir, S.S. & Kumari, S. 1980

Pseudarthria Wight & Arn.

6; tropics and South Africa, 1 tropical Asia. 1; Western Peninsula, and Sri Lanka.

viscida Wight & Arn.

- 22 Gajapathy, C. 1962c

Psophocarpus Neck. ex DC.

10; tropical Africa and Mascarenes. 2; cultivated.

palustris Desv.

- c 18 Luckey, J.A. 1980
- 20 Frahm-Leliveld, J.A. 1960b
- 22 Miège, J. 1960b

palmettorum Guill. & Perr.

- 20 Frahm-Leliveld, J.A. 1960b

tetragonolobus (Linn.) DC.

- c 18 Luckey, J.A. 1980
- 18 Khan, T.N. 1976
- 26 Ramirez, D.A. 1960

Psoralea Linn.

130; tropics and subtropics. 3; North Western India, 1 greater part of India, and Sri Lanka.

corylifolia Linn.

- 20 Thombre, M.V. 1959a; Datta, P.C. & Maiti, R.K. 1968c; Subramanian, D. 1972; Malla, S.B., Bhattarai, S. *et al.* 1977a
- 22 Raghavan, R.S. 1959b; Bakale, V.L. & Sharma, S.S. 1978

plicata Del.

- 22 Baquar, S.R. & Husain, S.A. 1967

Pterocarpus Jacq.

100; tropics. 4; South Western India, and Sri Lanka.

indicus Willd.

- 20 Sarkar, A.K., Datta, R. *et al.* 1975

marcupium Roxb.

- 22 Bir, S.S., Kumari, S. & Sunita 1980
- 44 Atchison, E. 1951

Pueraria DC.

35; Himalaya to Japan, South East Asia, Malaysia and Pacific. 8; mostly tropical Himalaya, and Nepal and Bangla Desh a few introduced.

* The combination *Pongamia pinnata* should be attributed to Pierre (DFP1 : 137).

lobata (Willd.) Ohwi*thunbergiana* (Sieb. & Zucc.) Benth.

- 24 Suzuki, O. (D. 1955); Sakai, B. 1951

hirsuta Schneid.

- 22 Hardas, M.W. & Joshi, A.B. 1954 ;
-
- Simmonds, N.W. 1954

peduncularis (Benth.) Graham ex Benth.

- 22 Malla, S.B., Bhattarai, S.
- et al.*
- 1977b

phaseoloides Benth.

- 22 Frahm-Leliveld, J.A. 1953 ; Hardas,
-
- M.W. & Joshi, A.B. 1954 ; Larsen,
-
- K. 1971

var. *javanicus* (Benth.) Baker*javanicus* Benth.

- 22 Frahm-Leliveld, J.A. 1957
-
- 22, 24 Berger, C.A.
- et al.*
- 1958
-
- 24 Frahm-Leliveld, J.A. 1953

tuberosa DC.

- 22 Bir, S.S. & Sidhu, S. 1966, 1967

Pycnospora R. Br. ex Wight & Arn.

1 ; tropical Africa, India, South East Asia, South China, Formosa, Philippines, Java, East Malaysia and North East Australia. Assam and Western Peninsula, and Bangla Desh and Sri Lanka.

lutescens (Poir.) Schindl.*hedysaroides* R. Br.

- 20 Gajapathy, C. 1962a

Rhynchosia Lour.

About 300 ; tropics and subtropics, abundant in America and Africa. 23 ; chiefly in Western Peninsular India and the Himalaya, and Pakistan, Bangla Desh and Sri Lanka.

bracteata Benth.

- 22 Bir, S.S. & Kumari, S. 1973 ; Bir,
-
- S.S. & Talwar, K. 1973, 1974

capitata DC.

- 22 Bir, S.S. & Sidhu, S. 1966, 1967 ; Bir
-
- S.S. & Sidhu, M. 1980

aurea DC.

- 22 Ahuja, M.R. & Natarajan, A.T.

1957 ; Thombre, M.V. 1959b

himalensis Benth.

- 22 Thombre, M.V. 1959b ; Mehra, P.N.
-
- & Dhawan, H. 1971

minima (Linn.) DC.

- 22 Senn, H.A. 1938 ; Turner B.L. 1956 ;
-
- Miege, J. 1960a ; Pritchard, A.J. &
-
- Gould, K.F. 1964 ; Baquar, S.R.
- et al.*
-
- 1966 ; Bir, S.S. & Sidhu, S. 1966
-
- 1967 ; Gupta, P.K. & Gupta, R.
-
- 1971 ; Sands, V.E. 1975 ; Sareen,
-
- T.S. & Trehan, R. 1977 ; Bir, S.S.
-
- & Sidhu, M. 1980

var. *laxiflora* Baker

- 22 Sareen, T.S. & Singh, P.D. 1976 ;
-
- Sareen, T.S. & Trehan, R. 1976,
-
- 1977

var. *memmonia* (Del.) Cooke*memmonia* (Del.) DC.

- 22 Frahm-Leliveld, J.A. 1967 ; Nordens-
-
- tam, B. 1969

rothii Benth. ex Ait.

- 22 Pundir, R.P.S. & Singh, R.B. 1978 ;
-
- Rao, N.K. 1978

sericea Spanoghe

- 22 Bir, S.S. & Kumari, S. 1973

viscosa (Roth) DC.

- 22 Frahm-Leliveld, J.A. 1969

Robinia Linn.

20 ; East North America and Mexico.
1 ; cultivated.

pseud-acacia Linn.

- c. 20 Kreuter, E. 1930
-
- 20 Whitaker, T.W. (Fedorov) ; Wans-
-
- cher, J.H. 1934b
-
- 20, 22 Mehra, P.N. 1972
-
- 22 Tschchow, W.P. (Fedorov) ; Májo-
-
- vský, J.
- et al.*
- 1970b

Rothla Pers.

2 ; tropical Africa, Asia and Australia.
1 ; dry areas of Madhya Pradesh to Penin-
sular India, and Sri Lanka.

indica (Linn.) Druce

trifoliata Pers.

- 14 Rao, Y.S. 1947, 1950a ; Sanjappa, M. 1978

Sarothamnus Wimm.

10 ; Atlantic Islands, Europe and West Siberia. A few introduced.

scoparius (Linn.) Wimm. ex Koch

- 24, 48 Morton, J.K. 1955
 46 Böcher, T.W. & Larsen, K. 1958c ; Skalińska, M. *et al.* 1964
 48 Tischler, G. 1934 ; Rohweder, H. 1937, Böcher, T.W. & Larsen, K. 1955 ; Adams, F.W. 1957

Cytisus scoparius (Linn.) Link

- 24, 46, 48 Berger, C.A. *et al.* 1958
 46 Maude, P.F. 1940 ; Gilot, J 1965 ; Taylor, R.L. & Mulligan, G.A. 1968 ; Gill, J.J.B. & Walker, S. 1971 ; Vorissier, R. 1973
 46, 48 Heiser, C.B. & Whitaker, T.W. 1948
 48 Kawakami, I. 1930 ; Sugiura, T. 1931, 1936b ; Castro, D. de 1949 ; Horjales, M. 1974

ssp. *scoparius*

- 48 Sanudo, A. 1973

Securigera DC.

1 ; cultivated in India.

securidaca (Linn.) Degen & Dörfler*

- 12 Larsen, K. 1955b
 16 Frahm-Leliveld, J.A. 1957

Sesbania Adans. *corr.* Scop.

50 ; tropics and subtropics. 6 ; throughout India, ascending up to 1,320 m in the Himalaya, and Sri Lanka a few cultivated.

benthameana Domin

- 24 Dutta, R.M. & Bagchi, S. 1966 ; Datta, R.M. & Bagchi, S. 1973

bispinosa (Jacq.) Fawcett & Rendle**

- 12 Bir, S.S. & Sidhu, S. 1966, 1967
 12, 13, 14 Bir, S.S., Sidhu, M. & Talwar, K. 1975
 14 Bir, S.S. & Sidhu, M. 1974

bispinosa (Jacq.) Wight

- 12 Mitge, J. 1960b ; Baquar, S.R. & Akhtar, S. 1968
 12, 13, 14 Bir, S.S. & Sidhu, M. 1981
 12, 24 Jacob, K.T. 1941

aculeata Poir.

- 12 Rao, Y.S. 1946
 24 Haque, A. 1946 ; Datta, R.M. & Sen, S.K. 1960 ; Dana, S.K. & Datta, R.M. 1961
 32 Kawakami, I. 1930 ; Senn, H.A. 1938

bispinosa

var. *elatior* Prain

- 12 Sareen, T.S. & Trehan, R. 1976, 1977

var. *paludosa*

paludosa Prain

- 12 Datta, R.M. & Choudhury, P.C. 1964-1965a ; Datta, R.M. & Neogi, A.K. 1970

var. *sericea*

sericea DC.

- 24 Frahm-Leliveld, J.A. 1957 ; Pawar, M.S. & Kulkarni, S.A. 1955

grandiflora (Linn.) Pers.***

- 14 Krishnaswamy, N. & Ayyangar, R. 1935c ; Senn, H.A. 1938
 14, 24 Datta, P.C. & Maiti, R.K. 1968c
 24 Jacob, K.T. 1941 ; Haque, A. 1946 ; Rao, Y.S. 1946 ; Tjio, J.H. 1948

grandiflora (Linn.) Poir.

- 24 Baquar, S.R. & Akhtar, S. 1968

* The combination *Securigera securidaca* was made by Dolla Torre and Sarnthaim (DFPI : 156). Recent taxonomists place this species under the genus *Coronilla* Linn.

** The combination *Sesbania bispinosa* should be attributed to Wight (HFDD : 161).

*** The combination *S. grandiflora* should be attributed to Poir. (FEH : 162).

procumbens (Roxb.) Wight & Arn.

- 12 Bhaskar, V. & Lakshmi Devi, A. 1976 ; Sanjappa, M. & Sathyananda, N. 1979

sesban (Linn.) Merr.

- 12 Jacob, K.T. 1941 (Turner, B.L. 1955) ; Pawar, M.S. & Kulkarni, S.A. 1955 ; Bir, S.S. & Sidhu, S. 1966 ; Datta, R.M. & Neogi, A.K. 1970 ; Al-Mayah, A.-R. A. & Al-Shehbaz, I. 1977

aegyptiaca Pers.

- 12 Haque, A. 1946 ; Rao, Y.S. 1946 ; Berger, C.A. *et al.* 1958 ; Baquar, S.R. *et al.* 1965
14 Sarkar, A.K., Datta, N. *et al.* 1978

var. *bicolor* (Wight & Arn.) Andr.

- 12 Sareen, T.S. & Trehan, R. 1976 ; Bir S.S. & Kumari, S. 1980
12, 14 Baquar, S.R. & Akhtar, S. 1968
12, 14, 24 Bir, S.S., Sidhu, M. & Talwar, K. 1975

var. *concolor* (Wight & Arn.) Baquar

- 12, 14, 16 Baquar, S.R. & Akhtar, S. 1968

var. *pleta* Santap.

- 12 Bir, S.S. & Sidhu, S. 1967 ; Sareen T.S. & Trehan, R. 1976 ; Bir, S.S. & Kumari, S. 1980
14, 16,
28 Bir, S.S., Sidhu, M. & Talwar, K. 1975

var. *sesban* Linn.

- 12 Bir, S.S. & Kumari, S. 1980
12, 14, 16 Baquar, S.R. & Akhtar, S. 1968
14, 16 Bir, S.S., Sidhu, M. & Talwar, K. 1975

speciosa Taub. ex Engl.

- 12 Jacob, K.T. 1941 (Turner, B.L. 1955) ; Simmonds, N.W. 1954 ; Pawar, M.S. & Kulkarni, S.A. 1955 ; Datta, R.M. & Sen, S.K. 1960 ; Dana, S.K. & Datta, R.M. 1961

Shuteria Wight & Arn.

10 ; tropical Africa to East Asia and Java. 4 ; Himalaya and Western Peninsula, and Nepal and Sri Lanka.

vestita Wight & Arn.

- 22 Bir, S.S. & Kumari, S. 1978a

Smithia Ait.

About 70 ; tropical Africa and Asia, abundant in Asia. 15 ; chiefly in Western Ghats, a few in Himalaya, and Sri Lanka.

bigemina Dalz.

- 38 Bir, S.S. & Kumari, S. 1973

conferta Smith

- 38 Bir, S.S. & Kumari, S. 1973

sensitiva Ait.

- 32 Borgmann, E. 1964
38 Mitra, K. & Datta, N. 1967

Sophora Linn.

50 ; tropics and warm temperate. 8 ; chiefly in Western Peninsula, a few in Eastern Himalaya and Bengal, and Nepal and Sri Lanka - a few cultivated.

acuminata Benth.

- 22 Mehra, P.N. & Hans, A.S. 1969, 1971

alopecuroides Linn.

- 36 Lessani, H. & Chariat-Panahi, S. 1979

interrupta Bedd.

- 18 Bir, S.S. & Kumari, S. 1978a

moorcroftiana Benth.

- c. 16 Lechtova-Trnka, M. 1931

secundiflora (Orteg.) Lag. ex DC.

- 18 Atchison, E. 1949a ; Bir, S.S. & Kumari, S. 1975, 1980

tomentosa Linn.

- 18 Atchison, E. 1951 ; Pal, M. 1964 ; Von Reinhard, F. 1972 ; Bir, S.S. & Kumari, S. 1980

Spartium Linn.

1 ; Mediterranean. Cultivated.

juncea Linn.

- 48 Tschekow, W.P. (Fedorov)
52 Gilot, J. 1965 ; Delay, J. 1969a ;
Fernandes, A. & Santos, M.F. 1971
54 Maugini, E. & Moskova, R. 1971 ;
Nararajan, G. 1978

54 (\pm 2) Diers, L. 1961

Stylosanthes Swartz

50 ; tropical and subtropical America, Africa, tropical Asia, 2 Java and lesser Sunda Islands. 2 ; Orissa to Peninsular India, and Sri Lanka, 1 introduced.

fruticosa (Retz.) Alston

macronata Willd.

20 Sanjappa, M. 1978

40 Cameron, D.F. 1967

guianensis Swartz

20 Kishore, H. 1951 ; Cameron, D.F. 1967

Tephrosia Pers.

About 300 ; tropics and subtropics, plentiful in Africa and Australia. About 25 ; chiefly in Western Peninsular India, and Pakistan, Bangla Desh and Sri Lanka.

calophylla Bedd.

22 Rao, C.K. 1979

candida DC.

22 Kedharnath, S. 1950 ; Frahm-Leliveld, J.A. 1953, 1957 ; Simmonds, N.W. 1954 ; Singh, A.K. & Yadava, K.S. 1978b ; Rao, C.K. 1979

24 Datta, P.C. & Maiti, R.K. 1968c

falciformis

22 Singh, A.K. & Yadava, K.S. 1978b

hirta Buch.-Ham.

22 Rao, C.K. 1979

hookeriana Wight & Arn.

22 Rao, C.K. 1979

31 Kawakami, I. 1930

maxima (Linn.) Pers.

22 Rao, C.K. 1979

noctiflora Bojer & Baker

22 Rao, C.K. 1979

procumbens Buch.-Ham.

22 Sanjappa, M. 1978

pumila (Linn.) Pers.

22 Gupta, P.K. & Gupta, R. 1971 ; Sareen, T.S. & Trehan, R. 1977 ; Rao, C.K. 1979

purpurea (Linn.) Pers.

16 Sands, V.E. 1975

22 Miège, J. 1960a ; Bir, S.S. & Sidhu, S. 1966, 1967 ; Gupta, P.K. & Gupta, R. 1971 ; Sinha, S.S.N. *et al.* 1972 ; Sinha, S.S.N. & Prasad, R. 1973 ; Sareen, T.S. & Trehan, R. 1977 ; Rao, C.K. 1979

22, 44 Tandon, S.L. & Malik, C.P. 1960 ; Singh, A.K. & Yadava, K.S. 1978b

24 Ramanathan, K. 1950, 1955b ; Bhatt, R.P. 1974, 1976

hamiltonii Drum. ex Gamble

22 Roy, R.P. & Mishra, U. 1968 ; Sanjappa, M. & Bhatt, R.P. 1976 ; Bir, S.S. & Kumari, S. 1978a ; Rao, C.K. 1979

wallichii Grah.

22 Singh, A.K. & Yadava, K.S. 1978b

strigosa (Dalz.) Santap. & Maheshw.

22 Gupta, P.K. & Gupta, R. 1971 ; Sareen, T.S. & Trehan, R. 1977 ; Singh, A.K. & Yadava, K.S. 1978b

suberosa DC.

22 Rao, C.K. 1979

subtriflora Hochst. ex Baker

multiflora Blatt. & Hallb.

22 Wood, C.E. 1949 ; Singh, A.K. & Yadava, K.S. 1978b

pauciflora Grah. ex Baker

22 Sanjappa, M. & Bhatt, R.P. 1976

tinctoria Pers.

22 Rao, C.K. 1979

uniflora Pers.

22 Singh, A.K. & Yadava, K.S. 1978b

virginiana Pers.

22 Singh, A.K. & Yadava, K.S. 1978b

villosa Pers.

22 Frahm-Leliveld, J.A. 1953, 1957 ;

Sanjappa, M. & Bhatt, R.P. 1976 ;
Singh, A.K. & Yadava, K.S. 1978b

vegellii Hook. f.

22 Wood, C.E. 1949 ; Frahm-Leliveld,
J.A. 1975

Teramans P. Br.

15 ; tropics. 3 ; 1 Eastern Himalaya
and Assam, 1 throughout the greater part of
India, 1 tropical parts and Bangla Desh and
Sri Lanka.

lobialis (Linn. f.) Spreng.

20 Bir, S.S. & Kumari, S. 1973
24 Sanjappa, M. 1978
28 Bhatt, R.P. 1974, 1976 ; Roy, R.P.
& Mishra, U. 1979

mollis Benth.

22 Sanjappa, M. & Sathyananda, N.
1979
28 Bir, S.S. & Kumari, S. 1973

Trifolium Linn.

About 300 ; temperate and subtropics.
About 8 ; temperate North Western
Himalaya and Nilgiris, and Sri Lanka a
few introduced.

alexandrinum Linn.

16 Wexelsen, H. 1928 ; Bhaskaran, S. &
Swaminathan, M.S. 1958 (Løve, A. &
Løve, D. 1961b) ; Sikka, S.M. *et al.*
1958 ; Evans, A.M. 1962 ; Almeida,
J.L.F. de & Carvalho, P. de 1964 ;
Puthevsky, E. & Katznelson, J. 1970 ;
Sareen, T.S. & Trehan, R. 1977 ; Bir,
S.S. & Kumari, S. 1980

arvense Linn.

14 Javůrková, V. 1979

subissm Sibth.

16 Noda, K. 1946
28 Bleier, H. 1925a ; Wipf, L. 1939 ;
Kliphuis, E. (Fedorov) ; Gadella,
T.W.J. & Kliphuis, 1963
32 Gadella, T.W.J. & Kliphuis, E. 1966

minus Smith

28 Bleier, H. 1925a, b

28, 32 Tischler, G. 1934, 1937 ; Rohweder,
H. 1937

32 Wexelsen, H. 1928 ; Bir, S.S. &
Kumari, S. 1973

fragiferum Linn.

16 Bleier, H. 1925a, b ; Karpechenko,
G.D. (Fedorov) ; Tischler, G. 1934 ;
Rohweder, H. 1937 ; Wulff, H.D.
1937a ; Pólya, L. 1948 ; Tarnavschí,
I.T. 1948 ; Evans, A.M. 1962 ;
Gadella, T.W.J. & Kliphuis, E. 1968a,
1971a, 1972 ; Kazimierski, T. &
Kazimierska, E.M. 1970a ; Kuzmanov,
B.A. & Stancev, G. 1972 ; Kozuharov,
S.I. *et al.* 1974, 1975 ; Nielsen, I.
1975

ssp. fragiferum

16 Kliphuis, E. 1977 ; Natarajan, G.
1978

pratense Linn.

14 Bleier, H. 1925a, b ; Karpechenko,
G.D. (Fedorov) ; Wexelsen, H. 1928 ;
Kawakami I. 1930 ; Tischler, G. 1934,
1937 ; Wipf, L. & Cooper, D.C. 1938 ;
Skovsted, A. 1939 ; Arutinova, L.G.
(Fedorov) ; Leván, A. 1940b, 1942a ;
Løve, A. & Løve, D. 1944b, 1956b ;
Sokolovskaya, A.P. & Strelkova, O.S.
(Fedorov) ; Reese, G. 1952b ; Butter-
fass, T. 1960 ; Evans, A.M. 1962 ;
Turesson, G. 1962 ; Gadella, T.W.J.
& Kliphuis, E. 1966, 1970b ; Kodama,
A. 1967, 1970b ; Taylor, R.L. &
Mulligan, G.A. 1968 ; Podlech, D. &
Dieterle, A. 1969 ; Májovský, J. *et al.*
1970a ; Fernandes, A. & Santos, M.F.
1971 ; Angulo, M.D. *et al.* 1972a, b ;
Kuzmanov, B.A. & Stancev, G. 1972 ;
Kozuharov, S.I., Petrova, A.V. &
Markova, T. 1974 ; Kozuharov, S.I.
et al. 1975 ; Nielsen, I. 1975 ; Tom-
kins, D.J. & Grant, W.F. 1978 ; Van
Loon, J. Chr. & de Jong, H. 1978 ;
Kliphuis, E. & Wierfering, J.H. 1979 ;
Van Loon, J. Chr. & Klef, B. 1980

14, 26, 27,

28, 29 Taylor, N.L. *et al.* 1976

14, 28 Tatuno, S. & Kodama, A. 1965

28 Pavilaitis, B. & Boyes, J.W. 1956 ;
Zhukova, P.G. 1967b

repens Linn.

- 16 Podlech, D. & Dieterle, A. 1969
 22 Zhukova, P.G. 1967b
 28 Bleier, H. 1925a, b
 30 Sharma, A. & Sarkar, A.K. 1967-1968
 32 Erith, A.G. 1924; Karpechenko, G.D. (Fedorov); Wexelsen, H. 1928; Kawakami, I. 1930; Tischler, G. 1934, 1937; Rohweder, H. 1937; Senn, H.A. 1938; Arutunova, L.G. (Fedorov); Atwood, S.S. & Hill, H.D. 1940; Löve, A. & Löve, D. 1944b, 1956b; Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov); Keim, W.F. 1953; Löve, A. 1954b; Brewbaker, J.L. 1955; Pandey, K.K. 1957; Coombe, D.B. 1961; Turesson, G. 1962; Evans, A.M. 1962; Kodama, A. 1967, 1970b; Murin & Váňová (Fedorov); Kazimierski, T. & Kazimierska, E.M. 1968, 1970b, 1972; Taylor, R.L. & Mulligan, G.A. 1968; Chen, C.C. & Gibson, P.B. 1970, 1972; Gadella, T.W.J. & Kliphuis, E. 1970b; Má'ovský, J. *et al.* 1970a; Pogliani, M. 1971; Kuzmanov, B.A. & Stancev, G. 1972; Kožuharov, S.I. *et al.* 1973, 1974, 1975; Nielsen, I. 1975; Kliphuis, E. & Wiering, J.H. 1979
 32, 48 Moriya, A. & Kondo, A. 1950
 32, 64 Tatuno, S. & Kodama, A. 1965
 64 Levan, A. 1942a; Brewbaker, J.L. & Keim, W.F. 1953

ssp. repens

- 32 Fernandes, A. & Santos, M.F. 1971

resupinatum Linn.

- 14 Wipf, L. 1939
 16 Bleier, H. 1925a, b; Karpechenko (Fedorov); Evans, A.M. 1962; Bir, S.S. & Kumari, S. 1980
 16, 32 Almeida, J.L.F. de 1957

Trigonella Linn.

About 135; Mediterranean, Europe, Asia, South Africa and Australia. About 8; Northern India and Western Himalaya (up to 3,960 m), and Nepal and Pakistan - 1 cultivated.

curiculata Linn.

- 16 Tschchow, W.P. (Fedorov); Coutinho, L. de A. & Santos, A. 1943; Larsen, K. 1956b; Sarkar, S. 1966; Roy, R.P. & Singh, A. 1969; Singh, A. & Roy, R.P. 1970; Kamari, G. & Papatzou, S. 1973; Singh, A. 1973; Singh, A. & Singh, D. 1976; Bir, S.S. & Kumari, S. 1980
 16, 32 Singh, A. & Roy, R.P. 1971b
 16+0-4B Lakshmi, N. & Rao, T.V. 1979
 17 Singh, A. & Singh, D. 1972; Singh, D. *et al.* 1978
 18 Singh, A. *et al.* 1973
 24 Singh, A. & Saini, R.G. 1971

curiculata

strain 'Kasari Methi'

- 17 Singh, D. & Singh, A. 1980

emodi Benth.

- 16 Malla, S.B., Saiju, H. *et al.* 1977

foetum-graecum Linn.

- 16 Fryer, J.R. 1930; Tschchow, W.P. (Fedorov); Senn, H.A. 1938; Suzuka, O. 1956; Frahm-Leliveld, J.A. 1957; Bhattacharyya, N.K. 1958a; Roy, R.P. & Saran, J. 1960; Sarkar, S. 1966; Roy, R.P. & Singh, A. 1969; Singh, A. & Roy, R.P. 1970; Raghuvanshi, S.S. & Singh, A.K. 1974a, b; Singh, A. & Singh, D. 1976; Bir, S.S. & Kumari, S. 1980; Lavania, U.C. & Sharma, A.K. 1980a
 16, 16+1
 - 3B Raghuvanshi, S.S. & Upreti, M. 1977
 16, 16+
 2B Raghuvanshi, S.S. & Pant, M. 1980
 16, 18+2B Pant, M. 1980
 16, 21-28,
 21-64, 32,
 44-46 Singh, A. & Gopal, J. 1979
 16, 22-44,
 32, 48 Raghuvanshi, S.S. & Singh, A.K. 1977
 16, 32 Roy, R.P. & Singh, A. 1968; Singh, A. & Roy, R.P. 1971a; Wanjari, K.B. & Phadnis, B.A. 1973a; Raghuvanshi, S.S. & Singh, D.N. 1977
 16+0-3B Raghuvanshi, S.S. & Singh, A.K. 1976

- 16+1—2B Raghuvanshi, S.S. & Joshi, S. 1968b
 17 Singh, D. & Singh, A. 1976
 24 Gopinath, P.M. 1974
 31 Raghuvanshi, S.S. & Singh, A.K.
 1978, 1980
 32 Lesins, K. 1952
 33 - 36 Singh, A. & Singh D. 1975

gracilis Benth.

- 16 Baquar, S.R. & Abid Askari, S.H.
 1970b

hamosa Linn.

- 16 Roy, R.P. & Singh, A. 1969 ; Singh,
 A. & Roy, R.P. 1970 ; Singh, A. 1973
 16, 32 Singh, A. & Roy, R.P. 1971b
 16, 44 Gardé, A. 1948

hamosa x *corniculata*

- 16 Singh, A. 1973

incisa Benth.

- 44 Bir, S.S. & Kumari, S. 1980

occulta Del.

- 16 Sanjappa, M. & Dasgupta, A. 1977

polycerata Linn.

- 28 Tschecchow, W.P. (Fedorov) ; Cou-
 tinho, L. de A. & Santos, A. 1943 ;
 Bir, S.S. & Sidhu, S. 1966, 1967
 28, 30, 32 Gardé, A. 1948
 40 Roy, R.P. & Singh, A. 1969
 44 Sarkar, S. 1966 ; Singh, A. & Roy,
 R.P. 1970
 48 Sarcen, T.S. & Singh, P.D. 1976

Ulex Linn.

20 ; West Europe and North Africa. 1 ;
 naturalized.

europaeus Linn.

- 64, 96 Castro, D. de 1941
 96 Tschecchow, W.P. (Fedorov) ; Rohwe-
 der, H. 1937 ; Heiser, C.B. & Whi-
 taker, T.W. 1948 ; Gilot, J. 1965

Uraria Desv.

20 ; tropical Africa, South East Asia,
 Formosa, Indo-Malesia, North Australia
 and Pacific. About 10 ; tropical India,
 ascending up to 2,970 m in the Himalaya, and
 Nepal and Sri Lanka.

alopecuroides Wight

- 22 Sanjappa, M. & Sathyananda, N.
 1979

crinita (Linn.) Desv.

- 22 Larsen, K. 1971

lagopus DC.

- 20 Sarkar, A.K., Mallick, R. *et al.* 1977

pieta (Jacq.) Desv. *ex* DC.

- 16 Sanjappa, M. & Dasgupta, A. 1977
 22 Mügge, J. 1962 ; Bir, S.S., Kumari,
 S. 1975

rufescens (DC.) Schindl.

- 22 Mehra, P.N. & Dhawan, H. 1971

hamosa Wall.

- 22 Gajapathy, C. 1962c

Vicia Linn.

About 150 ; North temperate and South
 America. 12 ; temperate Western Himalaya
 with a few extending to the plains of
 Northern India, and Nepal and Pakistan a
 few cultivated.

angustifolia Linn.

- 12 Nikolaeva (Fedorov) ; Sweschnikowa,
 I.N. (Fedorov) ; Heitz, E. 1931b ;
 Baklay, L. 1954 ; Larsen, K.
 1956b ; Löve, A. & Löve, D. 1956b ;
 Mulligan, G.A. 1961a ; Huziwara, Y.
 & Kondo, S. 1963 ; Mettin, D. &
 Hanelt, P. 1964 ; Chuxanova, N.A.
 1967 ; Hollings, E. & Stace, C.A.
 1974 ; Kuta, E. 1980

benghalensis Linn.

- 12 Srivastava, L.M. 1963
 14 Rajan, S.S. 1952 ; Fernandes, A. &
 Santos, M.F. 1971 ; Mettin, D. &
 Hanelt, P. 1967

faba Linn.

- 12 Němec, B. 1904, 1910 ; Lundegårdh,
 H. 1910, 1914a ; Strasburger, E.
 1911 ; Sakamura, T. 1915, 1916,
 1920 ; Taylor, W.R. 1924 ; Swes-
 chnikowa, I.N. (Fedorov) ; Maeda,
 T. & Kato, K. 1929 ; Kawakami, I.
 1930 ; Lewitsky, G.A. (Fedorov) ;
 Heitz, E. 1931a, b ; Tschecchow, W.P.
 (Fedorov) ; Straub, J. 1937 ; Husted,

- L. 1938; Rybin, V.A. (Fedorov); La Cour, L.F. 1951a; McLeish, J. 1953; Carvalho, J.M. de 1955; Montezuma-de-Carvalho, J. 1956; Berger, C.A. *et al.* 1958; Michaelis, A. & Rieger, R. 1959, 1968; Kumar, S. 1960; Takehisa, S. 1961b; Shimizu, Y. 1962; Tandon, S.L. & Kapoor, B.M. 1962a; Huziwara, Y. & Kondo, S. 1963; Srivastava, L.M. 1963; Tatuno, S. & Kodama, A. 1965; Martin, P.G. & Shanks, R. 1966; Kodama, A. 1967, 1970b; Minota, M. & Sato, S. 1967; Natarajan, A.T. & Ahnstrom, G. 1969; Reddy, M.V. & Rao, B.V.R. 1969; Vosa, C.G. & Marchi, P. 1972; Cionini, P.G. 1973; Nicoloff, H. *et al.* 1979; Bir, S.S. & Kumari, S. 1980
- 12, 14 Hirayoshi, I. & Matsumura, M. 1952; Al-Mayah, A.-R.A. & Al-Shehbaz, I. 1977
- 12, 14, 16, 18, 21, 24, 32, 42, 48 Yamane, Y. 1975
- 12+2B Singh, D.N. & Singh, U. 1966
- 14 Fraser, H.C.I. & Sneli, J. 1911; Eichhorn, A. 1931
- 16 Vosa, C.G. 1970
- 24 Rybin, V.A. 1939
- hirsuta** (Linn.) S.F. Gray
- 12 Sarsen, T.S. & Trehan, R. 1976, 1977
- 14 Nikolaeva (Tischler, G. 1927); Sweschnikowa, I.N. (Fedorov); Kawakami, I. 1930; Heitz, E. 1931b; Tischler, G. 1934; Rohweder, H. 1937; Senn, H.A. 1938; Löve, A. & Löve, D. 1956b; Kondo, S. 1959; Činžura, F. 1962; Huziwara, Y. & Kondo, S. 1963; Srivastava, L.M. 1963; Gadella, T.W.J. & Kliphuis, E. 1966; Kodama, A. 1970b; Fernandes, A. & Santos, M.F. 1971; Kožuharov, S.I. *et al.* 1972; Fritsch, R.M. 1973; Yamamoto, K. 1973; Dvořák, F. & Dacáková, B. 1975; Lungeanu, I. 1975; Hedberg, I. & Hedberg, O. 1977; Kuta, E. 1980
- 14, 28 Tatuno, S. & Kodama, A. 1965
- 28 Sinha, M.K. *et al.* 1971
- carbonensis** Linn.
- 14 Sweschnikowa, I.N. (Fedorov); Heitz, E. 1931b; Kumar, S. 1960; Srivastava, L.M. 1963; Martin, P.G. & Shanks, R. 1966; Chauhanova, N.A. 1967; Yamamoto, K. 1973; Blanco, A. & Perrino, P. 1974; Al-Mayah, A.-R.A. & Al-Shehbaz, I. 1977
- patlida** Turcz.
- 14 Mehra, P.N. & Dhawan, H. 1971
- peregrina** Linn.
- 12 Heitz, E. 1931b
- 14 Sweschnikowa, I.N. (Fedorov); Mettin, D. & Hanelt, P. 1967; Fernandes, A. & Santos, M.F. 1971; Kožuharov, S.I. *et al.* 1972; Yamamoto, K. 1973; Al-Mayah, A.-R.A. & Al-Shehbaz, I. 1977; Bir, S.S. & Kumari, S. 1980
- sativa** Linn.
- 10 Yamamoto, K. 1959
- 10, 12 Yamamoto, K. 1961; Dahlgren, R. *et al.* 1971
- 10, 12, 14 Ladizinsky, G. 1978; Ladizinsky, G. & Temkin, R. 1978
- 12 Sakamura, T. (Ishikawa, M. 1916); Sakamura, T. 1920; Nikolaeva (Fedorov); Sweschnikowa, I.N. (Fedorov); Lewitsky, G.A. & Araratyan, A.G. (Fedorov); Tischler, G. 1937; Senn, H. A. 1938; Araratyan, A.G. (Fedorov); Coutinho, L. de A. 1945; Sakai, B. 1951; Yates, J.J. & Brittan, N.H. 1952; Larson, K. 1956b; Kondo, S. 1960; Činžura, F. 1962; Huziwara, Y. & Kondo, S. 1963; Srivastava, L.M. 1963; Mettin, D. & Hanelt, P. 1964; Tatuno, S. & Kodama, A. 1965; Bir, S.S. & Sidhu, S. 1966, 1967; Gadella, T.W.J. & Kliphuis, E. 1966, 1972; Martin, P.G. & Shanks, R. 1966; Chauhanova, N.A. 1967; Kodama, A. 1967, 1970b; Taylor, R.L. & Mulligan, G.A. 1968; Kožuharov, S.I. *et al.* 1972; Hollings, E. & Stace, C.A. 1974; Aryavand, A. 1975; Sarsen, T.S. & Trehan, R. 1976, 1977; Hedberg, I. & Hedberg, O. 1977; Van Loon, J. Chr. & de Jong, H. 1978; Bir, S.S. & Kumari, S. 1980; Kuta, E. 1980
- 12, 14 Coutinho, L. de A. 1940; Moriya, A. & Kondo, A. 1950
- 14 Kawakami, I. 1930; Sinha, S.S.N. & Prasad, R. 1973
- ssp. sativa**
- 10, 12 Fernandes, A. & Santos, M.F. 1971

- 12 Al-Mayah, A.-R.A. & Al-Shehbaz, I. 1977

septum Linn.

- 12 Kumar, S. 1960
 14 Nikolaeva (Fedorov); Heitz, E. 1931b; Tischler, G. 1934; Rohweder, H. 1937; Larsen, K. 1954a; Löve, A. & Löve, D. 1956b; Činčura, F. 1962; Gadella, T.W.J. & Kliphuis, E. 1963, 1966; Kuzmanov, B.A. 1974; Dvořák, F. & Dadáková, B. 1976; Kuta, E. 1980
 14, 18 Bakšay, L. 1954
 16-18 Mattick (Tischler, G. 1950)

tennifolia Roth

- 14 Yamamoto, K. 1973; Al-Mayah, A.-R.A. & Al-Shehbaz, I. 1977
 23, 24, 25 Rousi, A. 1961
 24 Sweschnikowa, I.N. (Fedorov); Heitz, E. 1931b; Tischler, G. 1934; Bakšay, L. 1954; Ryka, C. 1954; Rousi, A. 1962, 1973; Dvořák, F. *et al.* 1977

tetrasperma (Linn.) Moeoch

- 14 Sweschnikowa, I.N. (Fedorov); Kawakami, I. 1930; Heitz, E. 1931b; Tischler, G. 1934; Rohweder, H. 1937; Kondo, S. 1959; Činčura, F. 1962; Huziwaru, Y. & Kondo, S. 1963; Srivastava, L.M. 1963; Bir, S.S. & Sidhu, S. 1966, 1967; Gadella, T.W.J. & Kliphuis, E. 1966; Kodama, A. 1970b; Kožubarov, S.I. *et al.* 1972; Yamamoto, K. 1973; Dvořák, F. & Dadáková 1975; Van Loon, J. Chr. & de Jong, H. 1978; Kuta, E. 1980
 14, 28 Tatuno, S. & Kodama, A. 1965

Vigna Savi

About 80 - 100; tropics, abundant in Africa and Asia. About 15; chiefly in tropical Himalaya, and Nepal, Bangla Desh and Sri Lanka - a few cultivated.

aconitifolia (Jacq.) Maréchal

- 22 Maréchal, R. 1969, 1970
 22, 44 Subramanian, D. 1977

Phaseolus aconitifolius Jacq.

- 22 Karpechenko (Kawakami, I. 1930); Tschchow, W. & Kartaschowa, N. (Fedorov); Tschchow, W.P. (Fedorov); Biswas, M.R. & Dana, S. 1976; Sarbhoj, R.K. 1977b, 1978a, 1980a; Sinha, S.S.N. & Roy, H. 1979a, b

Phaseolus aconitifolius x **P. trilobus**

- 22, 44 Biswas, M.R. & Dana, S. 1976

adenantha (G.F. Meyer) Maréchal**Phaseolus adenanthus** G.F. Meyer

- 22 Maréchal, R. 1970; Larsen, K. 1971

angularis (Willd.) Ohwi & Ohashi

- 22 Joseph, L.S. & Bouwkamp, J.C. 1978

Phaseolus angularis Willd.*

- 22 Karpechenko, G.D. (Fedorov); Shibata, K. 1962a; Kodama, A. 1967

Phaseolus angularis (Willd.) W.F. Wight

- 22 Kodama, A. 1970b; Sinha, S.S.N. & Roy, H. 1979a, b

calcarata (Roxb.) Kurz**Phaseolus calcaratus** Roxb.

- 22 Frahm-Leliveld, J.A. 1953, 1957; Shibata, K. 1962a; Maréchal, R. 1969, 1970; Roy, R.P. & Singh, A. 1969; Singh, A. & Roy, R.P. 1970; Datta, P.C. & Saha, N. 1973b; Sarbhoj, R.K. 1977b, 1978a, 1980a; Sinha, S.S.N. & Roy, H. 1979a, b

delzelliana (Kuntze) Verdo.**Phaseolus pauciflorus** Dalz.

- 22 Bir, S.S. & Kumari, S. 1978a

luteola (Jacq.) Benth.

- 22 Schnack, H. & Covas, G. 1947; Sen, N.K. & Bhowal, J.G. 1960; Lackey, J.A. 1980

mungo (Linn.) Hepper**Phaseolus mungo** Linn.

- 22 Karpechenko, G.D. (Fedorov); Simmonds, N.W. 1954; Bir, S.S. & Sidhu, S. 1966, 1967; Ayyangar, K.R. & Mahizh, N.M. 1967; Krishnan, R. & De, D.N. 1968a; Datta, P. C. & Saha, N. 1973; Chaurasia, B.D. & Sharma, V.K. 1974;

*The combination *Phaseolus angularis* was made by W.F. Wight (HFDD : 155).

- Sarbhoy, R.K. 1977b, 1978a, b, 1980a ;
Goswami, L.C. 1979 ; Sinha, S.S.N. &
Roy, H. 1979a, b
24 Rau, N.S. 1929b
- P. mungo* (2n=22) x *Phaseolus* sp. (2n=44)
33, 66 Krishnan, R. & De, D.N. 1968a, c
- radiata* (Linn.) Wilczek
22 Maféchal, R. 1969, 1970 ; Al-Mayah,
A.-R.A. & Al-Shohbaz, I. 1977 ; Joseph,
L.S. & Bouwkamp, J.C. 1978
c.22 Lackey, J.A. 1980
- Phaseolus aureus* Roxb.
22 Karpechenko, G.D. (Fedorov) ; Simmo-
nds, N.W. 1954 ; Shibata, K. 1962a ;
Bir, S.S. & Sidhu, S. 1966, 1967 ; Kaul,
C.L. 1970b ; Datta, P.C. & Saha, N.
1973b ; Biswas, M.R. & Dana, S. 1975 ;
Sarbhoy, R.K. 1977b, 1978a, 1980a ;
Sinha, S.S.N. & Roy, H. 1979a, b
22+0-7B Bhattacharya, S. 1979
22, 23 Raghuvanshi, S.S. *et al.* 1978
44 Kumar, L.S.S. & Abraham, A. 1942b ;
Krishnan, R. & De, D.N. 1968a
- radiatus* Linn.
22 Kawakami, I. 1930 ; Lewitsky (Tischler,
G. 1931) ; Frahm-Leliveld, J.A. 1953,
1957 ; Singh, M.K. 1971 ; Sinha, S.S.N.
& Roy, H. 1979a, b
24 Karpechenko, G.D. (Fedorov) ; Rau, N.
S. 1929b ; Ayyangar, K.R. & Mahizh,
N.M. 1967
- P. radiatus* x *P. calcaratus*
44 Sawa, M. 1974
- P. aureus* x *P. lathyroides*
22 Biswas, M.R. & Dana, S. 1975
- P. aureus* (autotetraploid) (2n=44)
x *Phaseolus* sp. (2n=44)
44 Krishnan, R. & De, D.N. 1968a, b
- ricciardiana* (Ten.) Babu & Sharma
Phaseolus ricciardianus Ten.
22 Janaki Annal, E.K. (D. 1945) ; Dana,
S. 1964 ; Sarbhoy, R.K. 1977b, 1978a, b
1980a ; Sinha, S.S.N. & Roy, H. 1979a, b
- sublobata* (Roxb.) Babu & Sharma
Phaseolus sublobatus Roxb.
22 Sinha, S.S.N. & Roy, H. 1979a, b
- trilobata* (Linn.) Verdc.
22 Joseph, L.S. & Bouwkamp, J.C. 1978
22, 44 Subramanian, D. 1977
- Phaseolus trilobus* Ait.
22 Karpechenko, G.D. (Fedorov) ; Roy, R.
P. & Singh, A. 1969 ; Singh, A. & Roy,
R.P. 1970 ; Biswas, M.R. & Dana, S.
1976 ; Sarbhoy, R.K. 1977b, 1978a, b,
1980a ; Shastri, M.B. 1978 ; Sinha,
S.S.N. & Roy, H. 1979a, b
- umbellata* (Thunb.) Ohwi & Ohashi
22 Joseph, L.S. & Bouwkamp, J.C.
1978
22, 44 Subramanian, D. 1977
- unguiculata* (Linn.) Walp.
22 Karpechenko, G.D. (Fedorov) ; Frahm-
Leliveld, J.A. 1965 ; Al-Mayah, A.-
R.A. & Al-Shohbaz, I. 1977
- sinensis* (Linn.) Savi ex Hassk.
22 Bir, S.S. & Kumari, S. 1980
- var. 'Black'
22, 33, 44,
55, 72
(in culture) Ghosh, P. & Sharma, A.K. 1979
- ssp. *cylindrica* Verdc.*
22, 44 Subramanian, D. 1977
- ssp. *cylindrica* (Linn.) van Eseltine
unguiculata (Linn.) Walp.
var. *catjang* (Burm.) Fiori
22 Maréchal, R. 1969, 1970 ; Karpecho-
nko, G.D. (Fedorov)
- catjang* (Burm. f.) Walp.
22 Karpechenko, G.D. (Fedorov) ; Seno,
H.A. 1938 ; Kodama, A. 1967 ; Sarb-
hoy, R.K. & Sinha, R.P. 1978
24 Rau, N.S. 1929b ; Kawakami, I. 1930 ;
Roy, R.P. & Saran, J. 1960

*The combination *Vigna unguiculata* ssp. *cylindrica* should be attributed to van Eseltine (Verdcourt, B. Kew Bull. 24 : 544).

cylindrica (Linn.) Skeels

22 Faris, D.G. 1964; Datta, P.C. & Saha, N. 1973b

22, 33, 41,

66 Datta, P.C. & Saha, N. 1973a

ssp. *unguiculata*

22 Maréchal, R. 1969, 1970

catjang Endl.var. *sinensis* Kin

22 Kodama, A. 1970b

sinensis (Linn.) Savi ex Hassk.

22 Saunders, A.R. 1960 (Faris, D.G. 1964); Sen, N.K. & Bhowal, J.G. 1960; Shibata, K. 1962a; Faris, D.G. 1964; Mukherjee, P. 1968

24 Kawakami, I. 1930; Floresca, E.T. *et al.* 1960; Miège, J. 1962*Dolichos biflorus* Linn.*

20 Sen, N.K. & Vidyabhushan, R.V. 1959; Pritchard, A.J. & Gould K.F. 1964

22 Karpechanko (Fedorov); Kachidze (Fedorov); Bir, S.S. & Sidhu, S. 1966, 1967

24 Rau, N.S. 1929b

vexillata (Linn.) Benth.**

22 Tschekow, W. & Kartaschowa, N. (Fedorov); Miège, J. 1960b; Sen, N.K. & Bhowal, J.G. 1960; Frähn-Leliveld, J.A. 1965; Maréchal, R. 1969

vexillata (Benth.) A. Rich.

22 Maréchal, R. 1970

capensis Walp.24 Sharma, A. & Sarker, A.K. 1967-1968; Chaudhuri, R.K. *et al.* 1969*Voandzeia* Thou.

1; tropical Africa and Madagascar. Cultivated.

subterranea Thou.

22 Dussou, A. & Magnant, C. 1941; Frähn-Leliveld, J.A. 1953, 1957; Miège, J. 1954; Lackey, J.A. 1980

Wisteria Nutt.

10; East Asia and East North America. 2; cultivated.

sinensis Rehd. & Wilson***16 Roscoe, W.V. 1927; Tschekow, W.P. (Fedorov); Berger, C.A. *et al.* 1958

24 Matsuura, H. 1937

sinensis Sweet

16 Sareen, T.S. & Trehan, R. 1977

var. *alba* Bailey

16 Bir, S.S. & Kumari, S. 1975, 1980

var. *sinensis*

16 Bir, S.S. & Kumari, S. 1975, 1980

Zornia Gmel.

75; tropics, especially America. 2; 1 throughout India (up to 1,320 m in the Himalaya), 1 in Southern India, and Sri Lanka.

diphylla (Linn) Pers.****

20 Krapovickas, A. & Krapovickas, A.M.F. 1957; Shibata, K. 1962a; Huynh, K.L. 1965; Bir, S.S. & Sidhu, S. 1966, 1967; Larsen, K. 1971

22 Sareen, T.S. & Trehan, R. 1977

* *Dolichos biflorus* auct. pl. (non Linn.), FBI, 2 : 210 is a synonym of *D. uniflorus* Lam. *D. biflorus* Linn. is a synonym of *Vigna unguiculata* Walp. (HFDD : 140).** The combination *Vigna vexillata* should be attributed to A. Rich. (HFDD : 173 ; FHD : 268).*** The combination *Wisteria sinensis* should be attributed to Sweet.**** *Zornia diphylla* auct. pl. (non Pers.), FBI, 2 : 147, *pro parte* is a synonym of *Z. gibbosa* Span. The true *Z. diphylla* (Linn.) Pers. is found in Southern India and Sri Lanka (FHD : 268 ; HFDD : 173).

FAGACEAE Dum.

8/900 ; cosmopolitan (excluding tropical South America and tropics and South Africa).
5/42 ; Himalaya (up to 4,000 m), and Nepal, Bhutan and Bangla Desh - a few cultivated.

Castanea Mill.

12, North temperate. 1 ; cultivated.

cattiva Mill.

- 22 Wetzel, G. 1928, 1929
24 Jaretsky, R. 1930

vulgaris Lam.

- 22 Delay, C. 1947
24 Mehra, P.N., Hans, A.S. & Sareen,
T.S. 1972

Castanopsis (D. Don) Spach

120 ; tropics and subtropical Asia. 6 ;
almost all in Himalaya, and Nepal and
Bangla Desh.

hystrix A. DC.

- 24 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Mehra, P.N., Hans, A.S. &
Sareen, T.S. 1972

indica A. DC.

- 24 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Mehra, P.N., Hans, A.S. &
Sareen, T.S. 1972

tribuloides A. DC.

- 24 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Mehra, P.N. & Sareen, T.S.
1969 ; Mehra, P.N., Hans, A.S. &
Sareen, T.S. 1972

var. *schldnocarpa* King

- 24 Mehra, P.N. & Hans, A.S. 1969 ;
Mehra, P.N., Hans, A.S. & Sareen,
T.S. 1972

var. *ferox* King

- 24 Mehra, P.N. & Hans, A.S. 1969 ;
Mehra, P.N., Hans, A.S. & Sareen,
T.S. 1972

var. *longispina* King

- 24 Mehra, P.N. & Hans, A.S. 1969 ;
Mehra, P.N., Hans, A.S. & Sareen,
T.S. 1972

Fagus Linn.

10 ; North temperate and Mexico. 1 ;
cultivated.

sylvatica Linn.

- 22 Wetzel, G. 1928, 1929 ; Delay, C.
1947
24 Jaretsky, R. 1930 ; Tschlor, G.
1934 ; Uhríková, A. & Schwarzová, T.
1978

Lithocarpus Blume

300 ; East and South East Asia and
Indo-Malesia. 12 ; chiefly in Eastern Hima-
laya (up to 3,300 m), and Assam, and Nepal,
Bhutan and Bangla Desh.

acuminata (Roxb.) Rehder

- 24 Mehra, P.N. & Hans, A.S. 1969 ;
Mehra, P.N., Hans, A.S. & Sareen,
T.S. 1972

dealbata Rehder

- Pasania dealbata* (Hook. f. & Thoms.) Chatterjee
24 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Mehra, P.N., Hans, A.S. &
Sareen, T.S. 1972

fenestrata (Roxb.) Rehder

- Pasania fenestrata* (Roxb.) Chatterjee
24 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Mehra, P.N., Hans, A.S. &
Sareen, T.S. 1972

grandifolia (D. Don) Biswas

- Pasania spicata* (Smith) Chatterjee
24 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Mehra, P.N., Hans, A.S. &
Sareen, T.S. 1972

var. *brevipetiolata* (A. DC.) Chatterjee

- 24 Mehra, P.N. & Hans, A.S. 1969 ;
Mehra, P.N., Hans, A.S. & Sareen,
T.S. 1972

var. *gracillipes* (Miq.) Chatterjee

- 24 Mehra, P.N. & Hans, A.S. 1969 ;
Mehra, P.N., Hans, A.S. & Sareen,
T.S. 1972

var. *microcalyx* (Miq.) Chatterjee

- 24 Mehra, P.N. & Hans, A.S. 1969 ;
Mehra, P.N., Hans, A.S. & Sareen,
T.S. 1972

lappaceus (Roxb.) Rehder*Pasania lappacea* (Roxb.) Schottky

- 24 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Mehra, P.N., Hans, A.S. &
Sareen, T.S. 1972

pachyphylla Rehder*Pasania pachyphylla* (Kurz) Schottky

- 24 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Mehra, P.N., Hans, A.S. &
Sareen, T.S. 1972

Pasania (Miq.) Oerst.**lateri* (King) Schottky

- 24 Mehra, P.N. & Hans, A.S. 1969 ;
Mehra, P.N., Hans, A.S. & Sareen,
T.S. 1972

mlkroyia (Purk.) A. Das

- 24 Mehra, P.N. & Hans, A.S. 1969 ;
Mehra, P.N., Hans, A.S. & Sareen,
T.S. 1972

Quercus Linn.

450 ; North America to West tropical
South America, temperate and subtropical
Eurasia and North Africa. About 21 ;
Himalaya (between 660 and 4,000 m), and
Nepal, Bhutan and Bangla Desh - many
introduced.

acutissima Carr.

- 24 Yamazaki, R. 1936

cerris Linn.

- 22 Wetzel, G. 1928, 1929
24 Ghimpu, V. 1929b, 1930 ; Jaretsky, R.

1930 ; Natividade, J.V. 1937 ; Duffield,
J.W. 1940

coccinea Muench.

- 22 Wetzel, G. 1928, 1929
24 Jaretsky, R. 1930 ; Duffield, J.W.
1940 ; Stairs, G.R. 1964

dilatata Lindl.

- 24 Mehra, P.N. & Sareen, T.S. 1969 ;
Mehra, P.N. & Hans, A.S. 1972 ;
Mehra, P.N., Hans, A.S. & Sareen,
T.S. 1972

glauca Thunb.

- 24 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Mehra, P.N. & Sareen, T.S.
1969 ; Mehra, P.N. 1972 ; Mehra,
P.N., Hans, A.S. & Sareen, T.S. 1972

griffithii Hook. f. & Thoms.

- 24 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Mehra, P.N., Hans, A.S. &
Sareen, T.S. 1972

hex Linn.

- 24 Ghimpu, V. 1930 ; Vignoli, L. 1933 ;
Natividade, J.V. 1937 ; Delay, J.
1969d, Natarajan, G. 1978

incana Roxb.

- 24 Vignoli, L. 1933 ; Mehra, P.N. &
Singh, A. 1963 ; Mehra, P.N. & Hans,
A.S. 1972 ; Mehra, P.N., Hans, A.S.
& Sareen, T.S. 1972

lanellosa Smith

- 24 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Mehra, P.N., Hans, A.S. &
Sareen, T.S. 1972

lanata Smith*lanuginosa* D. Don

- 24 Vignoli, L. 1933 ; Mehra, P.N., Hans,
A.S. & Sareen, T.S. 1972

lineata Blume

- 24 Mehra, P.N. & Hans, A.S. 1972

var. *lobbii* Wenzig

- 24 Mehra, P.N. & Hans, A.S. 1969 ;
Mehra, P.N., Hans, A.S. & Sareen,
T.S. 1972

* The species dealt under the genus *Pasania* have been transferred to *Lithocarpus*.

- var. *oxydon* Wenzig
 24 Mehra, P.N. & Hans, A.S. 1969 ;
 Mehra, P.N., Hans, A.S. & Sareen,
 T.S. 1972
- var. *thomsoniana* A. DC.*
 24 Mehra, P.N. & Hans, A.S. 1969 ;
 Mehra, P.N., Hans, A.S. & Sareen,
 T.S. 1972
- macrocarpa* Michx.
 24 Sax, H.J. 1930 ; Duffield, J.W. 1940
- montana* Willd.
 24 Sax, H.J. 1930 ; Natividade, J.V.
 1937 ; Duffield, J.W. 1940
- rohur* Linn.
 22 Wetzel, G. 1928, 1929
 24 Höeg, E. 1929 ; Jaretsky, R. 1930 ;
 Natividade, J.V. 1937 ; Duffield, J.W.
 1940 ; Johansson, H. & Eklundh, C.
 1940 ; Löve, A. 1954b ; Gadella,
 T.W.J. & Kliphuis, E. 1966 ; Mehra,
 P.N., Hans, A.S. & Sareen, T.S. 1972
- semecarpifolia* Smith
 24 Mehra, P.N. & Singh, A. 1963 ;
 Mehra, P.N. & Hans, A.S. 1972 ;
- semiserrata* Roxb.
 24 Mehra, P.N. & Hans, A.S. 1969 ;
 Mehra, P.N., Hans, A.S. & Sareen,
 T.S. 1972
- var. *spannil*
 24 Mehra, P.N. & Hans, A.S. 1969 ;
 Mehra, P.N., Hans, A.S. & Sareen,
 T.S. 1972
- serrata* Thunb.**
 24 Funabiki, K. 1938 ; Mehra, P.N. &
 Hans, A.S. 1969, 1972 ; Mehra, P.N.,
 Hans, A.S. & Sareen, T.S. 1972
- scutelliflora* Salisb.
 22 Wetzel, G. 1928
 24 Höeg, E. 1929 ; Vignoli, L. 1933 ;
 Tischler, G. 1934 ; Natividade, J.V.
 1933
- sider* Linn.
 24 Ghimpu, V. 1929b, 1930 ; Natividade,
 J.V. 1937
- velutina* Lam.***
 24 Sax, H.J. 1930 ; Duffield, J.W. 1940

FLACOURTIACEAE DC.

93/1,000 ; tropics and subtropics. 14/44 ; chiefly in South Western India, some in Himalaya (up to 1,600 m) and Eastern India, a few throughout India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka - a few cultivated.

Flacourtia Comm. ex L'Herit.

15 ; tropics and South Africa, Mascarene Islands, South East Asia, Malaysia and Fiji. 4 ; South Western India, Eastern India and Ghats, 1 almost throughout India, and Bangla Desh and Sri Lanka - a few also

cultivated.

indica (Burm. f.) Merr.

18 Mitra, K. & Datta, N. 1967

ramontchi L'Herit.

22 Bhaduri, P.N. & Kar, A.K. 1949 ;
 Mukherjee, P. 1975d

* The combination *Quercus ilaeota* Blume var. *thomsoniana* should be attributed to Wenzig (FBI, 5 : 605).

** *Q. serrata* auct. (non Thunb.), FBI, 5 : 601 is a synonym of *Q. acuminata* Carr. (FEH : 50).

*** The combination *Q. velutina* should be attributed to Lindl. (FBI, 5 : 606).

220 FLACOURTIACEAE

sepiaria Roxb.

- 22 Tjio, J.H. 1948 ; Bhaduri, P.N. & Kar, A.K. 1949 ; Mukherjee, P. 1975d
Sarkar, A.K., Datta, N., *et al.* 1976

var. *sapida* Roxb.

- 22 Mehra, P.N. & Sareen, T.S. 1973c

Gynocardia R. Br.

- 1 ; Sikkim and Khasi Hills, and Burma.

odorata R. Br.

- 46 Singhal, V.K. *et al.* 1980a

Homalium Jacq.

- 200 ; tropics and subtropics. 6 ; Himalaya and Western Ghats, and Nepal and Bangla Desh.

tumentosum Benth.

- 22 Gill, B.S. *et al.* 1979a

Hydnocarpus Gaertn.

- 40 ; Indo-Malesia. 7 ; Assam, South Western Peninsula and Andaman Islands, and Bangla Desh and Sri Lanka.

kurzii King*

- 24 Singhal, V.K. *et al.* 1980a

kurzii Warb.

Taraktogenos kurzii King

- 24 Mangenot, S. & Maogenot, G. 1962 ;
Nanda, P.C. 1962

laurifolia (Dennst.) Sleumer

- 48 Hämacher, H. 1947 (D. 1955)

wightiana Blume

- 24 Nanda, P.C. 1962
48 Singhal, V.K. *et al.* 1980a

Oncoba Forsk.

- 5 ; tropical Africa. 1 ; cultivated.

spinosa Forsk.

- 22 Singhal, V.K. *et al.* 1980a

Xylosma G. Forst.

- 100 ; warm regions. 3 ; Western Himalaya, Assam, Eastern Ghats, Andhra Pradesh and South Western India, and Nepal.

controversum Clos.

- 20 Malla, S.B., Bhattarai, S. *et al.* 1977a

longifolium Clos.

- 20 Mehra, P.N. & Sareen, T.S. 1969, 1973c

FLINDERSIACEAE (Engl.) C.T. White *ex* Airy Shaw

- 2/17 ; Southern India, Sri Lanka, East Malaysia, East Australia and New Caledonia. 1/1: Western Ghats, and Sri Lanka, also cultivated.

Chloroxylon DC.

- 1 ; South Western India, and Sri Lanka, also cultivated.

swietenia DC.

- 20 Nanda, P.C. 1962

* The combination *Hydnocarpus kurzii* should be attributed to Warb.

FRANKENIACEAE S.F. Gray

4/90 ; tropics and temperate. 1/1 ; Punjab and Uttar Pradesh, and Pakistan.

Frankenia Linn.

80 ; temperate and subtropics. 1 ; Punjab and Uttar Pradesh, and Pakistan.

puberulenta Linn.

20 Sugiura, T. 1937b, 1939 ; Dahlgren, R. *et al.* 1971

FUMARIACEAE DC.

16/over 450 ; mostly in North temperate region, a few in mountains of East Africa and South Africa. 3/41 ; confined between 1,320 and 5,600 m in the Himalaya, and Nepal and Bhutan.

Corydalis Vent.

320 ; North temperate, 1 in mountains of tropical East Africa. 31 ; Himalaya (between 2,000 and 5,600 m), and Nepal and Bhutan.

chaerophylla DC.

16 Ryberg, M. 1960

longipes DC.**sibirica** (Linn. f.) Pers.

12 Negodi, G. 1940

ophiocarpa Hook. f. & Thoms.

12 Negodi, G. 1940

16 Ryberg, M. 1960 ; Matveeva & Tikhonova (Fedorov)

Dicentra Borekh. *corr.* Bernh.

20 ; Western Himalaya to East Siberia, Sakhalin, Japan and West China and North America. 8 ; Himalaya (between 1,300 and 2,600 m), and Nepal and Bhutan a few cultivated.

canadensis (Goldie) Walp.

c.64 Ryberg, M. 1960 ; Ernst, W.R. 1962

chrysantha (Hook. & Arn.) Walp.

24 Ernst, W.R. 1965

32 Stern, K.R. & Ownbey, M. 1971

formosa Walp.

16 Ernst, W.R. 1965

24 Kellet (Tischler, G. 1935-1936)

ssp. formosa

16, 32 Stern, K.R. 1968 ; Stern, K.R. & Ownbey, M. 1971

spectabilis (Linn.) Lam.

16 Matsuura, H. 1935 ; Negodi, G. 1940 (D. 1955) ; Hasitschka-Jenschke, G. 1959 ; Ernst, W.R. 1965 ; Stern, K.R. & Ownbey, M. 1971

Fumaria Linn.

55 ; Europe, Mediterranean to Central Asia, Himalaya, and mountains and highlands of East Africa. 3 ; common in Northern India and at lower elevations in Himalaya and Nilgiri.

indica Pugsley

22 Rai, S. 1939

parviflora Lam.*

48 Gupta, P.K. & Srivastava, A.K. 1971

vallantii Loisel.

32 Ryberg, M. 1960

* *Fumaria parviflora* auct. (of Indian floras) is a synonym of *F. indica* Pugsley.

GENTIANACEAE Juss.

80/900; throughout the globe. 15/148; chiefly in the Himalaya (up to 5,940 m), and Southern and Western India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Cassipourea Lam.

30; palaeotropics. About 11; chiefly in Southern and Western India, and Bhutan and Sri Lanka.

decussata Roem. & Schult.*

64 Mukherjee, B. 1968

diffusa R. Br.

36 Christopher, J. 1976

60, 72, 84 Subramanian, D. 1980a

68 Mukherjee, B. 1968

72 Subramanyam, K. & Kambale, N.P. 1966

Centaurium Hill

About 40-50; throughout the world except tropical and South Africa. 4-5; Kashmir, Punjab and Gangetic Delta, 1 throughout India and Pakistan.

pulchellum (Swartz) Druce

20, 40 Zeltner, L. 1961

c.34 Warburg (Maude, P.F. 1939)

36 Zeltner, L. 1962; Dahlgren, R. *et al.* 1971

36, 54, 56 Khoshoo, T.N. *et al.* 1966

c.38 Tischler, G. 1937; Wulff, H.D. 1937a

42 Tarnavzchi, I.T. 1948

Erythraea pulchella Hook. f. & Thoms.

38 Rohweder, H. 1937

centaurioides (Roxb.) Rolla Rao & Hemadri*roxburghii* Druce

56 Mukherjee, B. 1968

Enicostema Blume

3-4; West Indies, tropical and South Africa, Madagascar, India, Java and Lesser Sunda Islands. 1; throughout India, and Pakistan and Sri Lanka.

byssopifolium (Willd.) I.C. Verdoorn*littorale* Blume

38 Srinivasan, A.R. 1941; Baquar, S.R. *et al.* 1965; Sanjappa, M. & Sathyananda, N. 1979

Exacum Linn.

40; palaeotropics. About 16; mostly in Southern and Western India, with a few in tropical Himalaya (up to 2,320 m) and Nepal, Bhutan and Sri Lanka.

pendulatum Linn.

30, 54, 56 Subramanian, D. 1980a

tetragonum Roxb.

18 Borgmann, E. 1964

Gentiana Linn.

About 400; throughout the world except Africa, chiefly alpine, 60; confined to temperate and alpine Himalaya (up to 5,960 m), a few descend as low as 330 m, and Nepal Bhutan, Pakistan and Sri Lanka.

aquatica Linn.

48 Belyseva, V.A. & Siplivinski, V.N. 1977

* The combination *Cassipourea decussata* should be attributed to J.A. Schult. & J.H. Schult. (HFDD: 311).

argentea Royle

20 Mehra, P.N. & Vasudevan, K.N. 1972

cachemirica Decne

16 Zhukova, P.G. 1967b

capitata Ham.

20 Mehra, P.N. & Vasudevan, K.N. 1972

carinata Griseb.

40 Mehra, P.N. & Gill, L.S. 1968a

colowina Marq.*Crawfordia japonica* Sieb. & Zucc.

20 Hsu, C.-C. 1968

46 Wada, Z. 1956

moorcroftiana Wall.

18 Mehra, P.N. & Vasudevan, K.N. 1972

26 Wada, Z. 1966

pedicellata Wall.

18 Mehra, P.N. & Vasudevan, K.N. 1972

quadrifera Blume*18 Sharma, A. & Sarkar, A.K. 1967
1968*tenella* Rottb.10 Favarger, C. 1949a; Quézel, P. 1957;
Zhukova, P.G. (Fedorov); Johnson,
A.W. & Packer, J.G. 1968; Skali-
ńska, M. *et al.* 1968*Gentianella tenella* (Rottb.) H. Smith

10 Knaben, G. 1950; Löve, D. 1953

tibetica King

52 Zhukova, P.G. 1967b

Halenia Borekh.103; 3 in mountains of Central and East
Asia and Southern India, 100 America. 2;
Kashmir to Bhutan and Western Ghats.*elliptica* D. Don

22 Favarger, C. 1952

Hoppea Willd.2; 1 Central and Southern India, 1
throughout India, and Sri Lanka.*elchotoma* Willd.

36 Mukherjee, B. 1968

Jaeschkea Kurz3; Himalaya (between 2,600 and
5,600 m).*latisejala* Clarke

20 Mehra, P.N. & Vasudevan, K.N. 1972

Swertia Linn.About 100; North America, Eurasia,
Africa and Madagascar. About 36; almost
all confined to Himalaya (up to 5,610m), and
Nepal, Bhutan and Sri Lanka.*alata* Royle

24 Mehra, P.N. & Gill, L.S. 1968a

26 Khoshoo, T.N. & Tandon, S.R. 1963

angustifolia Buch.-Ham. *ex* D. Don

24 Mehra, P.N. & Gill, L.S. 1968a

26 Khoshoo, T.N. & Tandon, S.R. 1963

blmaculata Hook. *f.* & Thoms.

18, 24 Wada, Z. 1954

24 Suzuka, O. 1950a

26 Wada, Z. 1955, 1966; Sharma, A. &
Sarkar, A.K. 1967-1968; Wada, Z. &
Tanaka, N. 1968*chirayita* (Roxb. *ex* Flem.) Karst.*chirata* Buch.-Ham. *ex* Clarke

20, 24 Wada, Z. 1955

26 Khoshoo, T.N. & Tandon, S.R. 1963

cordata Wall.26 Khoshoo, T.N. & Tandon, S.R.
1963; Mehra, P.N. & Gill, L.S. 1968a*dilatata* Clarke

20 Khoshoo, T.N. & Tandon, S.R. 1963

**Gentiana quadrifaria* (epithet is not '*quadrifera*') sensu Clarke, FBI, 4: 111 (non Blume) is a synonym
of *G. pedicellata* Wall. (HFDD: 314).

- lurida* Royle
26 Mehra, P.N. & Vasudevan, K.N. 1972
- nervosa* Wall.*
26 Sharma, A. & Sarkar, A.K. 1967-1968
- paniculata* Wall.
16 Khoshoo, T.N. & Tandon, S.R. 1963
- petiolata* Royle
26 Khoshoo, T.N. & Tandon, S.R. 1963
- purpurascens* Wall.
20 Khoshoo, T.N. & Tandon, S.R. 1963
- 24 Mehra, P.N. & Gill, L.S. 1968a
- speciosa* Wall.
26 Khoshoo, T.N. & Tandon, S.R. 1963; Mehra, P.N. & Gill, L.S. 1968a
- tetragona* Clarke
18 Khoshoo, T.N. & Tandon, S.R. 1963
- thomsonii* Clarke
26 Khoshoo, T.N. & Tandon, S.R. 1963
- tonglensis* Burkill
18 Sharma, A. & Sarkar, A.K. 1967-1968

GERANIACEAE Juss.

5/750 ; cosmopolitan. 4/about 32 ; chiefly in Himalaya, and Nepal and Pakistan.

Erodium L'Hérit.

90 ; Europe, Mediterranean to Central Asia, temperate Australia and South of tropical South America. 4 ; North Western India to Western Ghats and Pakistan, 1 cultivated.

cleonum (Juss.) L'Hérit.

- 18 Gauger, W. 1937 ; Guittonneau, G. 1964, 1965, 1967
20 Warburg, E.F. 1938b ; Van Loon, J.C. *et al.* 1971

cicutarium (Linn.) L'Hérit.

- 20 Löve, A. & Löve, D. 1944b
20, 36, 48, 54 (56) Rottgardt, K. 1956
20, 40 Warburg, E.F. 1938b
c.36 Tischler, G. 1934
30-38 Heitz, E. 1926
36 Podlech, D. & Dieterle, A. 1969
36, 40 Gauger, W. 1937
38 Faasen, P.V. & Nadeau, P. 1976
36-40 Rohweder, H. 1937
40 Löve, A. & Löve, D. 1942a, 1956b ; Andreas, C.H. 1947 ; Heiser, C.B. & Whitaker, T.W. 1948 ; Larsen, K.

1958c, 1960 ; Garajová, S. 1959 ; Guittonneau, G. 1965, 1966, 1967 ; Gadella, T.W.J. & Kliphuis, E. 1966 ; Dahlgren, R. *et al.* 1971 ; Skalčíšská, M. *et al.* 1971 ; Aryavand, A. 1975 ; Hindáková, M. & Májovský, J. 1976 ; Váchová, M. & Májovský, J. 1978, 1980

ssp. *cleuterium*

- 40 Strid, A. 1971

malacoides (Linn.) L'Hérit.

- 40 Warburg, E.F. 1938b ; Guittonneau, G. 1965, 1967 ; Fernandes, A. & Queiros, M. 1970-1971

moschatum (Linn.) L'Hérit.

- 20 Gauger, W. 1937 ; Warburg, E.F. 1938b ; Heiser, C.B. & Whitaker, T.W. 1948 ; Guittonneau, G. 1965, 1967 ; Gadella, T.W.J. & Kliphuis, E. 1970a ; Fernandes, A. & Queiros, M. 1970-1971

Geranium Linn.

About 400 ; throughout the globe. 21 ;

*The combination *Swertia nervosa* should be attributed to Clarke (FEH : 257).

confined to temperate and alpine Himalaya, it descends as low as 330 m, in Western Ghats, and Nepal and Pakistan.

aeemonifolium L'Hérit.

- 68 Warburg, E.F. 1938a
112 Chatterjee, A. & Sharma, A.K. 1970
128 Jackson, W. 1952

angustifolium Gilib.

- 112 Chatterjee, A. 1967

lambertii Sweet

grevilleanum Wall.

- 30, 32 Chatterjee, A. & Sharma, A.K. 1970
32 Chatterjee, A. 1967

laetidum Linn.

- 20 Warburg, E.F. 1938a ; Uhrliková, A. & Májovský, J. 1980

muscatense Boiss.

ocellatum Cambess.

- 56 Hedberg, I. & Hedberg, O. 1977

molle Linn.

- 26 Gauger, W. 1937 ; Warburg, E.F. 1938a ; Löve, A. & Löve, D. 1956b ; Böcher, T.W. & Larsen, K. 1958b ; Mulligan, G.A. 1959 ; Gadella, T.W.J. & Kliphuis, E. 1966 ; Taylor, R.L. & Mulligan, G.A. 1968 ; Natarajan, G. 1978

nepalense Sweet

- 26 Sharma, A. & Sarkar, A.K. 1967-1968
26, 28 Chatterjee, A. & Sharma, A.K. 1970
28 Suzuka, O. 1950a ; Kurosawa, S. 1966 ; Chatterjee, A. 1967 ; Baqur, S.R. & Abid Askari, S.H. 1970a,b ; Sarkar, A.K. *et al.* 1974

palustre Linn.

- 28 Warburg, E.F. 1938a ; Pólya, L. 1950
28, 56 Gauger, W. 1937

polyanthes Edgew. & Hook. f.

- 28 Warburg, E.F. 1938a

pratense Linn.

- 24 Tjebbes, K. 1928 ; Tlachler, G. 1934
28 Gauger, W. 1937 ; Warburg, E.F. 1938a ; Löve, A. & Löve, D. 1956b ; Murin & Uhrliková (Fedorov) ; Zhukova, P.G. 1967b ; Chatterjee,

A. & Sharma, A.K. 1970 ; Májovský, J. *et al.* 1970a ; Wahlstrom, R. 1978 ; Javůrková, V. 1979

posillum Burm. f.

- 26 Gauger, W. 1937 ; Löve, A. & Löve, D. 1944b, 1956b ; Jackson, W. 1951 ; Shaw, R.J. 1952 ; Gadella, T.W.J. & Kliphuis, E. 1966 ; Fritsch, R.M. 1973
34 Warburg, E.F. 1938a

refractum Edgew. & Hook. f.

- 28 Warburg, E.F. 1938a

robertianum Linn.

- 32 Warburg, E.F. 1938a ; Sorsa, V. 1962
32, 56, 64 Hara, H. 1952
32, 64 Böcher, T.W. 1947
52 Chatterjee, A. & Sharma, A.K. 1970
54, 56 Rohweder, H. 1937
56 Gauger, W. 1937
64 Jackson, W. 1952 ; Böcher, T.W. & Larsen, K. 1955 ; Löve, A. & Löve, D. 1956b ; Gadella, T.W.J. & Kliphuis, E. 1967 ; Laane, M.M. 1971 ; Shimizu, M. 1971

rotundifolium Linn.

- 26 Warburg, E.F. 1938a ; Larsen, K. 1956b ; Dahlgren, R. *et al.* 1971 ; Strid, A. 1971 ; Van Loon, J.C. *et al.* 1971 ; Natarajan, G. 1978

wallichianum D. Don *ex* Sweet

- 26 Chatterjee, A. & Sharma, A.K. 1970
28 Warburg, E.F. 1938a

sp.

- 28 Kumar, V. & Chauhan, K.P.S.

Monsonia Linn.

40 ; Africa, South West Asia and North Western India. 2 ; North Western India and Deccan, and Pakistan.

senegalensis Guill. & Perr.

- 24 Warburg, E.F. 1938b

Pelargonium L'Herit.

250 ; tropics and especially South Africa, 1 each Canaries, St. Helena, Tristan, East Mediterranean, South Arabia, Australia and New Zealand. Some cultivated.

226 GERANIACEAE

- capitatum* (Linn.) L'Hérit. ex Ait.
66 Daker, M.G. 1969
- domesticum* Bailey
20 Chatterjee, A. & Sharma, A.K. 1970
45 Takagi, F. 1928
- graveolens* L'Hérit.
30 Chatterjee, A. & Sharma, A.K. 1970
c.77 Daker, M.G. 1969
90 Takagi, F. 1928
- hortorum* Bailey
18 Takagi, F. 1928
18, 20, 24,
30, 34 Chatterjee, A. & Sharma, A.K. 1970
- loquimans* (Linn.) L'Hérit. ex Ait.
18 Takagi, F. 1928 ; Daker, M.G. 1969
- lateripes* L'Hérit.
18 Gauger, W. 1937 ; Warburg, E.F. 1938b
- odoratissimum* Ait.
16 Takagi, F. 1928
- peltatum* Ait.
18 Daker, M.G. 1969
36 Takagi, F. 1928 ; Gauger, W. 1937
- quercifolium* Ait.
44, 88 Gauger, W. 1937
45 Takagi, F. 1928
- radula* (Cav.) L'Hérit.
81 Takagi, F. 1928
- zonale* Ait.
15, 18, 24,
30 Sharma, A. & Sarkar, A.K. 1967-1968
17, 18, 35,
36 Gauger, W. 1937
18 Sugiura, T. 1931, 1936b ; Daker, M.G. 1969
36 Takagi, F. 1928
- Geranium zonale* Linn.
18, 20 Sharma, A. & Sarkar, A.K. 1967-1968

GESNERIACEAE Dum.

About 120/2,000 ; widely distributed in tropics and subtropics. 26/130 ; mostly in Eastern Himalaya (ascending up to 3,960 m in the Himalaya), and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka - some cultivated.

- Achimenes* Pers.
50 ; tropical America. 1 ; cultivated.
- hirsuta* DC.
22 Eberle, P. 1956
- Aeschynanthus* Jack.
80 ; Indo-Malesia and China. 21 ; Himalaya (up to 2,640m), 1 in Western Ghats, and Nepal, Bhutan and Sri Lanka.
- grandiflora* Spreng.
32 Eberle, P. 1956
- parasiticus* (Roxb.) Wall.
32 Malla, S.B., Bhattarai, S. *et al.* 1978b
- sikkimensis* Stapf
32 Ratter, J.A. 1963 ; Ratter, J.A. & Milne, C. 1970
- Chirita* Buch.-Ham.
80 ; Indo-Malesia, South East Asia and South China. 21 ; Himalaya (up to 2,970 m), and Nepal, Bhutan, Bangla Desh and Sri Lanka.
- hamosa* R. Br.
34 Milne, C.V. 1975
- macrophylla* Wall.
18 Ratter, J.A. & Prentice, H.T. 1967
- pumila* D. Don
8 Ratter, J.A. 1963

orticifolia Buch.-Ham. ex D. Don

34 Ratter, J.A. & Prentice, H.T. 1964

walkeri Gardn.

18 Milne, C.V. 1975

zeylanica Hook. f.

20 Ratter, J.A. & Prentice, H.T. 1967

Corallodiscus Batalin

18 ; Himalaya to North Western China and Indo China. 3 ; Himalaya (between 1,650 and 3,960 m), and Bhutan.

lanuginosus (DC.) Burt**Didissandra lanuginosa** Clarke

20 Mehra, P.N. & Vasudevan, K.N. 1972

Didymocarpus Wall.

About 120 ; tropical Africa, Madagascar, South East Asia, Indo-Malesia and Australia. 46 ; mostly in Himalaya (up to 3,960 m), and Nepal, Bangla Desh and Sri Lanka.

foccosus Thwaites

32 Milne, C.V. 1975

pedicellata R. Br.24 Malla, S.B. *et al.* 1974

36 Mehra, P.N. & Vasudevan, K.N. 1972

tomentosa Wight

54 Thathachar, T. 1942

+90 Ratter, J.A. & Prentice, H.T. 1967

Jerdonia Wight

1 ; South Western India.

indica Wight

28 Milne, C.V. 1975

Lysionotus D. Don

20 ; Eastern Himalaya, East and South East Asia. 3 ; subtropical Himalaya (up to 2,300 m) and Assam, and Bhutan.

serratus D. Don

32 Fussler, C. 1958 ; Ratter, J.A. & Prentice, H.T. 1964

Petrocosmea Oliv.

15 ; China. 1 ; Assam.

parryorum Fisch.

34 Fussler, C. 1958 ; Ratter, J.A. & Prentice, H.T. 1967

Platystemma Wail.

1 ; Himalaya (between 1,980 and 2,970 m).

violoides Wall.

40 Mehra, P.N. & Vasudevan, K.N. 1972

Rhynchoglossum Blume

6 ; Formosa and Indo-Malesia. 4 ; throughout India, ascending up to 1,650 m in the Himalaya, and Sri Lanka.

notolanum (Wall.) Burt

20 Ratter, J.A. & Prentice, H.T. 1967

Klugia notaniana (Wall.) DC.

20 Eberle, P. 1956, 1957

Sinningia Nees

20 ; Brazil. 1 ; cultivated.

speciosa (Lodd.) Hieron

26 Rogers, O.M. 1954 ; Eberle, P. 1956 ; Clayberg, C.D. 1967

56 Sugiyra, T. 1936b

Smithiantha Kuntze

8 ; Mexico. 1 ; cultivated.

zebrina (Paxt.) Kuntze

24 Rogers, O.M. 1954 ; Pal, O.J. 1964

Naegalia zebrina Regel

24 Sugiyra, T. 1931, 1936a, b ; Eberle, P. 1956

GOODENIACEAE R. Br. *corr.* Dum.

14/300 ; chiefly Australia (especially South West), a few in New Zealand, Polynesia, and tropical coasts. 1/2 ; seashores of India, and Pakistan and Sri Lanka.

Scaevola Linn.

80 - 100 ; tropics and subtropics, especially Australia and Polynesia. 2 ; seashores of India and Pakistan and Sri Lanka.

lobelia Linn.

16 Kausik, S.B. 1939

sericea Vahl

16 Sarkar, A.K., Mallick, R. *et al.* 1977

32 Hsu, C.-C. 1968

GROSSULARIACEAE DC.

2/150 ; temperate Eurasia, North West Africa, North and Central America, Pacific South America to Fuegia. 1/9 ; Himalaya (between 2,300 and 4,300 m), and Bhutan, 1 also cultivated.

Ribes Linn.

150 ; North temperate and Andine. 9 ; Himalaya (between 2,300 and 4,300 m), and Bhutan, 1 also cultivated.

acuminatum Wall, ex G. Don*glaciale* Wall.

16 Hamel, J.L. 1953 ; Zielinski, Q.B. 1953

emodense Rehd.

16 Zielinski, Q.B. 1953

grossularia Linn.*

16 Darlington, C.D. 1927b, 1929c ; Tischler, G. 1927b, 1929a ; Sax, K. 1931b ; Keep, E. 1962 ; Goldschmidt, E. 1964

tartum Hook. f.

16 Zielinski, Q.B. 1953

nigrum Linn.

16 Darlington, C.D. 1927b ; Tischler, G. 1927b, 1929a, 1934 ; Meurman (Fedorov) ; Löve, A. & Löve, D. 1948, 1956b ; Vaarama, A. 1953 ; Keep, E. 1962 ; Goldschmidt, E. 1964 ; Uhrliková, A. & Májovský, J. 1980

16, 32 Vaarama, A. 1949

orientale Desf.

16 Meurman, O. 1928 ; Hamel, J.L. 1953

rubrum Linn.**

16 Tischler, G. 1927b, 1934 ; Meurman, O. 1928 ; Hamel, J.L. 1953 ; Goldschmidt, E. 1964

GYROCARPACEAE Dum.

2/22 ; tropics and subtropics. 1/1 ; Peninsular India, Orissa, Bengal and the Andamans.

* *Ribes grossularia* Linn. *sensu* FBI, 2 : 410 is a synonym of *R. alpestre* Wall, ex Decne (FEH, 2 : 48).

** *R. rubrum* Linn. *sensu* FBI, 2 : 411 is a synonym of *R. emodense* Rehd. (FEH, 2 : 48).

Gyrocarpus Jacq.

7 ; tropics and subtropics. 1 ; Peninsular India, Orissa, Bengal and the Andamans.

jacquini Roxb.

americanus Jacq.

30 Raven, P.H. *et al.* 1971

HALORAGIDACEAE R. Br.

6/120 ; cosmopolitan, especially Australia. 3/12 ; Himalaya (between 1,600 and 3,300 m), Assam, Punjab, Bengal and Deccan Peninsula, and Bangla Desh and Sri Lanka.

Haloragis J.R. & G. Forst.

76 ; 1 Madagascar, 75 East Asia, Indo-Malesia, Australia, Tasmania, New Zealand Pacific to Juan Fernandez and Chile. 2 ; Eastern Himalaya (between 1,600 and 3,330 m).

micrantha R. Br.

12 Chazang, T.I. *et al.* 1963 ; Hsu, C.-C. 1968

Myriophyllum Linn.

45 ; cosmopolitan. 6 ; Kashmir, Kumaon, Punjab, Assam, Bengal and Deccan Peninsula, and Bangla Desh and Sri Lanka.

indicum Willd.

14 Sarkar, A.K. *et al.* 1973a

oliganthum (Wight & Arn.) F.V. Muell.

14 Nijalingappa, B.H.M. 1973b

spicatum Linn.

28 Löve, A. 1954a; Löve, A. & Löve, D. 1956b ; Taylor, R.L. & Mulligan, G.A. 1968

36 Löve, A. & Löve, D. 1948 ; Hara, H. 1952

42 Löve, A. 1961 ; Löve, A. & Ritchie, J.C. 1966 ; Bhat, B.K. *et al.* 1975 ; Aikou, S. 1978

verticillatum Linn.

28 Schoerer, H. 1940 ; Pogan (Skalická, M. *et al.* 1966) ; Aiken, S. 1978

42 Harada, I. 1952

HAMAMELIDACEAE R. Br.

22/80 ; chiefly subtropics (North and South). 6/8 ; Khasi Hills, Western Himalaya and Manipur, and Nepal to Bhutan.

Corylopsis Sieb. & Zucc.

20 ; Himalaya and East Asia. 2 ; Khasi Hills, and Manipur, and Bhutan.

himalayana Griff.

24 Mehra, P.N. & Khosla, P.K. 1969, 1972

Parrotiopsis (Nied.) Schneid.

1 ; Western Himalaya.

jacquemontiana (Decne) Rehd.

24 Anderson, E. & Sax, K. 1935

Symingtonia van Steenis

2 ; Eastern Himalaya to South China, Malay Peninsula and Sumatra. 1 ; Khasi Hills, and Nepal to Bhutan.

populnea van Steenis

64 Mehra, P.N. & Khosla, P.K. 1969, 1972

HELWINGIACEAE Decne

1/4-5 ; Himalaya and East Asia. 1/2 ; Eastern Himalaya (between 1,600 and 3,000 m).

Helwingia Willd.

4 - 5 ; Eastern Himalaya and East Asia.
2 ; Eastern Himalaya (between 1,600 and
3,000 m).

fermosana Kanchira & Sasaki

38 Kurosawa, S. 1971b

bimalaica Hook. f. & Thoms. ex Clarke

38 Hara, H. & Kurosawa, S. 1965 ; Kuro-
sawa, S. 1966

134 Sharma, A. & Sarkar, A.K. 1967-
1968 ; Chaudhuri, R.K. *et al.* 1969

HERNANDIACEAE Blume

3/54 ; tropics. 2/6 ; Khasi Hills and Andamans.

Hernandia Linn.

24 ; Central America, Guiana, West
Indies, West Africa, Zanzibar, Mascarenes,
Indo-Malesia and Pacific. 1 ; Andamans.

origera Linn.*peltata* Meisn.

40 Raven, P.H. & Kyhos, D.W. 1965 ;
Ehrendorfer, F. *et al.* 1968

HIPPOCASTANACEAE DC.

2/15 ; North temperate and South America. 1/4 ; Himalaya (up to 3,300 m), and Assam,
and Nepal.

Aesculus Linn.

13 ; 1 South East Europe, 5 India and
East Asia, 7 North America. 4 ; Himalaya
(up to 3,300 m), Assam, 1 Northern India,
and Nepal.

nanamica Griff.

40 Mehra, P.N., Khosla, P.K. & Sareen,
T.S. 1972

pandurana Wall.

40 Arora, C.M. 1961

hippocastanum Linn.

40 Hoar, C.S. 1927 ; Skovsted, A. 1929 ;
Dobronz, K. 1935 ; Upcott, M. 1936 ;
Delay, C. 1947

indica Colebr.

40 Mehra, P.N. & Singh, A. 1963 ; Mehra,
P.N. 1972 ; Mehra, P.N., Khosla, P.K. &
Sareen, T.S. 1972 ; Bir, S.S. & Kumari,
S. 1975

HYDRANGEACEAE Dum.

10/115 ; North temperate and subtropics, Andes from Mexico to South Chile. 3/8 ; temperate Himalaya (up to 3,300 m), and Nepal and Bhutan.

Dichroa Lour.

13 ; China, South East Asia and Indo-Malesia. 1 ; temperate Himalaya (between 1,300 and 2,600 m) and Khasi Hills, and Nepal and Bhutan.

febrifuga Lour.

36 Kurosawa, S. 1966 ; Sharma, A. & Sarkar, A.K. 1967-1968 ; Mehra, P.N. & Khosla, P.K. 1969

Hydrangea Linn.

80 ; Himalaya to Japan, Philippine Islands and Java, Atlantic North America, mountains from Central America to Chile. 8 ; temperate Himalaya (up to 3,300 m), and Nepal and Bhutan - a few cultivated.

saemula D. Don

24 Malla, S.B., Saiju, H. *et al.* 1977

aspera D. Don

36 Sax, K. 1931b ; Schoenagel, E. 1931 :

Hamel, J.L. 1953 ; Chuang, T. I. *et al.* 1963

heteromalla D. Don

36 Hamel, J.L. 1953

vestita Wall.

36 Mehra, P.N. & Khosla, P.K. 1969

macrophylla (Thunb.) Serr.

36 Singhal, V.K. *et al.* 1980a

paniculata Sieb.

36 Matsuura, H. & Suto, T. 1935

72 Sax, K. 1931b ; Sugiyama, T. 1936a ; Hamel, J.L. 1953 ; Mehra, P.N. & Khosla, P.K. 1969

robusta Hook. f. & Thoms.

36 Sharma, A. & Sarkar, A.K. 1967-1968 ; Mehra, P.N. & Khosla, P.K. 1969

Schizophragma Sieb. & Zucc.

8 ; Himalaya and East Asia. 1 ; Eastern Himalaya and Khasi Hills.

viburnoides (Hook. f. & Thoms.) Stapf

Pleostegia viburnoides Hook. f. & Thoms.

36 Hsu, C.-C. 1968

HYDROPHYLLACEAE R. Br. *ex* Edwards

18/250 ; cosmopolitan excluding Australia. 1/1 ; throughout India.

Hydrolea Linn.

20 ; tropical America, Africa and Asia. 1 ; throughout India.

zeylanica Vahl

18 Dutta, N. & Manna, M. 1963 ; Sarkar, A.K. *et al.* 1973a

24 Krishnappa, D.G. 1967, 1971

HYPERICOACEAE (Prantl & Kündig) Barkley

1/15 ; warm temperate Eurasia. 1/2 ; Sikkim, and Pakistan.

Hypocoon Linn.

15 ; Mediterranean to Central Asia and North China. 2 ; Sikkim, and Pakistan.

procumbens Linn.12 Smith, E. (Tischler, G. 1935-1936)
167 Sugiura, T. 1937b

HYPERICACEAE Juss.

8/over 550 ; tropics and subtropics. 1/24 ; mostly in the Himalaya and in the hills of South India, and Bhutan, Bangla Desh and Sri Lanka.

Hypericum Linn.

About 400 ; temperate regions and tropical mountains. 22 ; Himalaya (up to 3,960 m) and the hills of Southern India, and Bhutan, Bangla Desh and Sri Lanka - a few cultivated.

calycinum Linn.

20 Chattaway, M.M. 1926

chinense Linn.

42 Sareen, T.S., Kant, S. & Pratap, R. 1974

dyeri Robder*lytmachtaoides* Wall.

20 Mehra, P.N. & Sareen, T.S. 1969

elodeoides Choisy

16 Sugiura, T. 1941, 1944

humifusum Linn.

16 Winge, O. 1925 ; Chattaway, M.M. 1926 ; Van Loon, J. Chr. & de Jong, H. 1978

japonicum Thunb.

16 Hair, J.B. & Beuzenberg, E.J. 1959

oblongifolium Choisy46 Singhal, V.K. *et al.* 1980b*cernuum* Roxb.

44 Mehra, P.N. & Sareen, T.S. 1969

48 Sharma, J.N. & Swarup, V. 1962 ; Sareen, T.S., Kant, S. & Pratap, R. 1974

patulum Thunb.

20 Mehra, P.N. & Sareen, T.S. 1969 ; Sareen, T.S., Kant, S. & Pratap, R. 1974

36 Sugiura, T. 1936a

perforatum Linn.32 Nielsen, N. 1924 ; Winge, O. 1925 ; Hoar, C.S. & Haertl, E.J. 1932 ; Rohweder, H. 1937 ; Noack, K.L. 1939 ; Gustafsson, Å. 1947a ; Mulligan, G.A. 1957 ; Robson, N.K.B. 1957, 1958 ; Garažová, S. 1959 ; Hedberg, I. & Hedberg, O. 1964 ; Gadella, T.W.J. & Kliphuis, B. 1966, 1970a ; Robson, N.K.B. & Adams, P. 1968 ; Holub, J. *et al.* 1972 ; Reynaud, C. 1973 ; Tomkins, D.J. & Grant, W.F. 1978 ; Van Loon, J. Chr. & de Jong, H. 1978 ; Van Loon, J. Chr. & Snelgers, H.C.M. 1979 ; Van Loon, J. Chr. & Kieft, B. 1980

32, 36 Heiser, C.B. & Whitaker, T.W. 1948

ICACINACEAE Miers.

58/400 ; tropics. 12/21 ; chiefly in South Western India, a few in Himalaya, Khasi Hills and Bengal, and Nepal, Bangla Desh and Sri Lanka.

Apodytes E. Mey. ex Arn.

2 ; variable, 1 South Africa, to Malaysia, 1 North East Australia. 1 - 2 ; South Western India and Andaman Islands, and

Sri Lanka.

dimidiata E. Mey. ex Arn.

benthamiana Wight

24 Mehra, P.N. & Khosla, P.K. 1969

FTEACEAE J.G. Agardh.

2/17 ; East and South East Asia, East North America, tropical and South Africa. 1/3 ; Himalaya (between 330 and 1,600 m) and Khasi Hills, and Bhutan.

Itea Linn.

15 ; Himalaya to Japan, West Malaysia and Atlantic North America. 3 ; Himalaya (between 330 and 1,600 m) and Khasi Hills, and Bhutan.

chinensis Hook. & Arn.

22 Mehra, P.N. & Khosla, P.K. 1969

macrophylla Wall.

22 Mehra, P.N. & Khosla, P.K. 1969

JUGLANDACEAE A. Rich. ex Kunth

7/50 ; North temperate and subtropics, South to India, Indo-china, and South America (Andes). 3/4 ; Himalaya (up to 3,300 m), Khasi Hills, and Assam, and Nepal, Bhutan and Bangla Desh - a few cultivated.

Engelhardtia Leschen. ex Blume corr. Blume

5 ; Himalaya to Formosa, South East Asia, Malaysia, 3 Mexico and Central America. 2 ; Himalaya (up to 2,000 m), Assam and Khasi Hills, and Nepal, Bhutan and Bangla Desh.

roxburghiana Wall.

32 Hans, A.S. 1970b ; Mehra, P.N. & Hans, A.S. 1972

spicata Lesch. ex Blume

32 Mehra, P.N. & Hans, A.S. 1969, 1972 ; Hans, A.S. 1970b

var. *acerifolia* (Reinw.) Kds. & Val.

32 Mehra, P.N. & Hans, A.S. 1969 ; Hans, A.S. 1970b

var. *colebrookeana* (Lindl.) Kds. & Val.

32 Mehra, P.N. & Hans, A.S. 1969 ; Hans, A.S. 1970b

Juglans Linn.

15; Mediterranean to East Asia, Indo-China, North and Central America and Andes. 1; temperate Himalaya (up to 3,300 m), Khasi Hills, also cultivated.

regia Linn.

- 32 Woodworth, R.H. 1930b; Delay, C. 1947; Hans, A.S. 1970b; Mehra, P.N. & Hans, A.S. 1972; Uhríkova, A. & Májovský, J. 1980
32 or 34 Mehra, P.N. & Singh, A. 1963
36 Ermolenko, A.P.C. (Fedorov)

LAMIACEAE Lindl.

(=LABIATAE Juss.)

About 180/over 3,500; cosmopolitan, with Mediterranean as the chief centre. 67/405; chiefly in mountainous regions of India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka - some cultivated.

Ajuga Linn.

About 40; palaeotemperate. 7; Himalaya and hills of Chota Nagpur, and Nepal, Pakistan, Bhutan and Bangla Desh.

bracteosa Wall.

- 32 Chuang, T.I. *et al.* 1963; Bir, S.S. & Saggoo, M.I.S. 1980
64 Gill, L.S. 1971b

lobata D. Don

- 16 Arora, C.M. 1961
36 Bhattacharya, S. 1975

macrocarpa Wall. *ex* Benth.

- 16 Arora, C.M. 1961
32 Mehra, P.N. & Gill, L.S. 1968b; Gill, L.S. 1971b; Bhattacharya, S. 1975; Vij, S.P. & Kashyap, S.K. 1975, 1976b

var. **thomsonii** Hook. *f.*

- 32 Bhattacharya, S. 1975

parviflora Benth.

- 32 Gill, L.S. 1971b; Kumar, V. & Chauhan, K.P.S.

Anisochilus Wall.

20; tropical Africa and Asia. 13; chiefly in South Western India, and Nepal and Sri Lanka.

carneosa Wall.

- 34 Bir, S.S. & Saggoo, M.I.S. 1980

Anisomeles R.Br.

About 7; Indo-Malesia and Australia. 3; Southern India, 1 extending up to Himalaya (up to 1,650 m), and in Sri Lanka.

indica O. Kuntze

- 34 Mehra, P.N. & Gill, L.S. 1968b; Gill, L.S. 1970; Vij, S.P. & Kashyap, S.K. 1975, 1976b
40 Bir, S.S. & Sidhu, M. 1980

ovata R. Br.

- 34 Pal, S. 1971
40 Bir, S.S. & Sidhu, M. 1974

malabarica R. Br.

- 32 Vembu, B. & Sampathkumar, R. 1978

Basilicum Moench

2 3; tropical Africa to Queensland. 1; West Bengal, Bihar southwards to Peninsular India, and Sri Lanka.

polystachya (Linn.) Moench

- 28 Morton, J.K. 1962

Moschosma polystachyum Benth.

- 30 Vembu, B. 1979; Vembu, B. & Sampathkumar, R. 1980

40 Pal, S. 1971

Clinopodium Linn.

10 ; North temperate. 7 ; Himalaya (up to 3,960 m), 1 in Western Ghats, and Nepal, Bhutan and Sri Lanka.

longicaule Benth.48 Malla, S.B., Bhattarai, S. *et al.* 1977a**umbrosum** (Bieb.) Koch*Calamintha umbrosa* Fisch. & Mey.

20 Mehra, P.N. & Gill, L.S. 1968b ; Gill, L.S. 1971a

32 Pal, S. 1971

vulgare Linn.

20 Löve, A. & Löve, D. 1944b ; Von Bothmer, R. 1967 ; Markova, M.L. & Ivanova, P.St. 1971 ; Markova, M. & Ivanova, P. 1972 ; Morton, J.K. 1973 ; Van Loon, J. Chr. & de Jong, H. 1978

20, 20 | 1

-2B Böcher, T.W. 1975

Calamintha clinopodium Benth.20 Scheerer, H. 1939 ; Reoso, G. 1953 ; Löve, A. 1954b ; Hindáková (Fedorov) ; Mehra, P.N. & Gill, L.S. 1968b ; Májovský, J. *et al.* 1970a ; Gill, L.S. 1971a

40 Vii, S.P. & Kashyap, S.K. 1976b

Colebrookea Smith

i ; hilly regions of India, and Pakistan.

oppositifolia Roxb.*

32 Gajapathy, C. 1961

oppositifolia Smith

32 Gill, L.S. 1971a

Coleus Lour.

About 150 ; palaeotropics. 10 ; chiefly in Southern India, and Nepal, and Sri Lanka a few cultivated.

amboinense Lour

34 Ramachandran, K. 1967

68 Mehra, P.N. & Gill, L.S. 1968b, 1972

aromaticum Benth.

32 Scheel, M. 1931 ; Reddy, N.S. 1952 ; Morton, J.K. 1962

caninus (Roth) Vatke**spicatus** Benth.

30 Ramachandran, K. 1967

forskohlii (Willd.) Briq.

28 Reddy, N.S. 1952 ; Morton, J.K. 1962

30 Mehra, P.N. & Gill, L.S. 1972

barbatus Benth.

32 Riley, H.P. & Hoff, V.J. 1961 ; Hakeem, H. & Rife, D.C. 1966

34 Bir, S.S. & Saggoo, M.I.S. 1979

hybridum Hort.

48 Reddy, N.S. 1952 ; Morton, J.K. 1962

lactulatus Benth.

48 Reddy, N.S. 1952 ; Morton, J.K. 1962

malabaricus Benth.

28 Ramachandran, K. 1967

parviflorus Benth.

56 Mukherjee, S.K. 1959

64 Raghavan, R.S. 1958b ; Morton, J.K. 1962

68 Ramachandran, K. 1967

rehaettianus Berger

48 Scheel, M. 1931 ; Reddy, N.S. 1952 ; Morton, J.K. 1962

scutellarioides (Linn.) Benth.

48 Borgmann, E. 1964

blumei Benth.

24 Furusato, K. 1940 (Reddy, N.S. 1952)

24, 48, 72 Morton, J.K. 1962

48 Hakeem, H. & Rife, D.C. 1966 ; Huziwara, Y. 1968

48, 49, 72 Reddy, N.S. 1952

* The combination *Colebrookea oppositifolia* was made by Smith (FHD : 499).

Colquhounia Wall.

6 ; Eastern Himalaya and South West China. 3 ; temperate Himalaya (between 2,000 and 3,000 m), and Bhutan.

coccinea Wall.

34 Gill, L.S. 1970

var. vestita Prain

34 Bir, S.S. & Saggoo, M.I.S. 1980

Cranfolome Reichb.

1 ; temperate Himalaya (between 1,300 and 2,300 m).

furcata (Link) O. Kuntze**versicolor** Reichb.

29 Gill, L.S. 1970

34 Bir, S.S. & Saggoo, M.I.S. 1979

Dracocephalum Linn.

45 ; Central Europe, temperate Asia, 1 North America. 8 ; Himalaya (between 2,300 and 5,300 m).

moldavicum Linn.

10 Vakar, B.A. & Leshukova, N.B. 1970

rustans Linn.

10 Vakar, B.A. & Leshukova, N.B. 1970

speciosum Benth.

14 Gill, L.S. 1969

Dysophylla Blume

25 ; temperate Asia and Australia. 17 ; chiefly in the mountains of Southern and Western India, and Eastern Himalaya, and Nepal, Bangla Desh and Sri Lanka.

reticularia Blume

12 Hsu, C.-C. 1967

34 Chuang, T.L. *et al.* 1963

verticillata Benth.

72 Borgmann, B. 1964

Elsholtzia Willd.

35 ; Eurasia and Abyssinia. 12 ; chiefly in the Himalaya (up to 5,940 m), and Nepal and Bangla Desh.

blanda Benth.

58 Pal, S. 1971

caliata (Thunb.) Hyland.**cristata** Willd.

16 Gill, L.S. 1971a

densa Benth.

16 Podlech, D. & Dieterle, A. 1969

eristachya Benth.

16 Malla, S.B. *et al.* 1976

flava Benth.

20 Bir, S.S. & Saggoo, M.I.S. 1980

fruticosa (D. Don) Rechder**polystachya** Benth.

16 Gill, L.S. 1971a

pilosa Benth.

16 Gill, L.S. 1971a

strobilifera Benth.

16 Gill, L.S. 1971a

Eremostachys Bunge

60 ; West and Central Asia. 4 ; North Western Himalaya, and Pakistan.

superba (Royle) Benth.*

22 Podlech, D. & Dieterle, A. 1969

vicaryi Benth. *ex* Hook.

22 Podlech, D. & Dieterle, A. 1969

Galeopsis Linn.

10 ; temperate Eurasia. 1 ; Kashmir and Sikkim.

tetrahit Linn.

30 Belyaeva, V.A. & Siplivinskii, V.N. 1977

* The combination *Eremostachys superba* should be attributed to Royle *ex* Benth. (HFDD : 408).

- 32 Müntzing, A. 1928a, 1930a, b, 1932a, b ; Tischler, G. 1934 ; Rohweder, H. 1937 ; Hagberg, A. 1952 ; Löve, A. & Löve, D. 1956b ; Mulligan, G.A. 1959 ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Taylor, R.L. & Mulligan, G.A. 1968 ; Morton, J.K. 1973 ; Brand, C.V.D. *et al.* 1979 ; Gill, L.S. 1979b

Genfosporum Wall. *ex* Benth.

25 ; tropical Africa, Madagascar, Indo-China and South China. 1 ; Peninsular India.

tenuliflorum (Linn.) Merr.

prostratum Linn.

- 18 Vembu, B. & Sampathkumar, R. 1978 ; Vembu, G. 1979

Hyptis Jacq.

About 400 ; warmer America and West Indies. 4 ; naturalized.

capitata Jacq.

- 30 Chuang, T.I. *et al.* 1963

pectinata (Linn.) Poit.

- 32 Junell, S. 1937 ; Morton, J.K. 1962

suaevolens Polt.

- 28 Miège, J. 1960b ; Harvey (Fedorov) ; Bir, S.S. & Saggoo, M.I.S. 1979
28, 32 Pal, S. 1971
32 Morton, J.K. 1962 ; Gill, L.S. & Abubakar, A.M. 1975 ; Viji, S.P. & Kashyap, S.K. 1975, 1976b

Hyssopus Linn.

15 ; South Europe, Mediterranean to Central Asia. 1 ; Western Himalaya.

officinalls Linn.

- 12 Suzuka, O. & Koriba, S. 1951 ; Reese, G. 1952b ; Markova, M.L. & Thu, N.T. 1974
13 Delay, C. 1947

Lallemantia Fisch. & Mey.

5 ; Asia Minor to Central Asia and Himalaya. 1 ; Punjab and Western Himalaya.

royleana Benth.

- 14 Matveeva, T.S. & Tikhonova, A.D. (Fedorov) ; Mohra, P.N. & Gill, L.S. 1968b ; Gill, L.S. 1969 ; Chuksanova, N.A. & Kaplanbekova, S.A. 1971 ; Aryavand, A. 1977a

Lamium Linn.

40 - 50 ; Europe, Asia and extratropical Africa. 2 ; temperate Himalaya and Punjab.

album Linn.

- 16 Marchal, B. 1920

- 18 Heitz, E. 1926 ; Jørgensen, C.A. 1927a, Tischler, G. 1934 ; Rohweder, H. 1937 ; Turesson, G. 1938 ; Delay, C. 1947 ; Pölya, L. 1949 ; Löve, A. & Löve, D. 1956b ; Sorsa, V. 1962 ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Skalińska, M. *et al.* 1968 ; Pal, S. 1971 ; Poghosian, A.J. *et al.* 1971 ; Morton, J.K. 1973

- 18, 18 + 1B Gill, L.S. 1970

amplexicaule Linn.

- 18 Jørgensen, C.A. 1927a ; Tischler, G. 1927a, 1934 ; Heiser, C.B. & Whitaker, T.W. 1948 ; Löve, A. & Löve, D. 1956b ; Strid, A. 1965 ; Gadella, T.W.J. & Kliphuis, E. 1966 ; Skalińska, M. *et al.* 1968 ; Májovský, J. *et al.* 1970b ; Fernandes, A. & Queiros, M. 1970-1971 ; Dahlgren, R. *et al.* 1971 ; Ferakova, V. 1972 ; Morton, J.K. 1973 ; Markova, M.L. & Thu, N.T. 1974 ; Aryavand, A. 1977a ; Brand, C.V.D. *et al.* 1979

Lavandula Linn.

28 ; Atlantic Islands (including Central Verde) and Mediterranean, to Somalia and India. 6 ; Bihar, Madhya Pradesh and South Western India, some cultivated.

angustifolia Mill.

vera DC.

- 48 Janaki Ammal, B.K. (D. 1945)
50 Nesterenko (Fedorov) ; Makino, I. 1951 (D. 1955)

officinalls Chaix

- 36 Laws, D. 1930

- 42, 48
(36, 50) Buyukli, M.V. 1970
54 Garcia, J.G. 1942 ; Delay, C. 1947

spica DC.

- 12 Mehra, P.N. & Gill, L.S. 1972
50 Nesterenko (Fedorov)

stoechas Linn.

- 30 Nesterenko (Fedorov) ; Garcia, J.G.
1942

Leonotis (Pers.) R. Br. in Ait.

40 ; tropical and South Africa. 2 ; cultivated and naturalized.

sepetifolia (Linn.) Ait.*

- 28 Morton, J.K. 1962 ; Pal, M. 1964 ;
Pal, S. 1971

Leonurus Linn.

14 ; temperate Eurasia. 2 ; 1 Himalaya and Punjab, 1 plains of India.

cardiaca Linn.

- 18 Wulff, H.D. 1939a ; Rutland, J.P.
1941 ; Tarnavski, I.T. 1948 ; Pólya,
L. 1949 ; Mulligan, G.A. (Fedorov) ;
Murin & Uhríková (Fedorov) ; Gill,
L.S. 1970 ; Májovský, J. et al. 1970a ;
Markova, M.L. & Ivanova, P.St.
1971 ; Markova, M. & Iwanowa, P.
1972 ; Morton, J.K. 1973

albicaulis Linn.

- 20 Suzuka, O. 1950a (D. 1955) ; Chung,
T.I. et al. 1963 ; Pal, S. 1971 ; Sarkar,
A.K. et al. 1973a

Leucas R. Br.

About 100 ; tropical America, West Indies, tropical and South Africa, Arabia, South China and Indo-Malesia. 41 ; mostly in Western and Southern India, and Nepal, Pakistan, Bangla Desh and Sri Lanka.

aspera Spreng.

- 22 Jha, K.K. & Sinha, U. 1960 ; Pal, S.

1971 ; Ayyangar, K.R. & Vembu, B.
1980 ; Krishnan, N. 1980

- 28 Vij, S.P. & Kashyap, S.K. 1975,
1976b ; Gill, L.S. 1970

biflora R. Br.

- 26, 30, 32 Pal, S. 1971

cephalotes Spreng.

- 22 Vij, S.P. & Kashyap, S.K. 1975,
1976b
28 Mehra, P.N. & Gill, L.S. 1968b ; Gill,
L.S. 1970

diffusa Benth.

- 22 Ayyangar, K.R. & Vembu, B. 1980 ;
Krishnan, N. 1980 ; Vembu, B. &
Sampathkumar, R. 1980

hirta Spreng.

- 22 Ayyangar, K.R. & Vembu, B. 1980 ;
Vembu, B. & Sampathkumar, R. 1980

lanata Benth.

- 28 Gill, L.S. 1970
30 Bhat, B.K. et al. 1975

lavandulaefolia Smith*linifolia* Spreng.

- 22 Chopde, V.P. 1965

mollissima Wall.

- 28 Gill, L.S. 1970

ortanae Spreng.

- 28 Bir, S.S. & Saggoo, M.I.S. 1980

suffruticosa Benth.

- 22 Krishnan, N. 1980

Leucosceptum Smith

3 ; Himalaya and China. 1 ; temperate Himalaya (up to 2,600 m), and Bhutan.

canum Smith

- 24 Malla, S.B., Bhattarai, S. et al. 1977a
44 Bhattacharya, S. 1975

Lycopus Linn.

14 ; North temperate. 1 ; Western Himalaya and Punjab.

* The specific epithet is *sepetifolia* and the combination should be attributed to R.Br. (FEH, 3 : 93).

europaeus Linn.

- 22 Ruttle, M.L. 1932 ; Tischler, G. 1934 ; Rohweder, H. 1937 ; Ehrenberg, L. 1945 ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Hindáková (Fedorov) ; Májovský, J. *et al.* 1970a ; Skalinska, M. *et al.* 1971 ; Strid, A. 1971 ; Morton, J.K. 1973 ; Brand, C.V.D. *et al.* 1979

var. *exaltata* Hook. f.*exaltatus* Linn. f.

- 22 Ruttle, M.L. 1933

Marrubium Linn.

40 ; temperate Eurasia and Mediterranean. 3 ; Western Himalaya (up to 5,300 m).

vulgare Linn.

- 34 Rutland, J.P. 1941 ; Tarnavachi, I.T. 1948 ; Larsen, K. 1960 ; Diers, L. 1961 ; Murfn & Uhríková (Fedorov) ; Májovský, J. *et al.* 1970a ; Von Bothmer, R. 1970a ; Markowa, M. & Iwanowa, P. 1972 ; Morton, J.K. 1973 ; Van Loon, J. Chr. & Kieft, B. 1980
- 36 Wulff, H.D. 1939b ; Heiser, C.B. & Whitaker, T.W. 1948

var. *vulgare*

- 34 Markova, M.L. & Ivanova, P.St. 1971

Melissa Linn.

3 ; Europe to Central Asia and Persia. 2 ; Himalaya (between 1,300 and 3,300 m), and Nepal and Bhutan.

axillaris (Benth.) Bakh. f.*parviflora* Benth.

- 16 Mehra, P.N. & Gill, L.S. 1968b ; Gill, L.S. 1971a

Mentha Linn.

25 ; North temperate, South Africa, and Australia. 7 ; 2 indigenous in North Western Himalaya, 5 cultivated and naturalized.

aquatica Linn.

- 36 Schürhoff, P.N. 1929

60, 96 Ikeda, N. & Ono, S. 1969

c. 96 Ruttle, M.L. 1931a ; Junell (Löve, A. & Löve, D. 1942b)

- 96 Tischler, G. 1934 ; Rohweder, H. 1937 ; Graham, R.A. 1954 ; Löve, A. & Löve, D. 1956b ; Morton, J.K. 1956a ; Murray, M.J. 1958 ; Gadella, T.W.J. & Kliphuis, E. 1963, 1963b ; Olsson, U. 1967 ; Ouwensel, W.J. 1968 ; Van Loon, J. Chr. & de Jong, H. 1978

arvensis Linn.

12, c.60-62,

72 Junell (Löve, A. & Löve, D. 1942b)

24, 72, 90 Ouwensel, W. J. 1968

36, 92 Taylor, R.L. & Mulligan, G. A. 1968

64, 90, 92 Nagao, S. 1941

72 Schürhoff, P.N. 1929 ; Lietz, I. 1930 ; Rohweder, H. 1937 ; Morton, J.K. 1956a ; Olsson, U. 1967

72, 96 Ruttle, M.L. 1931a ; Ikeda, N. & Udo, S. 1967

90 Sharma, A.K. & Bhattacharyya, N.K. (Fedorov)

var. *javanica* Blume

72 Sobti, S.N. 1965

ssp. *haplocalyx* Briq.var. *piperascens* Holmer

96 Sobti, S.N. 1971b, 1975

arvensis Linn.var. *piperascens*

96 Lutkov, A.N. (Fedorov) ; Sobti, S.N. 1965 ; Ono, S. 1972

ssp. *haplocalyx* var. *piperascens* x *spicata*

72 Sobti, S.N. 1975

longifolia (Linn.) Huds.

18 Schürhoff, P.N. 1929 ; Lietz, I. 1930 (Tischler, G. 1935-1936) ; Heimans, J. 1938

18, 27 Sobti, S. N. 1962b

24 Ruttle, M.L. 1931a ; Junell, (Löve, A. & Löve, D. 1942b) ; Suzuka, O. & Koriba, S. 1949 ; Murray, M. J. 1958, 1960 ; Uhríková & Murin (Fedorov) ; Ouwensel, W.J. 1968 ; Májovsky, J. *et al.* 1970a ; Sobti, S.N. 1971a, b ; Markowa, M. & Iwanowa, P. 1972

24, 36, 48 Sobti, S.N. 1965

36 Zhukova, P.G. 1967b

36, 48 Morton, J.K. 1956a

- 48 Nagao, S. 1941 ; Pólya, L. 1950
- sylvestris* Linn.
- 18 Schürhoff, P.N. 1927, 1929 ; Tischler, G. 1934 ; Rohweder, H. 1937 ; Delay, C. 1947
- 24 Ruttle, M.L. 1931a
- ssp. longifolia*
- 48 Podiech, D. & Dieterle, A. 1969
- asperita* Linn.
- 36 Schürhoff, P.N. 1927, 1929 ; Wolf, P. 1929
- 36, 72, 144 Sobti, S.N. 1964
- 48 Sobti, S.N. 1962b
- 48, 72 Sobti, S.N. 1965
- 64, 128 Glotov, V.V. (Fedorov)
- 65-69 Ruttle, M.L. 1931a
- 66, 72 Morton, J.K. 1956a
- 68, 72, 84 Nagao, S. 1941
- 72 Murray, M.J. 1958 ; Lutkov, A.N. (Fedorov) ; Sobti, S.N. 1965 ; Ouweneel, W.J. 1968
- 72, 122 Sharma, A.K. & Bhattacharyya, N.K. 1959a
- 72, 108, 144 Lutkov, A.N. (Fedorov)
- 96, 120, 132, 144 Belyaeva, R.G. *et al.* 1970
- pategium* Linn.
- 10, 20, 30, 40 Morton, J.K. 1956a
- 20 Tarnavski, I.T. 1948 ; Pólya, L. 1950 ; Murin & Uhríková (Fedorov) ; Von Bothmer, R. 1970a ; Májovský, J. *et al.* 1970a
- 20, 40 Tischler, G. 1934
- 40 Sobti, S.N. 1965
- 40-42 Ruttle, M.L. 1931a
- 46 Nagao, S. 1941
- f. pategium*
- 20 Markova, M.L. & Ivanova, P.St. 1971 ; Markova, M. & Iwanowa, P. 1972
- rotundifolia* (Linn.) Huds.
- 18 Heimans, J. 1938
- 24 Ruttle, M.L. 1931a ; Nagao, S. 1941 ; Junell (Löve, A. & Löve, D. 1942b) ; Suzuka, O. & Koriba, S. 1949 (Löve, A. & Löve, D. 1961b) ; Morton, J.K. 1956a ; Murray, M.J. 1958, 1960 ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Sobti, S.N. 1965, 1971a
- 24, 36 Ouweneel, W.J. 1968
- 36 Arora, C.M. 1960
- 54 Schürhoff, P.N. 1929 ; Delay, C. 1947
- spicata* (Linn.) Huds.*
- 36, 48 Junell (Löve, A. & Löve, D. 1942b) ; Morton, J.K. 1956a ; Sobti, S.N. 1965
- 36, 48, 64 Nagao, S. 1941
- 48 Suzuka, O. & Koriba, S. 1949 ; Murray, M.J. 1958, 1960 ; Sobti, S.N. 1975
- 48 + 2B Ruttle, M.L. 1931a
- spicata* Linn.
- viridis* Linn.
- 32, 48 Sharma, A.K. & Bhattacharyya, N.K. 1959a
- 36 Schürhoff, P.N. 1929 ; Delay, C. 1947
- Meriandra* Benth.
- 2 ; Abyssinia and Himalaya. 2 ; 1 Western temperate Himalaya (up to 2,000 m), 1 cultivated.
- strobilifera* Benth.
- 18 Mehra, P.N. & Gill, L.S. 1968b ; Gill, L.S. 1971d
- Micromeria* Benth.
- Over 100 ; cosmopolitan. 3 ; Himalaya, Bihar, Orissa, Western Ghats and Upper Gangetic Plain, and Bhutan.
- biflora* Benth.
- 30 Mehra, P.N. & Gill, L.S. 1968b ; Gill, L.S. 1971a
- Mosla* (Benth.) Buch.-Ham. *ex* Maxim.
- About 10-20 ; Himalaya to Japan. 1 ; Himalaya (up to 1,980 m).

* The combination *Mentha spicata* should be attributed to Linn. (HFDD ; 412).

diandra Maxim.

32, 34, 38 Pal, S. 1971

scymoides Buch.-Ham. ex Benth.

18 Mehra, P.N. & Gill, L.S. 1968b; Gill, L.S. 1971a

Nepeta Linn.

About 250; temperate Eurasia, North Africa and mountains of tropical Africa. 35; almost all confined to the temperate and alpine Himalaya (up to 5,940 m), with 2 descending to the plains of Punjab, 1 in Western Ghats.

cataria Linn.

- 30 Májovský, J. *et al.* 1970a
 32 Bushnell, E.P. 1936
 34 Mulligan, G.A. 1959; Ubriková & Murfa (Fedorov); Morton, J.K. 1973; Markova, M.L. & Thu, N.T. 1974
 36 Sugiura, T. 1937c, 1940a; Lee, Y.N. 1967; Podlech, D. & Dieterle, A. 1969; Vakar, R.A. & Leshukova, N.B. 1970

distans Royle

- 26 Zhukova, P.G. 1967b
 36 Gill, L.S. 1969

elliptica Royle

- 18 Gill, L.S. 1969

erecta Benth.

- 36 Gill, L.S. 1969

erlostachya Benth.

- 18 Gill, L.S. 1969

glabrescens Benth.

- 18 Podlech, D. & Dieterle, A. 1969

govaniana Benth.

- 18 Gill, L.S. 1969

gracilliflora Benth.

- 18 Gill, L.S. 1969

gracilis Benth.

- 36 Gill, L.S. 1969

hirsutissima Haines

- 36 Gill, L.S. 1969; Vij, S.P. & Kashyap, S.K. 1975, 1976b

ruderalis Buch.-Ham.

- 36 Gill, L.S. 1969; Vij, S.P. & Kashyap, S.K. 1975, 1976b

leucopylla Benth.

- 36 Gill, L.S. 1969

linearis Royle

- 18 Gill, L.S. 1969

mollis Benth.

- 36 Gill, L.S. 1969

nervosa Royle

- 14 Zhukova, P.G. 1967b
 18 Chuksanova, N.A. & Kaplanbekova, S.A. 1971

podostachya Benth.

- 18 Podlech, D. & Dieterle, A. 1969

raphanorbiza Benth.

- 18 Gill, L.S. 1969

spicata Benth.

- 18 Gill, L.S. 1969

Ocimum Linn.

About 150; tropical and warm temperate regions, abundant in Africa. 6; 1 indigenous to Southern and Central India, others cultivated, and naturalized, and Nepal, Bangla Desh and Sri Lanka.

ascendens Willd.

- 64 Sanjappa, M. 1979

basilicum Linn.

- 16 Sz.-Borsos, O. 1970
 48 Vearama, A. 1947 (Fedorov); Morton, J.K. 1962; Sanjappa, M. 1979

americanum Linn.

- 64 Vij, S.P. & Kashyap, S.K. 1975
 72 Pushpangadan, P. *et al.* 1975
 84 Singh, T.P. 1980

var. *glabratum*

- 48 Pushpangadan, P. *et al.* 1975

var. *minimam*

- 48 Pushpangadan, P. *et al.* 1975

var. *purpurascens*

- 48 Pushpangadan, P. *et al.* 1975

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var. *thyrsiflora*

48 Pushpangadan, P. *et al.* 1975

canum Sims

22-32, 34 Pal, S. 1971
 24 Morton, J.K. 1962
 24, 26 Pushpangadan, P. *et al.* 1975
 64 Golubinskii, E.N. (Fedorov); Sanjappa, M. 1979
 64+0-4B Vij, S.P. & Kashyap, S.K. 1976b

gratissimum Linn.

24 Mitra, K. & Datta, N. 1967
 34 Pal, S. 1971
 40 Singh, T.P. 1980
 40, 48 Morton, J.K. 1962
 64 Golubinskii (Tischler, G. 1938)

var. *seavis* Hook. f.

suave Willd.

32 de Wet, J.M.J. 1958b; Morton, J.K. 1962

lilimandscharicum Guerke

76 Choudhury, J.K. *et al.* 1955; Kumar, L.S.S. *et al.* 1957; Bose, R.B. & Choudhury, J.K. 1962; Pushpangadan, P. *et al.* 1975

strictum Linn.

32 Mehra, P.N. & Gill, L.S. 1972
 32+0-3B Vij, S.P. & Kashyap, S.K. 1975, 1976b
 34, 36 Singh, T.P. 1980
 36 Bir, S.S. & Saggoo, M.I.S. 1980; Ayyangar, K.R. & Vembu, B. 1981
 64 Golubinskii (Tischler, G. 1938); Sanjappa, M. 1979

Origanum Linn.

15 20; Europe. Mediterranean to Central Asia. 2; 1 temperate Himalaya (between 2,300 and 4,000 m), 1 cultivated.

majorum Linn.

30 Harriman, N.A. 1975

vulgare Linn.

30 Rutland, J.P. 1941; Larsen, K. 1960; Gadella, T.W.J. & Kliphuis, B. 1963; Gill, L.S. 1971a; Skalická, M. *et al.* 1971; Morton, J.K. 1973; Van Loon, J. Chr. & de Jong, H. 1978
 30, 32 Pal, S. 1971
 32 Scherer, H. 1940; Delay, C. 1947

normale D. Don

30 Bir, S.S. & Saggoo, M.I.S. 1980

ssp. *vulgare*

30 Májovský, J. *et al.* 1970b

var. *vulgare*

30 Markowa, M. & Ivanova, P. 1971

Orthosiphon Benth.

30; tropical Africa and Madagascar and 20 in Eastern Asia and Indo-Malesia. 12; subtropical Himalaya, Southern and Western India, and Nepal and Sri Lanka.

paludosus Royle *ex* Benth.

22 Vembu, B. 1980; Vembu, B. & Sampathkumar, R. 1980
 24 Chopde, V.P. 1965
 28 Mehra, P.N. & Gill, L.S. 1968b, 1972; Bhatt, R.P. 1974, 1976

rubicundus (D. Don) Benth.

28 Morton, J.K. 1962

Perilla Linn.

4 - 6; India to Japan. 1; wild and cultivated in the tropical and temperate Himalaya (up to 3,300 m), and Bhutan.

frutescens (Linn.) Britton

ocimoides Linn.

28 Gill, L.S. 1971a
 28+0-1B Vij, S.P. & Kashyap, S.K. 1975
 28+0-2B Vij, S.P. & Kashyap, S.K. 1976b
 38, 40 Yamane, Y. 1950 (D. 1955)

Perovskia Karst.

7; North East Persia and Central Asia to Baluchistan and North Western Himalaya. 2; Kashmir.

abrotanoides Karst.

18 Chukanova, N.A. & Kaplanbekova, S.A. 1971

Phlomis Linn.

Over 100; North palaeotemperate. 11; Himalaya (up to 5,300 m), Assam and Punjab, and Nepal and Pakistan.

bracteosa Royle ex Benth.

22 Gill, L.S. 1970

seffigera Falc. ex Benth.

22 Gill, L.S. 1972

spectabilis Falc. ex Benth.

22 Gill, L.S. 1970

Platostoma P. Beauv.

4 ; tropical Africa and Western Peninsular India. 1 ; Western Peninsular India.

africanum P. Beauv.

14 Gadella, T.W.J. 1977

14, 28, 42 Morton, J.K. 1962

Plectranthus L'Herit.

About 250 ; tropical Africa to Japan and Malaysia, Australia and Pacific. 33 ; chiefly in the Himalaya (up to 3,300 m) and mountains of Southern and Western India and Nepal, Bhutan and Sri Lanka.

fruticosus L'Herit.

28 de Wet, J.M.J. 1958b ; Morton, J.K. 1962

japonicus (Burm. f.) Koidz

24 Suzuka, O. 1950a ; Morton, J.K. 1962

coesta Buch.-Ham.

22 Vij, S.P. & Kashyap, S.K. 1975

24 Mehra, P.N. & Gill, L.S. 1972 ; Malla, S.B. et al. 1974 ; Vij, S.P. & Kashyap, S.K. 1976b

maddesii Benth.

24 Bir, S.S. & Saggoo, M.I.S. 1980

mollis Spreng.

incanus Link

28 Morton, J.K. 1962

rugosus Wall.

24 Mehra, P.N. & Gill, L.S. 1972 ; Vij, S.P. & Kashyap, S.K. 1975, 1976b

striatus Benth.

24 Mehra, P.N. & Gill, L.S. 1972

gerardianus Benth.

24 Mehra, P.N. & Gill, L.S. 1972

ternifolius D. Don

24 Mehra, P.N. & Gill, L.S. 1972

wightii Benth.

24 Gajapathy, C. 1962b

Pogostemon Desf.

40 ; China and Indo-Malesia. 30 ; chiefly in the mountains of Southern and Western India and tropical and subtropical Himalaya, and Nepal, Bhutan, Bangla Desh and Sri Lanka a few cultivated.

benghalense (Burm. f.) O. Kuntze

plectranthoides Desf.

34 Mehra, P.N. & Gill, L.S. 1968b

64 Gill, L.S. 1971a ; Pal, S. 1971 ; Vij, S.P. & Kashyap, S.K. 1975, 1976b

parviflorus Benth.

64 Mehra, P.N. & Gill, L.S. 1968b ; Gill, L.S. 1971a

Prunella Linn.

7 ; temperate Eurasia, North West Africa and North America. 1 ; temperate Himalaya (between 1,300 and 3,300 m), Khasi Hills, and Western Ghats, and Bhutan.

vulgaris Linn.

28 Lewitsky, G.A. (Fedorov) ; Böcher, T.W. 1949 ; Löve, A. 1954b ; Löve, A. & Löve, D. 1956b ; Nelson, A.P. 1962, 1964 ; Gadella, T.W.J. & Kliphuis, E. 1963, 1966, 1972 ; Kurosawa, S. 1966 ; Hindáková & Činžara (Fedorov) ; Murin & Váchová (Fedorov) ; Taylor, R.L. & Mulligan, G.A. 1968 ; Gill, L.S. 1970 ; Májovský, J. et al. 1970a ; Váchová, M. 1970 ; Von Bothmer, R. 1970a ; Chukanova, N. A. & Kaplanbekova, S.A. 1971 ; Strid, A. 1971 ; Morton, J.K. 1973 ; Markova, M.L. & Thu, N.T. 1974

32 Hruby, K. 1932a ; Rohweder, H. 1937 ; Böcher, T.W. 1940 ; Delay, C. 1947 ; Heiser, C.B. & Whitaker, T.W. 1948 ; Matlack (Tischler, G. 1950) ; Hara, H. 1954

Pycnanthemum Michx.

17 ; North America. 1 ; cultivated.

virginianum (Linn.) Durand & Jackson

30 Chambers, H.L. 1961 ; Chambers, H.L. & Chambers, K.L. 1971

Rosmarinus Linn.

3 ; Mediterranean. 1 ; cultivated.

officinale Linn.

24 Scheel, M. 1931 ; Delay, C. 1947 ; Natarajan, G. 1978

Roylea Wall.

1 ; North Western Himalaya (between 330 and 1,650 m), also cultivated.

clara (D. Don) Ballou*calycina* Briq.

34 Mehra, F.N. & Gill, L.S. 1968b ; Gill, L.S. 1970

Salvia Linn.

About 700 ; tropics and temperate. 36 ; chiefly in temperate and alpine Himalaya (up to 4,000 m), and Bhutan and Pakistan - several cultivated.

egyptica Linn.

28 Delestaing, N. 1954
38 Bhattacharya, S.S. *et al.* 1971
42 Humphries, C.J. *et al.* 1978

aspera Lam.

20 Scheel, M. 1931

castanea

22 Gill, L.S. 1971c

cochina Juss.*

20 Sugura, T. 1931, 1936b ; Harvey 1966
22 Hrubý, K. 1934 ; Delestaing, N. 1954 ; Erbrich, P. (Fedorov)

22 (23,

24) Bhattacharya, B. 1978a

var. *pseudo-coccinea* (Juss. ex Murr.) Backer

pseudo-coccinea Jack.

c. 22 Scheel, M. 1931
22 Gill, L.S. 1971c

cv. 'Crimson King'

44 Gill, L.S. 1971c

cv. 'Pink Pearl'

22 Gill, L.S. 1971c ; Haque, Md. S. & Ghoshal, K.K. 1980a

dumetorum Andrz.**

14 Sugura, T. 1936a, b, 1937a ; Delestaing, N. 1954

farinacea Benth.

18 Bir, S.S., Kumari, S. *et al.* 1978
20 Sugura, T. 1931, 1936b ; Gill, L.S. 1971c

cv. 'Royal Blue'

14, 16, 18,
19, 20, 24 Nagendra, P. & Abraham, P.Z. 1981a
18 Haque, Md. S. & Ghoshal, K.K. 1980a

cv. 'White'

18+0-1f Haque, Md. S. & Ghoshal, K.K. 1980b

glutinosa Linn.***

16 Scheel, M. 1931 ; Hrubý, K. 1934, 1935 ; Pólya, L. 1949 ; Linnert, G. 1955 ; Májovský, J. *et al.* 1970b ; Markova, M. & Ivanova, P. 1971 ; Skaliňská, M. *et al.* 1971 ; Afzal-Rafii, Z. 1980

16 (variations

6, 8, 10) Haque, Md. S. & Ghoshal, K.K. 1980b

grahamii Benth.

22 Raman, V.S. & Kesavan, P.C. 1963b

hiana Royle

16 Gill, L.S. 1971c
32 Scheel, M. 1931

hornemannii Linn.

16 Linnert, G. 1955
16+1B Haque, Md. S. & Ghoshal, K.K. 1980a

* The combination *Salvia cochinea* should be attributed to Buchhoz ex Bllinger (FED : 508).

** *S. dumetorum* auct. (non Andrz.), FED, 4 : 655 is a synonym of *S. virgata* Jacq.

*** *S. glutinosa* auct., FED, 4 : 653, (non Linn.) is a synonym of *S. umbicoides* Wall. ex Sweet.

lanata Roxb.

- 22 Mehra, P.N. & Gill, L.S. 1968b ;
Gill, L.S. 1971c
24 Sarkar, A.K. *et al.* 1975

leucantha Cav.

- 22 Gill, L.S. 1971c ; Vij, S.P. & Kashyap,
S.K. 1975, 1976b ; Haque, Md. S. &
Ghoshal, K.K. 1980a
32 Carlson, E.M. & Stuart, B.C. 1936
32 (34,
48) Bhattacharya, S. 1978a

macrosiphon Boiss.

- 22 Delestaing, N. 1954

molesta Mitchell

- 45 Kuriachan, P.I. 1979a

moorcroftiana Wall.

- 16 Gill, L.S. 1971c
20 Bir, S.S. & Saggoo, M.J.S. 1980
22 Bhat, B.K. *et al.* 1972

nemorosa Linn.

- 12 • Hindáková (Fedorov) ; Májovský, J.
et al. 1970a
14 Hrubý, K. 1934, 1935 ; Benoist
(Tischler, G. 1938) ; Linnert, G.
1955 ; Chauhan, K.P.S. & Abel,
W. O. 1968

nubicola Benth.*

- 16 (variations
12-24) Pal, S. 1971
22 (16, 18,
20, 24) Bhattacharya, S. 1978a

officinalis Linn.

- 14 Hrubý, K. 1934, 1935 ; Suzuka, O.
& Koriba, S. 1951 (Löve, A. & Löve,
D. 1961b) ; Linnert, G. 1955 ; But-
terfass, T. 1960 ; Gill, L.S. 1971c ;
Haque, Md. S. & Ghoshal, K.K.
1980a ; Van Loon, J. Chr. 1980
16 Scheel, M. 1931

plebeia R. Br.

- 16 Mehra, P.N. & Gill, L.S. 1968b ; Vij,
S.P. & Kashyap, S.K. 1975, 1976b
16+1B Gill, L.S. 1971c

ratiana Carr.

- 20 Raman, V.S. & Kesavan, P.C. 1963b

splendens Ker-Gawl.

- 16 Gill, L.S. 1971c
20 Furusato, K. 1940 (D. 1955)
32 Carlson, E.M. & Stuart, B.C. 1936
44 Scheel, M. 1931 ; Hrubý, K. 1932b,
1934 ; Raman, V.S. & Kesavan, P.C.
1963b ; Bhattacharya, S. 1973, 1978a

cv. 'Fireball'

- 44 Haque, Md. S. & Ghoshal, K.K.
1980a

taraxacifolia Planch.

- 26 Haque, Md. S. & Ghoshal, K.K.
1980b
28 Delestaing, N. 1954

virgata Jacq.

- 16 Afzal-Rafii, Z. 1980

Satureja Linn.

30 ; temperate and warm regions. 1 ;
Kashmir.

hortensis Linn.

- 45 Vaarama, A. 1947a
46-48 Reese, G. 1952b
48 Mechelke, F. 1954 ; Gill, L.S. 1979b

Scutellaria Linn.

About 300 ; throughout the globe except
South Africa. 18 ; chiefly confined to the
Himalaya (up to 5,280 m), and Nepal and
Sri Lanka.

discolor Colebr.

- 24 Malla, S.B. *et al.* 1974

galericulata Linn.

- c. 16 Laane, M.M. 1969b
30 Gadella, T.W.J. & Kliphuis, E. 1963
31 Gadella, T.W.J. & Kliphuis, E. 1968a
31, 32 Gadella, T.W.J. & Kliphuis, E. 1967
c. 32 Scheel, M. 1931
32 Rohweder, H. 1937 ; Löve, A. 1954b ;
Morton, J.K. 1973 ; Václavová, M. &
Ferdáková, V. 1980

grossa Wall.

- 20 Gill, L.S. 1970

* The combination *Salvia nubicola* should be attributed to Wall. ex Sweet.

oblonga Benth.

24 Pal, S. 1971

repens Buch.-Ham.

20 Mehra, P.N. & Gill, L.S. 1968b ; Vij, S.P. & Kashyap, S.K. 1975, 1976b

20, 20+1B Gill, L.S. 1970

rivularis Wall.24 Malla, S.B., Bhattarai, S. *et al.* 1977a*scandens* D. Don

26 Gill, L.S. 1970

Stachys Linn.

300 ; North and South tropics and Sub-tropics (excluding Australia and New Zealand), and tropical mountains. 10 ; chiefly Himalaya (between 1,600 and 4,600 m) a few in Assam, Punjab and Bengal, and Nepal and Bangla Desh - a few cultivated.

boccosa Benth.

30 Gill, L.S. 1970

lanata Jacq.

30 Lang, A. von 1940

mollisifolia Benth.30 Gill, L.S. 1970 ; Malla, S.B., Bhattarai, S. *et al.* 1978b*palustris* Linn.

c.64 Rohweder, H. 1937 ; Wulff, H.D. 1938

64 Májovský, J. *et al.* 1970b ; Aydın, A. 1978

102 Lang, A. von 1940 ; Löve, A. 1954b

parviflora Benth.

34 Podlech, D. & Dieterle, A. 1969

sericea Wall.

30 Gill, L.S. 1970 ; Kumar, V. & Chauhan, K.P.S.

splendens Wall.

30 Bir, S.S. & Saggoo, M.I.S. 1980

sylvatica Linn.

48 Lang, A. von 1940 ; Löve, A. & Löve, D. 1942a ; Delay, C. 1947

64 Gill, L.S. 1970 ; Aydın, A. 1978

c.66 Schaefer, H. 1939

66 Pólya, L. 1950 ; Gadella, T.W.J. & Kliphuis, E. 1963

Teucrium Linn.

About 300 ; throughout the world, abundant in Mediterranean. 15 ; chiefly in the Himalaya (up to 3,300 m), and Bangla Desh and Sri Lanka few cultivated.

argutum R. Br.

32 Gill, L.S. 1971b

plectranthoides Gamble

32 Gajapathy, C. 1962b

quadrifarium Buch.-Ham.10 Malla, S.B., Bhattarai, S. *et al.* 1977a

30 Vij, S.P. & Kashyap, S.K. 1975, 1976b

32 Gill, L.S. 1971b

royleanum Wall.

32 Gill, L.S. 1971b

scordium Linn.

32 Morton, J.K. 1973

viscidum Blume*stoloniferum* Roxb.

32 Bhattacharya, S. 1975

Thymus Linn.

300 - 400 ; temperate Eurasia. 2 ; 1 Western temperate Himalaya, 1 cultivated.

serpyllus Linn.

c.20 Némec, B. 1925

20 Rohweder, H. 1937

24 Löve, A. & Löve, D. 1942a ; Jalas, J. 1948 ; Pigott, C.D. 1954, 1955 ; Jalas, J. & Pohjo, T. 1965 ; Gill, L.S. 1971a ; Morton, J.K. 1973

26 Bir, S.S. & Saggoo, M.I.S. 1980

ssp. *serpyllus*

24 Treha-Sawicka, Z. 1968

vulgaris Linn.

30 Vaarama, A. 1947 ; Jalas, J. 1948 ; Mechelke, F. 1954 ; Milovidov, P. & Storchová, J. 1958 ; Natarajan, G. 1978

56 Bonnet, A.L.M. 1966

LARDIZABALACEAE Decne

8/35 ; Himalaya to Japan, and Chile. 4/6 ; Eastern Himalaya, Nepal and Bhutan.

Holboellia Wall.

10 ; Himalaya, China and Indo-China.
1 ; Eastern Himalaya, Nepal and Bhutan.

latifolia Wall.

32 Malla, S.B., Bhattarai S. *et al.* 1977a

LAURACEAE Juss.

32/2,000 2,500 tropics and subtropics, chief centres of distribution are South East Asia and Brazil. 17/180 ; chiefly in Himalaya and Deccan Peninsula, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Actinodaphne Nees

60 - 70 ; East Asia and Indo-Malesia.
22 ; Himalaya, Assam, Deccan and Western Peninsula, and Bangla Desh and Sri Lanka.

reticulata Meisn.

24 Mehra, P.N. & Bawa, K.S. 1969

Alseodaphne Nees

25 ; China, South East Asia and Indo-Malesia. 5 ; Assam, Deccan Peninsula, and Southern India, and Sri Lanka.

petolaris Hook. f. (?)

24 Mehra, P.N. & Bawa, K.S. 1969

Belischmidia Nees

Over 200 ; tropics, Australia and New Zealand. 10 ; Sikkim, Assam, Bengal, Western Ghats and Southern India, and Nepal, Bangla Desh and Sri Lanka.

brandellii Hook. f.

24 Mehra, P.N. & Bawa, K.S. 1969

lagtifolia Nees

24 Mehra, P.N. & Bawa, K.S. 1969

gambiciana King

24 Mehra, P.N. & Bawa, K.S. 1969

24+0-2B Mehra, P.N. & Bawa, K.S. 1968 ;
Mehra, P.N. 1972

pseudomicropora (Purk.) Kosterm.

Purkayasthata pseudomicropora Purk. ex Naray.

24 Mehra, P.N. & Bawa, K.S. 1969

roxburghiana Nees

24 Bedi, Y.S. *et al.* 1980

Cassytha Linn.

20 ; palaeotropics. 3 ; greater part of India, and Bangla Desh and Sri Lanka.

elliformis Linn.

24 Sobha, V. & Ramachandran, K. 1979

48 Okada, H. & Tanaka, R. 1975

Cinnamomum Schaeff.

250 ; East Asia and Indo-Malesia. 20 ; Himalaya, Assam, Deccan, Western Peninsula, and Andaman Islands, and Bhutan, Bangla Desh and Sri Lanka - a few cultivated.

camphora Nees & Eberm.

24 Suglura, T. 1931 ; Sharma, A. K. & Bhattacharyya, N.K. 1959d ; Chuang, T.I. *et al.* 1963 ; Mehra, P.N. & Bawa, K.S. 1969 ; Okada, H. & Tanaka, R. 1975

caudatum Nees

20 Mehra, P.N. & Bawa, K.S. 1969

cecidodaphne Meisn.24 Mehra, P.N. & Bawa, K.S. 1969 ;
Mehra, P.N. 1972*impresalnervium* Meisn.

24 Mehra, P.N. & Bawa, K.S. 1969

inera Reinw.24 Sharma, A.K. & Bhattacharyya, N.K.
1959d*obtusifolium* Nees24 Janaki Ammal, E.K. (D. 1945) ;
Mehra, P. N. & Bawa, K.S. 1969*pauciflorum* Nees

24 Mehra, P.N. & Bawa, K.S. 1969

ramala Nees24 Sharma, A.K. & Bhattacharyya, N.K.
1959d ; Mehra, P.N. & Bawa, K.S.
1969*travancoricum* Gamble24 Sobha, V. & Ramchandran, K.
1979*zeylanicum* Blume24 Janaki Ammal, E.K. (D. 1945) ;
Sharma, A.K. & Bhattacharyya, N.K.
1959d*Cryptocarya* R.Br.200 - 250 ; tropics (excluding Central
Africa) and subtropics. 12; Himalaya, Assam,
Western Ghats, and Andaman Islands, and
Nepal, Bangla Desh and Sri Lanka.*mygdalina* Nees

24 Mehra, P.N. & Bawa, K.S. 1969

paribunda Nees

24 Mehra, P.N. & Bawa, K.S. 1969

Laurus Linn.2 ; Mediterranean, Canaries and Made-
ira. 1 ; cultivated.*nobilis* Linn.42 Bambacioni-Mezzetti, V. 1935, 1938
(Löve, A. & Löve, D. 1961b) ; Battag-
lia, E. 194748 Janaki Ammal, E.K. (D. 1955) ;
Okada, H. & Tanaka, R. 1975*Lindera* Thunb.100 ; Himalaya, East Asia and West
Malaysia. 16 ; Himalaya (up to 3,300 m)
and Assam, and Nepal, Dhutan and Bangla
Desh.*assamica* Kurz

24 Mehra, P.N. & Bawa, K.S. 1969

palcherrima Kurz*

24 Mehra, P.N. & Bawa, K.S. 1969

Litsea Lam.400 ; warm Asia (North to Korea, and
Japan), Australia and America. 58 ; chiefly
in Himalaya and Deccan Peninsula, and
Nepal, Bhutan, Bangla Desh and Sri Lanka.*amara* Blume

24 Mehra, P.N. & Bawa, K.S. 1969

caudata (Lour.) Pers.*citrata* Blume

24 Mehra, P.N. & Bawa, K.S. 1969

elongata Wall.**

24 Mehra, P.N. & Bawa, K.S. 1969

24+1B Mehra, P.N. & Gill, B.S. 1971

elongata Benth. & Hook. f.

24+1B Mehra, P.N. 1972

var. *latifolia* King

24 Mehra, P.N. & Bawa, K.S. 1969

glabrata Wall.

24 Mehra, P.N. & Bawa, K.S. 1969

glutinosus (Lour.) C.B. Robin

48 Mehra, P.N. & Bawa, K.S. 1969

* The combination *Lindera palcherrima* was made by Benth. & Hook. f. (FBI, 3 : 185 ; FEH : 101).** The combination *Litsea elongata* should be attributed to Hook. f. (FEH, 3 : 42).

- kingii* Hook. f.
24 Mehra, P.N. & Bawa, K.S. 1969
- lanceifolia* Roxb. ex Wall.
24 Mehra, P.N. & Bawa, K.S. 1969
- monopetala* (Roxb.) Pers.
24 Mehra, P.N. & Bawa, K.S. 1969
- oreophila* Hook. f.
24 Mehra, P.N. & Bawa, K.S. 1969
- panamonia* Buch.-Ham.
24 Mehra, P.N. & Bawa, K.S. 1969
- salicifolia* Roxb.*
24 Mehra, P.N. & Bawa, K.S. 1969
- semicarpifolia* Wall.
24 Mehra, P.N. & Bawa, K.S. 1969
- sericea* Wall.**
24 Mehra, P.N. & Bawa, K.S. 1969
- umbrosa* Nees
var. *constricta*
24 Mehra, P.N. 1972
- constricta* Nees
24 Mehra, P.N. & Singh, A. 1963
- Machilus* Nees***
- bombycina* King
24 Mehra, P.N. & Bawa, K.S. 1969
- gamajana* King
24 Mehra, P.N. & Bawa, K.S. 1969
- parviflora* Meisn.
24 Mehra, P.N. & Bawa, K.S. 1969
- sericea* Blume
24 Mehra, P.N. & Bawa, K.S. 1969
- Neolitsea* (Benth.) Merr.
80 ; East and South East Asia and Indo-Malesia. 6 ; Himalaya, Assam and Peninsular India and Bhutan.

- zeylanica* (Nees) Merr.
48 Mehra, P.N. & Bawa, K.S. 1969
48+0.5B Mehra, P.N. & Bawa, K.S. 1968 ; Mehra, P.N. 1972
- Persea* Mill.
About 150 ; tropics. 15 chiefly in the Himalaya (up to 2,600 m), and Nepal, Bangla Desh and Sri Lanka - 3 cultivated.
- americana* Mill.
24 Bowden, W.M. 1940b, 1945a ; Janaki Ammal, E.K. (D. 1945) ; Simmonds, N.W. 1954 ; Okada, H. & Tanaka, R. 1975
24, 36, 48 Garcia, V.A. 1975
- var. *drymifolia* Blake
24 Krishnaswamy, N. & Raman, V.S. 1949
- duthiei* (King ex Hook. f.) Kosterm.
Machilus duthiei King ex Hook. f.
24 Mehra, P.N. & Bawa, K.S. 1969
- gamblei* (King ex Hook. f.) Kosterm.
Machilus gamblei King ex Hook. f.
24 Mehra, P.N. & Bawa, K.S. 1969
- gratissima* Gaertn. f.
24 Bodi, Y.S. et al. 1980
- kingii* (Hook. f.) Kosterm.
Machilus kingii Hook. f.
24 Mehra, P.N. & Bawa, K.S. 1969
- odoratissima* (Nees) Kosterm.
Machilus odoratissima Nees
24 Mehra, P.N. & Bawa, K.S. 1969
- Phoebe* Nees
70 ; Indo-Malesia, tropical America and West Indies. 9 ; Himalaya and Western Ghats, and Nepal, Bhutan and Bangla Desh.

* The combination *Litsea salicifolia* should be attributed to Hook. f. (FEB, 2 : 39).

** The combination *L. sericea* should be attributed to Hook. f. (FEB, 2 : 39).

*** The species dealt under the genus *Machilus* have been transferred to *Persea*.

250 LAURACEAE

angustifolia Meisn.

24 Mehra, P.N. & Bawa, K.S. 1969

attenuata Nees

24 Mehra, P.N. & Bawa, K.S. 1969

cooperina Kanjilal ex Das

24 Mehra, P.N. & Bawa, K.S. 1969

goalgarensis Hutch.

24 Mehra, P.N. & Bawa, K.S. 1969

lanceolata Nees

24 Mehra, P.N. & Bawa, K.S. 1969

pallida Nees

24 Mehra, P.N. & Bawa, K.S. 1969

paniculata Nees

24 Mehra, P.N. & Bawa, K.S. 1969

LECYTHIDACEAE Poiteau

15/325 ; tropical America. 3/3 ; cultivated.

Bertholletia Humb. & Bonpl.

2 ; tropical South America and West Indies. 1 ; cultivated.

excolta Humb. & Bonpl.

34 Mangenot, S. & Mangenot, G. 1958, 1962

Couroupita Aubl.

20 ; tropical America and West Indies. 1 ; cultivated.

guyanensis Aubl.

36 Banerji, I. 1950a ; Sanjappa, M. & Sathyananda, N. 1979

Gustavia Linn.

45 ; Central and tropical South America. 1 ; cultivated.

angustata Linn.

72 Sarkar, A.K., Datta, N. *et al.* 1978

LEEACEAE (DC.) Dum.

1/70 ; palaeotropics. 1/20 ; Himalaya (up to 2,000 m), South Western Peninsula, 2 throughout the hotter parts of India, a few in Andaman Islands, and Nepal and Bangla Desh.

Lea Royen ex Linn.

70 ; palaeotropics. 20 ; Himalaya, South Western Peninsula, 2 throughout the hotter parts of India, a few in Andaman Islands, and Nepal and Bangla Desh.

acuminata Willd.

48 Mehra, P.N. & Khosla, P.K. 1969

alata Edgew.

24 Mehra, P.N. & Khosla, P.K. 1969

aspera Edgew.

24 Malla, S.B., Bhattarai, S. *et al.* 1978a ; Patil, V.P. *et al.* 1980

crispa Willd.*

24 Mehra, P.N. & Khosla, P.K. 1969

* The combination *Lea crispa* should be attributed to van Royen ex Linn. (FHD : 356).

crispa van Royen *ex* Linn.

edgeworthii Santap.

20 Mehra, P.N. & Sareen, T.S. 1969

48 Shetty, B.V. & Raman, V.S. 1960

indica (Burm.) Merr.

24 Shetty, B.V. & Raman, V.S. 1960 ;

Mehra, P.N. & Khosla, P.K. 1969

sambucina Willd.

20 Nair, N.C. & Nambisan, P.N.N. 1957

22 Vatsala, P. 1960 ; Hazra, R. & Sharma, A. 1970

24 Shetty, B.V. & Raman, V.S. 1960 ;

Patil, V.P. *et al.* 1980

48 Gill, B.S. *et al.* 1979b

macrophylla Roxb.

24 Shetty, B.V. & Raman, V.S. 1960

robusta Roxb.*

24 Shetty, B.V. & Raman, V.S. 1960

*p.

24 Patil, V.P. *et al.* 1980

48 Patil, V.P. *et al.* 1980

LENTIBULARIACEAE Rich.

4/170 ; cosmopolitan. 2/29 ; mostly in Western Ghats, a few in Eastern Himalaya, some occur throughout India (ascending up to 3,630 m in the Himalaya), and Nepal, Bangla Desh and Sri Lanka.

Pinguicula Linn.

46 ; North temperate (excluding West and Central United States of America and Central Asia), South East United States of America, Central America, West Indies, North Andes, Chile, T. del Fuego and Himalaya. 1 ; alpine Himalaya (between 3,600 and 4,300 m).

alpina Linn.

32 Löve, A. & Löve, D. 1944b, 1956b ; Doulat, E. 1947 ; Zurzycki, J. 1954 ; Wood, C.E. & Godfrey, R.K. 1957 ; Skalnífska, M. *et al.* 1959 ; Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov) ; Casper, S.J. 1962, 1963 ; Sorsa, V. 1963b

Utricularia Linn.

About 120 ; tropical and temperate regions. 28 ; chiefly in Western Ghats, and Nepal, Bangla Desh and Sri Lanka.

aurea Lour.

42 Subramanyam, K. & Kamble, N.P. 1968

flexuosa Vahl

42 Siddigi, O.H. 1959

baoutensis A. Chev.

20 Subramanyam, K. & Kamble, N.P. 1968

caerulea Linn.

40 Subramanyam, K. & Kamble, N.P. 1968

racemosa Wall. *ex* A. DC.

36 Kondo, D. 1973

inflexa Forsk.

var. *stellaris* (Linn. f.) P. Taylor

42 Subramanyam, K. & Kamble, N.P. 1968

stellaris Linn. f.

40 Sekar, A.K., Dutta, N. & Chatterjee, U. 1980

42 Siddigi, O.H. 1959

** *Lessa robusta* Roxb. *sensu* Laws., FBI, 1 : 667, *pro parte* is a synonym of *L. bracteata* Clarke. *L. robusta* Roxb. *sensu* Momiyama, FEM, 2 : 79, is a synonym of *L. aspera* Wall. *ex* Edgew. (FEH, 3 : 81).

minor Linn.

- 34-40 Reese, G. 1952b
 36 Löve, A. & Löve, D. 1975c
 c. 40 Löve, A. & Löve, D. 1956b

minutissima Vahl

- 16 Subramanyam, K. & Kamble, N.P.
 1968

scandens Benj.

- 12, 14 Subramanyam, K. & Kamble, N.P.
 1968

stricticaulis Stapf

- 14 Subramanyam, K. & Kamble, N.P.
 1968

LINACEAE S.F. Gray

12/290 ; throughout the world. 4/14 ; chiefly in mountainous regions, and Nepal, Pakistan, Bangla Desh and Sri Lanka - some cultivated.

lancea Linn.

About 230 ; temperate and subtropical regions, abundant in the Mediterranean region. About 8 ; Himalaya, with 1 extending to hills of Southern and Western India, and Pakistan and Sri Lanka, 3-4 cultivated.

lancea Mill.

- 30 Petrova, A.V. 1972
 30, 60 Masima, I. 1947 (D. 1955)
 32 Dahlgren, R. *et al.* 1971

angustifolium Huds.

- 30 Vilmorin, R. de & Simonet, M. 1927b ; Kikuchi, M. 1929 ; Masima, I. 1947 (Delay, C. 1951) ; Larsen, K. 1960 ; Seetharam, A. 1972 ; Chaudhuri, B.K. & Sen, S. 1976
 30-32 Simonet, M. 1929b (Ray, C. 1944)
 32 Marteenitsina, K.K. (Fedorov)

corymbiferum Desf.

- 18 Marteenitsina, K.K. (Fedorov) ; Rogers, C.M. *et al.* 1972
 30 Kikuchi, M. 1929 ; Yadava, T.P. & Kalia, H.R. 1968 ; Chaudhuri, B.K. & Sen, S. 1976

grandiflorum Desf.

- 16 Marteenitsina, K.K. (Fedorov) ; Vilmorin, R. de & Simonet, M. 1927b ; Warburg, E.F. 1938a ; Lutkov, A.N. (Fedorov) ; Singh, A. 1940c ; Ray, C. 1944 ; Masima, I. 1947 (Delay, C. 1951) ; Yadava, T.P. &

Kalia, H.R. 1968 ; Bari, G. & Godward, M.B.E. 1970 ; Jindal, V.K. & Kalia, H.R. 1971 ; Lobana, K.S. *et al.* 1972 ; Seetharam, A. 1972 ; Kijphuis, B. 1977

mysorensis Heyne

- 60 Joshi, A.B. & Hardas, M.W. 1956a ; Rogers, C.M. 1975

perenne Linn.

- 18 Marteenitsina, K.K. (Fedorov) ; Vilmorin, R. de & Simonet, M. 1927b ; Kikuchi, M. 1929 ; Dillman, A. 1933 ; Lutkov, A.N. (Fedorov) ; Ray, C. 1944 ; Osborne, W.P. & Lewis, W.H. 1962 ; Uhríková & Murín (Fedorov) ; Gill, K.S. & Yermanos, D.M. 1967b ; Bari, G. & Godward, M.B.E. 1970 ; Májovský, J. *et al.* 1970a
 18, 36 Ockendon, D.J. 1968, 1971
 30 Chaudhuri, B.K. & Sen, S. 1976

perenne x *corymbiferum*

- 30 Chaudhuri, B.K. & Sen, S. 1976

strictum Linn.

- 18 Vilmorin, R. de & Simonet, M. 1927b ; Ray, C. 1944 ; Harris, B.D. 1968 ; Dahlgren, R. *et al.* 1971 ; Van Loon, J. C. 1974
 30 Seetharam, A. 1972 ; Chaudhuri, B.K. & Sen, S. 1976

ssp. corymbosum (Reichb.) Rouy

- 18 Sz.-Borsos, O. 1971

corymbulosum Reichb.

18 Petrova, A.V. 1972

*ssp. strictum*18 Kliphuis, E. & Wieffering, J.H. 1972;
Natarajan, G. 1978*vestitissimum* Linn.15, 30, 60 Murray, B.E. *et al.* 197730 Tammeo, T. 1922; Kikuchi, M. 1929;
Simonet, M. 1929b; Richbaria, R.H.
& Kalamkar, W.J. 1939; Skovsted,
A. 1939; Singh, A. 1940c; Ray, C.
1944; Masima, I. 1947; Joshi, A.B.
& Hardas, M.W. 1956a; Gill, K.S.
& Yermanos, D.M. 1967a; Yadava,
T.P. & Kalia, H.R. 1968; Bari, G.
& Godward, M.B.E. 1970; Seet-
baram, A. 1972; Seetharam, A. &

Srinivasachar, D. 1972

32 Marteenitsina, K.K. (Fedorov);
Lutkov, A.N. (Fedorov); Rybin,
V.A. (Fedorov); Dutta, T.K. & Bhat-
tacharyya, N.K. 1980*Reinwardtia* Dum.2; India to China. 2; mountains of
India.*indica* Dum.22 Malla, S.B., Bhattarai, S. *et al.* 1978b*trigyna* (Roxb.) Planch.

20 Kishore, H. 1951

22 Raghavan, R.S. & Aroca, C.M. 1958;
- Sarcen, T.S. *et al.* 1974

LOBELIACEAE R. Br.

29/1, 150; temperate and subtropical regions and tropical mountains. 1/22; chiefly in
Eastern Himalaya, and Nepal, Bhutan, Bangla Desh and Sri Lanka.*Lobelia* Linn.About 200 - 300; world-wide in dis-
tribution, abundant in tropics and subtropics,
with the chief centre in America. 22; chiefly
in Eastern Himalaya, with a few descending
to the plains of Eastern India and Nepal
Bhutan, Bangla Desh and Sri Lanka - a few
cultivated.*cardinalis* Linn.14 Vilmorin, R. de & Simonet, M.
1927b; Sugiura, T. 1936a; Bowden,
W.M. 1940a, 1945a, 1958, 1960c*chacopodifolia* Wall.*differtiana* Linn.

14 Vilmorin, R. de & Simonet, M.

1927b; Sugiura, T. 1936b, 1937b,
1939*erios* Linn.28, 42 Vilmorin, R. de & Simonet, M.
1927b*inflata* Linn.14 Okuno, S. 1937; Sugiura, T. 1939;
Bowden, W.M. 1959

14, 28, 56 Kawatani, T. & Otsuo, T. 1953

16 Sugiura, T. 1937b

nummularia Lam.*Pratia nummularia* Kurz

12 Hsu, C.-C. 1967

pyramidalis Wall.28 Malla, S.B., Bhattarai, S. *et al.* 1977a*terminalis* Clarke

14 Bhattacharyya, N.K. 1972b

LOGANIACEAE Mart.

7/130 ; tropics, a few warm temperate. 1/1 ; Assam Hills and Manipur.

Gelsemium Juss.

2 ; 1 South China, Indo-China, North Borneo and Sumatra, 1 in South East United States and North Mexico. 1 ; Assam Hills

and Manipur.

elegans (Gardn. & Champ.) Benth.

16 Ornduff, R. 1970a

LORANTHACEAE Juss.

36/1,300 ; tropics and temperate. 14/61 ; chiefly in Western Ghats and tropical and sub-tropical Himalaya, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Arceuthobium M. Bieb.

15 ; North America, West Indies, Mediterranean, Himalaya, China, Malay Peninsula and Java. 2 ; Himalaya, and Pakistan.

oxycedri (DC.) M. Bieb.

26 Pisek, A. 1924

Dendrophthoe Mart.

30 ; tropical Africa, Indo-Malesia and tropical Australia. 11 ; almost all confined to the mountains of Southern and Western India, with 1 extending to tropical and temperate Himalaya, and Bhutan, Bangla Desh and Sri Lanka.

falcata (Linn. f.) Etting.

18 Barlow, B.A. 1966 ; Barlow, B.A. & Wiens, D. 1971 ; Johri, B.M. & Nag, K.K. 1974 ; Sarkar, A.K., Mellick, R. *et al.* 1977 ; Sarkar, A.K., Datta, N. & Chatterjee, U. 1978

longiflorus Desr.

18 Kumar, L.S.S. & Abraham, A. 1942c ; Bhaumik, G.H. 1971, 1972

var. *amplexifolius* DC.

18 Bir, S.S., Gill, B.S. & Bedi, Y.S. 1979, 1980

Loranthus longiflorus Desr.

var. *falcata* (Linn. f.) Kurz

18 Bir, S.S., Gill, B.S. & Bedi, Y.S. 1979, 1980

nelgherrensis (Wight & Arn.) Van Tiegh.

18 Barlow, B.A. & Wiens, D. 1971

pentandra Miq.

16 Rauch, K.V. 1936

trigona (Wight & Arn.) Danser *ex* Santap.

Loranthus trigonus Wight & Arn.

18 Sanjappa, M. & Sathyananda, N. 1979

Helicanthes Danser

1 ; Peninsular India.

elastica (Desr.) Danser

16 Johri, B.M. *et al.* 1957

Helixanthera Lour.

50 ; tropical Africa and from Indo-Malesia to Celebes. 9 ; chiefly in mountains of Southern and Western India, and Bangla Desh and Sri Lanka.

hookeriana (Wight & Arn.) Danser

18 Barlow, B.A. & Wiens, D. 1971

Nyctria (Wall.) Danser

Loranthus ligustrinus Wall.

18 Bhaumik, G.H. 1971, 1972

Korthalsella Van Tiegh.

45 ; North tropical Africa, Madagascar, Mascarenes, Himalaya, Japan, Indo-China, Malaysia, Australia, New Zealand, Pacific and West Indies (Cuba). 1 ; Himalaya, Assam and Western Ghats, and Sri Lanka.

japonica (Thunb.) Engler

opuntia (Thunb.) Merr.

28 Barlow, B.A. 1963

Loranthus Jacq.

600 ; tropical and subtropical Old World, a few temperate Eurasia and Australia. 6 ; Himalaya, Eastern and Peninsular, India and Bhutan.

pulverulentus Wall.

18 Bir, S.S., Gill, B.S. & Bedi, Y.S. 1979, 1980

Macrosolen (Blume) Reichb.

40 ; South East Asia and Malaysia. 6-7 ; chiefly in South Western India, a few in Himalaya, Eastern India and Nepal.

capitellus (Wight & Arn.) Danser

24 Barlow, B.A. & Wiens, D. 1971

cochinchinensis (Lour.) Van Tiegh.

12, 14, 18,

23, 24 Sarkar, A.K. & Datta, N. 1981

24 Schaeppi, H. & Steindl, F. 1942 (Barlow, B.A. 1963) ; Barlow, B.A. & Wiens, D. 1971 ; Sarkar, A.K., Datta, N. & Chatterjee, U. 1978

Scurrula Linn.

50 ; South East Asia and West Malay-

sia. 7 ; mostly in Himalaya, and in Nepal, Bhutan, Bangla Desh and Sri Lanka.

parasitica Linn.

Loranthus scurrula Linn.

24 Bhaumik, G.H. 1971, 1972

Taxillus Van Tiegh.

60 ; South Africa, Madagascar, Mascarenes, South China, Indo-China and West Malaysia. 7 ; South Western India, and Sri Lanka.

conceus Linn.*

18 Johri, B.M. & Nag, K.K. 1974

locuus (Trimen) Wiens

18 Barlow, B.A. & Wiens, D. 1971

vestitus Wall.**

18 Johri, B.M. & Nag, K.K. 1974

Viscum Linn.

60 70 ; warm parts of the Old World with a few in temperate Eurasia. 14 ; mostly in mountains of Southern and Western India and the Himalaya, and Nepal, Bangla Desh and Sri Lanka.

album Linn.

20 Pisek, A. 1923 ; Steindl, F. 1935 ; Uhriková, A. & Feráková, V. 1980

articulatum Burm.

24 Steindl, F. 1935 ; Barlow, B.A. 1963

capitellatum Smith

c. 24 Schaeppi, H. & Steindl, F. 1942 (Barlow, B.A. 1963)

orientale Willd.

20 Schaeppi, H. & Steindl, F. 1942 (Barlow, B.A. 1963)

26 Wiens, D. & Barlow, B.A. 1971

ovallifolium DC.

44 Barlow, B.A. 1964

* The combination *Taxillus conceus* should be attributed to Danser (FHD : 309).

** The combination *T. vestitus* was made by Danser (DFPI : 168).

LYTHRACEAE J. St. - Hil.

25/over 550 ; widely distributed throughout the world. 8/50 ; chiefly in the tropical regions, occur from tidal swamps to the Himalaya (up to 1,650 m), and Nepal, Bhutan, Bangla Desh and Sri Lanka - some cultivated.

Ammannia Linn.

Hamel, J.L. 1967 ; Gadella, T.W.J. *et al.* 1969 ; Guha, S. 1972

30 ; cosmopolitan. About 19 ; chiefly in the plains of Southern India, and Bangla Desh and Sri Lanka.

baccifera Linn.

26 Roy, R.P. & Thakur, M. 1961a ; Guha, S. 1972

latifolia Linn.

48 Graham, S.A. 1978

multiflora Roxb.

18 Sarkar A.K., Datta, N. & Chatterjee, U. 1980

salicifolia Montl.

28 Krishnappa, D.G. 1967, 1971

senegalensis Lam.*

36 Roy, R.P. & Thakur, M. 1961a
40 Bir, S.S. & Sidhu, M. 1975

Cuphea P. Br.

250 ; America. 1 ; cultivated.

jerullensis HBK

16, 32 Guha, S. 1972

Heimia Link & Otto

3 ; South United States to Argentina. 2 ; cultivated.

myrtifolia Cham. & Schlecht.

16 Dollon, T. & Hamel, J.L. 1967 ; Graham, S.A. 1971 ; Singhal, V.K. *et al.* 1980a

salicifolia Link

16 Graham, S.A. 1966 ; Dollon, T. &

Lafœnsia Vand.

12 ; tropical America. 1 ; cultivated.

vandelliana Cham. & Schlecht.

16 Guha, S. 1972

Lagerstroemia Linn.

53 ; tropical Asia to North Australia. 10 ; mostly in Western and Southern India, a few in foot hills of Himalaya, Assam and Andamans - some cultivated.

floribunda Jack.

48 Nanda, P.C. 1962

indica Linn.

16 Dollon, T. & Hamel, J.L. 1967
48 Sen, N.K. & Sahni, V.M. 1954b ; Ali, R. 1977 (Khoshoo, T.N. 1979)
48, 50 Guha, S. 1972
50 Bowden, W.M. 1945a

var. alba

50 Guha, S. 1972

lancastreri Hort.

46 Guha, S. 1972, 1976
48 Ali, R. 1977 (Khoshoo, T.N. 1979)

parviflora Roxb.

48 Ali, R. 1977 (Khoshoo, T.N. 1979)

var. benghalensis

50 Singhal, V.K. *et al.* 1960b

speciosa (Linn.) Pers.

48 Sen, N.K. & Sahni, V.M. 1954b ; Guha, S. 1972

* *Ammannia senegalensis* FBI, 2 : 570 is a synonym of *A. auriculata* Willd. (FEH : 217).

50 Bowden, W.M. 1945a ; Mehra, P.N. & Bawa, K.S. 1969

flos-reginae Retz.

44 Tjio, J.H. 1948

48 Nanda, P.C. 1962 ; Ali, R. 1977 (Khoshoo, T.N. 1979)

var. *magnifica*

48 Guha, S. 1972

var. *rosea*

48 Guha, S. 1972

thorellii Gagnep.

44 Guha, S. 1972

48 Sen, N.K. & Sahni, V.M. 1954b ; Ali, R. 1977 (Khoshoo, T.N. 1979)

Lawsonia Linn.

1 ; palaeotropics. Cultivated and naturalized.

inermis Linn.

24² Dollon, T. & Hamel, J.L. 1967

var. *alba* Hassk.

30, 32,

34, 36 Guha, S. 1972

var. *rosea*

30, 34, 36 Guha, S. 1972

Retala Linn.

50 ; tropics and subtropics. 14 ; chiefly in the plains, ascending up to 660 m in the Himalaya.

rotundifolia Koehne

16 Hsu, C.-C. 1968

30 Guha, S. 1972

Woodfordia Salisb.

2 ; 1 Abyssinia and 1 in Madagascar, India, Sri Lanka, China and Sumatra to Timor. 1 ; common in tropical India, ascending up to 1,650 m in the mountains.

fruticosa Salisb.*

16 Guha, S. 1972

fruticosa (Linn.) Kurz

floribunda Salisb.

16 Thomas, J.L. 1962

MAGNOLIACEAE Juss.

12/230 ; temperate and tropical East Asia and America. 8/35 ; almost all in Himalaya (up to 3,300 m), a few in hills of Southern India, and Nepal, Bhutan, Bangla Desh and Sri Lanka a few cultivated.

Liriodendron Linn.

1 ; East North America and 1 in China and North Indo-China. 1 ; cultivated.

altipifera Linn.

38 Maneval, W.F. 1914 ; Whitaker, T.W. 1933a ; Janaki Ammal, B.K. 1952b

Magnolia Linn.

80 ; Himalaya to Japan, Borneo and Java, East North America to Venezuela and West Indies. 10 ; almost all confined to Eastern Himalaya and Assam, and Nepal, Bhutan and Bangla Desh a few cultivated.

* The combination *Woodfordia fruticosa* should be attributed to Kurz (HFDD : 187).

258 MAGNOLIACEAE

campbellii Hook. f. & Thoms.

114 Janaki Ammal, E.K. 1952b ; Mehra, P.N. 1972

coco DC.

38 Biswas, B.K. 1979

denudata Desr.

114 Yasui, K. 1937b ; Janaki Ammal, E.K. 1952b ; Santamour, F.S. Jr 1970

globosa Hook. f. & Thoms.

38 Janaki Ammal, E.K. 1952b

grandiflora Linn.

112-114 Moriyaga, T. *et al.* 1929
114 Janaki Ammal, E.K. 1952b ; Biswas B.K. 1979

griffithii Hook. f. & Thoms.

38 Janaki Ammal, E.K. 1952b

kobus DC.

38 Janaki Ammal, E.K. 1952b

obovata Thunb.

38 Janaki Ammal, E.K. 1952b

pterocharpa Roxb.

38 Janaki Ammal, E.K. 1952b ; Biswas, B.K. 1979

Manglietia Blume

30 ; South East Asia to Sumatra. 3 ; Eastern Himalaya, and Nepal.

hookeri Cubitt. & Smith

38 Janaki Ammal, E.K. 1952b

laevis Blume

38 Janaki Ammal, E.K. 1952b

Michelia Linn.

50 ; tropical Asia and China. 12 ; almost all in Himalaya (up to 2,300 m) and Assam, 1 in hills of South Western India, and Nepal, Bhutan and Sri Lanka a few cultivated.

champaca Linn.

38 Janaki Ammal, E.K. 1952b ; Mehra, P.N. 1972 ; Mehra, P.N. & Sreen, T.S. 1973c ; Biswas, B.K. 1979

doitsopa Buch.-Ham. ex DC.

38 Janaki Ammal, E.K. 1952b

figo (Lour.) Spreng.

fuscata Blume

38 Janaki Ammal, E.K. 1952b ; Nanda, P.C. 1962 ; Raven, P.H. 1962

hisopa Buch.-Ham.

38 Mehra, P.N. & Sreen, T.S. 1969 ; Mehra, P.N. & Sreen, T.S. 1973c ; Biswas, B.K. 1979

montana Blume

38 Mehra, P.N. & Sreen, T.S. 1973c

valentina DC.

lanuginosa Wall.

38 Janaki Ammal, E.K. 1952b ; Mehra, P.N. & Sreen, T.S. 1973c ; Biswas, B.K. 1979

Pachylarnax Dandy

2 ; Assam, Indo-China and Malay Peninsula. 1 ; Assam and Naga hills.

pleiolarpa Dandy

38 Janaki Ammal, E.K. 1952b

Paramichelia Hu

3 ; Assam, South East Asia, Malay Peninsula and Sumatra. 1 ; Assam.

ballonii Hu

Talauma phellocharpa King

38 Janaki Ammal, E.K. 1952b

Talauma Juss.

50 ; Eastern Himalaya, South East Asia, Malaysia, Mexico to tropical South America and West Indies. 5 ; Eastern Himalaya and Assam.

cadottii Blume

38 Singhal, V.K. *et al.* 1980a

hodgsonii Hook. f. & Thoms.

38 Mehra, P.N. 1972 ; Biswas, B.K. 1979

mutabilis Blume

38 Biswas, B.K. 1979

MALPIGHIACEAE Juss.

60/800 ; tropics, especially South America. 6/19 ; chiefly in Eastern Himalaya and South Western India, and Nepal, Pakistan, Bangla Desh and Sri Lanka some cultivated.

Galpimia Cav.**gracilis* Bartl.

- 24, 36, 48 Roy, R.P. & Mishra, N.C. 1962
 24 Roy, R.P. & Mishra, N.C. 1962 ;
 Lewis, W.H. & Oliver, R.L. 1970 ;
 Macbride, B. 1970 ; Zaman, M.A.
et al. 1977b

- 24, 24+1B Lakshmi, N. & Rao, N.B. 1975

nitida

- 24 Raman, V.S. & Kesavan, P.C.
 1963a

Hiptage Gaertn.

20 - 30 ; Mauritius, Himalaya to China, Formosa, Indo-China, West Malaysia, Celebes, Timor and Fiji. 3 ; Khasi Hills, South Western India, 1 in hotter parts of India, and Pakistan and Sri Lanka, 1 also cultivated.

banghalensis Kurz*madagloti* Gaertn.

- 42, 56 Roy, R.P. & Mishra, N.C. 1962
 58 Pal, M. 1964
 60 Gill, B.S. *et al.* 1979b

Malpighia Linn.

35 ; tropical America and West Indies. About 5 ; cultivated.

coelgera Linn.

- 20 Gajapathy, C. 1962a ; Sarkar, A.K.
et al. 1973b

cubensis HBK

- 20 Nanda, P.C. 1962

glabra Linn.

- 20 Bawa, K.S. 1973
 20, 40 Pandey, R.M. & Pal, M. 1980b
 40 Pal, M. 1964 ; Sarkar, A.K., Datta,
 N. & Chatterjee, U. 1980

punctifolia Linn.

- 20 Raman, V.S. & Kesavan, P.C. 1963b

Stigmaphyllon Juss.

60 - 70 ; tropical America and West Indies. About 3 ; cultivated.

ciliatum Juss.

- 18 Snood (D. 1955)
 20 Pal, M. 1964

littorale

- 22 Roy, R.P. & Mishra, N.C. 1962

periptocifolium Juss.

- 20 Pal, M. 1964

Thryallis Linn.

12⁷ ; warm America. A few cultivated.

glauca O. Kuntze*Galpimia glauca* Cav.

- 12 Seavey, S. 1975

MALVACEAE Juss.

75/1,000 ; tropics and temperate. 21/102 ; chiefly in hotter regions, and Nepal, Bhutan, Pakistan, Bangla Desh and Sri Lanka several cultivated.

* The species dealt under the genus *Galpimia* have been transferred to *Thryallis*.

Abelmoschus Medik.

15 ; tropical Africa, Asia and Australia.
6 ; chiefly in hotter parts, and Nepal,
Pakistan and Bangla Desh 1 cultivated.

esculentus (Linn.) Moench

- 66-132,
130, 194 Singh, H.B. & Bhatnagar, A.A. (Kho-
shoo, T.N. 1979)
72 Teshima, T. 1933
108, 120,
144 Datta, P.C. & Naug, A. 1968
130 Joshi, A.B. & Hardas, M.W. 1953,
1956b
130, 194 Singh, H.B. & Bhatnagar, A. 1976
132 Roy, R.P. & Jha, R.P. 1958

Hibiscus esculentus Linn.

- c. 66 Ford, C.E. 1938
72 Teshima, T. 1933
118,
120, 122 Krenke (Tischler, G. 1931)
120 Purewal, S.S. & Randhawa, G.S. 1947
130 Skovsted, A. 1935
c. 130,
c. 132 Breslawetz, L.P. *et al.* (Fedorov)
132 Medwedewa, G.B. (Fedorov) ; Roy,
R.P. & Jha, R.J. 1958

ficulneus (Linn.) Wight & Arn.

- 32 Sanjappa, M. 1979
72 Hardas, M.W. & Joshi, A.B. 1954 ;
Joshi, A.B. & Hardas, M.W. 1956b

Hibiscus ficulneus Linn.

- 78 Skovsted, A. 1935, 1941

manihot (Linn.) Medik.

- 130 Dasgupta, A. & Bhatt, R.P. 1976

Hibiscus manihot Linn.

- 60 Teshima, T. 1933
66 Skovsted, A. 1935 ; Medwedewa,
G.B. (Fedorov) ; Delay, C. 1947

mochatus Medik.**Hibiscus abelmoschus** Linn.

- 72 Skovsted, A. 1935, 1941 ; Medwedewa,
G.B. (Fedorov) ; Sinha, R.P. 1962

tuberculatus Pal & Singh

- 58 Joshi, A.B. & Hardas, M.W. 1953,
1956b

Abutilon Mill.

About 150 ; tropics and subtropics. 12 ;
hotter parts of India, also in Pakistan,
Bangla Desh and Sri Lanka a few culti-
vated.

asiaticum G. Don

- 14 Ford, C.E. 1938
42 Skovsted, A. 1941

auritum Sweet

- 14 Ford, C.E. 1938 ; Skovsted, A. 1941

avicennae Gaertn.

- 42 Breslawetz, L.P. *et al.* (Fedorov) ;
Skovsted, A. 1935, 1941 ; Sugimra, T.
1936a, b ; Medwedewa, G.B. (Fedo-
rov) ; Lessani, H. & Chariat-Panahi,
S. 1979

bidentatum Hochst.

- 42 Bir, S.S. & Sidhu, M. 1978, 1980

crispum G. Don

- 14 Krishnappa, D.G. & Munirajappa
1980

fruticosum Guill.

- 42 Baquar, S.R. & Husain, S.A. 1967

glabrum G. Don

- 28 Skovsted, A. 1935, 1941
42 Sanjappa, M. 1979

grandiflorum (Willd.) Swartz*

- 42 Krapovickas, A. 1957b

grandiflorum (Willd.) Sweet**molle** Sweet

- 42 Skovsted, A. 1935

hirtum (Lam.) Sweet

- 14 Ford, C.E. 1938
42 Krishnappa, D.G. & Munirajappa 1980

graveolens Wight & Arn.

- 14 Ford, C.E. 1938
36 Baquar, S.R. *et al.* 1966

* The combination *Abutilon grandiflorum* should be attributed to Sweet (HFDD : 83).

- indicum** (Linn.) Sweet
 36 Roy, R.P. & Sinha, R.P. 1961
 42 Skovsted, A. 1935, 1941; Medwedewa, G.B. (Fedorov); Subramanyam, K. & Kamble, N.P. 1966; Baquat, S.R. 1967-1968; Hazra, R. & Sharma, A. 1971a; Sareen, T.S., Kant, S. & Pratap, R. 1974; Bie, S.S. & Sidhu, M. 1980
 (Fedorov); Májovský, J. *et al.* 1970a; Hazra, R. & Sharma, A. 1971a
 56 Sugiura, T. 1931, 1936b
- nelgherrense** Munro
 42 Krishnappa, D.G. & Munirajappa 1980
- persicum** (Burm.) Merr.
 42 Krishnappa, D.G. & Munirajappa 1980
- polyandrum** Wight & Arn.
 32 Sanjappa, M. 1979
 42 Gajapathy, C. 1962a
- striatum** Dicks.
 16 Kühn (Tischler, G. 1931); Davie, J.H. 1933; Skovsted, A. 1935
- theophrasti** Medik.
 42 Skovsted, A. 1935, 1941; Ford, C.E. 1938; Podlech, D. & Dieterle, A. 1969; Uhríková, A. & Májovský, J. 1980
- Althaea** Linn.
 20; temperate and subtropical regions of Europe and Asia. 3; 1 in Kashmir, 1 drier parts of Punjab and Uttar Pradesh, and in Pakistan 1 cultivated.
- officinalis** Linn.
 40-44 Davie, J.H. 1933
 c.42 Wujff, H.D. 1937a
 42 Skovsted, A. 1935, 1941; Ford, C.E. 1938; Delay, C. 1947; Pólya, L. 1950; Skalínska, M. *et al.* 1971; Hindáková, M. & Lhotská, M. 1980; Uhríková, A. & Schwarzová, T. 1980
- rosea** Cav.
 26 Burkott, G.W. 1932
 42 Kessler, E. 1932; Skovsted, A. 1935, 1941; Delay, C. 1947; Hindáková (Fedorov); Májovský, J. *et al.* 1970a; Hazra, R. & Sharma, A. 1971a
 56 Sugiura, T. 1931, 1936b
- Anoda** Cav.
 10; tropical America. 1; North Western and Peninsular India.
- hastata** Cav.*
 30 Skovsted, A. 1935; Ford, C.E. 1938; Delay, C. 1947
 30, 60 Skovsted, A. 1947
- Azanza** Alef.
 About 2-3; tropical Africa and Indo-Malesia. 1; Himalaya (up to 1,300 m), Eastern and South Western India, and Sri Lanka.
- lampas** (Cav.) Alef.
 28 Bhatt, R.P. & Dasgupta, A. 1976; Dasgupta, A. & Bhatt, R.P. 1976
Thespesia lampas Dalz. & Gibs.
 26 Ford, C.E. 1938; Krishnappa, D.G. & Geetha, K.S. 1975, 1977; Krishnappa, D.G. & Munirajappa 1980
- Decaschistia** Wight & Arn.
 12; India to Hainan and Malay Peninsula. 3; Upper Gangetic Plain and Peninsular India.
- crotonifolia** Wight & Arn.
 30 Krishnappa, D.G. & Munirajappa 1980
- trilobata** Wight
 30 Krishnappa, D.G. & Munirajappa 1980
- Gossypium** Linn.
 About 20-67; tropics and subtropics. 5; cultivated.
- arborescens** Linn.
 13 Thombre, M.V. & Mehrotra, S.S. 1977

* The combination *Anoda hastata* should be attributed to Linn. (DFPI : 12).

- 26 Denham, H.J. 1924b; Jaitsev, G.S. (Fedorov); Banerji, I. 1929; Baranov, P. *et al.* (Fedorov); Nakatomi, S. 1931; Emme, H.K. (Fedorov); Longley, A.E. 1933; Webber, J.M. 1934, 1935; Skovsted, A. 1935, 1937; Baranov, P. & Mikhailova, K. (Fedorov); Romanov, I. (Fedorov); Maupey, F.M. (Fedorov); Mikhailova, K.A. (Fedorov); Harland, S.C. 1940; Das, L.D.V. & Mensinkai, S.W. 1968; Wilson, F.D. & Fryxell, P.A. 1970
- 52 Stephens, S.G. 1942

herbadense Linn.

- 52 Nikolaeva (Fedorov); Denham, H.J. 1924a,b; Jaitsev, G.S. (Fedorov); Beal, J.M. 1928; Baranov, P. *et al.* (Fedorov); Nakatomi, S. 1931; Emme, H.K. (Fedorov); Longley, A.E. 1933; Skovsted, A. 1933, 1934a, 1935, 1937; Webber, J.M. 1934, 1935; Baranov, P. & Mikhailova, K. (Fedorov); Romanov, I. (Fedorov); Maupey, F.M. (Fedorov); Mikhailova, K.A. (Fedorov); Harland, S.C. 1940; Barrow, J.R. & Dunford, M.P. 1974

herbaceum Linn.

- 26 Nikolaeva (Fedorov); Jaitsev, G.S. (Fedorov); Banerji, I. 1929; Baranov, P. *et al.* (Fedorov); Nakatomi, S. 1931; Youngman, W. 1931; Emme, H.K. (Fedorov); Davis, J.H. 1933; Longley, A.E. 1933; Skovsted, A. 1933, 1935, 1937; Webber, J.M. 1934, 1935; Gates (Tischler, G. 1935-1936); Arutunova, L.G. (Fedorov); Baranov, P. & Mikhailova, K. (Fedorov); Romanov, I. (Fedorov); Mikhailova, K.A. (Fedorov); Doutreuilgne, J. 1939; Beasley, J.O. 1940, 1942; Harland, S.C. 1940; Delay, C. 1947; Endrizzi, J.E. & Brown, M.S. 1968

- 26, 52, 104 Mendes, A.J.T. 1939a
52-56 Vukovič, R. & Glihič, L.M. 1929

hirsutum Linn.

- 26 Mehetre, S.S. & Thombre, M.V. 1977; Davis, J.H. 1933
- 39, 52 Mehetre, S.S. & Thombre, M.V. 1980
- 52 Nikolaeva (Fedorov); Jaitsev, G.S. (Fedorov); Denham, H.J. 1924b; Beal, J.M. 1928; Banerji, I. 1929;

Baranov, P. *et al.* (Fedorov); Nakatomi, S. 1931; Longley, A.E. 1933; Skovsted, A. 1933, 1937; Webber, J.M. 1934, 1935; Feng, C.F. 1935; Arutunova, L.G. (Fedorov); Baranov, P. & Mikhailova, K. (Fedorov); Romanov, I. (Fedorov); Mikhailova, K.A. (Fedorov); Mendes, A.J.T. 1939a; Harland, S.C. 1940; Beasley, J.O. 1942; Endrizzi, J.E. 1957b; Kammacher, P. 1959, 1960; Douglas, C.R. 1968; Dzhabarov, Kh. 1971; Mehetre, S.S. *et al.* 1980

punctatum Schum. & Thonn.

- 52 Miège, J. 1960b

purpurascens Poir.

- 52 Skovsted, A. 1935

hirsutum x *panduriformis*

- 38 Mehetre, S.S. *et al.* 1980

stocksii Mast.

- 26 Youngman, W. & Panda, S.S. 1927; Banerji, I. 1929; Harland, S.C. & Atteck, O.S. 1931; Youngman, W. 1931; Skovsted, A. 1933, 1935, 1937; Webber, J.M. 1936b; Beasley, J.O. 1942; Baquar, S.R. *et al.* 1965

Hibiscus Linn.

About 300; tropical and subtropical regions of both Old and New Worlds. About 34; chiefly in hotter parts, and Pakistan, Bangla Desh and Sri Lanka a few cultivated.

acetosella Welw. ex Hiern.

- 72 Menzel, M.Y. & Wilson, F.D. 1961, 1963; Singh, F. (Khoshoo, T.N. 1979)

acetosella x *radiatus*

- 66-72 Singh, F. (Khoshoo, T.N. 1979)

acetosella x *aspera*

- 50, 54, 58,
62, 66, 108 Singh, F. (Khoshoo, T.N. 1979)
- aspera* Hook. f.

- 36 Singh, F. (Khoshoo, T.N. 1979)

caesius Garcke

- 36 Dasgupta, A. & Bhatt, R.P. 1976

- calyphyllus* Cav.
 80 Skovsted, A. 1941 ; Nimoto, D.H. 1966 ; Khoshoo, T.N. 1979 ; Singh, F. & Khoshoo, T.N. (Khoshoo, T.N. 1979) ; Krishnappa, D.G. & Munirajappa 1980
 (Khoshoo, T.N. 1979)
 92-96 Kachecheba, J.L. 1972
 100 Medwedewa, G.B. (Fedorov)
 120 Dasgupta, A. & Bhatt, R.P. 1976
- cannabicus* Linn.
 36 Breslawetz, L.P. *et al.* (Fedorov) ; Skovsted, A. 1935, 1941 ; Medwedewa, G.B. (Fedorov) ; Tjio, J.H. 1948 ; Sanyal, P. & Patel, G.I. 1956 ; Sanyal, P. & Kundu, B.C. 1959 ; Chennaveeraiah, M.S. & Subbarao, G. 1964-1965 ; Menzel, M.Y. 1966 ; Singh, D.P. & Mitra, G.C. 1967 ; Wilson, F.D. & Menzel, M.Y. 1967 ; Menzel, M.Y. & Wildon, F.D. 1969 ; Bhatt, R.P. & Dasgupta, A. 1976
 36, 72 Menzel, M.Y. & Wilson, F.D. 1961, 1963
 72 Rao, M.B.V.N. 1935
 c.72 Ford, C.E. 1938
- cannabicus x radiatus*
 36 Sanyal, P. & Patel, G.I. 1956
- var. *purpureus*
 36 Chennaveeraiah, M.S. & Subbarao, G. 1963
- var. *vulgaris*
 36 Chennaveeraiah, M.S. & Subbarao, G. 1963
- furcatus* Roxb.
 128 Gajapathy, C. 1962b
 144 Menzel, M.Y. & Wildon, F.D. 1969
- hirtus* Linn.
 70 Sharma, A.K. & Sharma, A. 1962
- lobatus* (Murr.) Kuntze
 36, 72 Bhatt, R.P. & Dasgupta, A. 1976 ; Dasgupta, A. & Bhatt, R.P. 1976
- solandra* L'Hérit.
 34 Skovsted, A. 1935 ; Medwedewa, G.B. (Fedorov)
- laevifolius* Willd.
 40 Skovsted, A. 1941 ; Krishnappa, D.G. & Munirajappa 1980
- mutabilis* Linn.
 84, 110 Sharma, A.K. & Sharma, A. 1962
 92 Skovsted, A. 1935, 1941 ; Kuwada, H. 1961 ; Singh, F. & Khoshoo, T.N. (Khoshoo, T.N. 1979)
 92-96 Kachecheba, J.L. 1972
 100 Medwedewa, G.B. (Fedorov)
 120 Dasgupta, A. & Bhatt, R.P. 1976
- ovalifolius* (Forsk.) Vahl
 32 Dasgupta, A. & Bhatt, R.P. 1976 ; Krishnappa, D.G. & Munirajappa 1980
- micranthus* Linn. f.
 64 Skovsted, A. 1941 ; Gill, L.S. & Abubakar, A.M. 1975
- panduriformis* Burm.
 24 Skovsted, A. 1941 ; Bhatt, R.P. & Dasgupta, A. 1976 ; Dasgupta, A. & Bhatt, R.P. 1976 ; Krishnappa, D.G. & Munirajappa 1980 ; Mehetre, S.S. *et al.* 1980
- platanifolius* (Willd.) Sweet
 40 Krishnappa, D.G. & Munirajappa 1980
 48 Singh, F. & Khoshoo, T.N. (Khoshoo, T.N. 1979)
- collinus* Roxb.
 42 Ford, C.E. 1938
 c.92 Skovsted, A. 1935
- punctatus* Delz.
 32 Sanjappa, M. *et al.* 1978 ; Sanjappa, M. & Dasgupta, A. 1977
- radiatus* Willd. ex Roxb.
 36 Sanyal, P. & Patel, G.I. 1956
 72 Tjio, J.H. 1948 ; Sanyal, P. & Kundu, B.C. 1959 ; Menzel, M.Y. & Wilson, F.D. 1961, 1963 ; Chennaveeraiah, M.S. & Subbarao, G. 1964-1965 ; Kachecheba, J.L. 1972 ; Singh, F. (Khoshoo, T.N. 1979) ; Krishnappa, D.G. & Munirajappa 1980
- rosa-sinensis* Linn.
 36 Thombro, M.V. 1959b
 46 Sharma, A.K. & Sharma, A. 1962
 46, 54, 63,
 68, 72, 77,
 84, 90, 96,
 112, 132,
 144, 225 Singh, F. & Khoshoo, T.N. 1970 (Khoshoo, T.N. 1979)
 72 Longley, A.E. 1933
 92 Skovsted, A. 1935
 c.144 Youngman, W. 1927
 168 Skovsted, A. 1941

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- c.170 Kachecheba, J.L. 1972
- subariffa* Linn.
- 36 Kachecheba, J. L. 1972
- 36, 72 Skovsted, A. 1941; Menzel, M.Y. & Wilson, F. D. 1963; Bhatt, R.P. & Dasgupta, A. 1976
- 72 Rao, M.B.V.N. 1935; Skovsted, A. 1935; Medwedewa, G.B. (Fedorov); Tjio, J.H. 1948; Chennaveeraiah, M.S. & Subbarao, G. 1964-1965; Singh, D.P. & Mitra, G.C. 1967; Wilson, F.D. & Menzel, M.Y. 1967; Menzel, M.Y. & Wilson, F.D. 1969; Dasgupta, A. & Bhatt, R.P. 1976
- var. *altissima*
- 72 Chennaveeraiah, M.S. & Subbarao, G. 1963
- var. *ruber*
- 72 Chennaveeraiah, M.S. & Subbarao, G. 1963
- schizopetalus* (Mast.) Hook. f.
- 40 Singh, F. & Khoshoo, T.N. (Khoshoo, T.N. 1979)
- c.42 Kachecheba, J.L. 1972
- 45 Sharma, A.K. & Sharma, A. 1962
- surattensis* Linn.
- 36 Skovsted, A. 1941; Krishnappa, D.G. & Munirajappa 1980
- 36, 72 Menzel, M.Y. & Wilson, F.D. 1963
- 72, (78?) Margadant (Tischler, G. 1927a)
- syriacus* Linn.
- 40 Hsu, C.-C. 1968
- 60 Singh, F. & Khoshoo, T.N. (Khoshoo, T.N. 1979)
- 80 Skovsted, A. 1941
- 80-84 Medwedewa, G.B. (Fedorov); Delay, C. 1947
- 90, 92 Sharma, A.K. & Sharma, A. 1962
- tiliaceus* Linn.*
- 40 Hsu, C.-C. 1968
- c.80 Skovsted, A. 1941
- c.92 Skovsted, A. 1935
- c.92, c.96 Skottsberg, C. 1955
- 96 Youngman, W. 1927; Krishnappa, D.G. & Munirajappa 1980
- tricuspis* Banks
- 80 Youngman, W. 1927; Longley, A.B. 1933
- trionum* Linn.
- 28 Medwedewa, G.B. (Fedorov); Nakajima, G. 1936; Ford, C.E. 1938; Rao, L.N. 1941; Kachecheba, J.L. 1972; Singh, F. & Khoshoo, T.N. (Khoshoo, T.N. 1979)
- 28, 56 Skovsted, A. 1941
- 56 Skovsted, A. 1935; Murin & Váchová (Fedorov); Májovský J. *et al.* 1970a; Dasgupta, A. & Bhatt, R.P. 1976; Lessani, H. & Chariat-Panahi, S. 1979
- vitifolius* Linn.
- 34 Skovsted, A. 1935; Hazra, R. & Sharma, A. 1971a; Bhatt, R.P. & Dasgupta, A. 1976; Dasgupta, A. & Bhatt, R.P. 1976
- 34, 34+1B Skovsted, A. 1941
- 66 Ford, C.E. 1938
- Kydia* Roxb.
- 3; Eastern Himalaya to South East Asia. 3; Himalaya, Assam and Peninsular India, and Bhutan.
- calycina* Roxb.
- 98 Mehra, P.N. & Sarcen, T.S. 1969, 1973c; Mehra, P.N. 1972; Krishnappa, D.G. & Munirajappa 1980
- Lavatera* Linn.
- 25; Canaries, Mediterranean to North Western Himalaya, Central Asia and East Siberia, Australia and California. 1; Kashmir.
- cachemiriana* Camb.**
- 42 Skovsted, A. 1935
- 44 Davie, J.H. 1933, 1935; Delay, C. 1947
- kashmiriana* Camb.
- 28 Bhat, B.K. *et al.* 1975

* Transferred to *Abelmoschus*.

** The specific epithet should be *kashmiriana* (FBI, 1 : 319).

Majacbra Linn.

6 ; warm America and West Indies. 1 ; naturalized.

capitata Linn.

- 56 Skovsted, A. 1935, 1941 ; Hazra, R. & Sharma, A. 1971a ; Dasgupta, A. & Bhatt, R.P. 1976

Malva Linn.

40 ; temperate and subtropical regions of the Old World. About 5 ; chiefly in Himalaya (up to 3,960 m), Nilgiris and Punjab, and Pakistan.

parviflora Linn.

- 40-42 Delay, C. 1947
40-44 Davie, J.H. 1933
42 Lilienfeld, F.A. 1929 ; Skovsted, A. 1941 ; Heiser, C.B. & Whitaker, T.W. 1948 ; Reese, G. 1957 ; Bir, S.S. & Sidhu, M. 1974, 1980 ; Van Loon, J.C. 1974

rotundifolia Linn.

- 42 Davie, J.H. 1933 ; Skovsted, A. 1935

var. **borealis****borealis** Wallr.

- 42 Skovsted, A. 1941
76 Skovsted, A. 1935

sylvestris Linn.*

- 42 Latter, J. 1932 ; Davie, J.H. 1933 ; Tischler, G. 1934 ; Skovsted, A. 1935, 1941 ; Delay, C. 1947 ; Roy, R.P. & Sinha, R.P. 1961 ; Májovský, J. *et al.* 1970b ; Skaliňská, M. *et al.* 1971 ; Van Loon, J.C. *et al.* 1971 ; Van Loon, J. Chr. & Kieft, B. 1980

ssp. **sylvestris**

- 42 Fritsch, R.M. 1973

verticillata Linn.

- c.76 Hedberg, I. & Hedberg, O. 1977
c.84 Skovsted, A. 1935
84 Adamkiewicz, E. & Bijok, K. 1971

Malvastrum A. Gray

12 ; tropical and subtropical America. 2 ; naturalized.

americanum (Linn.) Torr.

- 24 Krapovickas, A. 1954, 1957a

spicatum A. Gray

- 24 Skovsted, A. 1935, 1941

coromandelianum (Linn.) Garcke

- 24 Skovsted, A. 1935 ; Bates, D.M. 1967 ; Krapovickas, A. 1949a, 1954, 1957a ; Bir, S.S. & Sidhu, M. 1975, 1980 ; Krishnappa, D.G. & Munirajappa 1980

tricuspidatum A. Gray

- 24 Skovsted, A. 1941 ; Roy, R.P. & Sinha, R.P. 1961 ; Hazra, R. & Sharma, A. 1971b

Modiola Moench

1 ; America. Introduced and naturalized.

caroliniana (Linn.) G. Don

- 18 Krapovickas, A. 1949a, b ; Krishnappa, D.G. & Munirajappa 1980

multifida Moench

- 18 Skovsted, A. 1935, 1941 ; Tschischow, N.T.de 1956

Pavonia Cav.

200 ; tropics and subtropics. 8 ; tropical parts of India, and Pakistan and Sri Lanka - a few cultivated.

hastata Cav.

- 56 Skovsted, A. 1935 ; Delay, C. 1947 ; Krapovickas, A. & Cristóbal, C.L. 1962

odorata Willd.

- 26 Krishnappa, D.G. & Munirajappa 1980
42 Baquar, S.R. & Hussain, S.A. 1967

* *Malva sylvestris* auct. (non Linn.) FBI, 1 : 320 is a synonym of *M. cavanillesiana* Raizada (SFUGP : 31).

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patens (Andr.) Chiov.

- 28 Bates, D.M. 1967 ; Dasgupta, A. & Bhatt, R.P. 1976

procumbens Boiss.

- 28 Raman, V.S. & Kesavan, P.C. 1963a

spiniifex Cav.

- 42 Davis, J.H. 1933 ; Nanda, P.C. 1962
112 Skovsted, A. 1935, 1941

zeylanica (Linn.) Cav.

- 52 Krishnappa, D.G. & Munirajappa 1980
56 Dasgupta, A. & Bhatt, R.P. 1976

Senra Cav.

- 3 ; East Africa and Arabia. 1 ; Pakistan.

lacum Cav

- 34 Rehmatullah, C. 1970
36 Islam, A.S. & Imam, M.M. 1959

Sida Linn.

About 200 ; tropics and subtropics. 8 ; mostly in hotter parts, and Pakistan, Bhutan and Sri Lanka.

acuta Burm. f.

- 14 Skovsted, A. 1935 ; Raghavan, R.S. & Arora, C.M. 1958 ; Krapovickas, A. 1967 ; Kootin-Sanwa, M. 1969
14, 28 Skovsted, A. 1941 ; Mangenot, S. & Mangenot, G. 1962
18 Roy, R.P. & Sinha, R.P. 1961
18, 28 Sinha, R.P. 1962
28 Adhikary, A.K. 1963 ; Baquar, S.R. 1967-1968 ; Hazra, R. & Sharma, A. 1971b ; Ugborogho, R.E. 1975

alba Linn.

- 14 Mangenot, S. & Mangenot, G. 1962 ; Sinha, R.P. 1962 ; Bir S.S. & Sidhu, M. 1980

cordata (Burm. f.) Bors.

- 32 Krishnappa, D.G. & Munirajappa 1980

veronicifolia Lam.

- 14 Skovsted, A. 1941
16 Krapovickas, A. 1957b
28 Roy, R.P. & Sinha, R.P. 1961
32 Hazra, R. & Sharma, A. 1971b
34 Adhikary, A.K. 1963
56 Skovsted, A. 1935

cordifolia Linn.

- 28 Skovsted, A. 1941 ; Fernandez, A. 1974 ; Ugborogho, R.E. 1975
32 Hazra, R. & Sharma, A. 1971b

glutmosa Cav.

- 32 Hazra, R. & Sharma, A. 1971b ; Krishnappa, D.G. & Munirajappa 1980

humilis Willd.*

- 16 Basak, S.L. 1959

ovata Forst.

grewioides Guill. & Perr.

- 28 Skovsted, A. 1935, 1941

rhombifolia Linn.

- 14 Skovsted, A. 1935 ; Diers, L. 1961 ; Sinha, R.P. 1962 ; Adhikary, A.K. 1963 ; Bates, D.M. 1967 ; Krapovickas, A. 1969 ; Bir, S.S. & Sidhu, M. 1975 ; Gadella, T.W.J., et al. 1969
14, 28 Skovsted, A. 1941
14, 28 Hazra, R. & Sharma, A. 1971b ; Mhaske, M.M. & Dnyansagar, V.R. 1971 ; Ugborogho, R.E. 1975
16 Nascimento, A.C. 1941
28 Krapovickas, A. 1957b ; Raghavan, R.S. & Arora, C.M. 1958 ; Harvey, B.L. 1966b
28-10-7 Ganguly, S. 1976

ssp. *rhombifolia*

ramboidea Roxb.

- 14 Adhikary, A.K. 1963

ssp. *scabrida*

scabrida Wight & Arn.

- 28 Ugborogho, R.E. 1975

* The combination *Sida humilis* (FBI, 1 : 322) should be attributed to Cav. and it is a synonym of *S. cordata* (Burm. f.) Bors. (HFDD : 91). In FEH : 205, *S. humilis* Cav. is treated as a synonym of *S. mallicornis* Cavan.

spinesa Linn.

- 14 Skovsted, A. 1935 ; Krapovickas, A. 1957b ; Krishnappa, D.G. & Munirajappa 1980
28 Skovsted, A. 1941 ; Adhikary, A.K. 1963

stipulata Cav.

- 28 Harvey, M.J. 1967 ; Ugborogho, R.E. 1975

Thespesia Soland. ex Correa

15 ; tropics. 1 ; shores of Bengal, Peninsular India and Andamans, and Sri Lanka, also cultivated.

populnea Soland. ex Correa

- 24 Hazra, R. & Sharma, A. 1971
26 Youngman, W. 1927, 1931 ; Skovsted, A. 1935 ; Ford, C.E. 1938 ; Mehra,

- P.N. & Singh, A. 1963 ; Krishnappa, D.G. & Geetha, K.S. 1975, 1977
28 Dasgupta, A. & Bhatt, R.P. 1976

Urena Linn.

6 ; tropics and subtropics. 2 - 3 ; hotter parts of India.

lobata Linn.

- 28 Skovsted, A. 1935 ; Ford, C.E. 1938 ; Dasgupta, A. & Bhatt, R.P. 1976
28, 56 Skovsted, A. 1941
56 Kootin-Sanwu, M. 1969

ssp. *sinuata* Mast.

sinuata Linn.

- 28 Skovsted, A. 1935, 1941 ; Hazra, R. & Sharma, A. 1971 ; Bhatt, R.P. & Dasgupta, A. 1976

MARTYNIACEAE Stapf

3/13 ; tropical and subtropical America. 1/1 naturalized.

Martynia Linn.

1 ; Mexico. 1 ; naturalized in tropical and subtropical regions.

anana Linn.

- 36 Sanjappa, M. & Sathyananda, N. 1979

MELASTOMATACEAE Juss.

240/3,000 ; tropics and subtropics. 15/120 ; chiefly in the mountains of Southern and Western India and tropical Eastern Himalaya, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

Clidemia D. Don

145 ; tropical America and West Indies. 4 ; Southern India.

hirta D. Don

- 34 Favarger, C. 1962

Melastoma Linn.

70 ; South China, Indo-Malesia and Pacific. 4 ; Eastern Himalaya, Bengal, Andamans, 1 throughout India, also cultivated.

malabathricum Linn.

- 24 Christopher, J. 1976 ; Gill, B.S. *et al.* 1979b

normale D. Don

20 Mehra, P.N. & Khosla, P.K. 1969

Osbeckia Linn.

100 ; tropical Africa to Australia. About 36 ; chiefly in the mountains of Southern India and tropical Eastern Himalaya (up to 2,970 m), and Nepal, Bhutan, Bangla Desh and Sri Lanka.

chinensis Linn.

20 Mehra, P.N. & Khosla, P.K. 1969

nepalensis Hook.

38 Favarger, C. 1962

40 Mehra, P.N. & Khosla, P.K. 1969

parvifolia Arn.

20 Subramanyam, K. 1946

rosea Fyson

40 Subramanyam, K. 1946

stellata D. Don20 Malla, S.B. *et al.* 1975*Oxyspora* DC.

20 ; South China and Indo Malesia. 4 ; Himalaya (up to 2,300 m) and Khasi Hills, and Bhutan and Bangla Desh.

paniculata DC.

40 Mehra, P.N. & Khosla, P.K. 1969

Sonerila Roxb.

175 ; warm Asia. About 40 ; mostly in the mountains of Southern India and tropical Eastern Himalaya, and Nepal and Sri Lanka.

wallichii Benn.

16 Subramanyam, K. 1944

MELIACEAE Juss.

50/1,400 ; warm regions. 20/80 ; chiefly in South Western India, some in Eastern India and Eastern Himalaya, and Nepal, Bhutan, Pakistan, Bangla Desh and Sri Lanka - a few cultivated.

Aglaia Lour.

250 - 300 ; China, Indo-Malesia, tropical Australia and Pacific. 23 ; chiefly in South Western India, a few in Khasi Hills, Bengal and Andaman Islands, and Bangla Desh and Sri Lanka - a few cultivated.

edulis Gray

80 Mehra, P.N. & Khosla, P.K. 1969 ;
Mehra, P.N., Sareen, T.S. & Khosla,
P.K. 1972

domestica (Correa *emend.* Jack) Pellegrin*Lansium domesticum* Correa

72 Bernardo, F.A. & Ramirez, D.A. 1959

obovata Lour.

168 Datta, P.C. & Samanta, P. 1977

peruviana Hiern

40 Mehra, P.N. & Khosla, P.K. 1969 ;
Mehra, P.N., Sareen, T.S. & Khosla,
P.K. 1972

Amoora Roxb.

25 ; Indo Malesia. 5 ; Eastern Himalaya, South Western India, and Bengal, and Nepal and Sri Lanka.

wallichii King

40 Mehra, P.N. & Khosla, P.K. 1969 ;
Mehra, P.N. 1972 ; Mehra, P.N.,
Sareen, T.S. & Khosla, P.K. 1972

Aphanamixis Blume

25 ; Indo - Malesia. 2 ; sub-Himalayan

tracts, Bengal, Assam, Sikkim, Western Ghats and the Andaman Islands, and Bangla Desh and Sri Lanka.

polystachya (Wall.) Parker

- 36 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N. 1972 ; Mehra, P.N., Sareen, T.S. & Khosla, P.K. 1972
42 Ghosh, R.B. 1968c
76 Styles, B.T. & Vosa, C.G. 1971

Azadirachta A. Juss.

2 ; Indo Malesia. 1 ; native to India, widely cultivated.

indica A. Juss.

- 28 Mehra, P.N., Sareen, T.S. & Khosla, P.K. 1972 ; Datta, P.C. & Samanta, P. 1977
30 Manguenot, S. & Manguenot, G. 1958, 1962 ; Styles, B.T. & Vosa, C.G. 1971

Melia azadirachta Linn.

- 28 Patbak, G.N. *et al.* 1949 ; Sarkar, A.K., Datta, N. & Chatterjee, U. 1980

Chisocheton Blume

100 ; Indo Malesia, South East Asia and South China. 5 ; Bengal, Assam, Khasi Hills and Sikkim, and Bangla Desh.

paniculatus Hiern

- 46 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N., Sareen, T.S. & Khosla, P.K. 1972

Chukrasia A. Juss.

1 - 2 ; South China to Indo Malesia. 1 ; Western Peninsula, Andhra Pradesh and the Andamans, and Sri Lanka.

tabularis A. Juss.

- 26 Mehra, P.N. 1972 ; Mehra, P.N., Sareen, T.S. & Khosla, P.K. 1972

Cipadessa Blume

3 ; Madagascar and Indo Malesia. 1 ; Peninsular India, and Sri Lanka.

baccifera (Roth) Miq.

- 56 Styles, B.T. & Vosa, C.G. 1971 ; Sarkar, A.K., Datta, N. & Chatterjee, U. 1980

Dysoxylum Blume

200 ; Indo Malesia. 10 ; Eastern Himalaya, Assam, Bengal and South Western India, and Bangla Desh and Sri Lanka.

binectariferum Hook. f.

- 80 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N. 1972 ; Mehra, P.N., Sareen, T.S. & Khosla, P.K. 1972

hamiltonii Hiern

- 80 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P. N. 1972 ; Mehra, P.N., Sareen, T.S. & Khosla, P.K. 1972

pallens Hiern

- 20 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N., Sareen, T.S. & Khosla, P.K. 1972

Epicharis Blume

30 ; East and South East Asia, Indo-Malesia and Queensland. 2 ; Assam and Khasi Hills.

procera (Hiern) Pierre

Dysoxylum procerum Hiern

- 80 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N. 1972 ; Mehra, P.N., Sareen, T.S. & Khosla, P.K. 1972

Khaya A. Juss.

8 ; tropical Africa and Madagascar. 1 ; cultivated.

swazalensis (Desv.) Juss.

- 46 Minfray, E. 1963
50 Manguenot, S. & Manguenot, G. 1958, 1962 ; Mitgs, J. 1960a ; Styles, B.T. & Vosa, C.G. 1971

Melia Linn.

2 15 ; palaeotropics and subtropics. 3 ; Eastern Himalaya, South Western India.

and Sri Lanka, also cultivated, 1 cultivated and naturalized.

azedarach Linn.

- 28 Bowden, W.M. 1945a ; Minfray, E. 1963 ; Styles, B.T. & Vosa, C.G. 1971 ; Mehra, P.N. *et al.* 1972 ; Datta, P.C. & Samanta, P. 1977

dubia Cav.

composita Willd.

- 28 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra P.N. 1972 ; Mehra, P.N., Sareen, T.S. & Khosla, P.K. 1972

dubia Cav. (?)

- 28 Styles, B.T. & Vosa, C.G. 1971

teosendan Sieb. & Zucc.

- 28 Mehra, P.N., Sareen, T.S. & Khosla, P.K. 1972 ; Minfray, E. 1963

Munronia Wight

15 ; Sri Lanka to China and West Malaysia. 2 ; tropical Eastern Himalaya, Khasi Hills and Western Ghats, and Sri Lanka.

pinnata (Wall.) Harms

- 50 Styles, B.T. & Vosa, C.G. 1971

Naregamia Wight & Arn.

2 ; 1 in South West tropical Africa and 1 in Peninsular India.

alata Wight & Arn.

- 46 Styles, B.T. & Vosa, C.G. 1971

Sandoricum Cav.

10 ; Mauritius and Indo-Malesia. 1 ; introduced in Western Peninsula.

koetjapo (Burm. f.) Merr.

- 22, 44 Ramirez, D.A. (Fedorov)

indicum Cav.

- 32 Tixier, P. 1958

Soymida A. Juss.

1 ; Indo-Malesia. North Western, Central and Southern India, and Sri Lanka.

febrifuga A. Juss.

- 56 Styles, B.T. & Vosa, C.G. 1971

Swietenia Jacq.

7 8 ; tropical America and West Indies. 2 ; cultivated.

macrophylla King

- 46, 48 Tixier (Minfray, E. 1963)
54 Minfray, E. 1963 ; Datta, P.C. & Samanta, P. 1977

mahagoni Linn.*

- 46-48 Krishnaswamy, N. & Raman, V.S. 1949

mahagoni (Linn.) Jacq.

- 48 Styles, B.T. & Vosa, C.G. 1971
54 Sarkar, A.K. *et al.* 1974 ; Datta, P.C. & Samanta, P. 1977
56 Sareen, T.S. & Kumari, S. 1973

Toona Roem.

15 ; tropical Asia and Australia. 4 ; hilly tracts of Central and Southern India, also cultivated.

ciliata Roem.

- 52, 56 Mehra, P.N., Sareen, T.S. & Khosla, P.K. 1972
56 Styles, B.T. & Vosa, C.G. 1971 ; Datta, P.C. & Samanta, P. 1977

Cedrela toona Roxb.

- 52 Mehra, P.N. & Sareen, T.S. 1969
52, 56 Mehra, P.N. 1972
56 Singh, B. 1951

var. *toona*

- 56 Mehra, P.N. & Khosla, P.K. 1969

var. *plittistaminea*

- 78 Mehra, P.N., Sareen, T.S. & Khosla, P.K. 1972

* The combination *Swietenia mahagoni* should be attributed to Jacq. (DEPI : 163).

Cedrela toona Roxb.

var. *philippinensis* C. DC.

78 Mehra, P.N. & Khosla, P.K. 1969

microcarpa (DC.) Harms

24 Mehra, P.N., Sreen, T.S. & Khosla, P.K. 1972

Cedrela microcarpa DC.

24 Mehra, P.N. & Khosla, P.K. 1969

serrata (Royle) Roem.

52 Mehra, P.N., Sreen, T.S. & Khosla, P.K. 1972

56 Sreen, T.S. & Singh, P.D. 1973

Cedrela serrata Royle

52 Mehra, P.N. & Sreen, T.S. 1969

Walsura Roxb.

30-40; Himalaya and Sri Lanka to South China, Andamans, Indo China, West Malaysia and Celebes. 7; Himalaya, Assam, Punjab, Bengal, South Western India and Andaman Islands, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

trifolia (A. Juss.) Harms

pisida Roxb.

28 Ghosh, R.B. 1961, 1968a; Datta, P.C. & Samanta, P. 1977

trifuga (Roxb.) Kurz

Heynea trifuga Roxb.

24 Nanda, P.C. 1962

28 Mehra, P.N. & Sreen, T.S. 1969; Mehra, P.N., Sreen, T.S. & Khosla, P.K. 1972

Xylocarpus Koen.

3; coasts of tropical East Africa, Sri Lanka, Malaysia, North Australia and Pacific. 2-3; swampy forests of India, and Sri Lanka.

granatum Koen.

42 Gill, L.S. 1978b

52 Styles, B.T. & Vosa, C.G. 1971

Carapa obovata Blume

42 Sidhu, S.S. 1968

moluccensis (Lam.) Roem.

52 Styles, B.T. & Vosa, C.G. 1971

Carapa moluccensis Lam.

42 Sidhu, S.S. 1968

MELIANTHACEAE Link

2/15; tropical and South Africa. 1/1; almost naturalized in Kumaon, Darjeeling and the Nilgiris, and Bhutan.

Meliantbus Linn.

6; South Africa. 1; almost naturalized in Kumaon, Darjeeling and the Nilgiris, and Bhutan.

major Linn.

36 Anderson, D.B. (Fedorov)

38 Guerin, C. 1961a

MELIOSMACEAE Endl.

2/105; warm Asia and America. 1/7; Himalaya (up to 3,600 m) and South Western India, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

Meliosma Blume

100 ; warm Asia and America. 7 ; Himalaya (up to 3,600 m), South Western India, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

deltoniifolia Walp.

32 Mehra, P.N. & Khosla, P.K. 1969

deltoniifolia Wall.

32 Mehra, P.N. & Sreen, T.S. 1969

plumata (Roxb.) Walp.

32 Mehra, P.N. & Khosla, P.K. 1969

ssp. **arnottiana** (Wight) Beus.

arnottiana Walp.

32 Mehra, P.N. & Khosla, P.K. 1969

wallichii Planch.

16 Mehra, P.N. & Khosla, P.K. 1969

pungens Walp.

32 Singhal, V.K. *et al.* 1980a

simplicifolia (Roxb.) Walp.

ssp. **pungens** (Walp.) Beus.

wightii Planch.

32 Raju, M.V.S. 1952

ssp. **thomsonii** (King ex Brandis) Beus.

thomsonii King

32 Mehra, P.N. & Khosla, P.K. 1969

MEMECYLACEAE DC.

4/360 ; tropics. 2/50 ; South Western India and the Andaman Islands, and Bangla Desh and Sri Lanka a few cultivated.

Memecylon Linn.

300 ; tropical Africa, Asia, Australia and Pacific. About 49 ; South Western India and the Andaman Islands, and Bangla Desh

and Sri Lanka - a few cultivated.

umbellatum Burm. f.**edule** Roxb.

24 Ruys, J.D. 1925

MENISPERMACEAE Juss.

66/350 ; warm regions. 19/42 ; chiefly in tropical and subtropical regions, and Nepal, Pakistan, Bangla Desh and Sri Lanka.

Anamirta Colebr.

1 ; Indo-Malesia. Khasi Hills, Orissa and Peninsular India, and Bangla Desh and Sri Lanka.

coccinosa (Linn.) Wight & Arn.

16 Raghavan, R.S. & Kambic, S.Y. 1979

24 Sobha, V. & Ramachandran, K. 1979

26 Mathew, P.M. 1958c

Cissampelos Linn.

30; tropics. 1; tropical and subtropical India, and Pakistan.

pareira Linn.

- 24 Sinha, R. 1968; Malla, S.B., Bhattarai, S. *et al.* 1977a; Sobha, V. & Ramchandran, K. 1979

Coccolus DC.

11; tropics and subtropics (excluding South America). 6; Himalaya, Western India, Southern India, 1 throughout tropical and subtropical India, and Nepal, Pakistan and Sri Lanka.

hirsutus Diels.

- 26 Sanjappa, M. 1978

villosus DC.

- 22 Sharma, A.K. & Sharma, A. 1957
26 Sharma, A.K. & Bhattacharyya, N.K. 1955
38 Joshi, A.C. 1934

laurifolius DC.

- 26 Bowden, W.M. 1945b; Mehra, P.N. & Sareen, T.S. 1969, 1973c

Cyclea Arn. *ex* Wight

30; tropical Asia. 8; Eastern Himalaya and Western Ghats, and Bhutan and Sri Lanka.

peltata Hook. f. & Thoms.

- 48 Mathew, P.M. 1958c

Stephania Lour.

40; tropical Africa, Asia and Australia. 4; Himalaya (up to 2,300 m) and Western

Ghats, and Nepal, Pakistan, Bangla Desh and Sri Lanka.

andamanica

- 24 Guha, S. 1979

glandulifera Miers

- 24 Malla, S.B. *et al.* 1979
26 Malla, S.B., Bhattarai, S. *et al.* 1977b

japonica (Thunb.) Miers

- 22 Sarkar, A.K., Datta, N. & Chatterjee, U. 1980

var. **discolor** (Miq.) Forman**hernandifolia** Walp.

- 22 Sharma, A.K. & Bhattacharyya, N.K. 1955; Sharma, A.K. & Sharma, A. 1957; Guha, S. 1979
24 Maugini, E. & Moskova, R. 1971

rotunda Lour.*

- 26 Mathew, P.M. 1958c; Guha, S. 1979

wightii Dunn.

- 26 Sobha, V. & Ramchandran, K. 1979

Tiliacora Colebr.

25; tropical Africa and Indo-Malesia. 3; throughout tropical India and the Andamans, and Sri Lanka.

acuminata (Lam.) Miers

- 24 Sobha, V. & Ramachandra, K. 1980
26 Mitra, K. & Datta, N. 1967

racemosa Colebr.

- 26 Sharma, A.K. & Bhattacharyya, N.K. 1955; Mathew, P.M. 1958c; Sarkar, A.K., Datta, N. & Chatterjee, U. 1980

Tinospora Miers

40; tropical Africa, South East Asia, Indo-Malesia and Australia. 3; Eastern India, South Western India, 1 throughout

* *Stephania rotunda*, FBI, 1: 103, *pro parte* (non Lour.) is a synonym of *S. glabra* (Roxb.) Miers (HFDD: 46).

tropical India, and Bangla Desh and Sri Lanka.

cordifolia Miers

- 24 Joshi, A.C. 1934 ; Nanda, P.C. 1962 ; Sanjappa, M. 1978

- 26 Abraham, A. 1942 ; Sharma, A.K. & Bhattacharyya, N.K. 1955 ; Sharma, A.K. & Sharma, A. 1957 ; Mathew, P.M. 1958c ; Sarkar, A.K., Datta, N. & Chatterjee, U. 1980

MENYANTHACEAE Dum.

5/33 ; North and South temperate, and tropical South East Asia. 3/8 ; Western Himalaya, Khasi Hills, Peninsular India, a few throughout India, and Bangla Desh and Sri Lanka.

Menyanthes Linn.

1 ; North temperate. Kashmir.

trifoliata Linn.

- 54 Matsoura, H. & Sutō, T. 1935 ; Palmgren, O. 1943 ; Löve, A. & Löve, D. 1944b, 1956b ; Delay, C. 1947 ; Rork, C.L. 1949 ; Jørgensen, C.A. *et al.* 1958 ; Skulińska, M. *et al.* 1959 ; Sokolovskaya, A.P. & Strelkova, O.S. 1960 ; Sorsa, V. 1962 ; Sokolovskaya, A.P. (Fedorov), 1968 ; Hewett, D.G. 1964 ; Löve, A. & Ritchie, J.C. 1966 ; Wada, Z. 1966

- 54, c. 54 Taylor, R.L. & Mulligan, G.A. 1968
54, 108 Wada, Z. 1956

Nymphaeoides Seguiet

20 ; tropics and temperate. 6 ; Western Himalaya, Peninsular India, a few throughout India, and Bangla Desh and Sri Lanka.

crisatum (Roxb.) O. Kuntze

- 16 Bhattacharya, G.N. & Rahman, M.F. 1977, 1979

- 18 Mookerjee, A. 1951 ; Subramanyam, K. & Kamble, N.P. 1966 ; Mukherjee, B. 1968 ; Ornduff, R. 1970b ; Subramanian, D. 1980a

Limnanthemum cristatum Griseb.

- 18 Srinivasan, A.R. 1941
36 Srivastava, M.G. 1955

indica (Linn.) O. Kuntze

- 16 Wada, Z. 1956 ; Bhattacharya, G.N. & Rahman, M.F. 1977
18 Wada, Z. 1966 ; Mukherjee, B. 1968 ; Sarkar, A.K., Datta, R. *et al.* 1975 ; Shetty, B.V. & Subramanyam, K. 1971 ; Bhattacharya, G.N. & Rahman, M.F. 1979

- 18, 36 Ornduff, R. 1970b

nymphaeoides (Linn.) Britton

Limnanthemum nymphaeoides (Linn.) Hoffm. & Link

- 54 Scheerer, H. 1939

peltata O. Kuntze

- 54 Rork, C.L. 1949 ; Sobti, S.N. & Singh, S.D. 1961

Limnanthemum peltatum Griseb.

- 54 Delay, C. 1947

MIMOSACEAE R. Br.

56/over 2,800 ; tropics and subtropics abundant in Southern Hemisphere. 19/78 ; mostly in tropical and subtropical Himalaya and Western Peninsular India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka some cultivated.

Acacia Mill.

750-800 ; tropics and subtropics. About 26 ; chiefly in South Western India, and Pakistan and Sri Lanka a few introduced.

arabica Willd.*

44 Sharma, A.K. & Bhattacharyya, N.K. 1958c

48, 52 Datta, M.K. 1971

52 Atchison, E. 1948

52, 104 Ghimpu, V. 1929c, d, 1930

articuliformis A. Cunn. ex Benth.

26 Atchison, E. 1948 ; Datta, M.K. 1971 ; Bir, S.S. & Kumari, S. 1975

boothamii Meisn.

52 Bir, S.S. & Kumari, S. 1978b

catechu (Linn. f.) Willd.

26 Atchison, E. 1948 ; Berger, C.A. et al. 1958 ; Sharma, A.K. & Bhattacharyya, N.K. 1958c ; Datta, M.K. 1971 ; Mehra, P.N. & Sreen, T.S. 1973a

chundra Willd.*

26 Bir, S.S. & Kumari, S. 1978b

confusa Merr.

26 Atchison, E. 1948 ; Hsu, C.-C. 1967

dealbata Link

26 Ghimpu, V. 1929c, d, 1930 ; Atchison, E. 1948

farwelliana (Linn.) Willd.

52 Atchison, E. 1948 ; Berger, C.A. et al. 1958 ; Sharma, A.K. & Bhattacharyya, N.K. 1958c ; Datta, M.K. 1971 ; Bir, S.S. & Kumari, S. 1980

52, 104 Ghimpu, V. 1929c, d, 1930

horrida Willd.

52 Atchison, E. 1948

52, 104 Ghimpu, V. 1929c, d, 1930

latifolia Willd.

26 Bir, S.S. & Kumari, S. 1978a

lentiginaria Buch.-Ham.

26 Bir, S.S., Kumari, S. & Sunita 1980

leucophloea (Roxb.) Willd.

26 Bir, S.S. & Kumari, S. 1975

52 Sharma, A.K. & Bhattacharyya, N.K. 1958c

modesta Wall.

26 Khan, I.R. 1951 ; Bir, S.S. & Kumari, S. 1980

mollissima Willd.

26 Thomas (D. 1945) ; Atchison, E. 1948

26, 27 Datta, M.K. 1971

moniliformis Griseb.

26 Atchison, E. 1948 ; Sharma, A.K. & Bhattacharyya, N.K. 1958c

nilotica (Linn.) Willd. ex Delile

26 Atchison, E. 1948

52 Bir, S.S. & Kumari, S. 1980

52, 104 Ghimpu, V. 1929c, d

penata (Linn.) Willd.

26 Frahm-Loliveld, J.A. 1957 ; Larsen, K. 1971 ; Bir, S.S. & Kumari, S. 1975

polycantha Willd.*sumra* Kurz**

26 Atchison, E. 1948 ; Datta, M.K. 1971

pseudo-obovata J.R. Drumm.*eburnea* Willd.

52 Atchison, E. 1948

52, 104 Ghimpu, V. 1929d, 1930

robusta Burch.

26 Bir, S.S., Kumari, S. & Sunita 1980

senegal (Linn.) Willd.

26 Khan, I.R. 1951 ; Sharma, A.K. & Bhattacharyya, N.K. 1958c

senegal x mellifera

39 Khan, I.R. 1951

sinuata (Lour.) Merr.*continua* DC.

26 Thombre, M.V. 1959a ; Gupta, P.K. & Gupta, R. 1971

torta (Roxb.) Craib*caesia* Wight & Arn.

26 Bir, S.S. & Kumari, S. 1978a

* *Acacia arabica* auct. (non Willd.), FBI, 2 : 293 is a synonym of *A. nilotica* (Linn.) Willd. ex Del. esp. *indica* (Benth.) Brenan (FHD : 227-228).

** The combination *A. sumra* should be attributed to Buch.-Ham. (FHD : 228).

Adenanthera Linn.

8 ; tropical Asia, Australia and Pacific.
2 ; Eastern Himalaya, Western Ghats, and
Andamans, and Sri Lanka.

pavonina Linn.

26 Mehra, P.N. & Hans, A.S. 1969,
1971, 1972

Albizia Durazz.

100-150 ; warm Old World. 14 ; chiefly
in Himalaya, a few in South Western India,
and Nepal, Bangla Desh and Sri Lanka.

amara Boiv.

26 Bir, S.S. & Kumari, S. 1973a

chinensis (Osbeck) Merr.

26 Mehra, P.N. & Hans, A.S. 1969,
1971, 1972 ; Mehra, P.N. & Sareen,
T.S. 1969, 1973a

stipulata Boiv.

26 Bir, S.S. & Kumari, S. 1975

dissecta (Vent.) Macbr.*lophantha* (Willd.) Benth.

26 Covas, G. & Schnack, B. 1946 ; Tjio,
J.H. 1948 ; Berger, C.A. *et al.* 1958

gambelii Prain

26 Atchison, E. 1951

juilibrissin (Willd.) Durazz.

26 Senn, H.A. 1938 ; Sakai, B. 1951 ;
Berger, C.A. *et al.* 1958 ; Mehra, P.N.
& Sareen, T.S. 1973a

52 Yamazaki, R. 1936

lebbek Benth.*

26 Patil, R.P. 1958 ; Mehra, P.N. &
Hans, A.S. 1971, 1972 ; Mehra, P.N.
1972 ; Mehra, P.N. & Sareen, T.S.
1973a ; Al-Mayah, A.-R.A. & Al-
Shehbaz, I. 1977

locida Benth.

26 Mehra, P.N. & Hans, A.S. 1969,
1971, 1972 ; Bir, S.S. & Kumari, S.
1980

odoratissima Benth.

26 Atchison, E. 1951 ; Mehra, P.N. &
Hans, A.S. 1971, 1972

lebbekoides (DC.) Benth.

26 Atchison, E. 1951

procera Benth.

26 Covas, G. & Schnack, B. 1946 ; Tjio,
J.H. 1948 ; Mehra, P.N. & Hans, A.S.
1971, 1972

Calliandra Benth.

100 ; Madagascar, warm Asia and
America. 6 ; Khasi Hills, and Bangla Desh,
a few cultivated.

haematocephala Hassk.

16 Atchison, E. 1951 ; Datta, M.K.
1971 ; Bir, S.S. & Kumari, S. 1980

inaequalitera Rusby

16 Atchison, E. 1949a ; Datta, M.K.
1971

houstoniana Standley

16 Bir, S.S., Kumari, S. & Sunita 1980

surinamensis Benth.

16 Bir, S.S., Kumari, S. & Sunita 1980

tweedii Benth.

16 Datta, M.K. 1971 ; Bir, S.S. &
Kumari, S. 1978a, 1980

Desmanthus Willd.

40 ; America and Madagascar. 1 ; intro-
duced and scattered throughout India, and
Sri Lanka.

virgatum (Linn.) Willd.

28 Turner, B.L. & Beaman, J.H. 1933 ;
Gadella, T.W.J. & Kliphuis, E. 1964

Dichrostachys (A. DC.) Wight & Arn.

20 ; tropical Africa to Australia. 2 ; 1
arid and semi-arid areas of India, and Sri
Lanka, 1 Southern India.

* The combination *Albizia lebbekii* (not *lebbek*) should be attributed to Willd. (PFD : 230).

cinerea Wight & Arn.

44, 52 Datta, M.K. 1971

Haematoxylum Linn.

3; Mexico, Central America, West Indies and South West Africa. 1; cultivated.

campechianum Linn.

24 Revell (D. 1945); Atchison, E. 1951; Bir, S.S. & Kumari, S. 1980

Lencaena Benth.

50; tropical America, 1 pantropical and 1 Polynesia. 1; naturalized.

leucocephala (Lam.) de Wit

56 Pandey, R.M. & Pal, M. 1980b

glauca (Linn.) Benth.

36 Dnyansagar, V.R. 1949

104 Tjio, J.H. 1948; Sampath, S. & Ramanathan, K. 1949; Frahm-Leliveld, J.A. 1957; Shibata, K. 1962b; Pritchard, A.J. & Gould, K.F. 1964; Bir, S.S. & Kumari, S. 1980

Mimosa Linn.

About 450-500; tropical and subtropical America, with a few in Africa and Asia. 8; chiefly in Southern and Western Peninsular India, and Bhutan a few introduced.

hamata Willd.

26 Bir, S.S. & Kumari, S. 1975

40 Dnyansagar, V.R. 1951

himalayana Gamble

26 Bir, S.S. & Kumari, S. 1978a

invisa Mart.

24 Frahm-Leliveld, J.A. 1953

26 Tjio, J.H. 1948; Bouharmont, J. 1960

pedica Linn.

48 Saha, S.S.N. *et al.* 1972

52 Tjio, J.H. 1948; Berger, C.A. *et al.* 1958; Shibata, K. 1962b; Bandel, G. 1974

rubicaulis Lam.

26 Mehra, P.N. & Hans, A.S. 1969

Nepentia Lour.

11; tropics and subtropics. 3; Bengal, Gujarat, Southern India, 1 warm regions of India, and Pakistan and Sri Lanka.

oleracea Lour.

c.52 Mihge, J. 1960a

54 Raman, V.S. & Kesavan, P.C. 1963b

56 Sarkar, A.K., Datta, N. *et al.* 1976

prostrata (Lam.) Baill.

56 Turner, B.L. & Fearing, O.S. 1960

plena (Linn.) Benth.

c.72 Frahm-Leliveld, J.A. 1953; Berger, C.A. *et al.* 1958

78 Frahm-Leliveld, J.A. 1957; Turner, B.L. & Fearing, O.S. 1960

triquetra (Vahl) Benth.

36 Dnyansagar, V.R. 1952; Turner, B.L. & Fearing, O.S. 1960

Parkia R. Br.

40; tropics. 2; 1 in Assam, and Bangla Desh, also cultivated, 1 cultivated.

pedunculata (Roxb.) Macbr.

biglandulosa Wight & Arn.

26 Sampath, S. & Ramanathan, K. 1949

Pithecellobium Mart.

200; tropics. 5; Eastern Himalaya and South Western India, and Sri Lanka. 1 cultivated.

angulatum Benth.

26 Mehra, P.N. & Hans, A.S. 1969, 1971

dulce Benth.

26 Sampath, S. & Ramanathan, K. 1949; Bir, S.S. & Kumari, S. 1975, 1980

Prosopis Linn.

40; warm America, 1 tropical Africa, 2 Caucasia to Western Peninsular India. 3; Western Peninsular India and Punjab, and Pakistan - a few introduced.

278 MIMOSACEAE

chilensis (Mol.) Stuntz

- 28 Covas, G. & Schnack, B. 1947 ;
Cherubini, C. 1954

glandulosa Torr.

- 26 Ramanathan, K. 1950
28 Baquar, S.R. *et al.* 1966

luliflora DC.

- 22 Mehra, B. 1940b
26 Bir, S.S. & Sidhu, S. 1967
28 Cherubini, C. 1954
28 (56,
c.112)
56 (c.172) Hunziker, J.H. *et al.* 1975
52 Sampath, S. & Ramanathan, K.
1949 ; Bir, S.S. & Kumari, S. 1980
56 Atchison, E. 1951 ; Sareen, T.S.,
Kant, S. & Pratap, R. 1974

spiegelera Linn.

- 28 Sanjappa, M. & Sathyananda, N.
1979

Samanea (Benth.) Merr.

20 ; Mexico to tropical South America
and tropical Africa. 1 ; cultivated.

saman (Willd.) Merr.

- 26 Pouques, M.L. de 1945a
Pithecellobium saman (Jacq.) Benth.
26 Atchison, E. 1951 ; Simmonds, N.W.
1954 ; Bawa, K.S. 1973

Xylin Benth.

15 ; tropical Africa, Madagascar and
tropical Asia. 1 ; Central India, Orissa,
Andhra Pradesh and Western Peninsula.

xylocarpa (Roxb.) Taub.

- 24 Mehra, P.N. & Hans, A.S. 1971,
1972 ; Mehra, P.N. 1972

dolabriformis Benth.

- 24 Mehra, P.N. & Hans, A.S. 1971,
1972 ; Sarkar, A.K., Datta, N. *et al.*
1976

MONOTROPACEAE Nutt.

12/21 ; North temperate and tropical mountains. 4/4 ; temperate Himalaya and Khasi
Hills.

Monotropa Linn.

5 ; North temperate. 1 ; temperate
Himalaya and Khasi Hills.

uniflora Linn.

- 32 Löve, A. *et al.* 1980

MORACEAE Link

53/1,400 ; tropics and subtropics, a few temperate. 12/114 ; widely distributed, many in
Eastern and tropical Himalaya, and Southern India, and Nepal, Pakistan, Bhutan, Bangla
Desh and Sri Lanka - some cultivated.

Artocarpus J.R. & G. Forst

47 ; South East Asia and Indo-Malesia. About 19 ; Himalaya, Eastern India, Southern India, Andaman and Nicobar Islands, and Bangla Desh and Sri Lanka - a few cultivated.

altifolius (Park.) Fernald
communis Forst.

- 54, c.81 Nishiyama, I. & Kondo, N. 1942
56 Janaki Ammal (D. 1945)

chaplana Roxb.

- 56 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Hans, A.S. 1972

gomezianus Wall.

- 56 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Hans, A.S. 1972

heterophyllus Lam.

- 56 Habib, A.F. 1972 ; Hans, A.S.
1972 ; Mehra, P.N. & Hans, A.S.
* 1972 ; Mehra, P.N. & Gill, B.S. 1974

integer (Thunb.) Merr.

- 56 Janaki Ammal, E.K. (D. 1945 ;
Nanda, P.C. 1962

integra (Thunb.) Merr.**integrifolius** Linn. f.

- 56 Le Coq, C. 1963

lakoocha Roxb.

- 56 Banerji, I. & Hakim, A. 1954 ; Hans,
A.S. 1972 ; Mehra, P.N. & Hans,
A.S. 1972 ; Mehra, P.N. & Gill, B.S.
1974

Broussonetia L'Herit. ex Vent.

7-8 ; East Asia and Polynesia. 3 ;
Assam, and Sri Lanka, 1 introduced.

papyrifera (Linn.) Vent.

- 26 Bowden, W.M. 1940a, 1943b ; Hau,
C.-C. 1967 ; Hans, A.S. 1972 ; Mehra,
P.N. & Hans, A.S. 1972 ; Mehra,
P.N. & Gill, B.S. 1974 ; Sanjappa, M.
& Raju, R. 1980

Castilla Cerv.

10 ; tropical America and Cuba. 1 ;
introduced.

elasticus Cerv.

- 28 Janaki Ammal (D. 1945)

Ficus Linn.

800 ; warm regions, chiefly in Indo-
Malesia, Polynesia etc. About 75 ; widely
distributed, many in Eastern and tropical
Himalaya and Southern India, and Nepal,
Pakistan, Bhutan, Bangla Desh and Sri
Lanka a few cultivated.

altissima Blume

- 26 Krause, O. 1931 ; Hans, A.S. 1972 ;
Kundu, D. & Sharma, A. 1976

amplissima Smith

- 26 Condit, I.J. 1964

auriculata Lour.

- 26 Condit, I.J. 1964 ; Kundu, D. &
Sharma, A. 1976

roxburghii Wall.

- 26 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Hans, A.S. 1972

benghalensis Linn.

- 26 Condit, I.J. 1933 ; Sugiura, T. 1936a,
b ; Nanda, P.C. 1962 ; Kundu, D. &
Sharma, A. 1976

- 28 Krause, O. 1931

indica Linn.

- 26 Condit, I.J. 1933

var. kishinoe C. DC.**krishnae** C. DC.

- 26 Condit, I.J. 1964 ; Kundu, D. &
Sharma, A. 1976

- 26+(1-2B) Joshi, S. & Raghuvanshi, S.S. 1970a

benjamina Linn.

- 26 Condit, I.J. 1933 ; Pancho, J.V. 1966
26, 52 Kundu, D. & Sharma, A. 1976

var. amba (Miq.) Barrett**var. comosa** Kurz

- 26 Mehra, P.N. & Hans, A.S. 1969,
Hans, A.S. 1972 ; Kundu, D. &
Sharma, A. 1976

caecoid Hort.

- 26 Kundu, D. & Sharma, A. 1976

- carica* Linn.
26 Condit, I.J. 1928, 1933 ; Sugiura, T. 1931, 1936b
- caulocarpa* Miq.
26 Pancho, J.V. 1966
- congesta* Roxb.
26 Condit, I.J. 1964 ; Pancho, J.V. 1966
- drupacea* Thunb.
mysorensis Heyne
var. *subrepanda* King
26 Kundu, D. & Sharma, A. 1976
- var. *tomentosa*
26 Kundu, D. & Sharma, A. 1976
- var. *pubescens* (Roth) Corner
mysorensis Heyne
26 Condit, I.J. 1933 ; Mehra, P.N. & Hans, A.S. 1969 ; Hans, A.S. 1972 ; Kundu, D. & Sharma, A. 1976
- elastica* Roxb. ex Hornem.
26 Condit, I.J. 1928, 1933 ; Krause, O. 1930 ; Sugiura, T. 1931, 1936b ; Hans, A.S. 1972 ; Mehra, P.N. & Hans, A.S. 1972 ; Kundu, D. & Sharma, A. 1976
39 Condit, I.J. 1964
- var. *decora*
26 Kundu, D. & Sharma, A. 1976
- var. *variegata*
26 Kundu, D. & Sharma, A. 1976
- erecta* Thunb.
26 Condit, I.J. 1928
- exasperata* Vahl
asperrima Roxb.
26 Condit, I.J. 1933
- fastigiosa* Retow.
26 Pancho, J.V. 1966
- geniculata* Kurz
26 Condit, I.J. 1964 ; Kundu, D. & Sharma, A. 1976
- heteracea* Roxb.
26 Kundu, D. & Sharma, A. 1976
- betrophylla* Linn.
26 Kundu, D. & Sharma, A. 1976
- hirta* Vahl
hirsuta Roxb.
26 Krause, O. 1930
- hispida* Linn. f.
26 Condit, I.J. 1964 ; Mehra, P.N. & Gill, B.S. 1974
26, 28 Kundu, D. & Sharma, A. 1976
- hookeriana* Corner
hookeri Miq.
26 Mehra, P.N. & Hans, A.S. 1969 ; Hans, A.S. 1972 ; Kundu, D. & Sharma, A. 1976
- karzli* King
26 Kundu, D. & Sharma, A. 1976
- lepidosa* Wall.
26 Mehra, P.N. & Hans, A.S. 1969 ; Hans, A.S. 1972
- leucantatoma* Poir.
26 Kundu, D. & Sharma, A. 1976
- microcarpa* Linn. f.
247 Pancho, J.V. 1966
- nerifolia* J.B. Smith
var. *nemoralis* (Wall, ex Miq.) Corner
nemoralis Wall.
var. *triflopes* (Miq.) King
26 Mehra, P.N. & Hans, A.S. 1969 ; Hans, A.S. 1972
- nervea* Roth
magnoliifolia Blume
26 Pancho, J.V. 1966
- obscura* Blume
26 Pancho, J.V. 1966
- palmata* Forsk.
26 Condit, I.J. 1928, 1933 ; Mehra, P.N. & Gill, B.S. 1974
- paniculata* Hance
26 Krause, O. 1931
26, 28 Kundu, D. & Sharma, A. 1976
- pilosa* Blume*
26 Condit, I.J. 1964

* The combination *Ficus pilosa* should be attributed to Reinw. ex Blume and it is a synonym of *F. drupacea* Thunb. (RHPC, Vol. 1, Part 2 : 134).

pumila Linn.

- 26 Condit, I.J. 1933
26, 32 Kundu, D. & Sharma, A. 1976

racemosa Linn.*glomerata* Roxb.

- 22, 26 Kundu, D. & Sharma, A. 1976
26 Condit, I.J. 1928 ; Mehra, P.N. & Gill, B.S. 1974

religiosa Linn.

- 26 Condit, I.J. 1933 ; Mehra, P.N. & Hans, A.S. 1969, 1972 ; Hans, A.S. 1972 ; Mehra, P.N. & Gill, B.S. 1974 ; Kundu, D. & Sharma, A. 1976

retusa Linn.

- 16, 22, 26,
28 Kundu, D. & Sharma, A. 1976
26 Condit, I.J. 1933

var. *nitida* King

- 26 Kundu, D. & Sharma, A. 1976

rumphii Blume

- 22, 26 Kundu, D. & Sharma, A. 1976
26 Condit, I.J. 1964

semicordata Buch.-Ham. ex J.E. Smith*cunea* Buch.-Ham.

- 26 Mehra, P.N. & Gill, B.S. 1974

subulata Blume

- 26 Pancho, J.V. 1966

tomentosa Roxb.

- 26 Kundu, D. & Sharma, A. 1976

tsiata Roxb.

- 26 Bir, S.S., Gill, B.S. & Bedi, Y.S. 1979

variegata Blume

- 26 Condit, I.J. 1964 ; Pancho, J.V. 1966

virens Ait.*infectoria* Roxb.

- 26, 28, 32 Kundu, D. & Sharma, A. 1976

var. *glabella* (Blume) Corner*glabella* Blume

- 26 Condit, I.J. 1933 ; Le Coq, C. 1963

Maclura Nutt.

12 ; warm America, Africa and Asia. 3;

tropical Himalaya eastwards to Khasi Hills, Orissa and Andhra Pradesh, and Bangla Desh and Sri Lanka, 1 cultivated.

cochinchiensis (Lour.) Corner*Cudrania javanensis* Tréou.

- 28 Le Coq, C. 1963

Morus Linn.

Less than 10 ; East temperate, North America, South West United States to Andes, tropical Africa, South West Asia to Japan and Java. About 12 ; Himalaya, Assam, and Bengal a few cultivated.

acida Griff.

- 28 Osawa, J. 1920 ; Janaki Ammal, B.K. 1948

alba Linn.

- 28 Osawa, J. 1920 ; Voltattorni, S. 1940a, b, 1947b ; Delay, C. 1947 ; Janaki Ammal, B.K. 1948 ; Seki, H. 1952 ; Agasov, Y.M. & Fedorova, H.E. 1970 ; Hans, A.S. 1972 ; Mehra, P.N. & Hans, A.S. 1972 ; Mehra, P.N. & Gill, B.S. 1974 ; Kundu, D. & Sharma, A. 1976 ; Sanjappa, M. & Raju, R. 1980 ; Uhríková, A. & Májovský, J. 1980

- 28, 42 Gill, B.S. & Gupta, R.C. 1979

atropurpurea Roxb.

- 28 Osawa, J. 1920

cv. 'Australis'

- 26, 28, 30 Kundu, D. & Sharma, A. 1976

cv. 'Latifolia'

- 28, 30, 58 Kundu, D. & Sharma, A. 1976

australis Poir.

- 28 Hans, A.S. 1972 ; Mehra, P.N. & Hans, A.S. 1972

- 28, 30, 44 Kundu, D. & Sharma, A. 1976

bombycis Koidz.

- 28 Osawa, J. 1920 ; Sinotó, Y. 1928a, 1929b ; Seki, H. 1952 ; Sanjappa, M. & Raju, R. 1980

cv. 'Sanku'

- 28 Kundu, D. & Sharma, A. 1976

indica Linn.*

28 Tahara, M. 1910b ; Datta, M. 1954a, b ; Das, B.C. 1961 ; Royan-Subramanian, S. 1965

28, 56 Das, B.C. *et al.* 1970 ; Sanjappa, M. & Raju, R. 1980

latifolia Poir.

28 Sanjappa, M. & Raju, R. 1980

macrocarpa Miq.

28 Kundu, D. & Sharma, A. 1976

laevigata Wall.

28 Janaki Ammal, E.K. 1948 ; Sanjappa, M. & Raju, R. 1980

28, 56 Hans, A.S. 1972 ; Mehra, P.N. & Gill, B.S. 1974

56 Datta, M. 1954a, b ; Das, B.C. 1961 ; Mehra, P.N. 1972 ; Mehra, P.N. & Hans, A.S. 1972

cv. 'Mandalay'

28 Kundu, D. & Sharma, A. 1976

mongolica

cv. 'Chinarose'

28 Kundu, D. & Sharma, A. 1976

multicaulis Rafin.

26, 28 Kundu, D. & Sharma, A. 1976

28 Osawa, I. 1920 ; Sanjappa, M. & Raju, R. 1980

 nigra Linn.

30 Kundu, D. & Sharma, A. 1976

89-106 Voltattorni, S. 1947a (Löve, A. & Löve, D. 1961b)

308 Thomas, P.T. (Darlington, C.D. & La Cour, E.F. 1942) ; Janaki Ammal, E.K. 1948 ; Soki, H. & Oshikane, K. 1960 (Le Coq, C. 1963) ; Mehra, P.N. 1972

± 308 Agaev, Y.M. & Fedorova, H.E. 1970

serrata Roxb.

28 Janaki Ammal, E.K. 1948

84 Mehra, P.N. 1972 ; Mehra, P.N. & Gill, B.S. 1974

Pseudostreblus Bur.*indica* Bur.**

28 Hans, A.S. 1972 ; Mehra, P.N. & Hans, A.S. 1972

Streblus Lour.

22 ; Madagascar (? Africa), South East Asia and Indo-Malesia. 4 ; Khasi Hills, Peninsular India, 1 in drier parts of India, and Sri Lanka.

asper Lour.

24 Mitra, K. & Datta, N. 1967

26 Gajapathy, C. 1961 ; Hans, A.S. 1972 ; Mehra, P.N. & Hans, A.S. 1972 ; Sarkar, A.K. *et al.* 1973a ; Mehra, P.N. & Gill, B.S. 1974

MORINACEAE J.G. Agardh

1/17 ; temperate Eurasia. 1/6 ; Himalaya (between 2,300 and 4,600 m), and Nepal.

Morina Linn.

17 ; South East Europe to Himalaya

and South West China. 6 ; Himalaya, and Nepal.

* *Morus indica* auct. (non Linn.), FBI, 5 : 492 is a synonym of *M. australis* Poir. (FEH : 55).

** *Pseudostreblus indica* Bur. has been transferred to *Streblus*.

longifolia Wall.

- 16 Riise, K. 1929
 34 Kachidze, N.T. (Fedorov) ; Pouques,
 M.L. de 1949 ; Verlaque, R. 1977

persica Linn.

- 34 Kachidze, N.T. (Fedorov) ; Verlaque,
 R. 1977

MORINGACEAE Dum.

1/12 ; Africa to India. 1/2 ; Western Himalaya and Western India, and Pakistan 1
 cultivated.

Moringa Adans.

12 ; North East and South West Africa,
 Madagascar, Arabia and India. 2 ; Western
 Himalaya, Western India and Pakistan 1
 cultivated.

oleifera Lam.

- 14 Sanjappa, M. 1978
 28 Puri, V. 1941

pterygosperma Gaertn.

- 28 Patel, J.S. & Narayana, G.V. 1937 ;
 Raghavan, R.S. 1957 ; Nanda, P.C.
 1962

MYRICACEAE Blume ex Dum.

4/40 ; cosmopolitan. 1/1 ; subtropical Himalaya and Assam Hills, and Bangla Desh.

Myrica Linn.

35 ; almost cosmopolitan (excluding
 North Africa, Central and South East
 Europe, South West Asia and Australia). 1 ;
 subtropical Himalaya and Assam Hills, and
 Bangla Desh.

esculenta Buch.-Ham. ex D. Don*nagi* Thunb.

- 16 Bedi, Y.S. *et al.* 1980

sapida Wall.

- 16 Mehra, P.N. & Singh, A. 1963

MYRISTICACEAE R. Br.

18/300 ; tropics, especially Asia. 4/16 ; Eastern Himalaya, Assam, Southern India and the
 Andaman Islands, and Bangla Desh and Sri Lanka.

Horsfieldia Willd.

80 ; South China, South East Asia,
 Indo-Malesia and North Australia. 5 ;

Eastern Himalaya, South Western India, and
 the Andaman Islands, and Bangla Desh and
 Sri Lanka.

odorata Willd.

50 Bhrendorfer, F. *et al.* 1968

Kuema Lour.

37 ; South East Asia and Indo-Malesia.
4 ; Eastern Himalaya, Bengal, Western
Ghats and the Andaman Islands, and Bangla
Desh.

linifolia (Roxb.) Warb.

var. *erratica*

Myristica erratica Hook. f.

52 Mehra, P.N. & Bawa, K.S. 1969

Myristica Gronov.

120 ; palaeotropics. 5 ; Western Ghats
and the Andaman Islands, and Sri Lanka
1 cultivated.

fragrans Houtt.

42 Simmonds, N.W. 1954

MYRSINACEAE R. Br.

35/1,000 ; tropics and subtropics, South Africa and New Zealand. 11/117 ; Himalaya,
many in Assam and Khasi Hills, Bengal, Peninsular India, the Andaman and Nicobar Islands,
a few throughout India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Aegleceras Gaertn.

2 ; palaeotropics. 1 ; mangrove swamps
and the Andaman Islands, and Pakistan.

corniculatum (Linn.) Blanco

36 Subramanian, D. 1980

46 Faure, P. 1968

48 Sidhu, S.S. 1961

Ardisia Swartz

400 ; warm countries. About 50 ; chiefly
in Eastern Himalaya, and Nepal, Bhutan,
Bangla Desh and Sri Lanka.

crenata Roxb.

crispata A. DC.

24 La Cour (D. 1945)

46 Sugjura, T. 1931, 1936b

macrocarpa Wall.

46 Mehra, P.N. & Bawa, K.S. 1969

solanacea Roxb.

c.46 Raghavan, R.S. 1959b

46 Bedi, Y.S. *et al.* 1980

Maesa Forsk.

200 ; Old World tropics. 26 ; chiefly in

Himalaya, some in Bengal, the Andaman
and Nicobar Islands, and Nepal, Bhutan and
Bangla Desh.

argentea Wall.

20 Faure, P. 1968

chista Buch.-Ham.

20 Mallia, S.B., Bhattarai, S. *et al.* 1978a

indica Wall.

20 Mehra, P.N. & Bawa, K.S. 1969

perrottetiana DC.

20 Gajapathy, C. 1962b

Myrsine Linn.

7 ; Azores, Africa to China. 3 ; Hima-
laya, Khasi Hills and Assam, and Nepal and
Bhutan.

africana Linn.

46 Faure, P. 1968 ; Bedi, Y.S. *et al.* 1980

capitata Wall.

46 Mallia, S.B. *et al.* 1975

scuticerrata Wall.

92 Bedi, Y.S. *et al.* 1980

MYRTACEAE Juss.

100/3,000 ; warm regions, chief centres are Australia and tropical America. 16/150; chiefly in Eastern Himalaya, Khasi Hills and South Western India, and many in Bangla Desh and Sri Lanka, and Nepal, Pakistan and Bhutan many cultivated.

Callistemon R. Br.

25 ; Australia and New Caledonia. 3 ; cultivated.

citrius (Curt.) Skeels

22 Janaki Ammal (D. 1945)

lanceolatus DC.*

22 Smith - White, S. 1942, 1948

linearis DC.

22, 33, 44 Smith - White, S. 1948

rigidus R. Br.

22, 44 Smith - White, S. 1948

Decaspermum J. R. & G. Forst.

30 ; Indo Malesia. 1 ; Eastern India.

fruticosum Forst.

88 Mehra, P. N. & Khosla, P. K. 1972

paniculatum Kurz

88 Mehra, P. N. & Khosla, P. K. 1969 ;
Mehra, P. N. 1972

Eucalyptus L'Hérit.

500 ; Australia and Tasmania, 2 or 3 Indo - Malesia. About 40 ; introduced and cultivated.

bicolor A. Cunn.

24 Ruggieri, C. 1960

botryoides Smith

22 Atchison, E. 1947b ; Ruggieri, C. 1961

calophylla R. Br.

22 Atchison, E. 1947b

camaldulensis Dehn.

22 Atchison, E. 1947b ; Ruggieri, C. 1961 ;
Piton, Fr. 1969

rostrata Schl.

28 Harrison, J. W. (Tischler, G. 1935 -
1936)

cinerea F. Muell.

22 Ruggieri, C. 1961

clitriodora Hook.

20 Sugihara, T. 1931, 1936b
22 Atchison, E. 1947b ; Smith - White, S.
1948
28 Harrison, J. W. (D. 1945)

cornuta Labill.

22 Ruggieri, C. 1961

claeophora F. Muell.

22 Ruggieri, C. 1961

flicifolia F. Muell.

22 Smith - White, S. 1942

globulus Labill.

20 Sugihara, T. 1931, 1936b
22 McAulay, A. L. *et al.* 1936 ; McAulay,
A. L. & Cruickshank, F. D. 1937 ;
Mehra, P. N. & Khosla, P. K. 1972
28 Harrison, J. W. (Tischler, G. 1935 -
1936)

gomphecephala DC.

22 Ruggieri, C. 1961

gomicalyx F. Muell.

22 Ruggieri, C. 1961

ganali Hook. f.

* The combination *Callistemon lanceolatus* should be attributed to Sweet and it is a synonym of *C. citrius* (Curt.) Skeels (SFUGP : 72).

- 22 Atchison, E. 1947b
- leucoxylon* F. Muell.
22 Ruggeri, C. 1961
- linearis* Dehn.
22 McAulay, A. L. & Cruickshank, F. D. 1937; Atchison, E. 1947b
- longifolia* Link & Otto
22 Atchison, E. 1947b
- maidenii* F. Muell.
22 Ruggeri, C. 1961
- melanophloia* F. Muell.
22 Ruggeri, C. 1961
- melliodora* Schauer*
22 Moussel, B. 1965
- melliodora* A. Cunn.
22 Davis, G. L. 1968
- obliqua* L'Hérit.
22 McAulay, A. L. & Cruickshank, F. D. 1937; Atchison, E. 1947b
28 Harrison, J. W. (Tschler, G. 1935 - 1936)
- ovata* Labill.
22 Ruggeri, C. 1961
- paniculata* Smith
22 Smith - White, S. 1942, 1948
- pauciflora* Sieb.
22 McAulay, A. L. & Cruickshank, F. D. 1937
- polyanthemus* F. Muell.**
22 Ruggeri, C. 1961
- pulverulenta* Sims
22 Atchison, E. 1947b
- redunca* Schauer
24 Atchison, E. 1947b
- resinifera* Smith
22 Atchison, E. 1947b
- rudis* Endl.
22 Atchison, E. 1947b
- saligna* Smith
22 Krug, C. A. & Alves, A. S. 1949
- siderophloia* Benth.
22 Mehra, P. N. & Khosla, P. K. 1969, 1972
- sideroxylon* (A. Cunn.) Benth.
22 Smith - White, S. 1942; Atchison, E. 1947 b
- stuartiana* F. Muell.
22 Atchison, E. 1947b
- tereticoornis* Smith
22 Ruggeri, C. 1961; Mehra, P. N. & Khosla, P. K. 1969, 1972
- triantha* Link
22 Ruggeri, C. 1961
- viminalis* Labill.
22 Atchison, E. 1947b; McAulay, A. L. & Cruickshank, F. D. 1937
- Eugenia* Linn.
100; tropics and subtropics. About 25; chiefly in Southern India and Sri Lanka, and Bangla Desh.
- formosa* Wall.***
22 Mehra, P. N. & Khosla, P. K. 1969, 1972
- khasiang* Duthie***
22 Mehra, P. N. & Khosla, P. K. 1969, 1972
- kurzil* Duthie***
66 Mehra, P. N. & Khosla, P. K. 1969, 1972; Mehra, P. N. 1972
- mangifolia* Wall.***
22 Mehra, P. N. & Khosla, P. K. 1969, 1972
- ramosissima* Wall.***
22 Mehra, P. N. & Khosla, P. K. 1969, 1972

*The combination *Eucalyptus melliodora* should be attributed to A. Cunn.

**The combination *E. polyanthemus* should be attributed to Schauer.

***Now placed under the genus *Syzygium*

rafflora Linn.

- 22 Bhaduri, P. N. & Islam, A. S. 1949 ;
Simmonds, N. W. 1954
33 Singhal, V. K. *et al.* 1980a

Feijoa Berg

2 ; South America. 1 ; cultivated.

setibowlana Berg

- 22 Bowden, W. M. 1940a, 1945a

Metaleuca Linn.

101 ; 1 Indo Malesia, 100 Australia
and Pacific. 2 ; cultivated.

genistifolia Smith

- 22 Moussel, B. 1965

leucadendron (Linn.) Linn.

- 22 Brighton, C. A. & Ferguson, I. K. 1976

Myrtus Linn.

100 ; tropics and subtropics, especially
America. 1 ; cultivated.

communis Linn.

- 22 Greco, R. 1929; Delay, C. 1947 ;
Roy, R.P. & Jha, R. P. 1962b ; Mo-
ussel, B. 1965; Natarajan, G. 1978

Pimenta Lindl.

18 ; tropical America and West Indies.
2 ; cultivated.

glotca (Linn.) Merr.*officinalis* Lindl.

- 22 Moussel, B. 1965

racemosa Mill.*

- 22 Moussel, B. 1965

racemosa (Mill.) Moore*acris* Kost.

- 22 Janaki Ammal, E. K. (D. 1945)

Psidium Linn.

140 ; tropical America and West Indies.
7 ; cultivated.

coriaceum Mart. *ex DC.*

- 77 Singhal, V. K. *et al.* 1980a

freidrichshallanum Niedenzu

- 22 Srivastava, H. C. 1977h

guajava Linn.

- 18, 20, 32 Sharma, A. K. & Majumdar, A. 1957
21, 22, 30, 33 D' Cruz, R. & Rao, G. B. 1962
22 Janaki Ammal, E. K. (D. 1945) ; Atch-
ison, E. 1947b ; Roy, R.P. & Jha, R.P.
1962b ; Hirano, R.T. & Nakasone,
H.Y. 1969 ; Raikwar, S. K. S. & Roy,
S. K. 1971b ; Raman, V. S. *et al.* 1971
22-28,
32-34 Majumdar, P. K. & Mukherjee, S. K.
1971, 1972
33 Kumar, L. S. S. & Ramade, S. G. 1952
44 Naithani, S. P. & Srivastava, H. C.
1966 ; Srivastava, H.C. 1977a

var. *typica*

- 22 Roy, R. P. & Jha, R. P. 1962b

cv. 'Chinese guava'

- 22 Roy, R. P. & Jha, R. P. 1962b

cattleianum Sabine

- 88 Atchison, E. 1947b ; Smith - White, S.
1948

chinense Hort.

- 22 Naithani, S. P. & Srivastava, H. C.
1965

pusillum Vahl

- 22 Singhal, V. K. *et al.* 1980a

Syncarpia Ten.

5 ; Queensland. 1 ; introduced.

glomulifera Smith *ex Niedenzu**laurifolia* Ten.

- 22 Smith - White, S. 1948

Syzygium Gaertn.

500 ; palaeotropics. About 75 ; chiefly
in Eastern Himalaya and Peninsular India,
and Nepal, Bhutan, Pakistan, Bangla Desh
and Sri Lanka.

carasoides (Roxb.) Chatt. & Kanjilal*Eugenia operculata* Roxb.

*The combination *Pimenta racemosa* should be attributed to Moore.

288 MYRTACEAE

- 22 Nanda, P. C. 1962 ; Mehra, P. N. & Khosla, P. K. 1972
- claviflorum* (Roxb.) Wall. ex Cowan & Cowan
Eugenia claviflora Roxb.
 22 Mehra, P. N. & Khosla, P. K. 1969, 1972
- cumini* (Linn.) Skeels
Eugenia cumini Merr.
 42-44 Van der Pijl, L. 1934
 44 Tjio, J.H. 1948
 44, 46 Bhaduri, P.N. & Islam, A.S. 1949
- Eugenia jambalana* Lam.
 22 Mehra, P.N. & Khosla, P.K. 1969, 1972
 22, 66 Mehra, P. N. 1972
 33, 55 Roy, R.P. & Jha, R.P. 1962b
 44 Raikwar, S.K. S. & Roy, S.K. 1971b
 44, 66 Bhaduri, P.N. & Islam, A.S. 1949
- var. *caryophyllifolia*
 44 Bhaduri, P.N. & Islam, A.S. 1949
- fruticosum* (Roxb.) DC.
 44 Herdas, M.W. & Joshi, A.B. 1954
- Eugenia fruticosa* Roxb.
 22 Mehra, P.N. & Khosla, P.K. 1969, 1972
- grande* Walp.
Eugenia grandis Wight
 22 Mehra, P.N. & Khosla, P.K. 1969, 1972
- jambos* (Linn.) Alston
Eugenia jambos Linn.
 28, c. 42,
 c. 54 Van der Pijl, L. 1934
 33, 44 Roy, R.P. & Jha, R.P. 1962b
 45, 46 Bhaduri, P.N. & Islam, A.S. 1949
- malaccense* (Linn.) Merr. & Perry
Eugenia malaccensis Linn.
 22 Van der Pijl, L. 1934 ; Simmonds, N. W. 1954
- oblatum* (Roxb.) Wall. ex Cowan & Cowan
Eugenia oblata Roxb.
 22 Mehra, P.N. & Khosla, P.K. 1969, 1972
- samarangense* (Blume) Merr. & Perry
Eugenia javanica Lam.
 22, 33,
 44, 55 Roy, R.P. & Jha, R.P. 1962b
 42, 44 Van der Pijl, L. 1934
 45 Bhaduri, P.N. & Islam, A.S. 1949
- tetragonum* (Wight) Wall. ex Cowan & Cowan
Eugenia tetragona Wight
 22 Mehra, P.N. & Khosla, P.K. 1972
- venosum* DC.
Eugenia frondosa Wall.
 66 Mehra, P.N. 1972

NANDINACEAE J.G. Agardh

1/1 ; East Asia. 1/1 ; cultivated.

Nandina Thunb.

1 ; China and Japan. 1 ; cultivated.

domestica Thunb.

20 Langlet, O.F.J. 1928 ; Morinaga, T. *et al.* 1929 ; Miyaji, Y. 1930b ; Sugiura, T. 1936b ; Kuroki, Y. 1967 ; Gill, B. S. *et al.* 1979b

NELUMBONACEAE Dum.

1/2 ; warm Asia, Australia and America. 1/1 ; wild and cultivated throughout India.

Nelumbo Adans.

2 ; East United States to Columbia and 1 in Asia and North East Australia. 1 ; wild and cultivated throughout India.

maculosa Gaertn.

16 Langlet, O.F.J. & Söderberg, E. 1927 ; Morinaga, T. *et al.* 1929 ; Ohga, I. *et al.* 1962 ; Subramanyam, K. & Kamble, N.P. 1966 ; Bhaduri, P.N. & Sen, S. 1967 ; Gupta, P.P. 1976a

NEURADACEAE J.G. Agardh

3/10 ; Mediterranean to India, and South Africa. 1/1 ; Punjab, and Pakistan.

Neurada Linn.

1 ; East Mediterranean to Indian Desert. 1 ; Punjab, and Pakistan.

procumbens Linn.

12 Murbeck, S. 1916
14 Hagerup, O. 1932 ; Murin, A. & Chaudhri, I.I. 1970

NYCTAGINACEAE Juss.

30/290 ; mostly tropics and especially America. 5/19 ; mostly in the plains, and Pakistan and Sri Lanka some cultivated.

Boerhavia Linn.

40 ; tropics and subtropics. 8 ; drier parts of India, and Pakistan and Sri Lanka.

chinesis (Linn.) Asch. & Schw.

repanda Willd.

40 Gajapathy, C. 1962b
42 Tandon, S.L. & Rao, G.K. 1963

diffusa Linn.

26 Srivastava, A.K. & Misra, K.C. 1966 ; Gill, L.S. & Abubakar, A.M. 1975
52 Carr, G.D. 1978
c. 116 Thombre, M.V. 1959a

repens Linn.

94 Sharma, A.K. & Bhattacharyya, U.C. 1959b

verticillata Poir.

94 Sanjappa, M. 1978

Bougainvillea Comm. *ex* Juss. *mut.* Choisy

18 ; South America. Some cultivated.

brasilensis

34 Sharma, A.K. & Bhattacharyya, U.C. 1960a

battiana Holttum & Standley

20, 34 Ninan, T. *et al.* 1959

glabra Choisy

20 Cooper, D.C. 1931
34 Wilson, G.B. 1947 ; Sharma, A.K. & Bhattacharyya, U.C. 1959a, 1960a ; Zadoo, S.N. *et al.* 1976 ; Khoshoo, T. N. 1979

peruviana Humb. & Bonpl.

34 Zadoo, S. & Khoshoo, T.N. 1968

cv. 'Princess Margaret Rose'

30 Zadoo, S.N. *et al.* 1976

refulgens Bull.

- 34 Sharma, A.K. & Bhattacharyya, U.C. 1960a
- spectabilis* Willd.
20 Cooper, D.C. 1931
34 Wilson, G.B. 1947; Ninan, T. *et al.* 1959; Sharma, A.K. & Bhattacharyya, U.C. 1959a; Nowickie, J.W. 1967; Zadoo, S.N. *et al.* 1976; Khoshoo, T.N. 1979
34, 51 Sharma, A.K. & Bhattacharyya, U.C. 1960a
- sp.* (Hort.)
32 Sen, N.K. & Sen, S. 1955
- cv.*
34, 68 Zadoo, S. N. *et al.* 1975
- cv.* 'Perfection'
51 Zadoo, S.N. *et al.* (Khoshoo, T.N. 1979)
- cv.* 'lateritia'
lateritia
34 Sharma, A.K. & Bhattacharyya, U.C. 1960a
- cv.* 'Poultoni Special'
51 Zadoo, S.N. *et al.* (Khoshoo, T.N. 1979)
- spectabilis* × *glabra*
34 Khoshoo, T.N. 1979
- Mirabilis* Linn.
60; America. 4; 1 in greater part of India, cultivated and naturalized, 3 cultivated.
- jalapa* Linn.
54 Tischler, G. 1928; Nakajima, G. 1958
58 Showalter, H.M. 1935; Sharma, A.K. & Bhattacharyya, U.C. 1960b; Prakken, R. 1944; Siroun, M. *et al.* 1960; Kruszewska, A. 1961; Sanjappa, M. 1978
58, 116 Ayyangar, K.R. & Sampathkumar, R. 1969b

NYMPHAEACEAE Salisb.

3/75; cosmopolitan. 1/18; throughout India, ascending up to 1,850 m in the Himalaya many cultivated.

Nymphaea Linn.

50; tropics and temperate. 18; warmer parts of India - many cultivated.

alba Linn.

- 48, 52, 56 Delay, C. 1947
64 Guignard, L. 1897
84 Langlet, O.F.J. & Söderberg, E. 1927; Tischler, G. 1934
84, 105,
112, 160 Wood, C.E. 1959
84, 112 Heslop-Harrison, Y. 1953b
96 Strasburger, E. 1900
105 Ehrenberg, L. 1945
112 Langlet, O.F.J. 1936

bissetii Hort.

- 84 Gupta, P.P. 1978a, 1980

enerulea Savigny

- 28 Gupta, P.P. 1978a, b, 1980

daubeniana Hort.

- 42 Gupta, P.P. 1980

dentatamagnifica Bisset.

- 84 Gupta, P.P. 1978a, 1980

lotus Linn.*

- 28 Gupta, P.P. 1976b
28, 56, 84 Gupta, P.P. 1978a
56 Langlet, O.F.J. & Söderberg, E. 1927
Delay, C. 1947

**Nymphaea lotus* *sect. pl.* (non Linn.) FBI, 1: 114, is a synonym of *N. wockii* Burm. f. (HFDD: 48).

- 84 Raghavan, R.S. & Arora, C.M. 1958 ;
Gupta, P.P. 1980
- mexicana* Zucc.
56 Wood, C.E. 1959
84 Gupta, P.P. 1978b, 1980
- pubescens* Willd.
24 Sobha, V. & Ramachandra, K. 1980
- pygmaea* Aiton
42 Gupta, P.P. 1978b
84 Gupta, P.P. 1980
- rubra* Roxb.
42 Gupta, P.P. 1977b
56 Langlet, O.F.J. & Söderberg, E. 1927
70 Bhaduri, P.N. & Sen, S. 1967
84 Gupta, P.P. 1978a
84, 112 Gupta, P.P. 1980
84, 112,
c. 112 Gupta, P.P. 1976 b
- stellata* Willd.
28 Langlet, O.F.J. & Söderberg, E. 1927 ;
Mitra, K. & Datta, N. 1967
56, 84 Bhaduri, P.N. & Sen, S. 1967
84 Gupta, P.P. 1978a
- var. *cyanea* (Roxb.) Hook. f. & Thoms.
28 Gupta, P.P. 1978a, b, 1980
- var. *major* Hook. f.
70 Gupta, P.P. 1976b
- var. *parviflora* Hook. f. & Thoms.
84 Gupta, P.P. 1976b, 1980
- var. *stellata*
84 Gupta, P.P. 1978a
- var. *versicolor* Hook. f. & Thoms.
56 Gupta, P.P. 1976b, 1978a, 1980
84 Raghavan, R.S. & Arora, C.M. 1958
- sturtevantii* Hort.
56 Gupta, P.P. 1978a, 1980
- tetragona* Georgi
112 Langlet, O.F.J. & Söderberg, E. 1927 ;
Löve, A. 1954a
120 Wood, C.E. 1959
- cv. 'General Pershing'
42 Gupta, P.P. 1978a
- cv. 'Panama'
42 Gupta, P.P. 1978a
- cv. 'Panama Pacific'
56 Gupta, P.P. 1978a
- cv. 'Sunrise'
84 Gupta, P.P. 1978a

NYSSACEAE Dum.

2/10; East Asia and East North America. 1/2; Eastern Himalaya (up to 2,600 m).

Nyssa Gronov. ex Linn.

10 ; Himalaya, East Asia, West
Malaysia and East North America. 2 ;
Eastern Himalaya (up to 2,600m).

javanica Wanger

44 Mehra, P.N. & Bawa, K.S. 1969 ;
Mehra, P.N. 1972

siyatica Marsh.

44 Derman, H. (Fedorov)

OCHNACEAE DC.

40/600; tropics. 2/8; Himalaya, Central and Southern India and the Andaman Islands,
and Sri Lanka.

292 OCHNACEAE

Ochna Linn.

85 ; tropics and South Africa, and tropical Asia. 7 ; Himalaya, Central and Southern India, and the Andaman Islands, and Sri Lanka.

squarrosa Linn.*

24 Singhal, V.K. *et al.* 1980b
28 Mehra, P.N. & Khosla, P.K. 1969

OLACACEAE Juss.

25/250 ; tropics. 5/16 ; tropical Himalaya, Khasi Hills, Peninsular India and the Andaman Islands, a few almost throughout tropical India, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

Olax Linn.

55 ; tropical Africa, Madagascar, Indo-Malesia and Australia. 7 ; tropical Himalaya, Khasi Hills, Southern India, 1 in tropical regions of India, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

oana Wall.

24 Mehra, P.N. & Khosla, P.K. 1969

Schoepfia Schreb.

35 ; tropics. 2 ; Khasi Hills, and Nepal and Bangla Desh.

fragrans Wall.

24 Mehra, P.N. & Khosla, P.K. 1969

Ximenia Linn.

10-15 ; tropical America, tropical and South Africa, tropical Asia and Australia. 1 ; Western Peninsula and the Andamans, and Sri Lanka.

americana Linn.

26 Bawa, K.S. 1973

OLEACEAE Hoffmgg. & Link

29/600 ; cosmopolitan, especially temperate and tropical Asia. 9/88 ; chiefly in Himalaya (up to 4,000 m), Eastern India and Western Ghats to Southern India, and in Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka some cultivated.

Fraxinus Linn.

70 ; North hemisphere, especially East Asia, North America and Mediterranean.

6 ; temperate and subalpine Himalaya (up to 3,600m) and Khasi Hills, and Bhutan.

**Ochna squarrosa* *austr.* non Linn. is a synonym of *O. obtusata* DC. (FHD : 116).

- excelsior* Linn.
46 Sax, K. & Abbe, E.C. 1932; Tischler, G. 1934; Eklundh (Löve, A. & Löve, D. 1942b); Hovet, J. 1958; Gadella, T.W.J. & Kliphuis, E. 1963; Vachová, M. & Feráková, V. 1978, 1980; Mukherjee, A. & Ware, G.H. 1979
- floribunda* Wall.
46 Bowden, W.M. 1940a, 1945b; Taylor, H. 1945; Mehra, P.N. & Bawa, K.S. 1969
- griffithii* Clarke
46 Taylor, H. 1945
- xanthoxyloides* (Don) DC.*
46 Taylor, H. 1945
- Jasminum* Linn.
300; Old World tropics and subtropics, 40; chiefly in Eastern Himalaya and South Western India, and Nepal, Pakistan, Bhutan, Bangla Dēsh and Sri Lanka - some cultivated.
- angustifolium* Vahl
26 Sharma, A.K. & Sharma, A. 1958c; Mukherjee, A. 1981
52 Krishnaswamy, N. & Raman, V.S. 1949; Raman, V.S. 1955a, b
- arborecens* Roxb.
26 Sharma, A.K. & Sharma, A. 1958c; Baquar, S.R. & Abid Askari, S.H. 1970a, b
- aureiculatum* Vahl
26 Krishnaswamy, N. & Raman, V.S. 1948a, 1949; Raman, V.S. 1955a, b; Sharma, A.K. & Sharma, A. 1958c; Mukherjee, A. 1981
- azoricum* Linn.
- flexile* Vahl
26 Krishnaswamy, N. & Raman, V.S. 1948a
26, 52 Raman, V.S. 1955a, b
- calophyllum* Wall.
26 Krishnaswamy, N. & Raman, V.S. 1949; Raman, V.S. 1955 a, b
- 52 Sharma, A.K. & Sharma, A. 1958c; Datta, M. 1960
- dispermum* Wall.
26 Arora, C.M. 1961; Mallia, S.B., Bhattarai, S. *et al.* 1977b
- fraticans* Linn.
26 Sax, K. & Abbe, E.C. 1932; Taylor, H. 1945
- grandiflorum* Linn.
26 Bowden, W.M. 1940a; Krishnaswamy, N. & Raman, V.S. 1948a; Dutt, M. 1952b; Raman, V.S. 1955a, b; Sharma, A.K. & Sharma, A. 1958c; Datta, M. 1960
- humile* Linn.
26 Bowden, W.M. 1940a, 1945b; Taylor, H. 1945
- f. wallichianum* (Lindl.) Green.
wallichianum Lindl.
26 Bowden, W.M. 1940a; Taylor, H. 1945
- var. pubigerum* (D. Don) Kitamura
pubigerum D. Don
26 Sharma, A.K. & Sharma, A. 1958c
- indicum*
52 Sharma, A.K. & Sharma, A. 1957
- malabaricum* Wight
26 Krishnaswamy, N. & Raman, V.S. 1948a, 1949; Raman, V.S. 1955a, b
- mesnyi* Hance
24 Bowden, W.M. 1945b
26 Taylor, H. 1945
- primulinum* Hemsl.
39 Krishnaswamy, N. & Raman, V.S. 1948a
- multiflorum* (Burm. f.) Andrews
26 Taylor, H. 1945
- pubescens* Willd.
26, 39 Dutt, M. 1952b; Datta, M. 1960
39 Ahuja, M.R. & Natarajan, A. T. 1957; Sharma, A.K. & Sharma, A. 1958c
- nepalense* Spreng.
26 Mallia, S.B., Bhattarai, S. *et al.* 1977b

The combination *Fraxinus xanthoxyloides* should be attributed to Wall.

294 OLEACEAE

- nodiflorum** Lindl.
26 Raman, V.S. 1955b (Löve, A. & Löve, D. 1961b)
52 Bowden, W.M. 1940a, 1945b; Taylor, H. 1945
- odoratissimum** Linn.
26 Bowden, W.M. 1945b; Taylor, H. 1945; Larsen, K. 1958b, 1960
- officinale** Linn.
26 Bowden, W.M. 1940a, 1945b; Taylor, H. 1945; Raman, V.S. 1955a, b
- parkeri** Dunn.
26 Bowden, W.M. 1945b; Taylor, H. 1945
- rigidum** Zenk.
26 Taylor, H. 1945; Krishnaswamy, N. & Raman, V.S. 1949; Raman, V.S. 1955a, b
- rotlerianum** Wall.
26 Raman, V.S. 1955a
- sambac** Ait.
26 Bowden, W.M. 1945b; Raman, V.S. 1955a; Sarkar, A.K., Datta, N. & Chatterjee, U. 1978
26, 39 Taylor, H. 1945; Krishnaswamy, N. & Raman, V.S. 1948a; Dutt, M. 1952b; Raman, V.S. 1955b; Sharma, A.K. & Sharma, A. 1958c; Datta, M. 1960
39 Tjio, J. H. 1948
- sessiliflorum** Vahl
26 Raman, V.S. 1955a, b
- sabbanillo** Smith
- heterophyllum** Roxb.
52 Mehra, P.N. & Bawa, K.S. 1969
- subtriplicerve** Blume
26 Chuang, T.I. *et al.* 1963
- Ligustrum** Linn.
40 - 50; Europe to North Persia, East Asia, Indo-Malesia to New Guinea and Queensland. 16; temperate Himalaya, Khasi Hills, Bengal and South Western India, and Bhutan, Bangla Desh and Sri Lanka a few cultivated.
- decussaei** Clarke
46 Gajapathy, C. 1962b
- indicum** Lour.*
46 Malla, S.B. *et al.* 1974
- japonicum** Thunb.
22 Somego, M. 1974
44 Sugiura, T. 1931, 1936b
- laetidum** Ait.
22 Somego, M. 1974
46 Taylor, H. 1945; Nanda, P.C. 1962; Mehra, P.N. & Bawa, K.S. 1969
- myrsinites** Decne
46 Mehra, P.N. & Bawa, K.S. 1969
- ovalifolium** Hassk.
22 Somego, M. 1974
46 Arora, C.M. 1960
- robustum** Blume
46 Mehra, P.N. & Bawa, K.S. 1969
- sinense** Lour.
46 Bedi, Y.S. *et al.* 1980
- vulgare** Linn.
46 Sax, K. & Abbe, E.C. 1932; Taylor, H. 1945; Gadella, T.W.J. & Kliphuis, E. 1966; Javůrková, V. 1979
- Olea** Linn.
20; Mediterranean, Africa, Mascarene, East Asia, Indo Malesia, East Australia, New Zealand and Polynesia. 6; North Western Himalaya, North Eastern India, Sikkim and South Western India, and Nepal, Pakistan, Bangla Desh and Sri Lanka 1 cultivated.
- dentata** Wall.
46 Mehra, P.N. & Bawa, K.S. 1969
- europaea** Linn.
46 Sax, K. & Abbe, E.C. 1932; Taylor, H. 1945; Breviglieri, N. & Battaglia, E. 1954; Battaglia, E. & Breviglieri, N. 1955; Coutinho, L. de A. 1956

The combination *Ligustrum indicum* should be attributed to Merrill (FEH : 252).

salicifolia Wall.

46 Mehra, P.N. & Bawa, K.S. 1969

Osmanthus Lour.

15; East and South East Asia. 2; temperate and subalpine Himalaya (up to 3,300 m), 1 also cultivated.

fragrans Lour.

46 Taylor, H. 1945

Schrebera Roxb.

28; 1 South America, 25 tropical Africa, India, 1 South East Asia and 1 Borneo, 1; tropical Himalaya, Madhya Pradesh southwards to Peninsular India.

swietenoides Roxb.

46 Bir, S.S., Gill, B.S. & Bedi, Y.S. 1979

Syringa Linn.

30; South East Europe to East Asia. 2; subalpine Himalaya and Kashmir (up to 4,000 m), 1 also cultivated.

emodi Wall.

44 Tischler, G. 1930

persica Linn.44 Sax, K. & Abbe, E.C. 1932
72-88 Sax, K. 1930
88 Tischler, G. 1930

ONAGRACEAE Juss.

21/640; temperate and tropics. 6/44; mostly in temperate Himalaya (up to 4,620 m), and Pakistan and Sri Lanka a few cultivated.

Circaea Linn.

12; North temperate and Arctic. 3; temperate and Western Himalaya (up to 3,600m) and hills of Southern India.

alpina Linn.22 Udding, A. 1929; Löve, A. & Löve, D. 1944b; Lewis, H. *et al.* 1958; Raven, P.H. 1963a; Packer, J.G. 1964; Sokolovskaya, A.P. (Fedorov); Jungblut, F. 1967; Mulligan, G.A. & Cody, W.J. 1968; Skalińska, M. *et al.* 1968, 1971*ssp. alpina*

22 Taylor, R.L. & Mulligan, G.A. 1968

ordata Royle

22 Sokolovskaya, A.P. (Fedorov)

lutetiana Linn.*22 Udding, A. 1929; Delay, C. 1947; Löve, A. 1954b; Jungblut, F. 1967; Skalińska, M. *et al.* 1968, 1971; Schotzman, H.D. 1970; Van Loon, J. Chr. & Kieft, B. 1980*repens* Wall.

22 Kurosawa, S. 1966

Clarkia Pursh.

36; West North America and Chile. 4; cultivated.

amoena (Lehm.) Nels. & Macbr.*ssp. lindleyi* (Dougl.) Lewis & Lewis*Gadeteia grandiflora* Lindl.

14 Jash, M. & Sharma, A. 1970

Circaea lutetiana of FBI, 2 : 589 is a synonym of *C. repens* Wall.

- conchana* (Fisch. & Mey.) Greene
14 Lewis, H. 1953; Lewis, H. & Lewis, M. E. 1955
- pulchella* Parsh.
24 Håkansson, A. 1931; Lewis, H. & Lewis, M.E. 1955
- unguiculata* Lindl.
elegans Dougl.
14 Johansen, D. A. 1930
18 Kachidze (Tischler, G. 1927); Håkansson, A. 1931; Sharma, A.K. & Sarkar, S.K. 1936a, 1957b; Jash, M. & Sharma, A. 1970
18+1 - 6B Lewis, H. 1951
- Epllobium* Linn.**
215; North and South Temperate and Arctic. 30; chiefly in temperate Himalaya (up to 4,600 m).
- album* Linn.
36 Mosquin, T. 1968 ; Scholte, G. 1977
- angustifolium* Linn.
18 Jash, M. & Sharma, A. 1970
36 Michaelis, P. 1925, 1926; Johansen, D.A. 1929 b; Tischler, G. 1934 ; Raven, P.H. & Moore, D.M. 1964 ; Gadella, T.W.J. & Kliphuis, E. 1967 ; Johnson, A.W. & Packer, J.G. 1968; Taylor, R.L. & Mulligan, G.A. 1968; Scholte, G. 1977; Van Loon, J. Chr. & de Jong, H. 1978
36,72 Mulligan, G.A. 1957; Mosquin, T. 1963
- apicatum* Lam.
36 Brun, J. 1958
- ssp. *angustifolium*
36 Mosquin, T. 1967
- brevipetiolatum* D. Don
36 Mehra, P.N. & Dhawan, H. 1971
- hirsutum* Linn.
36 Håkansson, A. 1924 ; Schwemmle, J. 1924 ; Michaelis, P. 1925 ; Tischler, G. 1934 ; Löve, A. & Löve, D. 1942 b ; Raven, P. H. & Moore, D. M. 1964, Gadella, T.W.J. & Kliphuis, E. 1966, 1968a ; Podlech, D. & Dieterle, A. 1969; Van Loon, J. Chr. & Kieft, B. 1980
36,54 Hara, H. 1952
54 Michaelis, P. 1928
- latifolium* Linn.
36 Johnson, A.W. & Packer, J.G. 1968
36,54,72 Small, E. 1968
54 Mosquin, T. & Hayley, D.E. 1966
72 Dawe, J.C. & Murray, D.F. 1979
- palustre* Linn.
36 Böcher, T.W. 1938a; Rutland, J.P. 1941; Löve, A. & Löve, D. 1948, 1956b, 1966; Gagnieu, A. & Linder, R. 1954, 1955; Raven, P.H. & Moore, D.M. 1964; Löve, A. & Ritchie, J.C. 1966 ; Johnson, A.W. & Packer, J. G. 1968 ; Podlech, D. & Dieterle, A. 1969
- parviflorum* Schreb.
36 Schwemmle, J. 1924; Tischler, G. 1934; Rohweder, H. 1937; Straub, J. 1941; Gagnieu, A. & Linder, R. 1954, 1955; Raven, P.H. & Moore, D.M. 1964; Van Loon, J. Chr. & de Jong, H. 1978
- roseum* Schreb.
36 Schwemmle, J. 1924; Michaelis, P. 1925; Tischler, G. 1934; Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov); Gagnieu, A. & Linder, R. 1954, 1955; Raven, P.H. & Moore, D.M. 1964; Hsu, C.-C. 1968; Jash, M. & Sharma, A. 1970
- tetragonum* Linn.*
36 Raven, P.H. & Moore, D.M. 1964
- Fuchsia* Linn.**
100; New Zealand, Tahiti and Central and South America. 2 ; cultivated.
- fulgens* DC.
22 Warth, G. 1925
22,44,66 Jash, M. & Sharma, A. 1970
- magellanica* Lam.
cv. 'Globosa'
globosa Lindl.
46 - 48 Warth, G. 1925
88 Jash, M. & Sharma, A. 1970

Epllobium tetragonum of FBI, 2 : 586 is a synonym of *E. wallichianum* Hausskn. (PEH : 224).

Ludwigia Linn.

75; cosmopolitan, especially tropical America. 6; throughout India, and Bangla Desh and Sri Lanka.

adscedens (Linn.) Hara

Jussiaea repens Linn.

- 16 Sinotó, Y. 1928b; Sharma, A.K. & Sarkar, S.K. 1956a, 1957b; Gregory, D.P. & Klein, W.M. 1960; Raven, P.H. 1963 b

16, 24,

- 32, 48 Jash, M. & Sharma, A. 1970

hirsutifolia (G. Don) Exell

- 16 Gadella, T.W.J. & Kliphuis, E. 1968 b; Shetty, B.V. & Subramanyam, K. 1971

octovalvis (Jacq.) Raven

ssp. sensiflora (Michx.) Raven

Jussiaea suffruticosa Linn.

- 16 Mitra, K. & Datta, N. 1967
32 Gregory, D.P. & Klein, W.M. 1960
48 Chuang, T.I. *et al.* 1963

pergamis Linn.

- 16 Shetty, B.V. & Subramanyam, K. 1971

parviflora Roxb.

- 16 Korah, M. 1959; Baquar, S.R. 1967-1968; Sarkar, S.K. 1977

- 32 Pillay, R.V.R. 1970

prostrata Roxb.

- 16 Shetty, B.V. & Subramanyam, K. 1971; Sarkar, S.K. 1977

Oenothera Linn.

80; America (especially temperate) and West Indies. About 6; cultivated, a few naturalized.

drummondii Hook.

- 14 Brittingham, W.H. & Shull, G.H. 1936; Hecht, A. 1950; Gregory, D.P. & Klein, W.M. 1960

erythrosepala Borbás

- 14 Gadella, T.W.J. & Kliphuis, E. 1966

odorata Jacq.

- 14 Schwemmler, J. 1927; Yamashita (Kihara, H. *et al.* 1931)

rosea Ait.

- 14 Schwemmler, J. 1924; Jash, M. & Sharma, A. 1970

tetraptera Cav.

- 14 Johansen, D.A. 1929 a

☞

- 14 Roy, R.P. & Jha, R.P. 1962 a

OPILIACEAE Walton

8/60; tropics, especially Asia. 4/4; Eastern Himalaya, plains of Eastern India, Upper Gangetic Plain to Peninsular India and the Andamans, and Sri Lanka.

Leptanurus Blume

5-6; Eastern Himalaya to Indo-China, Java and New Guinea. 1; Assam Hills and

Eastern Himalaya.

sylvestris Blume

- 20 Mehra, P.N. & Khosla, P.K. 1969

OROBANCHACEAE Vent.

13/180 ; chiefly North temperate Eurasia, a few in America and tropics. 7/28 ; chiefly in Himalaya and Western Ghats, and Nepal, Pakistan and Sri Lanka.

Cistanche Hoffmgg. & Link

16 ; North West Africa, Abyssinia, Mediterranean to Western India and North West China. 1 ; North Western India, and Pakistan.

tuberosa Wight

40 Hamblen, D.J. 1956, 1958

Lathraea Linn.

7 ; temperate Eurasia. 1 ; Western Himalaya.

squamaria Linn.

c. 35 Sorsa, V. 1963b

36 Witsch, H. 1932

36, 42 Tischler, G. 1930, 1934, 1935-1936

42 Gates, R.R. & Latter, J. 1927

sp. squamaria

36 Greilhuber, J. 1971

Orobancha Linn.

140 ; temperate and subtropics. 10 ; chiefly between 2,320 and 4,290 m in the Himalaya, and Nepal and Pakistan.

egyptiaca Pers.

24 Zhukova (Fedorov) ; Bir, S.S. & Sidhu, M. 1974

38 Srivastava, G.D. 1939 (D. 1955)

cernua Loefl.var. *desertorum* Beek.

38 Hamblen, D.J. 1956, 1958

epithymum DC.

38 Mehra, P.N. & Vasudevan, K.N. 1972

kashmirica Clarke

38 Mehra, P.N. & Vasudevan, K.N. 1972

ramosa Linn.

24 Zhukova (Fedorov) ; Gardé, A. 1952 (D. 1955) ; Hamblen, D.J. 1958

OXALIDACEAE R. Br.

3/875 ; mostly tropics and subtropics. 2/16 ; chiefly in hotter regions, and Bhutan and Sri Lanka.

Blrophytum DC.

70 ; tropics. About 10 ; hotter parts of India, and Sri Lanka.

sensitivum (Linn.) DC.

18 Raghavan, R.S. & Arora, C.M. 1958 ; Mathew, P.M. 1958a ; Chatterjee, A. & Sharma, A.K. 1970

Oxalis Linn.

800 ; cosmopolitan, chiefly in Central

and South America, and South Africa. 6 ; Himalaya and warmer parts of India, and Bhutan and Sri Lanka, a few are American adventives.

scotosella Linn.

22 Nakajima, G. 1936 ; Löve, A. & Löve, D. 1944b, 1956b, 1966 ; Hara, H. 1952 ; Löve, A. 1954b ; Marks, G.E. 1956 ; Skalińska, M. *et al.* 1959 ; Sorsa, V. 1962 ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Hara,

- H. & Kurosawa, S. 1965 ; Laane, M.M. 1969b
 22-24 Wulff, H.D. 1937b
 30 Sharma, A.K. & Chatterjee, T. 1959 ; Sharma, A.K. & Chatterji, T. 1960b
- ssp. *griffithii* (Edgew. & Hook. f.) Hara
 22 Kurosawa, S. 1966
- griffithii* Edgew. & Hook. f.
 30 Chaudhuri, R.K. *et al.* 1969
- corniculata* Linn.
 24 Rutland, J.P. 1941 ; Heiser, C.B. & Whitaker, T.W. 1948 ; Sarkar, A.K., Datta, N. & Chatterjee, U. 1980
 24, c. 24 Hedberg, I. & Hedberg, O. 1977
 28 Borgmann, E. 1964
 44 Wulff, H.D. 1939a ; Chaudhuri, R.K. *et al.* 1969 ; Chatterjee, A. & Sharma, A.K. 1970 ; Bir, S.S. & Sidhu, M. 1980
- corymbosa* DC.
 22, 28, 30 Chatterjee, A. & Sharma, A.K. 1970
 28 Chaudhuri, R.K. *et al.* 1969
- martiana* Zucc.
 30 Bir, S.S. & Sidhu, M. 1980
- latifolia* HBK*
 14, 28, 42 Weller, S.G. & Denton, M.F. 1976
 24 Sarkar, A.K. *et al.* 1974
 26 Chaudhuri, R.K. *et al.* 1969
 26, 46 Chatterjee, A. & Sharma, A.K. 1970
- pes-caprae* Linn.
 28 Marks, G.E. 1956 ; Mathew, P.M. 1958a
 34 Bir, S.S. & Sidhu, M. 1978, 1980

PAEONIACEAE Rudolphi

• 1/33 ; North temperate. 1/1 ; Western Himalaya (between 1,600 and 3,300 m), also cultivated.

Paeonia Linn.

33 ; temperate Eurasia and West North America. 1 ; Western Himalaya (between 1,600 and 3,300 m), also cultivated.

emodi Walf.

10 Dark, S.O.S. 1936 ; Stern, F.C. 1944 ; Mehra, P.N. & Ramasundar, P. 1972

PAPAVERACEAE Juss.

26/200 ; chiefly North temperate. 6/32 ; the native species confined between 2,640 and 5,610 m in the Himalaya, and Nepal and Bhutan some cultivated, a few naturalized.

Argemone Linn.

10 ; West and East United States,

Mexico and West Indies. 5 ; 3 naturalized, 2 cultivated.

**Oxalis latifolia* auct. pl. (non HBK) is a synonym of *O. richardiana* Babu (HFDD : 104).

mexicana Linn.

- 28 Sugiura, T. 1936a, b ; Bose, P.K. 1937 ; Malhotra, S.K. & Mehra, P.N. 1944 ; Ownbey, G.B. 1958 ; Koul, M.L.H. 1966 ; Malik, C.P. & Grover, I.S. 1973a, b ; Malik, C.P. & Mary, T.N. 1976a ; Bir, S.S. & Sidhu, M. 1980

132 Diers, L. 1961

mexicana × *ochroleuca*

- 49, 56 Malik, C.P. & Grover, I.S. 1973b

ochroleuca Sweet

- 28 Ernst, W.R. 1959
28, 56 Ownbey, G.B. 1958

ssp. *ochroleuca*

- 28, 56 Mary, T.N. & Malik, C.P. 1973
56 Malik, C.P. & Grover, I.S. 1973b

Eschscholzia Cham.

10 ; Pacific North America. 1 ; cultivated.

californica Cham.

- 12 Winge, O. 1925 ; Morinaga, T. *et al.* 1929 ; Lawrence, W.J.C. 1930 ; Smith, E. (Tischler, G. 1935-1936) ; Heiser, C.B. & Whitaker, T.W. 1948 ; Ernst, W.R. 1958 ; Kimber, G. & Riley, R. 1963

Hunnemannia Sweet

1 ; Mexico. Cultivated.

fumarifolia Sweet

- 28 Sugiura, T. 1931
56 Sugiura, T. 1936b ; Ernst, W.R. 1959

Meconopsis Vig.

43 ; 1 West Europe, 42 from Himalaya to West China. About 20 ; temperate and subalpine Himalaya (between 2,640 and 5,610 m).

sculeata Royle

- 56 Ratter, J.A. 1967b

bella Prain

- 22 Malla, S.B., Bharatal, S. *et al.* 1977a

horridula Hook. f. & Thoms.

- 56 Ratter, J.A. 1967b

nepaulensis DC.

- 28 Sugiura, T. 1940c
56 Ratter, J.A. 1967b

paniculata (D. Don) Prain

- 56 Ernst, W.R. 1965

regia G. Taylor

- 56 Ernst, W.R. 1959

robusta Hook. f. & Thoms.

- 28 Sugiura, T. 1940d, 1944

simplicifolia (D. Don) Walp.

- 82 or 84 Ratter, J.A. 1967b

villosa (Hook. f.) Taylor*Cathcartia villosa* Hook. f.

- 32 Ernst, W.R. 1965

Papaver Linn.

100 ; Europe, Asia, South Africa. Australia and America. About 10 ; Himalaya, and Pakistan a few cultivated.

argemone Linn.

- 12 Bcal, M. (Maude, P.F. 1939)
40 Koopmans, A. 1954
42 Sugiura, T. 1936a, 1937a ; Rohweder, H. 1937 ; Sugiura, T. 1940c ; Kawatani, T. & Ohno (Asahina, H. *et al.* 1957) ; McNaughton, I.H. 1960 ; Májovský, J. *et al.* 1970a

cabium Linn.

- 14 Sugiura, T. 1936a
14, 28 Rohweder, H. 1937
28 Ljungdahl, H. 1922 ; Tischler, G. 1934 ; Koul, A.K. *et al.* 1972 ; Koltay, P. 1978
28, 42 Koopmans, A. 1970a
42 Sugiura, T. 1937a ; Löve, A. & Löve, D. 1944b ; McNaughton, I.H. 1960 ; McNaughton, I.H. & Harper, J.L. 1960 ; Heimburger, C. (Löve, A. & Löve, D. 1961b) ; Gadella, T.W.J. & Kliphuis, E. 1966 ; Malik, C.P. & Grover, I.S. 1973c ; Humphreys, M.O. 1975

cabium × *rhoeas*

- 28 Malik, C.P. & Grover, I.S. 1973c

56 Koopmans, A. 1970b

hybridum Linn.

- 14 Ljungdahl, H. 1922; Sugiura, T. 1937c; Kawatani, T. & Ohno, T. (Asahina, H. *et al.* 1957); McNaughton, I.H. 1960; Kawatani, T. & Ohno, T. 1965; Koktay, P. 1978

macrostomum Boiss.

- 14 Koul, A.K. *et al.* 1972

medicula Linn.

- 14 Ljungdahl, H. 1922, 1924; Yasui, K. 1927; Sugiura, T. 1940c; Fabergé, A.C. 1942, 1944; Fagerlind, F. 1944; Knaben, G. 1959; Löve, A. & Löve, D. 1961b; Kawatani, T. & Ohno, T. 1965
- 28 Horn, K. 1938; Ernst, W.R. 1965
- 28, 29, 41 Koul, A.K. *et al.* 1972
- 42 Mesiček, J. & Sojak, J. 1969; Hanelt, P. 1970

orientale Linn.

- 28 Snoad, B. 1952; Goldblatt, P. 1974
- 42 Tahara, M. 1915f; Yasui, K. 1921; Ljungdahl, H. 1922; Yamazaki, R. 1936; Castiglia, E. 1955; Kawatani, T. & Ohno, T. (Asahina, H. *et al.* 1957); Kawatani, T. & Asahina, H. 1959; Kawatani, T. & Ohno, T. 1965

bracteatum Lindl.

- 14 Yasui, K. 1936b, 1937a, 1941
- 41 Koul, A.K. *et al.* 1972
- 42 Kawatani, T. & Ohno, T. (Asahina, H. *et al.* 1957); Ernst, W.R. 1965

rhoeas Linn.

- 14 Tahara, M. 1915f; Ljungdahl, H. 1922; Vicius, M. & Abela, K. 1927; Lawrence, W.J.C. 1930; Tischler, G. 1934; Yamazaki, R. 1936; Rohweder, H. 1937; Sugiura, T. 1940c;

Felföldy, L.J.M. 1947a; Castiglia, E. 1955; Hasitschka, G. 1956; Kawatani, T. & Ohno, T. (Asahina, H. *et al.* 1957); McNaughton, I.H. 1960; Mitra, K. 1964; Ernst, W.R. 1965; Kawatani, T. & Ohno, T. 1965; Grover, I.S. & Malik, C.P. 1969; Koul, A.K. *et al.* 1972; Májovský, J. *et al.* 1970b; Fritsch, R.M. 1973; Malik, C.P. & Grover, I.S. 1973c; Humphreys, M.O. 1975; Malik, C.P. & Mary, T.N. 1975, 1976b; Gohil, R.N. & Kaul, R. 1978; Kieft, B. & Van Loon, J. Chr. 1978; Koktay, P. 1978; Van Loon, J. Chr. & de Jong, H. 1978

14 + 1B Fernandes, A. & Queiros, M. 1970-1971

14, 15, 21 Koopmans, A. 1956

rhoeas × *glaucum*

- 14 Malik, C.P. & Grover, I.S. 1973c

somaliferum Linn.

20 Ghimpu, V. 1933

22 Tahara, M. 1915f; Ljungdahl, H. 1922; Yasui, K. 1927; Kuzmina, H.E. (Fedorov); Sugiura, T. 1940c; Voltov, E.N. (Fedorov); Castiglia, E. 1955; Kawatani, T. & Ohno (Asahina, H. *et al.* 1957); Kawatani, T. & Asahina, H. 1959; Hrisih, N.J. 1960; Diene, G.M. 1961; Ernst, W.R. 1965; Kawatani, T. & Ohno, T. 1965; Zhukova, P.G. 1967b; Grover, I.S. & Malik, C.P. 1969; Malik, C.P. & Grover, I.S. 1971; Koul, A.K. *et al.* 1972; Gohil, R.N. & Kaul, R. 1978; Malik, C.P. *et al.* 1979

22, 44 Furusato, K. 1940

ssp. *somaliferum*

22 Hammer, K. & Fritsch, R. 1977; Kari, H. & Fritsch, R. 1977

PARNASSIACEAE S.F. Gray

1/50; North temperate. 1/11; Himalaya (between 1,500 and 5,000 m) and Western Peninsula.

Parnassia Linn.

50 ; North temperate. 11 ; Himalaya (between 1,500 and 5,000 m) and Western Peninsula.

foliosa Hook. f. & Thoms.

18 Wada, Z. 1958

subicata Wall.

16 Hamel, J.L. 1953

18 Malla, S.B. *et al.* 1979 ; Kumar, V. & Chauhan, K.P.S.

palustris Linn.

16 Hamel, J.L. 1953

18 Matsuura, S. & Sutō, S. 1935 ; Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov) ; Löve, A. & Löve, D. 1951 ; Löve, A. 1954b ; Quézel, P. 1957 ; Sokolovskaya, A.P. (Fedorov) ; Wada, Z. 1958 ; Sorsa, V. 1963b ; Hedberg, I. & Hedberg, O. 1964 ;

Löve, A. & Ritchie, J.C. 1966 ; Knaben, G. & Engelskjøn, T. 1967 ; Johnson, A.W. & Packer, J.G. 1968 ; Zhukova, P.G. 1969 ; Gadella, T.W.J. & Kliphuis, E. 1970b, 1972 ; Zhukova, P.G. & Tikhonova, A.D. 1973

18, 27, 36,

54 Erlandsson, S. 1942c

18, 36

Banach Pogan, E. 1956 ; Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov) ; Sokolovskaya, A.P. (Fedorov) ; Kliphuis, E. *et al.* 1965 ; Gadella, T.W.J. & Kliphuis, E. 1968c

20 Tischler, G. 1934

34 Belyaeva, V.A. & Siplivinskii, V.N. 1977

36 Löve, A. & Löve, D. 1944b ; Hedberg, O. 1958 ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Laane, M.M. 1967 ; Laine, U. *et al.* 1974

pusilla Wall.

18 Malla, S.B. *et al.* 1979

PASSIFLORACEAE Juss.

12/600 ; tropics and warm temperate. 2/30 ; native ones mostly confined to Eastern Himalaya and Western Peninsula, and Nepal, Bangia Dosh and Sri Lanka - many cultivated.

Passiflora Linn.

500 ; chiefly in America, a few in Asia and Australia, 1 in Madagascar. About 25 ; 3 indigenous in Eastern and Central Himalaya and Southern India, and Nepal, rest cultivated, a few naturalized.

caerulea Linn.

18 Heitz, E. 1926 ; Nakajima, G. 1931 ; Simonet, M. & Miodzyrzecski, Ch 1932 ; Bowden, W.M. 1940a, 1945b

edulis Sims

18 Janaki Ammal, E.K. (D. 1945) ; Storey, W.B. 1950 ; Beal, P.R. 1969

fortida Linn.

18 Janaki Ammal, E.K. (D. 1945)
20 Nishiyama, I. & Kondo, N. 1942 (D. 1955) ; Storey, W.B. 1950

22 Bowden, W.M. 1945b ; Harvey 1966

gracilis Jacq. ex Link

18 La Cour, L.F. 1952

20 Bowden, W.M. 1945b

lucarnata Linn.

18 Heitz (Tischler, G. 1927a) ; Bowden, W.M. 1940a, 1945b ; Storey, W.B. 1950

36 Lloyd, R.M. 1963

laurefolia Linn.

18 Storey, W.B. 1950 ; Simmonds, N.W. 1954

mollissima (HBK) Bailey

18 Bowden, W.M. 1945b ; Storey, W.B. 1950 ; Heiser, C.B. 1963

quadrangularis Linn.

18 Storey, W.B. 1950 ; Janaki Ammal, E.K. (D. 1955) ; Beal, P.R. 1973a,

- b ; Dixit, G.B. & Torne, S.G. 1978
racemosa Brot.
 18 Bowden, W.M. 1940a, 1945b
suberosa Linn.
 12 Diers, L. 1961
 18 Hsu, C.-C. 1968
 24 Beal, P.R. 1973a, b
 24, 36 Storey, W.B. 1950
subpeltata Ortega
 18 Storey, W.B. 1950

PEDALIACEAE R. Br.

12/50 ; tropics and South Africa, Madagascar and Indo-Malesia. 3/6 ; chiefly in South India, and Sri Lanka 1 cultivated.

Ceratotheca Endl.

9 ; tropics and South Africa. 1 ; Western India.

sesamoides Endl.

32 Kodharnath, S. 1950 ; Mihge, J. 1962

Petalium Royen ex Linn.

1 ; tropical Africa, Madagascar and tropical Asia. Peninsular India, and Sri Lanka.

murex Linn.

16 Srinivasan, A.R. 1942

Sesamum Linn.

30 ; tropical and South Africa, and Asia. 4 ; Southern India, 1 cultivated.

lacinatum Klein.

28 Raghavan, T.S. & Krishnamurthy, K.V. 1945, 1947b
 32 Ramanujam, S. & Joshi, A.B. 1948

orientale Linn.

26 Raghavan, T.S. & Krishnamurthy,

K.V. 1947a, b ; Abraham, A. 1945
 26, 52 Richharia, R.H. & Persai, D.P. 1940
 52, 58 Ramanathan, K. 1955a

indicum DC.

26 Motinaga, T. *et al.* 1929 ; Sugiura, T. 1931, 1936b ; Nohara, S. 1934 ; Kobayashi, T. 1956 ; Sarkar, A.K., Chakraverty, M. *et al.* 1978
 26, 52 Mitra, A.K. & Biswas, A.K. 1979

var. *grandiflorum*

26 Abraham, A. 1944a

grandiflorum

26 Abraham, A. 1945

orientale × *prostratum*

29, 58 Raghavan, T.S. & Krishnamurthy, K.V. 1947b

prostratum Retz.

32 Ramanujam, S. 1942 (D. 1955) ; Abraham, A. 1945 ; Raghavan, T.S. & Krishnamurthy, K.V. 1947a, b

radiatum Schum.

64 John, C.M. & Rao, U. 1941

occidentale Heer & Regel

64 Sampath, S. & Ramanathan, K. 1949

PEPEROMIACEAE (Miq.) Wettst.

4/1,000 ; tropics. 1/22 ; chiefly in Southern and Western India, and Sri Lanka, about 10 cultivated.

304 PEPEROMIACEAE

Peperomia Ruiz & Pav.

About 1,000 ; tropics and subtropics, especially America. 22 ; chiefly in Southern and Western India, and in Sri Lanka, about 10 cultivated.

argyrea E. Morr.

- 22 Sharma, A.K. & Bhattacharyya, N.K. 1958b, 1959e ; Smith, J.B. 1966 ; Dasgupta, A. & Datta, P.C. 1976
- 24 Blot, J. 1960

sandersii C. DC.

- 22 Mathew, P.M. 1958b
- 24 Sugiura, T. 1936a, b

var. argyrea

- 24 Huziwara, Y. 1968

metallica Linden & Rodig.

- 22 Sharma, A.K. & Bhattacharyya, N.K. 1958b, 1959e

- 24 Abele, K. 1923 ; Dasgupta, A. & Datta, P.C. 1976
- 32 Blot, J. 1960
- 33 Smith, J.B. 1966

pellucida HBK

- 20-24 Brown, W.H. 1908
- 22 Sobli, S.N. & Singh, S.D. 1961 ; Baquar, S.R. 1967-1968
- 22, 46 Sharma, A.K. & Bhattacharyya, N.K. 1959e
- 44 Mathew, P.M. 1958b ; Harvey 1966 ; Smith, J.B. 1966 ; Sampathkumar, R. & Ayyangar, K.R. 1981
- 46 Sharma, A.K. & Bhattacharyya, N.K. 1958b
- 48 Dasgupta, A. & Datta, P.C. 1976

portulacoides A. Dietr.

- 44 Mathew, P.M. 1958b

tetraphylla (Forst. f.) Hook. & Arnott

reflexa A. Dietr.

- 40 Blot, J. 1960

PERIPLOCACEAE Schltr.

45-50/200 ; tropical and warm temperate Old World, especially tropical Africa. 11/19 ; chiefly in Eastern and South Western India, and Pakistan, Bangla Desh and Sri Lanka.

Cryptostegia R. Br.

2 ; Madagascar. 2 ; introduced and cultivated.

grandiflora R. Br.

- 22 Navaneetham, N. 1980
- 24 Perdi, P. 1933a, b ; Sarkar, A.K. *et al.* 1975

Hemidesmus R. Br.

1 ; India, South East Asia and Malaysia. Upper Gangetic Plain eastwards to Bengal and from Madhya Pradesh to Southern India, and Sri Lanka.

indicus (Linn.) R. Br.

- 22 Biswas, I. 1957a ; Raghavan, R.S. 1957 ; Sreedevi, P. & Nambodiri, A.N. 1977

PHILADELPHACEAE D. Don

7/135 ; South Europe to East Asia and North America, South to Philippine Islands and Central America. 2/9 ; confined to Himalaya almost all in temperate zone, and Nepal and Bhutan - a few cultivated.

Deutzia Thunb.

50 ; Himalaya, East Asia and Philippine Islands, 1-3 Mexico. 7 ; Himalaya (between 1,600 and 3,300 m), and Nepal and Bhutan a few cultivated.

corymbosa R. Br.

- 26 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N. & Sareen, T.S. 1969
182 Sharma, A. & Sarkar, A.K. 1967-68

crenata Sieb. & Zucc.

- 130 Schoenagel, E. 1931 ; Hamel, J.L. 1953

parviflora Bunge

- 26 Sax, K. 1931b ; Hamel, J.L. 1953 ; Chuksanova (Fedorov)

var. **ovalifolia** Rehd.

- 78 Hamel, J.L. 1953 ; Chuksanova (Fedorov)

purpurascens (Henry) Rehd.

- 26 Hamel, J.L. 1953

scabra Thunb.

- 130 Singhal, V.K. *et al.* 1980a

staminea R. Br. ex Wall.

- 26 Sharma, J.N. & Swarup, V. 1962

Philadelphus Linn.

75 ; North temperate, especially East Asia. 2 ; Himalaya (between 1,500 and 3,000 m), and Bhutan.

coronarius Linn.

- 26 Bangham, W. 1929 ; Schoenagel, E. 1931 ; Janaki Ammal, B.K. 1951 ; Hamel, J.L. 1953

tomentosus Wall.

- 26 Bangham, W. 1929 ; Sax, K. 1931b ; Schoenagel, E. 1931 ; Hamel, J.L. 1953

f. **nepalensis** (Kochoe) Hara**nepalensis** Kochoe

- 26 Bangham, W. 1929 ; Hamel, J.L. 1953 ; Schoenagel, E. 1931

PHRYMATACEAE Schauer.

1/2 ; East Asia and East North America. 1/1 ; Himalaya and Khasi Hills, and Nepal.

Phryma Linn.

1-2 ; India to Japan and East North America. 1 ; Himalaya and Khasi Hills, and Nepal.

leptostachya Linn.*

- 14 Sugiura, T. 1936b
28 Cooper, D.C. 1941 ; Sokolovskaya, A.P. (Fedorov)

var. **oblongifolia** (Koidz.) Honda

- 28 Kurosawa, S. 1966

PHYTOLACCACEAE R. Br.

12/100 ; chiefly tropical America and South Africa. 4/5 ; 1 in temperate Himalaya, and Bhutan, wild or cultivated, rest cultivated.

* *Phryma leptostachya* *sensu* Clarke, FBI, 4 : 562, is a synonym of *P. leptostachya* Linn. var. *oblongifolia* (Koidz.) Honda (FEH : 306).

Petiveria Linn.

1; warm America and West Indies.
Cultivated.

allivacea Linn.

72 Sugiura, T. 1937b, 1939

Phytolacca Linn.

35; tropics and subtropics, 2; 1 in temperate Himalaya, and Bhutan, wild or cultivated, 1 cultivated.

acutosa Roxb.

18 Sharma, A. & Sarkar, A.K. 1967-1968

36 Morinaga, T. *et al.* 1929; Sugiura, T. 1931, 1936a, b; Josimovich, V. P. (Fedorov)

dioica Linn.

36 Schnack, B. & Covas, G. 1947 (D. 1955); Josimovich, V.P. (Fedorov); Gadella, T.W.J. *et al.* 1969

Rivina Linn.

3; tropical America. 1; cultivated.

humbilis Linn.

108 Joshi, A.C. 1936; Sugiura, T. 1936a, b; Mitra, K. & Datta, N. 1967; Nowickie, J.W. 1967

PIPERACEAE C.A. Agardh

4/2,000; tropics. 1/53; mostly in tropical and subtropical Eastern Himalaya, and Southern and Western India, and Nepal, Bhutan, Bangla Desh and Sri Lanka a few cultivated.

Piper Linn.

2,000; tropics. 53; mostly in tropical and subtropical Eastern Himalaya, and Southern and Western India, and Nepal, Bhutan, and Bangla Desh and Sri Lanka a few cultivated.

negrophyllum Miq.

26, 39 Samuel, M.R.A. & Bavappa, K.V.A. 1981

attenuatum Buch.-Ham.

26, 39 Samuel, M.R.A. & Bavappa, K.V.A. 1981
52 Jose, J. 1981

bette Linn.

26, 52 Samuel, M.R.A. & Bavappa, K.V.A. 1981
32 Johnson, D. S. 1910 (D. 1955); Janaki Ammal, E.K. (D. 1945)
64 Sharma, A.K. & Bhattacharyya, N.K. 1958b, 1959e; Dasgupta, A. & Datta, P.C. 1976
78 Mathew, P.M. 1958b

cubeba Linn. f.

24 Dasgupta, A. & Datta, P.C. 1976

longum Linn.

24 Tjio, J.H. 1948
24, 48, 96 Sharma, A.K. & Bhattacharyya, N.K. 1959e
26 Samuel, M.R.A. & Bavappa, K.V.A. 1981
48 Dasgupta, A. & Datta, P.C. 1976
48, 96 Sharma, A.K. & Bhattacharyya, N.K. 1958b
52 Mathew, P.M. 1958b

magnificum Trelease

24 Dasgupta, A. & Datta, P.C. 1976
26 Smith, J.B. 1966

nigrum Linn.

36, 60 Dasgupta, A. & Datta, P.C. 1976
48 Sharma, A.K. & Bhattacharyya, N.K. 1958b, 1959e
52, 65, 78 Samuel, M.R.A. & Bavappa, K.V.A. 1981
52, 104 Mathew, P.M. 1958b
c. 128 Janaki Ammal, E.K. (D. 1945)

- ornatum* N.E. Brown
80 Sharma, A.K. & Bhattacharyya, N.K. 1958b, 1959e
- retrofractum* Vahl
- chaba* Hunter
24 Janaki Ammal, E.K. (D. 1945)
- subpeltatum* Linn.
24 Palm, B. 1915 (Tischler, G. 1927); Johansen, D.A. 1931
- Heckeria subpeltata* Kunth
26 Mathew, P.M. 1958b
- sylvestre* Lam.
26, 39 Samuel, M.R.A. & Bavappa, K.V.A. 1981
- thwaitesii* C. DC.
39, 65 Samuel, M.R.A. & Bavappa, K.V.A. 1981
- trineuron* Miq.
26 Samuel, M.R.A. & Bavappa, K.V.A. 1981
- unguiculatum* Ruiz & Pav.
26 Bedi, Y.S. *et al.* 1980
- zeylanicum* Miq.
39 Samuel, M.R.A. & Bavappa, K.V.A. 1981
- sp.
104 Mathew, P.M. 1958b

PISTACIACEAE (Marchand) Caruel.

1/10 Mediterranean to Afghanistan, East Asia to Malaysia and warm North America. 1/2; North Western India, and Pakistan, 1 cultivated.

Pistacia Linn.

10; Mediterranean to Afghanistan, South East and East Asia to Malaysia, South United States, Mexico and Guatemala. 2; 1 in North Western India, and Pakistan, 1 cultivated.

khinjuk Stocks*integerrima* Stew.

- 30 Mehra, P.N. & Sareen, T.S. 1969; Khosla, P.K. *et al.* 1973

vera Linn.

- 30 Zohary, M. 1952

PITTOSPORACEAE R.Br.

9/200; tropical Africa to Pacific; 8 genera endemic in Australia. 2/13; Himalaya (up to 2,300 m) Khasi Hills and South Western India, and Sri Lanka - a few cultivated.

Pittosporum Banks *ex* Soland. *apud* Gaertn.

150; tropical and subtropical Africa, Asia, Australia, New Zealand and Pacific. 12; Himalaya (up to 2,300 m), Khasi Hills, and South Western India, and Sri Lanka - a few cultivated.

boribundum Wight & Arn.

- 24 Arora, C.M. 1961

rhombofolium A. Cunn. *ex* Hook.

- 24 Singhal, V.K. *et al.* 1980a

undulatum Vent.

- 24 Gros, J.-P. 1965

PLANTAGINACEAE Juss.

3/270; cosmopolitan. 1/10; mostly in Himalaya (up to 3,960 m), and Nepal, Pakistan, Bhutan and Sri Lanka.

Plantago Linn.

265; cosmopolitan. 10; mostly in Himalaya, and Pakistan, Bhutan and Sri Lanka.

amplexicaulis Cav.

- 10 Heitz, E. 1927b; McCullagh, D. 1934; Paliwal, R.L. & Hyde, B.B. 1958; Rahn, K. 1966; Humphries, C.J. *et al.* 1978

ssp. *amplexicaulis*

- 10 Runemark, H. 1967

asiatica Linn.

- 12 McCullagh, D. 1934
24 Fujiwara, I. 1956a; Rahn, K. 1957; Subramanyam, K. & Kamble, N.P. 1966
36 Rahn, K. 1966

elliptica Desf.

- 10 El-Bayoumi, A.S. 1973

coronopus Linn.

- 10 McCullagh, D. 1934; Tischler, G. 1934, 1937; Wulff, H.D. 1937a; Löve, A. & Löve, D. 1944b; Fujiwara, I. 1955; Paliwal, R.L. & Hyde, B.B. 1958; Mitra, K. 1964; Gadella, T.W.J. & Kliphuis, E. 1967
10, 11 Gorenflot, R. 1964
10, 11, 30 Böcher, T.W. *et al.* 1953
10, 11, 30, 31 Böcher, T.W. *et al.* 1955b
10, 20 Guinochet, M. & Gorenflot, R. 1952
10, 10+1 Paliwal, R.L. & Hyde, B.B. 1958, 1959; Gorenflot, R. 1959, 1960
20 Larsen, K. 1960

indica Linn.

- 12 Heitz, E. 1927b; McCullagh, D. 1934; Fujiwara, I. 1956b; Rahn, K. 1957, 1966; Murin & Váňová (Fedorov); Májovský, J. *et al.* 1970a

arvensis Waldst. & Kit.

- 12 Heitz, E. 1927b; McCullagh, D. 1934; Tischler, G. 1934

lanceolata Linn.

- 12 Nemeč, B. 1910; Tjebbes, K. 1928; Nakajima, G. 1930; Tischler, G. 1934, 1937; Rohweder, H. 1937; Böcher, T.W. 1943a; Doulat, E. 1943; Delay, C. 1947; Heiser, C.B. & Whitaker, T.W. 1948; Pölya, L. 1948; Mattick (Tischler, G. 1950); Ono, R. 1954; Fujiwara, I. 1956b; Löve, A. & Löve, D. 1956b; Czapska, D. 1959; Mulligan, G.A. 1961a; Heiser, C.B. 1963; Sorsa, V. 1963b; Gadella, T.W.J. & Kliphuis, E. 1966, 1970a, 1971a; Murin & Váňová (Fedorov); Runemark, H. 1967; Taylor, R.L. & Mulligan, G.A. 1968; Podlech, D. & Dieterle, A. 1969; Baquar, S.R. & Abid Askari, S.H. 1970a, b; Májovský, J. *et al.* 1970a; Dahlgren, R. *et al.* 1971; Strid, A. 1971; Favarger, C. & Vasudevan, K.N. 1972; Fernandes, A. & Franca, F. 1972; Fritsch, R.M. 1973; Kožubarov, S.I. & Petrova, A.V. 1974; Hindáková, M. & Zabor-sky, J. 1977; Jain, K.K. 1978a; Van Loon, J. Chr. & de Jong, H. 1978; Brand, C.V.D. *et al.* 1979; Lessani, H. & Charist-Panahi, S. 1979
12, 12+1B Soyano, Y. 1959
12, 13 Böcher, T.W. *et al.* 1953; Rahn, K. 1957
12, 24, 96 McCullagh, D. 1934
12+1 Kliphuis, E. & Wierfening, J.H. 1979
24 Faasen, P.V. & Nadeau, P. 1976; Aryavaud, A. 1980

majoe Linn.

- 12 Ekstrand, A. 1918; Shadowsky, A.E. (Fedorov); Lewitsky, G.A. (Fedorov); Nakajima, G. 1930; Takahashi (Kihara, H. *et al.* 1931); McCullagh, D. 1934; Tischler, G. 1934, 1937; Resende, F. 1937; Rohweder, H. 1937; Turesson, G. 1938; Doulat, E. 1943; Gripenberg (Löve, A. & Löve, D. 1948); Heiser, C.B. & Whitaker, T.W. 1948; Pölya, L. 1948, 1949; Vaarama, A. (Löve, A. & Löve, D.

- 1948) ; Fujiwara, I. 1956a ; Löve, A. & Löve, D. 1956b ; Rahn, K. 1957 ; Czapska, D. 1959 ; Garajová, S. 1959 ; Mulligan, G.A. 1959 ; Sorsa, V. 1962, 1963b ; Gadella, T.W.J. & Kliphuis, E. 1963, 1966 ; Heiser, C.B. 1963 ; Sokolovskaya, A.P. (Fedorov) ; Murin & Václavová (Fedorov) ; Mulligan, G.A. & Cody, W.J. 1968 ; Taylor, R.L. & Mulligan, G.A. 1968 ; Kuzmanov, B. & Kožuharov, S. 1969 ; Laane, M.M. 1969b ; Baqar, S.R. & Abid Askari, S.H. 1970b ; Murin, A. & Sheikh, M.Y. 1971 ; Fernandes, A. & Franca, F. 1972 ; Kapoor, B.M. 1972 ; Susnik, F. & Lovka, M. 1973 ; Kožuharov, S.I. & Petrova, A.V. 1974 ; Labadie, J.P. 1976 ; Aryavand, A. 1977b ; Jain, K.K. 1978b ; Van Loon, J. Chr. & de Jong, H. 1978 ; Javůrková, V. 1979 ; Lessani, H. & Chariat-Panahi, S. 1979 ; Aryavand, A. 1980
- 12, 24 Tomkins, D. J. & Grant, W.F. 1978
- 12, 36 Favarger, C. & Vasudevan, K.N. 1972 ; Vasudevan, K.N. 1976 (1977)
- 18 Delay, C. 1947
- 24 Miyaji (Ishikawa, M. 1916) ; Sinotō,

- Y. 1925 ; Ikeno, S. 1929 ; Pal, R.K. 1961
- 34 Kumar, V. & Chauhan, K.P.S.
- ssp. *major*
- 12 Májovský, J. *et al.* 1970a ; Brand, C.V.D. *et al.* 1979
- ovata* Forsk.
- 8 Heitz, E. 1927b ; McCullagh, D. 1934 ; Hyde, B.B. 1953 ; Paliwal, R.B. & Hyde, B.B. 1958, 1959 ; Rahn, K. 1966 ; Stebbins, G.L. & Day, A. 1967 ; Podlech, D. & Dieterle, A. 1969 ; Stack, S.M. & Brown, W.J. 1969 ; Murin, A. & Chaudhri, I.I. 1970 ; Van Loon, J.C. 1974 ; Dube, K.G. 1979, 1981
- psyllium* Linn.
- 12 Ekstrand, H. 1918 ; Heitz, E. 1927b ; McCullagh, D. 1934 ; Fujiwara, I. 1956b ; Suzuka, O. 1956 ; Reese, G. 1957 ; Larsen, K. 1960 ; Rahn, K. 1966 ; Runemark, H. 1967 ; Fernandes, A. & Franca, F. 1972
- tibetica* Hook. f. & Thoms.
- 12 Heitz, E. 1927b ; McCullagh, D. 1934

PLATANACEAE Dum.

1/10 ; North temperate. 1/1 ; cultivated.

Platanus Linn.

10 ; 1 from South East Europe to North Persia, 1 in Indo-China, 1 in East North America and 7 in South West United States and Mexico. 1 ; cultivated.

orientalis Linn.

- 14 Arora, C.M. 1961
- 16 Delay, C. 1947
- 42 Sax, K. 1933 ; Pizzolongo, P. 1958 ; Ernst, W.R. 1963 ; Mehra, P.N. & Singh, A. 1963

PLUMBAGINACEAE Juss.

19/775 ; cosmopolitan, but especially on salt steppes and sea coast. 6/9 ; mostly in Himalaya, a few in mangroves of Bengal and Western India, and Pakistan, Bhutan, Bangla Desh and Sri Lanka.

319 PLUMBAGINACEAE

Plumbago Linn.

12 ; warm regions. 3 ; mostly cultivated.

auriculata Lam.

capensis Thunb.

- 14 Dahlgren, K.V.O. 1916, 1964 ;
 Phillips, H.M. 1938
 14+1B Bedi, Y.S. *et al.* 1980
 16 D'Amato, F. 1940

indica Linn.

- 14 Sobti, S.N. & Singh, S.D. 1961

rosea Linn.

- 24 Dahlgren, K.V.O. 1964

zeytanica Linn.

- 16 Sanjappa, M. & Sathyananda, N. 1979
 28 Dahlgren, K.V.O. 1964 ; Jha, R.P. &
 Jha, D. 1968a ; Carr, G.D. 1978

PODOACEAE Baill. *ex* Franch. (*corr.* Hutch.)

2/3 ; South East Asia. 1/1 ; Central and Eastern Himalaya.

Dobinea Buch.-Ham.

2 ; Himalaya and South China. 1 ;
 Central and Eastern Himalaya.

vulgaris Buch.-Ham.

- 14 Mehra, P.N. & Khosla, P.K. 1969 ;
 Mehra, P.N., Khosla, P.K. & Sareen,
 T.S. 1972 ; Khosla, P.K. *et al.* 1973

PODOPHYLLACEAE DC.

6/20 ; North temperate, especially East Asia and East North America. 1/1 ; interior ranges
 of Western Himalaya, also cultivated.

Podophyllum Linn.

10 ; Himalaya and East Asia, 1 in East
 North America. 1 ; interior ranges of
 Western Himalaya, also cultivated.

hexandrum Royle

- 12 Kumar, V. & Chauhan, K.P.S.
 12+0-2f Kurosawa, S. 1971b

emodi Wall.

- 12 Litardière, R. de 1921 ; Langlet,
 O.F.J. 1928

PODOSTEMACEAE Rich. *ex* C.A. Agardh

45/130 ; tropics. 10/19 ; chiefly in Khasi Hills and Western Peninsula, and in Sri Lanka.

Podostemum Michx.

17 ; Central and tropical South America,
 tropical Africa and Asia. About 4 ; Western

Ghats and Madhya Pradesh, and Sri Lanka.

subulatum Gardn.

- 40 ? Magnus, W. 1913

Ternstroemia Tul.

1; Western Peninsular India, to Sri Lanka.

zeylanica Tul.

Lawla zeylanica Tul.

20 Magnus, W. 1913

POLEMONIACEAE Juss.

15/300; chiefly North America, a few in Chile, Peru, Europe and North Asia. 3/3; 1 in alpine Western Himalaya (between 3,000 and 4,000 m), 2 cultivated.

Phlox Linn.

67; 1 in North East Asia, 66 in North America and Mexico. 1; cultivated.

drummondii Hook.

14 Kelly, J.P. 1920; Kelly, J.P. & Wahl, H.A. 1928; Flory, W.S. 1931, 1934; Resende, F. 1937, 1940; Erbe, L. & Turner, B.L. 1962; Dhillon, T.S. 1970; Gill, L.S. 1972; Dhillon, T.S. & Dhillon, E.K.S. 1974; Raghuvanshi, S.S. & Pathak, C.S. 1975

14, 28 Meyer, J.R. 1944

sp. *drummondii*

14 Smith, D.M. & Levin, D.A. 1967

2x × 4x

10, 14, 15,

21, 24, 25,

27, 28, 71 Raghuvanshi, S.S. & Pathak, C.S. 1975

Polemonium Linn.

50; temperate Eurasia, North America and Mexico, and 2 in Chile. 1; alpine Western Himalaya.

coeruleum Linn.

18 Winge, O. 1923; Clausen, J. 1931a; Heitz, E. 1932; Sakai, K. 1935a; Flory, W.S. 1937a; Griesinger, R. 1937; Turesson, G. 1938; Löve, A. & Löve, D. 1956b; Knaben, G. & Engelskjön, T. 1967; Zhukova, P.G. 1967b; Májovský, J. *et al.* 1970a; Gill, L.S. 1972; Bhat, B.K. *et al.* 1975; Kumar, V. & Chauhan, K.P.S.

POLYGALACEAE Juss.

12/800; cosmopolitan excluding New Zealand, Polynesia and arctic zone. 3/24; chiefly in Western Peninsular India, some in Himalaya, a few occur throughout India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Polygala Linn.

500-600; cosmopolitan, excluding New Zealand, Polynesia and arctic zone. About 21; concentrated in Western Peninsular India, some are Himalayan, and Nepal, Pakistan and Sri Lanka.

abyssinica R. Br. ex Fresen

38 Sharma, M.L. & Mehra, P.N. 1978

arvensis Willd.*triflora* Linn.

38 Hagerup, O. 1932

312 POLYGALACEAE

chinensis Linn.*

48 Mitra, K. & Datta, N. 1967

var. *linearifolia* (Willd.) Chodat

28 Sharma, M.L. & Mehra, P.N. 1978

crotonarioides Buch.-Ham. ex DC.

28 Sharma, M.L. & Mehra, P.N. 1978

erioptera DC.

76 Sharma, M.L. & Mehra, P.N. 1978

furens Royle

triphylla Buch.-Ham. ex D. Don

56 Sharma, M.L. Mehra, P.N. 1978

longifolia Poir.

38 Sharma, M.L. & Mehra, P.N. 1978

persicariaefolia DC.

28 Sharma, M.L. & Mehra, P.N. 1978

sibirica Linn.

c.68 Sokolovskaya, A.P. (Fedorov)

var. *monopetala* (Camb.) Chodat

34 Sharma, M.L. & Mehra, P.N. 1978

Triplaris Loefl. ex Linn.

25 ; tropical South America. 2 ; cultivated.

americana Linn.

22 Sarkar, A.K., Datta, N. & Chatterjee, U. 1978

POLYGONACEAE Juss.

40/800 ; chiefly North temperate, a few in tropics, arctic and Southern region., 12/115 ; chiefly in Himalaya (up to 5,940 m), and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka - a few cultivated.

Antigonon Endl.

8 ; tropical America. 1 ; cultivated.

leptopus Hook. & Arn.

14 Subramanian, D. 1980b

40 Jaretsky, R. 1928b

40, c.44, 48 Graham, S.A. & Wood, C.E. 1965

42-44 Simmonds, N.W. 1954

48 Edman, G. 1929 ; Rao, V.S. 1936a

Calligonum Linn.

80 ; South Europe, North Africa, and West Asia. 1 ; Punjab and Rajasthan, and Pakistan.

polygonoides Linn.

54 Valovich, B.M. & Soskov, Yu.D. 1973

Coccoloba P. Br. *mut.* Linn.

150 ; tropics and subtropics, and America. 1 ; cultivated.

uvifera Linn.

c.80 Edman, G. 1929

132 Howard (Graham, S.A. & Wood, C.E. 1965)

Fagopyrum Mill.

15 ; temperate Eurasia. 3 ; temperate Himalaya (up to 3,960 m) - a few cultivated.

dlbotrys (D. Don) Hara

cymosum Meisn.

16 Jaretsky, R. 1928b ; Doida, Y. 1962

32 Sharma, A.K. & Chatterji, T. 1960a

**Polygala chinensis* auct. pl. (non Linn.), FBI, 2 : 204, is a synonym of *P. arvensis* Willd. (HFDD : 67).

esculentum Moench

- 16 Stevens, N.E. 1912; Taylor, W.R. 1925; Quisenberry, K.S. 1927; Mahony, K.L. 1935; Mansurova, V.V. (Fedorov); Löve, A. & Löve, D. 1956b; Milovidov, P. & Štorchová, J. 1958; Doida, Y. 1960a, 1961b, 1962; Subramanian, D. 1980b
- 16, 32 Zakhareva, O.I. (Fedorov); Poddubnaja-Arnoldi, W. (Fedorov)
- 18 Sinotō, Y. & Satō, D. 1940

emarginatum Meissn.

- 16 Quisenberry, K.S. 1927; Jaretsky, R. 1928b; Mansurova, V.V. (Fedorov)

sagittatum Gilib.

- 16 Menshchikova, E.A. (Fedorov)

tataricum (Linn.) Gaertn.

- 16 Jaretsky, R. 1927b, 1928b; Quisenberry, K.S. 1927; Sando, W.J. 1939; Milovidov, P. & Štorchová, J. 1958; Doida, Y. 1960a, 1962; Menshchikova, E.A. (Fedorov)

rotundatum Bab.

- 16 Jaretsky, R. 1928b

Koenigia Linn.

7; Arctic, Himalaya, temperate East Asia, 1 in temperate South America. 3; alpine Himalaya.

islandica Linn.

- 14 Mészék, J. & Sojak, J. 1973
- 28 Hagerup, O. 1926; Edman, G. 1929; Löve, A. & Löve, D. 1948, 1956b; Löve, A. & Sarkar, P. 1957; Jørgensen, C.A. *et al.* 1958; Menshchikova, E.A. (Fedorov); Zhukova, P.G. 1967a, b; Knaben, G. & Engelakjøn, T. 1967; Johnson, A.W. & Packer, J.G. 1968; Löve, A. *et al.* 1971

Oxyria Hill

1; North arctic and subarctic, mountains of temperate Eurasia and California. Alpine Himalaya.

diversa (Linn.) Hill

- 14 Kihara, H. 1927b; Jaretsky, R. 1928b; Edman, G. 1929; Sakai, K.

1935a; Flovik, K. 1940; Löve, A. (Löve, A. & Löve, D. 1942b); Löve A. & Löve, D. 1948, 1956b, 1966; Sørensen & Westergaard (Löve, A. & Löve, D. 1948) Martick (Tischler, G. 1950); Bøcher, T.W. & Larsen, K. 1950; Knaben, G. 1950; Larsen, K. 1954a; Jørgensen, C.A. *et al.* 1958; Skalińska, M. *et al.* 1959; Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov); Mooney, H.A. & Billings, W.D. 1961; Skalińska, M. 1963; Sorsa, V. 1963b; Packer, J.G. 1954; Zhukova, P.G. (Fedorov), 1967b; Mosquin, T. & Hayley, D.E. 1966; Taylor, R.L. & Brockman, R.P. 1966; Johnson, A.W. & Packer, J.G. 1968; Taylor, R.L. & Mulligan, G.A. 1968; Mulligan, G.A. & Porsild, A.E. 1970; Löve, A. *et al.* 1971; Mulligan, G.A. & Cody, W.J. 1973; Zhukova, P.G. *et al.* 1973; Contandriopoulos, J. & Gamisans, J. 1974; Dawa, J.C. & Murray, D.F. 1979

- 14, 28 Menshchikova, E.A. (Fedorov)
- 42 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)

elatior R. Br.

- 14 Jaretsky, R. 1928b; Menshchikova, E.A. (Fedorov)
- 14, 42 Edman, G. 1929

Polygonum Linn.

About 300; cosmopolitan, abundant in temperate regions. 81; mostly in Himalaya (up to 5,940 m), and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

affine Don

- 22 Jaretsky, R. 1928b

alpinum All.

- 20 Jaretsky, R. 1928b; Zhukova, P.G. 1967b
- 22 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)

amphibium Linn.

- 22 Mehra, P.N. & Dhawan, H. 1966b
- <60 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)
- c.66 Jaretsky, R. 1928b

314 POLYGONACEAE

- 66 Tischler, G. 1934; Rohweder, H. 1937
 88 Weislo, H. 1977
 96 Turesson, G. 1961
- Periscaria amphibia* (Linn.) S.F. Gray
 66 Löve, A. 1954b; Löve, A. & Löve, D. 1956b
- amplexicaule* D. Don
 24 Mehra, P.N. & Dhawan, H. 1966b
 40 Mallick, R. 1968, 1969
- aviculare* Linn.
 20, 22, 40,
 60 Graham, S.A. & Wood, C.B. 1965
 40 Jaretsky, R. 1928b; Tischler, G. 1934, 1937; Rohweder, H. 1937; Pólya, L. 1948; Löve, A. & Löve, D. 1956a, b; Menshchikova, E.A. (Fedorov)
 40, 60 Löve, A. & Löve, D. 1942a; Heiser, C.B. & Whitaker, T.W. 1948; Styles, B.T. 1962; Taylor, R.L. & Mulligan, G.A. 1968
 40, 80 Löve, A. & Löve, D. 1948
 60 Styles, B.T. 1959a, b; Doida, Y. 1960a, b, 1962; Zhukova, P.G. (Fedorov); Löve, A. & Ritchie, J.C. 1966
- barbatum* Linn.
 20, 40 Sharma, A.K. & Chatterji, T. 1960a; Mallick, R. 1968, 1969
 22 Bhattacharya, G.N. & Rahman, M.F. 1978
 40 Subramanian, D. 1980b
 60 Bir, S.S. & Sidhu, M. 1978, 1980
- ssp. gracile* Danser
 40 Mallick, R. 1968, 1969
- bistorta* Linn.
 24 Doida, Y. 1960a
 24, 48 Doida, Y. 1962
 44 Jaretsky, R. 1928b; Tischler, G. 1934; Menshchikova, E.A. (Fedorov)
 46 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)
 84 Doida, Y. 1961a
- carneum* C. Koch
 22 Zhukova, P.G. 1967b
 24 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)
- campanulatum* Hook. f.
Aconogonum campanulatum (Hook. f.) Hara
 60, c.64 Kurosawa, S. 1971b
- capitatum* Buch.-Ham., ex D. Don
 22 Jaretsky, R. 1928b; Mehra, P.N. & Dhawan, H. 1966b
 40 Mallick, R. 1968, 1969
- chinense* Linn.
 22 Gajapathy, C. 1961; Hsu, C.-C. 1968
 24 Mehra, P.N. & Dhawan, H. 1966b
 26 Sharma, A.K. & Chatterji, T. 1960a
 32 Subramanian, D. 1980b
- convolvulus* Linn.
 20 Jaretsky, R. 1928b; Tischler, G. 1934; Rohweder, H. 1937; Menshchikova, E.A. (Fedorov)
 20, 40 Heiser, C.B. & Whitaker, T.W. 1948; Graham, S.A. & Wood, C.B. 1965
 40 Andersson (Löve, A. & Löve, D. 1942b); Löve, A. 1942a; Mulligan, G.A. 1957, 1961a; Pauwels, L. 1959a; Taylor, R.L. & Mulligan, G.A. 1968; Weislo, H. 1977
- Bilderdykia convolvulus* (Linn.) Dum.
 40 Löve, A. & Löve, D. 1956b
- Tinaria convolvulus* (Linn.) Webb. & Moq.
 40 Andersson (Löve, A. & Löve, D. 1942b); Löve, A. 1942a; Löve, A. & Löve, D. 1948
- dumetorum* Linn.
 20 Jaretsky, R. 1928b; Tischler, G. 1934; Pauwels, L. 1959a; Weislo, H. 1977
- Bilderdykia dumetorum* (Linn.) Dum.
 20 Sugiura, T. 1936a, b; Löve, A. & Löve, D. 1956b; Májovský, J. et al. 1970b
- Tinaria dumetorum* (Linn.) Opiz
 20 Löve, A. 1954b
- glabrum* Willd.
 20 Mehra, P.N. & Dhawan, H. 1966b; Mallick, R. 1968, 1969
 40 Subramanian, D. 1980b
 60 Sharma, A.K. & Chatterji, T. 1960a; Bhattacharya, G.N. & Rahman, M.F. 1978
 66 Raghavan, R.S. & Arora, C.M. 1958; Mitra, K. & Datta, N. 1967; Sarkar,

A.K. Datta, N. & Chatterjee, U
1975

hydropiper Linn.

- 20 Jaretsky, R. 1928b; Tischler, G. 1934; Rohweder, H. 1937; Löve, A. & Löve, D. 1942a; Mulligan, G.A. 1957; Doida, Y. 1960a, 1962; Menshchikova, E.A. (Fedorov); Timson, J. 1965; Podlech, D. & Dieterle, A. 1969
c.20 Hedberg, I. & Hedberg, O. 1964
20, 22 Graham, S.A. & Wood, C.E. 1965; Mallick, R. 1968, 1969
20, 22, 44 Bhattacharya, G.N. *et al.* 1979
22 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov); Sharma, A.K. & Chatterji, T. 1960a; Weislo, H. 1977
40 Mehra, P.N. & Dhawan, H. 1966b

ssp. *olerocarpum* Danser

var. *triquetrum* Danser

faccidum Meisn.

- 20 Mallick, R. 1968, 1969

lapathifolium Linn.

- 22 Jaretsky, R. 1927b; Tischler, G. 1934; Pauwels, L. 1959a; Timson, J. 1965; Graham, S.A. & Wood, C.E. 1965; Mulligan, G.A. & Persild, A.E. 1969; Podlech, D. & Dieterle, A. 1969; Weislo, H. 1977

nodosum Pers.

- 22 Jaretsky, R. 1928b; Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov); Andersson (Löve, A. & Löve, D. 1942); Doida, Y. 1960a, 1962; Menshchikova, E.A. (Fedorov)
44 Löve, A. & Löve, D. 1942a

Persicaria lapathifolia (Linn.) S.F. Gray

- 22 Andersson (Löve, A. & Löve, D. 1948); Löve, A. & Löve, D. 1956b
22, 44 Hara, H. 1952

var. *lanatum* (Roxb.) Steward

lanigerum R. Br.

- 20 Mehra, P.N. & Dhawan, H. 1966b

macrophyllum D. Don

sphaerostachyum Meisn.

- 22 Jaretsky, R. 1928b

minus Huds.*

- 40 Wulff, H.D. 1939b; Menshchikova, E.A. (Fedorov); Timson, J. 1965; Baquar, S.R. 1967-1968; Weislo, H. 1977

molle D. Don

- 20 Jaretsky, R. 1928b

Aconogonum molle (D. Don) Hara

- 32 Kurosawa, S. 1971b

var. *frondosum* Moissn.

Aconogonum molle (D. Don) Hara

var. *frondosum* (Meisn.) Hara

- 32 Kurosawa, S. 1971b

var. *rude*

rude Meisn.

- c.30 Pauwels, L. 1959b

nepalense Meisn.

- 48 Doida, Y. 1961a, 1962

alatum Buch.-Ham. *ex* Spreng.

- 24 Sharma, A.K. & Chatterji, T. 1960a; Mallick, R. 1968, 1969

orientale Linn.

- 22 Jaretsky, R. 1928b; Edman, G. 1929; Doida, Y. 1960a, 1962; Mallick, R. 1968, 1969; Weislo, H. 1977; Bhattacharya, G.N. & Rahman, M.F. 1978
22, 24 Graham, S.A. & Wood, C.E. 1965
24 Sharma, A.K. & Chatterji, T. 1960a
44 Menshchikova, E.A. (Fedorov)

Amblygonum orientale

- 22 Sugiura, T. 1928

perfoliatum Linn.

- 24 Doida, Y. 1960a, 1962

persicaria Linn.

- 22 Menshchikova, E.A. (Fedorov); Gadella, T.W.J. & Kliphuis, B. 1966
40 Doida, Y. 1960a, 1962; Weislo, H. 1977
40, 44 Graham, S.A. & Wood, C.E. 1965
44 Jaretsky, R. 1927b, 1928b; Tischler, G. 1934; Rohweder, H. 1937; Andersson (Löve, A. & Löve, D. 1942b); Pauwels, L. 1959a; Timson,

* *Polygonum minus*, *auct. pl.*, non Huds., FBI, 5: 36 is a synonym of *P. tenellum* Blume var.

- J. 1965 ; Taylor, R.L. & Mulligan, G.A. 1968
- plebeium* R. Br.
 20 Sharma, A.K. & Chatterji, T. 1960a ; Mallick, R. 1968, 1969 ; Gupta, P.K. & Srivastava, A.K. 1971 ; Sarkar, A.K., Mallick, R. *et al.* 1977 ; Bir, S.S. & Sidhu, M. 1980
 22 Malik, N.A. & Ahmad, A.J. 1963
 40 Jaretsky, R. 1928b
- var. *effusum* Hook. f.
 30 Mallick, R. 1968, 1969
- var. *indica* Hook. f.
 22 Mallick, R. 1968
- polystachyum* Wall.
 22 Jaretsky, R. 1928b ; Taylor, R.L. & Mulligan, G.A. 1968
- pteroecarpum* Wall. ex Meissn.
 56 Mallick, R. 1969
- pubescens* Blume
donii Meissn.
 22 Mehra, P.N. & Dhawan, H. 1966b
- raichrom* Blume
 22 Bhattacharya, G.N. & Rahman, M.F. 1978
- paucitatum* Buch.-Ham.
 40 Subramanian, D. 1980b
- racematum* Buch.-Ham.
 20 Mallick, R. 1968, 1969
 22 Sharma, A.K. & Chatterji, T. 1960a ; Borgmann, E. 1964 ; Hsu, C.-C. 1968
- angittatum* Linn.
 20 Mehra, P.N. & Dhawan, H. 1966b
 40 Doida, Y. 1962
- strobilati* Meissn.
 40 Doida, Y. 1960a
- sibiricum* Laxm.
 20 Zhukova, P.G. 1967b
- tenuosum* Schrank
 22 Jaretsky, R. 1928b ; Tischler, G. 1934 ; Anderson (Löve, A. & Löve, D. 1942b) ; Löve, A. & Löve, D. 1942a
- vaschikifolium* Wall.
 22 Jaretsky, R. 1928b
- virginianum* Linn.
 44 Jaretsky, R. 1928b ; Wancher, J.H. 1934b
- filiforme* Thunb.
 c.44 Jaretsky, R. 1928b
- Tovara filiformis*
 44 Sugiura, T. 1931, 1936b
- viscosum* Buch.-Ham. ex D. Don
Persicaria viscosa (Buch.-Ham. ex D. Don) Nakai
 22 Sugiura, T. 1936a, b
- viviparum* Linn.
 < 66 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)
 c.80 Zhukova, P.G. & Tikhonova, A.D. 1973
 83-88 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)
 88-110 Löve, A. & Löve, D. 1948
 c.100 Zhukova, P.G. 1967a ; Zhukova, P.G. *et al.* 1973
 100 Fløvik, K. 1940
 > 100 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)
 100±10 Mosquin, T. & Hayley, D.E. 1966
 110 ? Jaretsky, R. 1928b
 c.130(132) Weisto, H. 1967b
 132 Skalińska, M. 1950
 200 Johnson, A.W. & Packer, J.G. 1968 ; Taylor, R.L. & Mulligan, G.A. 1968
- Bistorta vivipara* (Linn.) S.F. Gray
 c.100 Dawe, J.C. & Murray, D.F. 1979
 c.110 Löve, A. & Löve, D. 1948
 120 Löve, A. & Löve, D. 1964 ; Löve, A. & Ritchie, J.C. 1966 ; Löve, A. *et al.* 1971
 c.132 Löve, A. & Löve, D. 1956b, 1966
- Rheum* Linn.
 50 ; temperate and subtropical Asia. 10 ; Himalaya (between 3,000 and 5,300 m), and Nepal, 1 cultivated.
- australe* D. Don
emodi Wall.
 22 Edman, G. 1929 ; Chin, T.C. & Youngken, H.W. 1947 ; Mallick, R. 1969
 22, 44 Mensabchikova, E.A. (Fedorov)
- rsaponticum* Linn.
 44 Jaretsky, R. 1928b ; Edman, G.

- 1929; Wanscher, J.H. 1934b; Jensen, H.W. 1936b; La Cour (D. 1945); Löve, A. & Löve, D. 1961b; Menschikova, E.A. (Fedorov)
- spiciforme* Royle
22 Jaretzky, R. 1928b; Edman, G. 1929
- webbianum* Royle
44 Edman, G. 1929
- Rumex* Linn.
About 200; cosmopolitan, especially North temperate. 15; mostly Himalayan (up to 3,960 m), and Pakistan, Bhutan and Bangla Desh.
- acetosa* Linn.
14 Jørgensen, C.A. *et al.* 1958
14♀ Sinotō, Y. 1924; Ono, T. 1928; Kuroki, Y. & Kurita, M. 1970a; Kurita, M. & Kuroki, Y. 1975
14, 1♂ Kuroki, Y. & Kurita, M. 1969; Kurita, M. & Kuroki, Y. 1971; Zarzycki, K. & Rychlewski, J. 1972
14♀, 15♂ Kihara, H. & Ono, T. 1923b, 1924a, b; Ono, T. 1935; Kihara, H. & Yamamoto, Y. 1931; Yamamoto, Y. 1933a, b, 1935a, b, 1938; Löve, A. 1942b; Swietlinska, Z. 1960, 1963; Shimizu, Y. 1961; Gajewski, W. *et al.* 1963; Graham, S.A. & Wood, C.E. 1965; Zhukova, P.G. (Fedorov); Kurita, M. & Kuroki, Y. 1970; Kuroki, Y. & Kurita, M. 1970b, d; Moutschen, J. *et al.* 1972
14♀, 15, 22♂ Ono, T. 1930a
14♂, 15, 21, 22♂ Ono, T. 1932
14, 14+1-6, 8B♀, 15, 15+1♀
3B♂ Haga, T. 1961
14 + 0-8B Kuroki, Y. & Kurita, M. 1972
15♂ Löve, A. 1944a; Loane, M.M. 1967
15 Menschikova, E.A. (Fedorov)
15, 22♂ Takenaka, Y. 1931
21, 22, 29♂ Ono, T. & Shimotozumi, N. 1928; Yamamoto, Y. 1934
22 Kuroki, Y. & Kurita, M. 1970c
27 Kurita, M. *et al.* 1971
- acetosella* Linn.
14, 14(15-17)28, 28 (29-30, 35); 42, 42(40, 41, 43, 44), Hybrids: 14(21); 21-23(28); 14(35); c. 30; c.35; 42(35); 28 (c.32); 35; 30 (31); 42 (28), (35); 43(35); c. 32; 28 (c. 30); c. 30; 28 (29); 28(c. 31); c. 37; c. 39
Den Nijs, J.C.M. 1974
14, 14(15, 21) 28, 28 (27, 29, c. 29,35); 42, 42(34, c. 37, 38-41, 35, 43), 41 (42), Hybrids: c. 37, 28 (35), 30-33, 35, 28 (36)37; 42 (35), 34; 42(c.35); 30-32; 32 (c.35), 37 (32); 36 (42), 42 (41, 35), c. 36(40), 28 (30, c.35), 30(28, 34); 30-33(38); 35(28); 35 (31-34); 35(39)
Den Nijs, J.C.M. 1976
14, 28, 42 Harris, W. 1969; Den Nijs, J.C.M. 1974
15, 16 Menschikova, E.A. (Fedorov)

- 28 Mattick (Fedorov)
28, 42 Löve, A. 1940a, b; Soó, R. 1947; Sterk, A.A. *et al.* 1969; Sterk, A.A. & Den Nijs, J.C.M. 1971; Van Loon, J.C. *et al.* 1971
- 32 Roth, P. 1906; Kihara, H. & Ono, T. 1923a
- 40, 42 Meurman, O. 1924, 1925
- 41 ♂, 42 ♀ Kihara, H. 1925
- 42 Kihara, H. 1927a, b; Ono, T. 1930b, 1935; Tischler, G. 1934; Jensen, H.W. 1936b; Rohwedder, H. 1937; Löve, A. 1941, 1944b; Heiser, C.B. & Whitaker, T.W. 1948; Jørgensen, C.A. *et al.* 1958; Mulligan, G.A. 1959; Sorsa, V. 1962; Gadella, T.W.J. & Kliphuis, E. 1966; Singh, R.B. 1968a, b, 1971, 1972; Taylor, R.L. & Mulligan, G.A. 1968; Mallick, R. 1969
- 42 (38, 41, 43) Gardou, C. & Bigot, G. 1976
- dentatus** Linn.*
- 40 Jaretsky, R. 1928b; Pathak, G.N. *et al.* 1949; Datta, P.C. 1952; Raghavan, R.S. 1957; Löve, A. & Löve, D. 1961b; Mallick, R. 1969; Degraeve, N. 1975; Sarkar, A.K., Datta, R. *et al.* 1975; Bir, S.S. & Sidhu, M. 1980
- hastatus** Desf.**
- 18 Ono, T. 1933, 1935; Motegi, T. 1963
- hastatus** D. Don
- 18 Mallick, R. 1969
- maritimus** Lind.
- 20 Mallick, R. 1969
- 20, 40 Menshchikova, E.A. (Fedorov)
- 40 Kihara, H. & Ono, T. 1926; Jaretsky, R. 1927a, 1928b; Tischler, G. 1934; Takenaka, Y. 1941; Löve, A. 1942b, 1954b; Datta, P.C. 1952; Mulligan, G.A. 1959; Graham, S.A. & Wood, C.E. 1965; Degraeve, N. 1975; Javůrková, V. 1980
- palustris* Smith
- 40 Jaretsky, R. 1928b; Löve, A. 1942b; Degraeve, N. 1975
- nepalensis* Spreng
- 54 Sugitara, T. 1936a, b
- 120 Mehra, P.N. & Dhawan, H. 1966b; Löve, A. 1967; Degraeve, N. 1975
- patientia* Linn.
- 40, 60 Menshchikova, E.A. (Fedorov)
- 60 Kihara, H. & Ono, T. 1926; Kihara, H. 1927b; Jensen, H.W. 1936a; Löve, A. & Löve, D. 1961b; Graham, S.A. & Wood, C.E. 1965; Májovský, J. *et al.* 1970b
- orientalis* Bernh.
- 40 Bir, S.S. & Sidhu, M. 1978, 1980
- 60 Kihara, H. & Ono, T. 1926; Takenaka, Y. 1941 (D. 1955)
- scutellus* Linn.
- 20 Noda, K. 1926; Jaretsky, R. 1928b; Ono, T. 1935; Löve, A. 1942b; Mattick (Tischler, G. 1930); Kliphuis, E. & Wiering, J.H. 1972; Lessani, H. & Chariat-Panahi, S. 1979
- 40 Fikry, M.A. 1930
- acetosa scutellata* (Linn.) Mill.
- 20 Löve, A. 1942b, 1944a; Degraeve, N. 1976
- vesicarius* Linn.
- 18 Ono, T. 1935; Sugitara, T. 1936a, b; Datta, P.C. 1952; Van Loon, J.C. 1974; Humphries, C.J. *et al.* 1978
- 20 Jaretsky, R. 1928b
- Acetosa vesicaria* (Linn.) A. Löve
- 18 Degraeve, N. 1976
- Triplaris* Loefl. ex Linn.
- 25; tropical South America. 2; cultivated.

**Rumex dentatus sensu* Hook. f. FBI, 5: 59 (non Linn.) is a synonym of *R. dentatus* Linn. ssp. *klatschianus* (Meisn.) Reiche. f. (HFDD: 446).

**The combination *Rumex hastatus* should be attributed to D. Don (HFDD: 446).

americana Linn.

22 Bawa, K.S. 1973

surinamensis Cham.

22 Jaretzky, R. 1928b

PORTULACACEAE Juss.

19/580 ; cosmopolitan, but especially America. 3/11 ; chiefly in Western Peninsula, and Nepal and Sri Lanka a few cultivated.

Portulaca Linn.

200 ; tropics and subtropics. 7 ; warmer parts of India, and Sri Lanka a few cultivated.

grandiflora Hook.

10 Syakudo, K. *et al.* 1960

10, 18 Sultana, R. *et al.* 1972

18 Tjebbes, K. 1928, 1930 ; Steiner, E. 1944 ; Sharma, A.K. & Bhattacharyya, N.K. 1956b ; Bouharmont, J. 1965 ; Adachi, T. & Katayama, Y. 1967 ; Mii, M. & Iwasa, R. 1972 ; Khullar, S.P. & Datta, M. 1973 ; Khoshoo, T.N. 1979

18, 36 Furusato, K. 1940 ; Singh, A.K. 1979
cv. 'Jewel'

10 Adachi, T. & Katayama, Y. 1967 ;
Khoshoo, T.N. 1979

oleracea Linn.

14, 54 Hagerup, O. 1931

18, 54 Hagerup, O. 1932

36, 54 Khullar, S.P. & Dutta, M. 1973

45 Sharma, A.K. & Bhattacharyya, N.K. 1956b

52 Sugiura, T. 1936a, b

54 Cooper, D.C. 1935a ; Steiner, E. 1944 ; Heiser, C.B. & Whitaker, T.W. 1948 ; Bouharmont, J. 1965 ; Khoshoo, T.N. & Singh, R. 1966 ; Adachi, T. & Katayama, Y. 1967 ; Podlech, D. & Dieterle, A. 1969 ; Sanjappa, M. 1978 ; Bir, S.S. & Sidhu, M. 1980

c.54 Mulligan, G.A. 1961a

pilosa Linn.

16 Steiner, E. 1944 ; Adachi, T. & Katayama, Y. 1967 ; Mii, M. & Iwasa, R. 1972

18 Diers, L. 1961

quadrifida Linn.

36 Sharma, A.K. & Bhattacharyya, N.K. 1956b

48 Raghavan, T.S. & Srinivasan, A.R. 1941a ; Khullar, S.P. & Datta, M. 1973

50 Bouharmont, J. 1965

*quadrifolia**

54, 108 Khoshoo, T.N. & Singh, R. 1966

tuberosa Roxb.

18 Raghavan, T.S. & Srinivasan, A.R. 1941a

Talinum Adans.

50 ; warm America (especially Mexico), Africa and Asia. 3 ; North Western, Western and Peninsular India, and Nepal and Sri Lanka - a few cultivated.

paniculatum (Jacq.) Gaertn.

24 Steiner, E. 1944 ; Tjio, J.H. 1948

patens Willd.

24 Sugiura, T. 1936a, b, 1938, 1940a

triangulare Willd.

48 Sugiura, T. 1938, 1940a

72 Steiner, E. 1944

*The specific epithet is probably *quadrifida*.

POTALIACEAE Mart.

4/70 ; tropics. 1/11 ; Eastern India, Deccan Peninsula and the Andamans, and Bhutan and Sri Lanka.

Fagraea Thunb.

35 ; Indo-Malesia, South East Asia, North Australia and Pacific. 11 ; Eastern India, Deccan Peninsula and the Andamans, and Bhutan and Sri Lanka.

callanica Thunb.

66 Gadella, T.W.J. 1963c

cochinchinensis A. Chev.*fragrans* Roxb.

12 Mohrbutter, C. 1936 ; Janaki Ammal, E.K. (Fedorov)

reylanica Thunb.*

66 Janaki Ammal, E.K. 1954

PRIMULACEAE Vent.

20/1,000 cosmopolitan, but especially North temperate. 9/164 ; chiefly in temperate and alpine Himalaya (up to 5,940 m) and in Nepal and Bhutan, a few in Pakistan and Sri Lanka.

Anagallis Linn.

28 ; West Europe, Africa and Madagascar, 1 pantropical and 2 in South America. 3 ; Western Ghats, mountains of Bihar, Central India, Central and North Western Himalaya, and Nepal and Sri Lanka.

arvensis Linn.

- 22 Amin, A. 1973b
40 Tischler, G. 1937 ; Löve, A. & Löve, D. 1944b, 1956b ; Delay, C. 1947 ; Heiser, C.B. & Whitaker, T.W. 1948 ; Reese, G. 1957 ; Marsden-Jones, E.M. & Weiss, F.E. 1960 ; Gadella, T.W.J. & Kliphuis, E. 1963, 1966 ; Švečková, G. 1968, 1972 ; Kress, A. 1969 ; Májovský, J. *et al.* 1970b ; Dahlgren, R. *et al.* 1971 ; Van Loon, J.C. 1974 ; Brand, C.V.D. *et al.* 1979 ; Javůrková, V. 1979 ; Sanjappa, M. & Sathyananda, N. 1979 ; Van Loon, J.Chr. & Kieft, B. 1980

spp. arvensis

- 40 Strid, A. 1971 ; Kliphuis, E. & Wieffering, J.H. 1972

var. *arvensis*

40 Kollmann, F. & Feinbrun, N. 1968

var. *caerulea* (Linn.) Gouan

40 Kollman, F. & Feinbrun, N. 1968

Androsace Linn.

100 ; North temperate. About 21 ; chiefly in Himalaya (up to 5,600 m), and Nepal and Bhutan.

chamaejasme Host

- 20 Favarger, C. 1934, 1938 ; Skalińska, M. *et al.* 1959 ; Weislo (Skalińska, M. *et al.* 1959) ; Packer, J.G. 1964 ; Uhríková, A. & Pačlová, L. 1978

geraniifolia Watt

- 18 Sarkar, A.K. 1967 ; Sharma, A. & Sarkar, A.K. 1967-1968

rotundifolia Hardw.

20 Kress, A. 1969

sarmentosa Wall.

- 20 Matveeva & Tixonova (Fedorov) ; Sharma, A. & Sarkar, A.K. 1967-1968

* The specific epithet is *callanica*

var. *primuloides*

primuloides Duby

20 Favarger, C. 1958

sempervivoides Jacq. ex Duby

20 Favarger, C. 1958

umbellata Merr.

18 Hsu, C.-C. 1968

villosa Linn.

20 Guinochet, M. & Quézel, P. 1954 ;
Quézel, P. 1957 ; Favarger, C. 1958 ;
Kress (Löve, A. & Löve, D. 1961b) ;
Zhukova, P.G. 1967b ; Ritter, J.
1972 ; Lovka, M. *et al.* 1971

72 Sokolovskaya, A.P. & Streikova, O.S.
(Fedorov)

Cortusa Linn.

10 ; mountains of Central Europe to
Japan and Sakhalin. 1 ; Kashmir (up to
3,000 m).

matthiolii Linn.

24 Bruun, H.G. 1932b ; Matsuura, H. &
Sutô, T. 1935 ; Wulff (Tischler, G.
1950) ; Skalińska, M. *et al.* 1959 ;
Pogan (Skalińska, M. *et al.* 1959) ;
Zhukova, P.G. 1967b ; Májovský, J.
et al. 1970b ; Peev, D. 1977a

Cyclamen Linn.

15 ; Europe, and Mediterranean to
Persia. 3 ; cultivated.

africanum Boiss. & Reut.

32-36 Heitz, E. 1926

32 Hocquette, M. & Lys, J. 1954

34 Lepper (Schwarz, O. 1964) ; Lepper,
L. 1968a

68 de Haan, I. & Doorenbos, J. 1951 ;
Legro, R.A.H. 1959

72 Glasau, F. 1939

hederifolium Ait.

neapolitanum Ten.

* 24 Kozuharov, S. & Kuzmanov, B. 1964b

32 Hocquette, M. & Lys, J. 1954

32-36 Heitz, E. 1926

34 Legro, R.A.H. 1959 ; Lepper (Schwarz,
O. 1964) ; Lepper, L. 1968a,
1970b ; Susnik, F. & Lovka, M. 1973

c.34 Larsen, K. & Lagaard, S. 1971

36 Glasau, F. 1939

54 de Haan, I. & Doorenbos, J. 1951

persicum Mill.

24 Hocquette, M. & Lys, J. 1954

48, 84-88 Heitz, E. 1926

48 Glasau, F. 1939 ; de Haan, I. &
Doorenbos, J. 1951 ; Legro, R.A.H.
1959 ; Lepper (Schwarz, O. 1964)

Lysimachia Linn.

200 ; cosmopolitan, especially East Asia
and North America. 12 ; chiefly between
1,320 and 3,300 m in the Himalaya, 2 in
Western Ghats, and Nepal, Bhutan and
Bangla Desh.

congestiflora Hemsl.

48 Hara, H. & Kurosawa, S. 1965 ; Kuro-
sawa, S. 1966

debilis Wall.

84 Hara, H. & Kurosawa, S. 1965 ; Kuro-
sawa, S. 1966, 1971b

evulvis Wall.

30 Kurosawa, S. 1971b

ferruginea Edgew.

48 Kurosawa, S. 1966

japonica Thunb.*

18 Sharma, A. & Sarkar, A.K. 1967-
1968

20 Jinno, T. 1956a ; Hara, H. & Kuro-
sawa, S. 1959a ; Borgmann, R. 1964

laxa Bauda

ramosa Wall.

20 Kurosawa, S. 1971b

prolifera Klatt

24 Sharma, A. & Sarkar, A.K. 1967-
1968 ; Kurosawa, S. 1971b

**Lysimachia japonica* Thunb. of FBI, 3 : 505 in parts are synonyms of *L. congestiflora* Hemsl., *L. debilis* Wall. and *L. ferruginea* Edgew. (FEH : 245-246).

pyramidalis Wall.

- 24 Shetty, B.V. & Subramanyam, K.
1971

stricta Lam.

- 20 Sarkar, A.K. *et al.* 1974

sp.

- 18 Sarkar, A.K. 1967

***Primula* Linn.**

500 ; North hemisphere, chiefly in hilly districts. 130 ; confined between 2, 320 and 5,940 m in the Himalaya, with 2-3 descending as low as 660 m, and 1 extending to Upper Gangetic Plain, and Nepal and Bhutan - a few cultivated.

auricula Linn.

- 54 Marchal, E. 1920 ; Vokolek, H.
1926 ; Zhukova, P.G. 1967b
56 ? Bruun, H.G. 1930, 1932b
62 Wanner, H. 1943 ; Chiarugi, A. 1956 ;
Skalifiska, M. *et al.* 1959 ; Susnik, F.
et al. 1972
62, 66 Kress, A. 1963a
72 Ernst, A. 1922 ; Ernst, A. & Moser,
F. 1925 ; Strub, W. 1940

batifolia King ex Hook. f.

- 20 Bruun, H.G. 1930, 1932b
40 Kress, A. 1969

bryana Balf. f.

- 20 Bruun, H.G. 1932b

capitata Hook.

- 18 Bruun, H.G. 1930, 1932b

ssp. crispata (Balf. f. & Smith) Smith & Forrest*crispata* Balf. f. & Smith

- 18 Bruun, H.G. 1930, 1932

ssp. mooreana (Balf. f. & Smith) Smith*mooreana* Balf. f. & Smith

- 18 Bruun, H.G. 1930, 1932

*chinensis**

- 22 Sarkar, A.K. 1967

clarkei Watt

- 22 Kress, A. 1963b

denticulata Smith

- 22 Kumar, V. & Chauhan, K.P.S.
22, 22+5f Bruun, H.G. 1930, 1931b
22, 22f,
44 Bruun, H.G. 1932b

var. cashmeriana Hort.*cachemeriana* Munro

- 52 Bruun, H.G. 1932b

didyma Smith

- 22 Bruun, H.G. 1932b

elatior (Linn.) Hill

- 22 Huskins, C.L. 1929 ; Bruun, H.G.
1930, 1932b ; Tischler, G. 1934 ;
Mattick (Tischler, G. 1950) ; Valen-
tine, D.H. 1952 ; Vazart, B. 1955 ;
Susnik, F. *et al.* 1972

elliptica Royle

- 22 Bruun, H.G. 1930, 1932b

elongata Wall.*

- 22 Sarkar, A.K. 1973

floribunda Wall.

- 18 Digby, L. 1912 ; Dahlgren, K.V.O.
1916 ; Marchal, E. 1920 ; Newton,
W.C.F. & Fellow, C. 1929 ; Bruun,
H.G. 1930, 1932b ; Bohlin, J.-E. &
Sjodin, K. 1979

gambeliana Watt

- 22 Bruun, H.G. 1930, 1932b

geraniifolia Hook.

- 22 Bruun, H.G. 1930, 1932b

glabra Klatt

- 16 Bruun, H.G. 1930, 1932b

glomerata Pax*crispa* Balf. f. & Smith

- 44, 44+1f Bruun, H.G. 1930, 1931b, 1932b

gracilipes Craib

- 22 Malla, S.B. *et al.* 1974

hayatii Duthie

- 16 Bruun, H.G. 1930, 1932b

*The specific epithet should be *simensis*.

*The combination *Primula elongata* should be attributed to G. Watt.

- tothina* Balf. f.
18 Sarkar, A.K. 1973
- involuta* Wall.
22 Lepper, L. 1970b
44 Bruun, H.G. 1930, 1932b
- japonica* A. Gray
44 Inuma, M. 1926 ; Richardson, M.M. 1930 ; Bruun, H.G. 1932b ; Sarkar, A.K. 1967, 1973 ; Kress, A. 1969
- khasiana* Balf. f. & Smith
22 Sharma, A. & Sarkar, A.K. 1967-1968 ; Sarkar, A.K. 1973
- lactocapitata* Balf. f. & Smith
18 Bruun, H.G. 1930, 1932b
- malacoides* Franch.
18 Sugiura, T. 1928 ; Sarkar, A.K. 1967, 1973
18, 36 Bruun, H.G. 1930, 1932b ; Kattermann, G. 1934
24 Marchal, E. 1920
36 Kobei, F. 1927a ; Kattermann, G. 1935
- menziesiana* Balf. f. & Smith
40 Bruun, H.G. 1930, 1932b
- mollis* Nutt. ex Hook.
24 Bruun, H.G. 1930, 1932b
- obconica* Balf. f.*
24 Marchal, E. 1920
24, 48 Bruun, H.G. 1930, 1932b
- obconica* Hance
22 Sharma, A. & Sarkar, A.K. 1967-1968 ; Sarkar, A.K. 1973
- patibularis* Wall.
22 Sarkar, A.K. 1967, 1973 ; Malla S.B. et al. 1976
- polyantha* Hort.
22 Chittenden, R.J. 1928 ; Sharma, A. & Sarkar, A.K. 1967-1968 ; Sarkar, A.K. 1973
- primulina* (Spreng.) Hara
18 Malla, S.B. et al. 1979
- prolifera* Wall.
22 Kress, A. 1963b ; Sharma, A. & Sarkar, A.K. 1967-1968 ; Sarkar, A.K. 1973
- imperialis* Jungh.
22 Bruun, H.G. 1930, 1932b
- reidii* Duthie
20 Kumar, V. & Chauhan, K.P.S.
- repens* Hook. f.
22 Bruun, H.G. 1930, 1932b
- reticulata* Wall.
22 Bruun, H.G. 1930, 1932b
- rivula* Lign.
18 Sharma, A. & Sarkar, A.K. 1967-1968
- rosea* Royle
22 Bruun, H.G. 1930, 1932b
- scapigera* Craib
22 Sarkar, A.K. 1967 ; Sharma, A. & Sarkar, A.K. 1967-1968
- sikkimensis* Hook.
18 Sharma, A. & Sarkar, A.K. 1967-1968 ; Sarkar, A.K. 1967
22 Bruun, H.G. 1930, 1932b ; Zhukova, P.G. 1967b
- var. *pubibunda* (Smith) Smith & Fletch.
pubibunda Smith
22 Bruun, H.G. 1930, 1932b
- siensis* Linn.**
22 Sharma, A. & Sarkar, A.K. 1967-1968
- siensis* Lindl.
22 Sarkar, A.K. 1973
24 Gregory, R.P. 1909 ; Keeble, F. 1912 ; Vokolek, H. 1926 ; Bruun, H.G. 1930, 1932b ; Sugiura, T. 1936a, b
24, 36, 48 Schome, A.S. 1930
24, 48 Darlington, C.D. 1931a
36 Dark, S.O.S. 1931
48 Gregory, R.P. 1914 (Bruun, H.G. 1932b) ; Belling, J. & Blakeslee, A.F. (Federov) ; Haldan, J.B.S. 1931

*The combination *Primula obconica* should be attributed to Hance.

**The combination *P. siensis* should be attributed to Sabine ex Lindl. (DEP1 : 138).

tepella King

- 22 Sharma, A. & Sarkar, A.K. 1967-1968

tibetica Watt

- 20 Bruun, H.G. 1930, 1932b

varia Linn.

- 22 Bruun, H.G. 1930, 1932b; Turesson, G. 1938; Valentine, D.H. 1952; Kress, A. 1963b; Gadella, T.W.J. & Kliphuis, E. 1966; Sarkar, A.K. 1967; Zhukova, P.G. 1967b; Laane, M.M. 1969b

officinalis Hill

- 18 Marchal, E. 1920
-
- 22 Dahlgren, K.V.O. 1916; Chittenden, R.J. 1928; Huskins, C.L. 1929; Harrison, J.W.H. 1931 (Tischler, G. 1935-1936); Tischler, G. 1934; Sokolovskaya (Fedorov)

vilgaris Huds.

- 22 Chittenden, R.J. 1928; Huskins, C.L. 1929; Bruun, H.G. 1930, 1932b; Matveeva, T.S. & Tikhonova, A.D. (Fedorov); Larsen, K. & Lagaard, S. 1971; Humphries, C.J.
- et al.*
- 1978

ocaulis (Linn.) Hill

- 22 Harrison, J.W.H. 1931 (Tischler, G.

1935-1936); Tischler, G. 1934

ssp. vilgaris

- 22 Peev, D. 1977a; Kieft, B. & Van Loon, J. Chr. 1978; Václavá, M. & Májovský, J. 1980

wattii King *ex* Watt

- 20 Kress, A. 1969

wollastonii Bal.f.

- 20 Bruun, H.G. 1930, 1932b

Samolus Linn.

10-15; cosmopolitan, especially Southern hemisphere. 1; Western Himalaya.

valerandi Linn.

- c.24 Wulff, H.D. 1937a
-
- 24 Larsen, K. 1960
-
- 26 Mori, M. 1957; Skalláska, M. (Skallíáska, M.
- et al.*
- 1961); Gadella, T.W.J. & Kliphuis, E. 1968a, 1970a; Delay, J. 1969b; Podtch, D. & Dieterle, A. 1969; Larsen, K. & Lagaard, S. 1971; Strid, A. 1971; Brand, C.V.D.
- et al.*
- 1979
-
26. 36 Tarnavski, I.T. 1948
-
- 36 Leveque, M. & Gorenflot, R. 1969

PROTEACEAE Juss.

62/1,050; tropical Asia, Malaysia, Australia, New Zealand, tropical South America, Chile, mountains of tropical Africa, South Africa and Madagascar. 7/14; native ones in Eastern Himalaya and South Western India, and Bangla Desh and Sri Lanka some cultivated.

Banksia Linn. f.

50; Australia. A few cultivated.

margiata Cav.

- 22 Rao, C.V. 1964

currata Linn. f.

- 28 Lancaster (D. 1955); Ramsay, H.P. 1963; Rao, C.V. 1964

Grevillea R. Br.

190; East Malaysia, New Hebrides,

New Caledonia and Australia. 1; cultivated.

robusta Cunn. *ex* R. Br.

- 20 Sugiura, T. 1936a, b; Kausik S.B. 1938; Lancaster (D. 1955); Ramsay, H.P. 1963

Hakea Schrad.

100; Australia: 1; cultivated.

acicularis R.Br.

- 20 Lancaster (D. 1955)

sericea Schrad.

20 Ramsay, H.P. 1963

Helicia Lour.

90 ; East and South East Asia, Indo-Malesia and East Australia. 7 ; Eastern Himalaya, South-Western India, and Bangla Desh and Sri Lanka.

exceles Blume

28 Mehra, P.N. & Hans, A.S. 1969

nilagirica Bedd.

erratica Hook. f.

28 Mehra, P.N. & Hans, A.S. 1969

Leucadendron R. Br.

80 ; South Africa. 1 ; introduced.

argenteum R. Br.

26-28 ? de Vos, M.P. 1943

Macadamia F. Muell.

10 ; 1 in Madagascar, 1 in Celebes, 5 in East Australia and 3 in New Caledonia. 1 ; cultivated.

ternifolia F. Muell.

28, 56 Urata (D. 1955)

36 Sarker, A.K., Datta, N. *et al.* 1976

PUNICACEAE Horan

1/2 ; South East Europe to Himalaya, and Socotra. 1/1 ; cultivated.

Punica Linn.

2 ; 1 endemic in Socotra, 1 Balkans to Himalaya, and cultivated. 1 ; cultivated.

granatum Linn.

14, 15, 16,

18 Guha, S. 1972

16 Morinaga, T. *et al.* 1929 ; Yasui, K. 1936a ; Povolotschko, P.A. (Fedorov) ; Delay, C. 1947 ; Tjio, J.H.

1948 ; Thombre, M.V. 1959b ; Mihgo, J. 1960b

16+0-4B Mehra, P.N. & Gill, B.S. 1971 ; Mehra, P.N. 1972

16+0-7B Gill, B.S., Bir, S.S. & Singhal, V.K. 1980

18 Pruss, A.G. (Fedorov) ; Dollon, T. & Hamel, J.L. 1967

18, 19 Kostoff, D. *et al.* (Fedorov)

var. *nana*

18 Dollon, T. & Hamel, J.L. 1967

PYROLACEAE Dum.

3/30 ; cold North temperate and arctic. 1/2 ; Himalaya and Khasi Hills.

Pyrola Linn.

20 ; North temperate. 2 ; Himalaya and Khasi Hills.

rotundifolia Linn.

32 Samuelsson, G. 1913

46 Hagerup, O. 1928, 1941a ; Tischler, G. 1934 ; Rohweder, H. 1937 ; Löve, A. & Löve, D. 1948 ; Böcher, T.W. 1961b ; Sorsa, V. 1963b ; Skalińska, M. *et al.* 1971 ; Faason, P.V. & Nadeau, P. 1976

RANUNCULACEAE Juss.

50/1,900 ; chiefly North temperate. 20/160 ; mostly confined to mountainous regions, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Aconitum Linn.

300 ; North temperate. About 30 ; temperate and alpine Himalaya (between 2,300 and 5,000 m).

blava (Ham.) Rapaics

30 Bhattacharjee, A. 1979

palmatum D. Don

46 Sharma, A. & Sarkar, A.K. 1967-1968

48 Schafer, B. & La Cour, L. 1934

chamananthum Stapf & Holmes

16 Schafer (D. 1945) ; Mehra, P.N. & Sobti, S.N. 1955

delacourthum Stapf

32 Mehra, P.N. & Sobti, S.N. 1955

forex Wall. ex Ser.

20 Bir, S.S. & Thakur, H.K. 1980

34 Sharma, A. & Sarkar, A.K. 1967-1968

heterophyllum Wall.

16 Schafer, B. & La Cour, L. 1934 ; Mehra, P.N. & Sobti, S.N. 1955 ; Mehra, P.N. & Remanandan, P. 1972 ; Bhat, B.K. *et al.* 1975

kashmiricum Stapf & Coventry

16 Mehra, P.N. & Sobti, S.N. 1955 ; Mehra, P.N. & Remanandan, P. 1972

laciniatum Stapf

40 Sharma, A. & Sarkar, A.K. 1967-1968

lycoctosum Linn.

16 Mehra, P.N. & Remanandan, P. 1972

laeve Royle

16 Mehra, P.N. & Sobti, S.N. 1955

novoburidanum Munz

16 Bhattacharjee, A. 1979

viridum Hook. f. & Thoms.

16 Afify, A. 1933a ; Schafer, B. & La Cour, L. 1934 ; Sharma, A. & Sarkar, A.K. 1967-1968

spicatum Stapf

32 Kurosawa, S. 1966

violaceum Jacq.

16 Mehra, P.N. & Sobti, S.N. 1955

Actaea Linn.

10 ; North temperate. 1 ; temperate Himalaya, and Bhutan.

acuminata Wall. ex Royle

16 Sokolovskaya, A.P. (Fedorov)

spicata Linn.*

16 Langlet, O.F.J. 1927a ; Rodriguez 1949 ; Pólya, L. 1950 ; Skalińska, M. *et al.* 1959 ; Gadella, T.W.J. & Kijphuis, E. 1963, 1968a ; Sorsa, V. 1963b ; Laano, M.M. 1971 ; Susnik, F. *et al.* 1972 ; Van Loon, J. Chr. & Kieft, B. 1980

c.32 Mattick (Tischler, G. 1950)

Adonis Linn.

20 ; North palaeotemperate. 2 ; Western Himalaya.

aestivalis Linn.

32 Langlet, O.F.J. 1927a ; Gregory, W.C. 1941 ; Kurita, M. 1963 ; Bhat, B.K. *et al.* 1972

chrysocyathus Hook. f. & Thoms.

32 Mehra, P.N. & Remanandan, P. 1972

* *Actaea spicata* of FBI, 1 : 29 is a synonym of *A. acuminata* Wall. ex Royle (FBH, 2 : 27).

Anemone Linn.

150 ; cosmopolitan. 19 ; temperate and alpine Himalaya (between 1,300 and 5,600 m), and Bhutan and Sri Lanka.

biflora DC.

16 Durani, P.K. & Kaul, V. 1969

demissa Hook. f. & Thoms.

14 Langlet, O.F.J. 1936 ; Baumberger, Von H. 1971

elongata D. Don

16 Baumberger, Von H. 1941

japonica Sieb. & Zucc.

16 Takamine, N. 1916 ; Nakajima, G. 1931 ; Langlet, O.F.J. 1932 ; Moffett, A.A. 1932a ; Matsuura, H. & Sudo, T. 1935 ; Gregory, W.C. 1941 ; Baumberger, Von H. 1971 ; Roy, S.C. & Sharma, A.K. 1971

narcissifolia Linn.

narcissiflora Linn.

14 Langlet, O.F.J. 1932, 1936 ; Sakai, K. 1934 ; Gregory, W.C. 1941 ; Larsen, K. 1954a ; Kurita, M. 1955b, 1957a ; Treha, Z. 1958 ; Zhukova, P.G. 1967b ; Johnson, A.W. & Packer, J.G. 1968 ; Knaben, G. 1968 ; Lee, Y.N. 1969 ; Baumberger, Von H. 1971

c.14-16 Langlet, O.F.J. 1927a

16 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)

var. *fasciculata* (Linn.) DC.

fasciculata Linn.

14 Heimbürger, M. 1959 ; Zhukova, P.G. (Fedorov)

32 Moffett, A.A. 1932a ; Zhukova, P.G. (Fedorov)

var. *polyanthes* Finet & Gagnep

polyanthes D. Don

14 Mehra, P.N. & Kaur, B. 1963

16 Langlet, O.F.J. 1932 ; Baumberger, Von H. 1971

obtusifolia D. Don*

16 Sobti, S.N. & Singh, S.D. 1961

obtusiloba D. Don

14 Mehra, P.N. & Kaur, B. 1963 ; Roy, S.C. & Sharma, A.K. 1971 ; Bhat, B.K. *et al.* 1972

26 Mehra, P.N. & Remanandan, P. 1972

var. *glabra* Wint.

14 Mehra, P.N. & Remanandan, P. 1972

pusatilla Linn.

32 Moffett, A.A. 1932a ; Sakai, K. 1935a ; Rosenthal, C. 1936 ; Gregory, W.C. 1941 ; Delay, C. 1947

albana Stev.

16 Langlet, O.F.J. 1932

rivularis Buch.-Ham. ex DC.

14 Sharma, A. & Sarkar, A.K. 1967-1968

14, 16 Roy, S.C. 1968

16 Mehra, P.N. & Kaur, B. 1963 ; Mehra, P.N. & Remanandan, P. 1972 ; Baumberger, Von H. 1971

16, 28 Roy, S.C. & Sharma, A.K. 1971

rupicola Camb.

16 Heimbürger, M. 1959

16, 32, 48 Baumberger, Von H. 1971

32 Langlet, O.F.J. 1927a, 1932 ; Moffett, A.A. 1932a

tetrasepala Royle

14 Baumberger, Von H. 1971

32 Kurita, M. 1958b

trullifolia Hook. f. & Thoms.

28 Malla, S.B., Bhattarai, S. *et al.* 1978a

vitifolia Buch.-Ham. ex DC.

14 Roy, S.C. & Sharma, A.K. 1971 ; Mehra, P.N. & Remanandan, P. 1972

16 Langlet, O.F.J. 1932 ; Moffett, A.A. 1932a ; Gajowski, W. 1947 ; Mehra, P.N. & Kaur, B. 1963 ; Kurosawa, S. 1966 ; Baumberger, Von H. 1971

Aquilegia Linn.

100 ; North temperate. 7 ; temperate and alpine Himalaya.

alpina Linn.

14 Lewitsky, G.A. (Fedorov) ; Gregory,

*The specific epithet should be *obtusiloba*.

328 RANUNCULACEAE

W.C. 1941, Kurita, M. 1957f, 1958a ;
Pražmo, W. 1965

canadensis Linn.

- 14 Winge, O. 1925 ; Gregory, W.C.
1941 ; Zhukova, P.G. (Fedorov),
1967b ; Linnert, G. 1961 ; Lewis,
W.H. *et al.* 1962 ; Pražmo, W. 1965 ;
Roy, S.C. & Sharma, A.K. 1971 ;
Mehra, P.N. & Romanandan, P. 1972

fragrans Benth.

- 14 Zhukova, P.G. (Fedorov), 1967b

glanulosa Fisch. ex Link

- 14 Sokolovskaya, A.P. & Strelkova,
O.S. (Fedorov) ; Gregory, W.C. 1941 ;
Linnert, G. 1961
14, 16 Zhukova, P.G. 1961, 1967b
18 Sokolovskaya, A.P. & Strelkova, O.S.
(Fedorov)

juvenda Fisch. & Mey.

- 14 Gregory, W.C. 1941

pyrenaica DC.

- 14 Zhukova, P.G. (Fedorov), 1967b ;
Kupfer, PH. 1971

glauca Lindl.

- 14 Zhukova, P.G. (Fedorov), 1967b

olympica Boiss.

- 14 Kurita, M. 1957f
14, 16 Zhukova, P.G. 1967b
14, 16, 28 Zhukova, P.G. (Fedorov)
16 Sokolovskaya, A.P. & Strelkova, O.S.
(Fedorov)

virgata Linn.

- 14 Langlet, O.F.J. 1927a ; Skalníška, M.
1928, 1950 ; Gregory, W.C. 1941 ;
Delay, C. 1947 ; Manick (Tischler, G.
1950) ; Pražmo, W. 1960, 1965 ; Lin-
nert, G. 1961 ; Sobti, S.N. & Singh,
S.D. 1961 ; Curran, P.L. 1968 ;
Mehra, P.N. & Romanandan, P. 1972
14, 28 Pereira, A. de L. 1948
16 Anderson, E. & Schafer, B. 1931

Caltha Linn.

20 ; arctic and North temperate, 12 in
New Zealand and temperate South America.
3 ; Western temperate Himalaya (from 2,600
to 3,300 m) and Eastern alpine Himalaya
(from 5,000 to 5,600 m), and Nepal.

gotaniana Wall. ex Royle

c.80 Kurosawa, S. 1971b

palustris Linn.

- 28 Nygren (Löve, A. & Löve, D. 1948) ;
Sorsa, V. 1962
32 Langlet, O.F.J. 1927a ; Lewitsky,
G.A. (Fedorov) ; Tischler, G. 1934 ;
Rohwedder, H. 1937 ; Gregory, W.C.
1941 ; Delay, C. 1947 ; Felföldy,
L.J.M. 1947a ; Pólya, L. 1950 ; Skalní-
ška, M. *et al.* 1959 ; Packer, J.G.
1964 ; Lee, Y.N. 1969 ; Laane, M.M.
1971
32, 32+, 3B,
52, 54, 55,
56, 56+
6B, 57, 58,
60, 64 Kootin-Sanwu, M. & Woodell, S.R.J.
1970
32, 38, 44,
50, 56, 72 Wcislo, H. 1968
32, 44, 56 Smit, P.G. 1967
32, 48 Leoncini, M.L. 1951
32, 48, 56 Sokolovskaya, A.P. & Strelkova, O.S.
(Fedorov)
32, 48, 56,
58, 60 Wcislo, H. 1967a
32-35 ;
53-65 Reese, G. 1952a
32, 48,
53-60+
1-6B Reese, G. 1954a, b
32, 54 Long, S.P. 1972
32, 56 Sokolovskaya, A.P. & Strelkova, O.S.
(Fedorov) ; Sokolovskaya, A.P. (Fedo-
rov) ; Wcislo, H. 1964 ; Smit, P.G.
1970
32, 56-70 Johnson, A.W. & Packer, J.G. 1968
32, 56, 58 Langlet, O.F.J. 1932
40 Mehra, P.N. & Romanandan, P.
1972
48 Sokolovskaya, A.P. & Strelkova, O.S.
(Fedorov) ; Roy, S.C. & Sharma,
A.K. 1971 ; Kumar, V. & Chhabra,
K.P.S.
56 Langlet, O.F.J. 1936 ; Sokolovskaya,
A.P. & Strelkova, O.S. (Fedorov) ;
Bormann, F.H. & Beatty, A.V. 1955 ;
Sokolovskaya, A.P. (Fedorov) ; Koo-
tin Sanwu, M. 1964
56, 60 Maugini, B. 1953 ; Leoncini, M.L.
1952
60 Mosquin, T. & Hayley, D.E. 1966
c.60 Hedberg, O. 1967

- 2n=32 × 56
 32, 44, 56 Smit, P.G. 1968
 2n=32 × 56
 42-45 Kootin-Sanwu, M. & Woodell, S.R.J.
 1971
 2n=56 × 64
 56-63 Kootin-Sanwu, M. & Woodell, S.R.J.
 1971

var. *alba* ?

- 44 Smit, P.G. 1967

var. *alba* Hook. f. & Thoms.

- c.48 Kurosawa, S. 1971b

var. *himalensis* (D. Don) Mukerjee

- 32 Kurosawa, S. 1971b

var. *normalis* Hook.

- 32, 32+4B Malik, C.P. & Mary, T.N. 1970a

scaposa Hook. f. & Thoms.

- ± 64 Mehra, P.N. & Kaur, B. 1963

Cimicifuga Wern.

15; North temperate, 1; temperate
 Himalaya, and Bhutan (between 2,300 and
 4,000 m).

foetida Linn.

- 16 Lewitsky, G.A. (Fedorov); Nakajima,
 G. 1933; Emura (Hasegawa), K.M.
 1970b
 16, 32 Emura (Hasegawa), K.M. 1970a
 32 Hasegawa, K.M. 1969

Clematis Linn.

250; cosmopolitan, chiefly temperate.
 20; chiefly Himalayan, and Bhutan and Sri
 Lanka.

acuminata DC.

- 16 Roy, S.C. & Sharma, A.K. 1971

berbelata Edgew.

- 16 Mehra, P.N. & Kaur, B. 1963

bourdillonii Duan.

- 48 Sobha, V. & Ramachandran, K. 1980

bocharaniana DC.

- 16 Mehra, P.N. & Kaur, B. 1963

coarctata Linn.*

- 16 Bir, S.S. & Thakur, H.K. 1980

dioscoreifolia Levl. & Vaniot.

- 16 Mehra, P.N. & Kaur, B. 1963

flammula Linn.

- 16 Meurman, O. & Therman, E. 1939;
 Kurita, M. (Fedorov)
 18 Roy, S.C. & Sharma, A.K. 1971

gouriana Roxb.

- 16 Raghavan, R.S. & Arora, C.M. 1938;
 Gajapathy, C. 1962b; Mehra, P.N. &
 Kaur, B. 1963

42, 48, 50 Sharma, A.K. & Sharma, A. 1957

grata Wall.

- 16 Bir, S.S. & Thakur, H.K. 1980

montana Buch.-Ham. ex DC.

- 16 Meurman, O. & Therman, E. 1939;
 Mehra, P.N. & Remanandan, P.
 1972

- 16, 32 Schneider, F. 1963

nepalensis DC.

- 16 Kurosawa, S. 1971b; Roy, S.C. &
 Sharma, A. K. 1971

orientalis Linn.

- 16 Sobai, S.N. & Singh, S.D. 1961;
 Shambulingappa, K.G. 1966; Podlech,
 D. & Dieterle, A. 1969

punicata J.F. Gmel.

- 16 Langlet, O.F.J. 1927a
 16, 64 Gregory, W.C. 1941
 36 Roy, S.C. & Sharma, A.K. 1971
 48 Meurman, O. & Therman, E. 1939;
 Bir, S.S. & Thakur, H.K. 1980

puberula Hook. f. & Thoms.

- 16 Malla, S.B., Bhattarai, S. *et al.*
 1977a; Bir, S.S. & Thakur, H.K.
 1980

*The combination *Clematis coarctata* should be attributed to DC.

330 RANUNCULACEAE

roylei Rehder

nutans Royle

16 Mehra, P.N. & Kaur, B. 1963

smilacifolia Wall.

48 Sobha, V. & Ramachandran, K. 1980

theobromina Dunn.

48 Sobha, V. & Ramachandran, K. 1980

wattii Drumms. & Craib.

16 Malla, S.B., Bhattarai, S. *et al.* 1977a

wightiana Wall.

48 Sobha, V. & Ramachandran, K. 1979

Delphinium Linn.

250 ; North temperate. 15 ; Himalaya (chiefly temperate and alpine up to 6,000 m) and Punjab - a few cultivated.

najacis Linn.

16 Guignard, L. 1889 ; Langlet, O.F.J. 1927a ; Tjebbes, K. 1927, 1928 ; Lewitsky, G.A. (Fedorov) ; Gregory, W.C. 1941 ; Kurita, M. 1955c, 1957e ; Legro, R. 1961 ; Basak, S.L. & Jain, H.K. 1963 ; Mehra, P.N. & Remanandan, P. 1972

24 Bönnicke, L. 1971

cv. 'Comet'

16 Singh, U. & Jain, H.K. 1979

altissimum Wall.

16 Mehra, P.N. & Kaur, B. 1963 ; Malla, S.B., Bhattarai, S. *et al.* 1977a

cardiopetalum DC.

16 Tjebbes, K. 1928 ; Lewitsky, G.A. (Fedorov) ; Mehra, P.N. & Remanandan, P. 1972

caelmariantha Royle

16 Propach, H. 1940 ; Zhukova, P.G. (Fedorov), 1967b

consolida Linn.

16 Hocquette, M. 1922 ; Langlet, O.F.J. 1927a ; Tischler, G. 1927a, 1934 ; Tjebbes, K. 1927, 1928 ; Lewitsky, G.A. (Fedorov) ; Gregory, W.C. 1941

decaudatum Wall.

16 Mehra, P.N. & Kaur, B. 1963 ; Mehra, P.N. & Remanandan, P. 1972

elatium Linn.

32 Lewitsky, G.A. (Fedorov) ; Propach, H. 1940 ; Gregory, W.C. 1941 ; Delay, C. 1947 ; Sateczek (Skalińska, M. *et al.* 1959) ; Skalińska, M. *et al.* 1959 ; Zhukova, P.G. (Fedorov), 1967b ; Gajewski, W. 1963

vestitum Wall. *ex* Royle

16 Mehra, P.N. & Kaur, B. 1963 ; Malla, S.B., Bhattarai, S. *et al.* 1978b

Isopyrum Linn.

30 ; North temperate. 3 ; temperate and alpine Himalaya (up to 5,600 m).

adiantifolium Hook. *f.* & Thoms.

c.28 Kurosawa, S. 1966

thalictroides Linn.

14 Skalińska, M. *et al.* 1959 ; Taylor, R.L. 1967

Noravelia Adans. *mut.* DC.

6 ; Indo-Malesia. 1 ; tropical forests of Himalaya, Assam, Bengal and Peninsular India, and Nepal and Sri Lanka.

zeylanica DC.

16 Raghavan, R.S. & Arora, C.M. 1958

Nigella Linn.

20 ; Europe, Mediterranean to Central Asia. 2 ; cultivated.

damascena Linn.

12 Hocquette, M. 1922 ; Langlet, O.F.J. 1927a, 1932 ; Lewitsky, G.A. (Fedorov) ; Gregory, W.C. 1941 ; Pereira, A. de L. 1942 ; Delay, C. 1947 ; Kurita, M. 1956b, 1959a ; Bhattacharyya, N.K. 1958b ; Kapoor, B.M. 1966a ; Moutschen-Dahmen, J. *et al.* 1966 ; Björkqvist, I. *et al.* 1969 ; Natarajan, A.T. & Ahnstrom, G. 1969 ; Gilot-Delhalle, J. *et al.* 1976 ; Strid, A. 1970, 1971 ; Gadella, T. & Kliphuis, E. 1972 ; Moutschen, J. & Gilot-Delhalle, J. 1973 ; Marks, G.B. 1975 ; Bhandari, N.N. *et al.* 1976 ; Popova, M.T. & Česárhmedjiev, I.V.

1978 ; Van Loon, J. Chr. & Kieft, B. 1980

sativa Linn.

- 12 Hocquette, M. 1922 ; Langlet, O.F.J. 1927a, 1932 ; Lewitsky, G.A. (Fedorov) ; Gregory, W.C. 1941 ; Pereira, A. de L. 1942 ; Kurita, M. 1957d ; Bhattacharyya, N.K. 1958b ; Kapoor, B.M. 1966a ; Gilot-Delhalle, J. 1970 ; Gilot-Delhalle, J. *et al.* 1976
- 24 Biswas, A.K. & Chatterji, A.K. 1971

Oxygraphis Bunge

5 ; temperate Asia. 2 ; alpine Himalaya (from 4,000 to 6,000 m).

glacialis (Fisch.) Regel*

- 16 Sokolovskaya, A.P. & Sirekova, O.S. (Fedorov) ; Sokolovskaya, A.P. (Fedorov) ; Zhukova, P.G. (Fedorov)

glacialis (Fisch.) Bunge

- 16 Johnson, A.W. & Packer, J.G. 1968 ; Zhukova, P.G. *et al.* 1973 ; Dawe, J.C. & Murray, D.F. 1980
- 32 Mehra, P.N. & Kaur, B. 1963

Ranunculus Linn.

400 ; cosmopolitan, temperate and cold and tropical mountains. About 27 ; confined to the temperate and alpine Himalaya (up to 6,000 m), with a few species descending to the plains of Northern India, and Nepal, Bhutan, Pakistan and Sri Lanka.

adoxifolius Hand.-Mazz.

- c.48 Kurosawa, S. 1971b

affinis R. Br.

- 16 Sharma, A. & Sarkar, A.K. 1967-1968
- 28 Sokolovskaya, A.P. (Fedorov)
- 30 Roy, S.C. & Sharma, A.K. 1971
- 32 Holmen, K. 1952 ; Zhukova, P.G.

1961, 1969, (Fedorov) ; Johnson, A.W. & Packer, J.G. 1968 ; Zhukova, P.G. & Tikhonova, A.D. 1971, 1973 ; Zhukova, P.G. *et al.* 1973 ; Goepfert, D. 1974

- 48 Böcher, T.W. & Larsen, K. 1950

arvensis Linn.

- 32 Langlet, O.F.J. 1927a ; Larter, L.N.H. 1932 ; Tischler, G. 1934 ; Hindákova, (Fedorov) ; Májovský, J. *et al.* 1970a ; Roy, S.C. & Sharma, A.K. 1971 ; Bhat, B.K. *et al.* 1972 ; Mehra, P.N. & Remanandan, P. 1972 ; Goepfert, D. 1974

brocheri Freyn

- 32 Kurosawa, S. 1971b

cantonensis DC.

- 32 Kurita, M. 1955a

cymbalaria Pursh**

- 16 Langlet, O.F.J. 1927a ; Larter, L.N.H. 1932 ; Böcher (Löve, A. & Löve, D. 1948) ; Böcher, T.W. & Larsen, K. 1950 ; Rahn, K. 1960 ; Diers, L. 1961 ; Packer, J.G. 1964 ; Kapoor, B.M. & Löve, A. 1970 ; Kapoor, B.M. 1972 ; Goepfert, D. 1974 ; Scott, P.J. 1974

difusus DC.

- 32 Mehra, P.N. & Kaur, B. 1963 ; Sharma, A. & Sarkar, A.K. 1967-1968 ; Roy, S.C. & Sharma, A.K. 1971 ; Mehra, P.N. & Remanandan, P. 1972

falcatus Linn.

- 40 Langlet, O.F.J. 1932

Ceratocephala falcatus (Linn.) Pers.

- 28 Aryavand, A. 1977a

hirtellus Royle

- 16 Mehra, P.N. & Remanandan, P. 1972
- 16, 32 Kumar, V. & Chauhan, K.P.S.
- 24 Roy, S.C. & Sharma, A.K. 1971

*The combination *Oxygraphis glacialis* should be attributed to Bunge (DFPI : 122).

** *Ranunculus cymbalaria* Pursh *sensu* Hook. f., FBI, 1 : 17 *pro parte* is a synonym of *R. tricuspis* Maxim. (FEH, 3 : 37).

332 RANUNCULACEAE

- 28 Mehra, P.N. & Kaur, B. 1963
- hyperboreus* Rottb.
- 24 Sokolovskaya, A.P. 1968
- 32 Flovik, K. 1936, 1940; Langlet, O.F.J. 1936; Sørensen & Westergaard (Löve, A. & Löve, D. 1948); Böcher, T.W. & Larsen, K. 1950; Löve, A. & Löve, D. 1956b; Jørgensen, C.A. *et al.* 1958; Sokolovskaya, A.P. (Fedorov); Sokolovskaya, A.P. & Strelkova, O.S. 1960 (Fedorov); Mehra, P.N. & Kaur, B. 1963; Knaben, G. & Engelskjøn, T. 1967; Johnson, A.W. & Packer, J.G. 1968; Taylor, R.L. & Mulligan, G.A. 1968; Larsson, G. 1969; Mulligan, G.A. & Forsild, A.E. 1969; Zhukova, P.G. 1969; Zhukova, P.G. & Petrovsky, V.V. 1971
- 64 Mosquin, T. & Hayley, D.E. 1966
- var. satans* Regel
- satans* Mey.
- 16 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov); Sokolovskaya, A.P. (Fedorov); Anufrienko, T.B. & Rostovtseva, T. S. 1972
- lactus* Wall.
- 28 Mehra, P.N. & Kaur, B. 1963; Roy, S.C. & Sharma, A.K. 1971; Bhat, B.K. *et al.* 1972; Goepfert, D. 1974; Kumar, V. & Chauhan, K.P.S.
- 28, 32 Mehra, P.N. & Remanandan, P. 1972
- 32 Sobti, S.N. & Singh, S.D. 1961; Baqar, S.R. & Abid Askari, S.H. 1970a, b
- lingua* Linn.
- 56, 64 Larter, L.N.H. 1932
- 64, 128 Tischler, G. 1934
- c.112 Pogan (Skalińska, M. *et al.* 1966)
- c.125-128 Goepfert, D. 1974
- 128 Langlet, O.F.J. 1932; Böcher, T.W. 1936b; Sokolovskaya, A.P. (Fedorov)
- marginatus* Linn.
- 32 Van Loon, J. Chr. & de Jong, H. 1978
- 42 Roy, S.C. & Sharma, A.K. 1971; Bir, S.S. & Sidhu, M. 1980
- 48 Langlet, O.F.J. 1927a; Larter, L.N.H. 1932; Gregory, W.C. 1941; Neves, J. de B. 1944; Mehra, P.N. & Kaur, B. 1963; Marchi, P. 1971a; Goepfert, D. 1974
- c.48 Larsen, K. & Lagaard, S. 1971
- ovifolius* Linn.
- 40, 48, 56 Nygren (Löve, A. & Löve, D. 1948)
- 48 Flovik, K. 1936, 1940; Jørgensen, C.A. *et al.* 1958; Knaben, G. & Engelskjøn, T. 1967; Zhukova, P.G. & Tikhonova, A.D. 1971; Zhukova, P.G. *et al.* 1973; Goepfert, D. 1974
- 56 Langlet, O.F.J. 1932, 1936
- palchellus* Mey.
- 40 Sokolovskaya, A.P. & Strelkova, O.S. 1938; (Fedorov)
- var. stracheyanus* (Maxim.) Hand.-Mazz.
- 48 Kurosawa, S. 1971b
- reniformis* Wall.
- 16 Sobha, V. & Ramchandran, K. 1980
- sardous* Crantz
- 16 Langlet, O.F.J. 1932; Hindáková, M. & Činčura, F. 1967
- 16, 32 Larter, L.N.H. 1932
- 18 Pólya, L. 1948
- 32 Roy, S.C. & Sharma, A.K. 1971
- 47 Kurita, M. 1959b
- 48 Neves, J. de B. 1944 (D. 1955)
- sceleratus* Linn.
- 16, 32 Gadella, T.W.J. & Klipuis, E. 1967
- 32 Langlet, O.F.J. 1936; Coonen, L.P. 1939; Gregory, W.C. 1941; Felföldy, L.J.M. 1947a; Kurita, M. 1955a, 1960; Sokolowska-Kulczycka (Skalińska, M. *et al.* 1961); Cook, C.D.K. 1963; Mehra, P.N. & Kaur, B. 1963; Gadella, T.W.J. & Kliphuis, E. 1968a; Podlech, D. & Dieterle, A. 1969; Goepfert, D. 1974; Scott, P.J. 1974; Subramaniam, B. & Suresh Chandra 1978; Agapova, N.D. 1980; Bir, S.S. & Sidhu, M. 1980
- trichophyllus* Chaix
- 16 Hara, H. 1952
- 16, 32 Cook, C.D.K. 1962
- 16, 32, 48 Larsen, K. 1936a
- 32 Reese, G. 1957; Dorsch, G. 1968; Larsen, K. & Lagaard, S. 1971
- wallichianus* Wight & Arn.
- 16 Sobha, V. & Ramchandran, K. 1980

Thalictrum Linn.

150; North temperate, tropical South America and tropical and South Africa. 21; mostly confined to Himalaya (up to 5,610 m), and Nepal, Bhutan and Sri Lanka.

alpinum Linn.

- 14 Langlet, O.F.J. 1927a; Kuhn, E. 1930; Sakai, K. 1935a; B cher, T.W. 1938a; L ve, A. & L ve, D. 1944b, 1956b; Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov); Kurita, M. 1956a; J rgensen, C.A. *et al.* 1958; Sokolovskaya, A.P. 1958, (Fedorov); Hedberg, I. & Hedberg, O. 1961; Sorsa, V. 1963b; Knaben, G. & Engelskj n, T. 1967; Taylor, R.L. & Mulligan, G.A. 1968; Laane, M.M. 1969a; L ve, A. *et al.* 1971; Boczanzeva, V.V. 1972; Zhukova, P.G. *et al.* 1973
- 14, 21* Johnson, A.W. & Packer, J.G. 1968
- 16 Sokolovskaya, A.P. & Strelkova, O.S. 1960

eboldaeii DC.

- 14 Malla, S.B., Saiju, H. *et al.* 1977
- 42 Kuhn, E. 1928a

calibratum Wall.

- 14 Malla, S.B. *et al.* 1979; Bir, S.S. & Thakur, H.K. 1980
- 42 Kuhn, E. 1928a

foetidum Linn.

- 14 Langlet, O.F.J. 1927a; Kuhn, E. 1928a, 1930; Sokolovskaya, A.P. (Fedorov)

var. foetidum

- 14 Emura, K.M.H. 1972

foliolosum DC.

- 14 Emura, K.M.H. 1972; Mehra, P.N. & Romanandan, P. 1972

javanicum Blume

- 14 Mehra, P.N. & Kaur, B. 1963
- 42 Kuhn, E. 1928a

minus Linn.

- 14 Kurita, M. 1957c
- 28 Overton, J.B. 1909
- 40 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)
- 42 Langlet, O.F.J. 1927a; Tischler, G. 1934; Rohweder, H. 1937; L ve, A. & L ve, D. 1944b; Bak ay, L. 1956; Zhukova, P.G. (Fedorov), 1967b; Murin & V chov  (Fedorov); M jovskyy, J. *et al.* 1970a; Kuzmanov, B. & Georgieva, S. 1977b; Hommel, P.W.F.M. & Wiewering, J.H. 1979
- 48 Hocquette, M. 1922
- 70-72 Sokolovskaya, A.P. (Fedorov)
- 84 Boczanzeva, V.V. 1972

pauciflorum Royle

- 42 Langlet, O.F.J. 1927a

reniforme Wall.

- 14 Mehra, P.N. & Romanandan, P. 1972
- 28 Emura, K.M.H. 1972; Bir, S.S. & Thakur, H.K. 1980

rotundifolium DC.

- 14 Malla, S.B., Bhattaraj, S. *et al.* 1977a

saniculaeforme DC.

- 14 Mehra, P.N. & Kaur, B. 1963; Bir, S.S. & Thakur, H.K. 1980

Trollius Linn.

25; North temperate and arctic. 3; alpine Himalaya (between 3,600 and 5,600 m).

acutis Lindl.

- 16 Langlet, O.F.J. 1932; Matsumura, H. & Sudo, T. 1935

pusillus D. Don

- 16 Doroszewska, A. 1967

RESEDACEAE S.F. Gray

6/70; chiefly Mediterranean, also Europe to Central Asia and India, South Africa and California. 3/5; North Western India, 1 extending to Konkan Hills, and Pakistan.

Oligomeris Camb.

9 ; 1 in South West United States and Mexico, 8 in Canaries, North Africa and South Africa to North Western India. 1 ; North Western India southwards to Konkan Hills, and Pakistan.

linifolia (Vahl) Macbride*glaucescens* Camb.

28 Oksjuk, P. (Fedorov)

48 Malik, C.P. 1960b

Reseda Linn.

60 ; Europe and Mediterranean to Cent-

ral Asia. 3 ; North Western India and Pakistan — 1 cultivated.

luteola Linn

24 Oksjuk, P. (Fedorov) ; Larsen, K. 1960 ;
Aguilera, J.J.G. & Rejón, M.R. 1976 ;
González-Aguilera, J.J. *et al.* 1979

24,26 Eigsti, O.J. 1936

26 Aguilera, J.J.G. & Rejón, M.R. 1978

28 Löve, A. & Löve, D. 1944b

odorata Linn.

12 Oksjuk, P. (Fedorov) ; Eigsti, O.J. 1936

12,14 Gori, C. 1957

RHAMNACEAE Juss.

58/900 ; cosmopolitan. 15/77 ; chiefly in tropical and temperate Himalaya and Western Peninsular India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka — a few cultivated.

Berberis Neck. *ex DC.*

22 ; palaeotropics and Atlantic North America. 5 ; Himalaya (up to 3,300 m) and Bengal, and Nepal.

flavescens (Wall.) Brongn.

24 Kurosawa, S. 1971b ; Malla, S.B.,
Bhattarai, S. *et al.* 1978a

floribunda (Wall.) Brongn.*floribunda* Wall.

24 Mehra, P.N. & Khosla, P.K. 1969 ;
Sareen, T.S., Khosla, P.K. & Mehra,
P.N. 1974

Hovenia Thunb.

5 ; Himalaya to Japan. 1 ; subtropical Himalaya (from 1,000 to 2,130m) and Bhutan, also cultivated.

dulcis Thunb.

24 Sugiura, T. 1931, 1936b ; Gadella, T.W.J.
et al. 1969

Pomaderris Labill.

45 ; Australia and New Zealand. 1 ;
cultivated.

spatala Labill.

36 Halc, J.B. 1963

Rhamnus Linn.

150 ; cosmopolitan. 10 ; Himalaya,
Punjab and Peninsular India, and Nepal,
Pakistan and Sri Lanka.

nepalensis Wall. *ex M. Lawson*

24 Malla, S.B. *et al.* 1976

34 Borgmann, E. 1964

procumbens Edgew.24 Singhal, V.K. *et al.* 1980b*purpureus* Edgew.24 Mehra, P.N. & Sareen, T.S. 1969 ;
Sareen, T.S., Khosla, P.K. & Mehra,
P.N. 1974*triqueter* Wall.24 Mehra, P.N. & Sareen, T.S. 1969 ;
Sareen, T.S., Khosla, P.K. & Mehra,
P.N. 1974*virgata* Roxb.

24 Mehra, P.N. & Singh, A. 1963

Sageretia Brongn.35 ; Asia minor and Somalia to Formosa,
and South United States to tropical South
America. 4 ; Himalaya, Central and Penin-
sular India, and Nepal and Pakistan.*filiiformis* (Roth) G. Don*oppositifolia* Brongn.24 Mehra, P.N. & Sareen, T.S. 1969 ;
Sareen, T.S., Khosla, P.K. & Mehra,
P.N. 1974*hirsuta* Brongn.24 Mehra, P.N. & Khosla, P.K. 1969 ;
Sareen, T.S., Khosla, P.K. & Mehra, P.N.
1974*thun* Johnston*theezans* Brongn.24 Bowden, W.M. 1945b ; Sareen, T.S.,
Khosla, P.K. & Mehra, P.N. 1974**Ventilago** Gaertn.37 ; 1 in tropical Africa, 1 in Madagas-
car, 35 in India and China to New Guinea,
Australia and Pacific. 6 ; Peninsular India,
a few in hotter parts of India, and Nepal,
Bhutan, Bangla Desh and Sri Lanka.*ombocensis* Dalz.

24 Adatia, R.D. & Gajapathy, C. 1960

denticulata Willd.*calyculara* Tulaszko

24 Adatia, R.D. & Gajapathy, C. 1960

Ziziphus Mill.100 ; tropical America, Africa, Mediterra-
nean, Indo-Malesia and Australia. 20 ; widely
distributed in India, mostly in tropics, and
Nepal, Pakistan, Bhutan, Bangla Desh and
Sri Lanka — a few cultivated.*incurva* Roxb.24 Malla, S.B., Bhattarai, S. *et al.* 1977a*jajaba* Mill.72 Sareen, T.S., Kant, S. & Pratap, R.
1974*saliva* Gaertn.

26 Chiarugi, A. 1930

mauritiana Lam.48 Srinivasan, V.K. 1952 ; Daulta, B.S. &
Sareen, P.K. 1980*jajaba* Lam.24 Morinaga, T. *et al.* 1929 ; Howden, W.M.
1940a, 1945b

40 Srinivasachar, D. 1940

48 Sareen, T.S., Khosla, P.K. & Mehra,
P.N. 1974

48, 60, 96 Khoshoo, T.N. & Singh, N. 1963

48, 72, 96 Srinivasan, V.K. 1952

var. *fruticosa* (Haines) Seb. & Henry48 Singhal, V.K. *et al.* 1980b*nammularia* (Burm.) Wight & Arn.

24 Murin, A. & Chaudhri, I.I. 1970

rotundifolia Lam.

48, 72 Khoshoo, T.N. & Singh N. 1963

72 Srinivasan, V.K. 1952

oocarpa Mill.

20 Srinivasachar, D. 1940

24 Gill, B.S. *et al.* 1979b

48 Srinivasan, V.K. 1952

oxyphylla Edgew.24 Mehra, P.N. & Sareen, T.S. 1969 ;
Sareen, T.S., Khosla, P.K. & Mehra,
P.N. 1974*rugosa* Lam.24 Gill, B.S. *et al.* 1979a*xylopyrus* Willd.24 Mehra, P.N. & Sareen, T.S. 1969 ; Sareen,
T.S., Khosla, P.K. & Mehra, P.N. 1974var. *acuta*24 Singhal, V. K. *et al.* 1980b

RHIZOPHORACEAE R. Br.

16/120 ; tropics, mostly in Old World. 8/16 ; mostly in the coastal forests, and Sri Lanka.

Bruguiera Lam.

6 ; tropical East Africa, Asia, Australia and Polynesia. 5 ; coastal forests of India, and Sri Lanka.

conjugata Merr.

38 Subramanian, D. 1980c

gymnorhiza Lam.

36 Sidhu, S.S. 1968 ; Gil, L.S. 1978b

parviflora Wight & Arn.

36 Sidhu, S.S. 1961, 1968

Cerlops Aca.

2 ; tropical coasts of Indian and West Pacific Oceans. 2 ; coasts of India, and Sri Lanka.

candolleana Arn.

36 Raghavan, R.S. & Arora, C.M. 1958 ; Sidhu, S.S. 1968

roxburghiana Arn.

36 Sidhu, S.S. 1968 ; Subramanian, D. 1980c

Rhizophora Linn.

7 ; tropical coasts. 2 ; tidal shores and marshes of India, and Sri Lanka.

apiculata Blume*candelaria* DC.

36 Subramanian, D. 1980c

conjugata Linn*.

36 Sidhu, S.S. 1968

mucronata Lam.

36 Patil, R.P. 1958 ; Sidhu, S.S. 1968

ROSACEAE Juss.

100/2,000 ; cosmopolitan. 35/244 ; mainly confined to temperate Himalaya (up to 5,940m), and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka—some cultivated.

Acomastylis Greene

13 ; Himalaya, temperate East Asia and North America. 2 ; subalpine and alpine Himalaya (between 3,000 to 5,000m).

elata (Wall.) F. Boite*Geum elatum* Wall.

42 Sharma, A. & Sarkar, A.K. 1967-1968
Mehra, P.N. & Dhawan, H. 1971

Agrimonia Linn.

15 ; North temperate. 1 ; temperate Himalaya, Assam Hills (up to 3,300m), and Sri Lanka.

* *Rhizophora conjugata* of FBI, 2 : 436, non Linn. is a synonym of *R. apiculata* Blume.

eupatoria Linn.*

- 28 Wulff, H.D. 1938, 1939b; Maude, P.F. 1940; Brittan, N.H. 1953; Löve, A. 1954b; Skaliňská, M. *et al.* 1959; Pačková, M. 1959; Murin & Váňová (Fedorov); Sharma, A. & Sarkar, A.K. 1967-1968; Májovský, J. *et al.* 1970a
56 Mehra, P.N. & Dhawan, H. 1966a

pilosa Ledeb.

- 28 Brittan, N.H. 1953
56 Sokolovskaya, A.P. (Fedorov)

var. *nepalensis* (D. Don) Nakai

- 56 Hara, H. & Kurosawa, S. 1968; Kurosawa, S. 1971b

Alchemilla Linn.

250; temperate, and tropical mountains. 6; Himalaya (up to 3,000m) and Western Ghats.

indica Gardn.

- 32 Subramanian, D. 1979b

vulgaris Linn.

- 64 Strasburger, E. 1904; Tischler, G. 1934
91-191 Gentscheff, G. & Gustafsson, A. (Fedorov)
c.96 Jørgensen, C.A. *et al.* 1958
c.100 Ehrenberg, L. 1945
104-110 Bradshaw (Löve, A. & Löve, D. 1961b)

Arnica (Linn.) Schaeff.

12; North temperate. 1; temperate Himalaya (up to 3,300m), and Nepal.

oleuca (Walt.) Fernald

- 38 Kawano, S. (Fedorov); Löve, A. & Löve, D. 1964

sylvester Kost.

- 14, 18 Hara, H. 1952
18 Delay, C. 1947; Zhukova, P.G. 1967b; Taylor, R.L. & Mulligan, G.A. 1968

var. *tritermatus* (Maxim.) Hara

- 18 Kurosawa, S. 1966

Agrimonia eupatoria Linn. of FBI, 2: 361 *pro parte* is a synonym of *A. pilosa* var. *nepalensis* (D. Don) Nakai (FEH: 118).

Cotoneaster (B. Ehrh.) Medik.

50; North temperate. 25; chiefly in temperate and alpine Himalaya (up to 4,600m), 1 in South Western India, and Nepal and Bhutan.

acuminatus Lindl.

- 34 Sax, H.J. 1954

adpressus Bois.

- 34 Zeilinga, A.E. 1964
51 Sax, H. 1954

affinis Lindl.var. *bacillaris* (Wall. ex Lindl.) Schneid*bacillaris* Wall. ex Lindl.

- 34 Mehra, P.N. & Sareen, T.S. 1969; Mehra, P.N., Sareen, T.S. & Hans, A.S. 1973
51 Kroon, G.H. 1975

congestus Baker

- 51 Moffett, A.A. 1931a, b

frigidus Wall. ex Lindl.

- 34 Sax, H.J. 1954; Zeilinga, A.E. 1964; Mehra, P.N., Sareen, T.S. & Hans, A.S. 1973

integerrimus Medik.

- 51 Sax, H.J. 1954; Gladkova, V.N. (Fedorov)
68 Moffett, A.A. 1931a

microphyllus Wall. ex Lindl.

- 34 Sax, H.J. 1954
68 Moffett, A.A. 1931a, b; Zeilinga, A.E. 1964; Kroon, G.H. 1975

multiflorus Bunge

- 51 Kroon, G.H. 1975
68 Sax, H.J. 1954; Zeilinga, A.E. 1964; Gladkova, V.N. 1968

nummularia Fisch. & Mey.

- 68 Gladkova, V.N. 1967, 1968

pannosus Franch.

- 17 Sharma, A. & Sarkar, A.K. 1967-1968

rotundifolius Wall. ex Lindl.

- 32 Sugjura, T. 1931, 1936b
 51 Sax, H.J. 1954
 68 Moffett, A.A. 1931a, b; Zeilings, A.E. 1964

Crataegus Linn.

200; North temperate. 2; Western temperate Himalaya (up to 3,000m).

oxycantia Linn.

- 32 Longley, A.E. 1924b
 34 Moffett, A.A. 1931a, b; Tischler, G. 1934; Delay, C. 1947; Gustafsson, Å. 1947b; Gladkova, V.N. 1968

Cydonia Mill.

1; East Asia Minor, Caucasus, North Persia and Central Asia. Cultivated.

oblonga Mill.

- 34 Rybin, W.A. (Fedorov); Kober, F. 1927b; Murin, A. & Májovský, J. 1976

vulgaris Pers.

- 34 Moffett, A.A. 1931a, b; Bagnoli, L. et al. 1963

Duchesnea Smith

6; India and East Asia. 1-2; Himalaya (up to 2,600m).

indica (Andr.) Focke

- 42 Delay, C. 1947
 84 Ichijima, K. 1926; Hara, H. & Kurosawa, S. 1959b, 1963a; Kurosawa, S. 1966

Fragaria indica Andr.

- 14 Subramanian, D. 1979b
 84 Mehra, P.N. & Dhawan, H. 1966a

Eriobotrya Lindl.

30; Himalaya to Japan, South East Asia and West Malaysia (excluding Philippines). 9; Eastern Himalaya and Khasi Hills, and

Nepal, Bhutan and Bangla Desh 1 cultivated.

debila Decne

- 34 Mehra, P.N. & Hans, A.S. 1969; Mehra, P.N., Sareen, T.S. & Hans, A.S. 1973

elliptica Lindl.

- 34 Malla, S.B., Bhattarai, S. et al. 1977b

japonica Lindl.

- 32 Evreinoff, M.V. 1930
 34 Morinaga, T. et al. 1929; Moffett, A.A. 1931a, b; Sax, K. 1931a; Gadella, T.W.J. et al. 1969

petiolata Hook. f.

- 34 Mehra, P.N. & Hans, A.S. 1969; Mehra, P.N., Sareen, T.S. & Hans, A.S. 1973

Fragaria Linn.

15; North America, Chile, and Eurasia (to Southern India). 9; temperate Himalaya (up to 5,000m), Khasi Hills and Nilgiris - some cultivated.

chiloensis Duchesne

- 56 Ichijima, K. 1926, 1930; Longley, A.E. 1926; Yarnell, S.H. 1931a; Turesson, G. 1938; Schiemann, E. 1951; Staudt, G. 1962; Bringham, R. S. & Khan, D.A. 1963; Gupta, B.K. 1970a

collina Ehrh.

- 14 Yarnell, S.H. 1929a, 1931a; Ichijima, K. 1930; Rudolf, C.F. 1930; Tischler, G. 1934; Felföldy, L.J.M. 1947a
 28 Gupta, B.K. 1970a

collina × *chiloensis*

- 49 Gupta, B.K. 1970a

daltoniana J. Gay

- 14 Darrow, G.M. 1937; Kurosawa, S. 1971b

moschata Duchesne

- 42 Ichijima, K. 1926, 1930; Schiemann, E. 1951; Staudt, G. 1962; Zhukova, P.G. 1967b; Gupta, B.K. 1970a

nilgerrensis Schlecht.

- 14 Yarnell, S.H. 1929a, 1931a,b; Ichijima, K. 1930; Schiemann, E. 1951; Kurosawa, S. 1966; Subramanian, D. 1979b

nubicola Lindl.

14 Kurosawa, S. 1966

rubiginosa Lacaita

14 Kurosawa, S. 1966

vesca Linn.

- 14 Ichijima, K. 1926, 1930; Longley, A.E. 1926; Yarnell, S.H. 1929a,b, 1931a; Rudloff, C.F. 1930; Fedorova, N.J. (Fedorov); Tischler, G. 1934; Darrow, G.M. 1937; Rohweder, H. 1937; Tureson, G. 1938; Dogadkina, N.A. (Fedorov); Delay, C. 1947; Löve, A. & Löve, D. 1956b; Skalińska, M. *et al.* 1959; Staudt, G. 1962; Gadella, T.W.J. & Kliphuis, E. 1967; Zhukova, P.G. 1967b; Gupta, B.K. 1970a
- 28 Sebastiampillai, A.R. & Jones, J.K. 1977
- 35 Bringham, R.S. & Khan, D.A. 1963
- 56 Mehra, P.N. & Dhawan, H. 1966a

Geum Linn.

40; North and South temperate, and arctic. 1; Western temperate Himalaya (between 2,000 and 3,600m).

urbanum Linn.

- 42 Winge, Ö. 1925, 1926a; Tischler, G. 1934; Löve, A. & Löve, D. 1942a; Delay, C. 1947; Gajewski, W. 1948, 1953, 1954, 1957; Raynor, L.A. 1952; Gadella, T.W.J. & Kliphuis, E. 1966; Murin & Václav (Fedorov); Laane, M.M. 1969a; Májovský, J. *et al.* 1970a; Van Loon, J. Chr. & de Jong, H. 1978; Kliphuis, E. & Wieffering, J.H. 1979; Van Loon, J. Chr. 1980; Van Loon, J. Chr. & Kieft, B. 1980

Kerria DC.

1; East Asia. Cultivated.

japonica (Thunb.) DC.

- 18 Sugiura, T. 1931, 1936b; Sax, K. 1932; Nakajima, G. 1933; Delay, C. 1947

Malus Mill.

35; North temperate. 4; Himalaya

(from 2,000 to 4,000m), and Bhutan—2 also cultivated.

haccata (Linn.) Borkh.

- 34 Rybin, V.A. (Fedorov); Kobel, F. 1927b; Nebel, B.R. 1929b, c, 1930; Sax, K. 1931a; Velikanova, E.V. & Petrov, D.F. (Fedorov); Delay, C. 1947

pumila Mill.

- 34 Rybin, V.A. (Fedorov); Kobel, F. 1927b

communis DC.

- 34 Rybin, V.A. (Fedorov)
- 51, 68 Dermen, H. 1949
- 68 Nebel, B.R. 1929a,b,c, 1930; Sax, K. 1931a; Lincoln, F.B. & McCann, L.P. 1936

domestica Borkh.

- 34, 51 Rybin, V.A. (Fedorov)

Pyrus malus Linn.

- 34, 51 Lawrence, W.J.C. 1930; Crane, M.B. & Lawrence, W.J.C. 1931a; Moffett, A.A. 1931a, b

sikkimensis

- c. 51, 68 Sax, K. 1959

Pyrus sikkimensis Hook. f.

- 34 Mehra, P.N. & Hans, A.S. 1969; Mehra, P.N., Sareen, T.S. & Hans, A.S. 1973

Neillia D. Don

13; Eastern Himalaya to Korea, Indo-China, Sumatra and Java. 2; Central and Eastern Himalaya.

thymiflora D. Don

- 20 Sharma, A. & Sarkar, A.K. 1967-1968

Photinia Lindl.

60; Himalaya to Japan and Sumatra, and North America. 7; Central and Eastern Himalaya, South Western India, and Nepal, Bhutan and Sri Lanka.

integrifolia Lindl.

- 34 Arora, C.M. 1961; Mehra, P.N., Sareen, T.S. & Hans, A.S. 1973

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Potentilla Linn.

500 ; nearly cosmopolitan, chiefly North temperate and arctic. About 40; temperate and alpine Himalaya, a few in Western Ghats, and Nepal, Bhutan and Sri Lanka.

anserina Linn.

28 Tischler, G. 1929b, 1934, 1937; Popoff, A. (Fedorov); Rohwedder, H. 1937; Turcson, G. 1938; Löve, A. & Löve, D. 1942a; Pólya, L. 1949; Skalińska, M. & Czapik, R. 1958; Guguicu, A. *et al.* 1959; Gadella, T.W.J. & Kliphuis, E. 1966; Gadella, T.W.J. *et al.* 1970

28, 42 Erlanson, S. 1942b; Gadella, T.W.J. & Kliphuis, E. 1963, 1971a; Rousi, A. 1965; Ockendon, D.J. & Walters, S.M. 1970; Goswami, D.A. & Matfield, B. 1975

ssp. anserina

28 Taylor, R.L. 1967

argentea Linn.

14 Delay, C. 1947; Gadella, T.W.J. & Kliphuis, E. 1970b

14, 28, 35,

42, 56 Müntzing, A. 1928b, 1931; Müntzing, A. & Müntzing, G. 1941; Gustafsson, A. 1947b

14, 35, 42 Gustafsson, A. 1947a

14, 42 Gadella, T.W.J. & Kliphuis, E. 1970a, 1971a; Goswami, D.A. & Matfield, B. 1975

14, 42, 56 Tischler, G. 1934

28 Gagnieu, A. *et al.* 1959; Caribon, C. 1969

28, 35, 42,

63 Asker, S. 1971

28, 42 Mulligan, G.A. 1959

35 Christoff, M. & Papasova, G. 1943

35, 42 Skalińska, M. 1950

42 Shimotomai, N. 1930a, b; Popoff, A. (Fedorov); Hunziker, H.R. 1954; Skalińska, M. & Czapik, R. 1958; Gadella, T.W.J. *et al.* 1970

56 Håkansson, A. 1946

argyrophylla Wall. ex Ledeb.

42, 56 Zhukova, P.G. 1967b

56 Shimotomai, N. 1930a, b

56, 63 Popoff, A. (Fedorov); Gustafsson, A. 1947a

56, 63, 70,

77, 84, 91,

98 Popoff, A. (Fedorov)

63 Gentscheff, G. 1938; Gustafsson, A. 1947b

atrosanguinea Lodd. ex D. Don

56 Shimotomai, N. 1930a; Popoff, A. (Fedorov); Christoff, M. & Papasova, G. 1943

56, 74, 84 Goswami, D.A. & Matfield, B. 1978

63 Zhukova, P.G. 1967b

bifurca Linn.

56 Popoff, A. (Fedorov)

davurica Nestl.

arbuscula D. Don

14 (21, 42,

56) Bowden, W.M. 1957b

desertorum Bunge

28 Měsíček, J. & Sojak, J. 1969

fragarioides Linn.

14 Shimotomai, N. 1929

56 Malik, C.P. 1965; Mehra, P.N. & Dhawan, H. 1966a

fruticosa Linn.

14 Shimotomai, N. 1930a,b; Sax, K. 1931a; Popoff, A. (Fedorov); Ellis, J.R. 1958; Johnson, A.W. & Packer, J.G. 1968; Kupfer, P.H. 1971

14, 28 Turcson, G. 1938; Bowden, W.M. 1957b; Elkington, T.T. 1969

42 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)

fulgens Wall. ex D. Don

28 Sharma, A. & Sarker, A.K. 1967-1968

34 Mehra, P.N. & Dhawan, H. 1966a

56 Popoff, A. (Fedorov)

gellida C.A. Mey.

14 Guinocet, M. 1968

28 Měsíček, J. & Sojak, J. 1969; Zhukova, P.G. *et al.* 1973

42 Shimotomai, N. 1930a,b; Popoff, A. (Fedorov); Gustafsson, A. 1947b

leachenautiliana Ser.

28 Subramanian, D. 1979b

mooniana Wight

28 Sharma, A. & Sarker, A.K. 1967-1968

multifida Linn.

- 14 Tischler, G. 1929b
 28 Popoff, A. (Fedorov) ; Gustafsson, A. 1947a, b ; Měsíček, J. & Sojak, J. 1965 ; Zhukova, P.G. & Petrovsky, V.V. 1971 ; Dawe, J.C. & Murray, D.F. 1979
 28, 42 Popoff, A. (Fedorov)
 42 Shimotomai, N. 1930b

nepalensis Hook.

- 14, 42 Popoff, A. (Fedorov)
 42 Shimotomai, N. 1930a, b ; Gentscheff, G. 1938 ; Christoff, M. & Pappasova, G. 1943 ; Mehra, P.N. & Dhawan, H. 1966a ; Zhukova, P.G. 1967b ; Goswami, D.A. & Matfield, B. 1975

nivea Linn.

- 28 Zhukova, P.G. & Petrovsky, V.V. 1971 ; Zhukova, P.G. *et al.* 1973
 56 Eriandsson, S. 1942b ; Löve, A. & Löve, D. 1942b ; Danser, P. & Steiner, E.E. 1956
 56, 67 Knaben, G. & Engelskjön, T. 1967
 63 Bücher, T.W. & Larsen, K. 1950
 70 Shimotomai, N. 1930a, b ; Sakai, K. 1934 ; Sokolovskaya, A.P. 1968

purpurea Hook.

- 42 Zhukova, P.G. 1967b

reptans Linn.

- 28 Shimotomai, N. 1930a, b ; Tischler, G. 1934 ; Ehrenberg, L. 1945 ; Stomps, T.J. 1951 ; Löve, A. 1954b ; Ellis, J.R. 1958 ; Gagnieu, A. *et al.* 1959 ; Gadella, T.W.J. & Kliphuis, E. 1963, 1970a, 1971a ; Matfield, B. 1967 ; Czapik, R. 1968 ; Schwendener, J. 1969 ; Gadella, T.W.J. *et al.* 1970 ; Matfield, B. *et al.* 1970 ; Goswami, D.A. & Matfield, B. 1975
 28, 42 Skalníšská, M. & Czapik, R. 1958

sericea Linn.

- 42 Popoff, A. (Fedorov)

sandalica Kuntze**ketniiana** Wight & Arn.

- 14 Shimotomai, N. 1929 ; Sokolovskaya, A. P. (Fedorov)

- 28 Arora, C.M. 1961 ; Mehra, P.N. & Dhawan, H. 1966a

supina Linn.

- 28 Shimotomai, N. 1930a, b ; Tischler, G. 1934 ; Pólya, L. 1949 ; Gagnieu, A. *et al.* 1959 ; Gadella, T.W.J. *et al.* 1970
 42 Podlech, D. & Diesterle, A. 1969 ; Popoff, A. (Fedorov)
 56 Mehra, P.N. & Dhawan, H. 1966a

Poterium Linn.

25 ; temperate Eurasia. 5 ; Eastern Himalaya, Punjab and Khasi Hills, and Nepal, Pakistan and Sri Lanka.

sanguisorba Linn.

- 28 Maude, P.F. 1940 ; Delay, C. 1947

Prinsepia Royle

3-4 ; Himalaya to North China and Formosa. 1 ; temperate Himalaya and Khasi Hills (up to 3,000m), and Bhutan, introduced in Nilgiris.

utilla Royle

- 28 Subramanian, D. 1979b
 32 Sharma, J.N. & Swarup, V. 1962 ; Mehra, P.N., Sreen, T.S. & Hans, A.S. 1973 ; Malla, S.B., Bhattarai, S. *et al.* 1978b

Prunus Linn.

430 ; cosmopolitan ; in strict sense 36 ; North temperate. 19 ; chiefly in temperate Himalaya (up to 4,000m), and Nepal and Bhutan - many cultivated.

amygdalus Stokes*

- 16 Okabe, S. 1927, 1928 ; Darlington, C.D. 1928, 1930a ; Delay, C. 1947

armeniaca Linn.

- 16 Kobel, F. 1927b, 1928 ; Okabe, S. 1927, 1928 ; Darlington, C.D. 1928 ; Crane, M. B. & Lawrence, W.J.C. 1931a, b

* The combination *Prunus amygdalus* should be attributed to Batsch (DFP) : 139), and it is a synonym of *P. dulcis* (Mill.) Webb.

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avium (Linn.) Linn.

- 16 Darlington, C.D. 1927a ; Kobel, F. 1927b, 1928 ; Okabe, S. 1927, 1928 ; Lawrence, W.J.C. 1930 ; Crane, M.B. & Lawrence, W.J.C. 1931a, b ; Sax, K. 1931a ; Tischler, G. 1934

16, 17, 18,

19, 24, 32 Darlington, C.D. 1928, 1933b

24, 32, 36 Galletta, G.J. 1961

cerasifera Ehrh.

- 16 Crane, M.B. 1927 ; Darlington, C.D. 1927a, 1928, 1930a ; Kobel, F. 1927b, 1928 ; Mather, K. 1937 ; Delay, C. 1947

cerasoides D. Don

- 16 Okabe, S. 1927, 1928 ; Mehra, P.N., Sareen, T.S. & Hans, A.S. 1973

cerases Linn.

- 32 Crane, M.B. 1927 ; Darlington, C.D. 1927a, 1928 ; Kobel, F. 1927b, 1928 ; Crane, M.B. & Lawrence, W.J.C. 1929, 1931a, b ; Lawrence, W.J.C. 1930 ; Prywer, C. 1936 ; Yenikejev, K.K. (Fedorov) ; Delay, C. 1947 ; Hrubý, K. 1950, 1962

cornuta Wall.*

- 32 Mehra, P.N., Sareen, T.S. & Hans, A.S. 1973

domestica Linn.

- 16 Okabe, S. 1927
48 Crane, M.B. 1927 ; Darlington, C.D. 1927a, 1930a ; Kobel, F. 1927b, 1928 ; Crane, M.B. & Lawrence, W.J.C. 1929, 1931a, b ; Lawrence, W.J.C. 1930 ; Sax, K. 1931a ; Rybin, V.A. (Fedorov) ; Mather, K. 1937 ; Flory, W.S. 1940c ; Dermen, H. 1941 ; Salesses, G. 1970

ducis (Mill.) Webb

Amygdalus communis Linn.

- 16 Ararayan, A.G. (Fedorov) ; Abdushukurova, R.A. (Fedorov) ; Uhríková, A. & Májovský, J. 1980

insititia Linn.

- 48 Crane, M.B. 1927 ; Darlington, C.D. 1927a, 1928 ; Crane, M.B. & Lawrence, W.J.C. 1931b ; Tischler, G. 1934 ; Rybin, V.A. (Fedorov) ; Mather, K. 1937 ; Dermen, H. 1941 ; Salesses, G. 1970

laurocerasus Linn.

144 Kobel, F. 1927b, 1928

170-180 Meurman, O. 1929b

mahaleb Linn.

- 16 Kobel, F. 1927b, 1928 ; Darlington, C.D. 1928 ; Crane, M.B. & Lawrence, W.J.C. 1929, 1931b ; Charitonova (Fedorov)

nepalensis Ser.**

- 32 Mehra, P.N. & Hans, A.S. 1969 ; Mehra, P.N., Sareen, T.S. & Hans, A.S. 1973

padus Linn.***

- 32 Kobel, F. 1927b, 1928 ; Okabe, S. 1927, 1928 ; Tischler, G. 1934 ; Yenikejev, K. K. (Fedorov) ; Sorsa, V. 1961 ; Mehra, P.N. & Dhawan, H. 1966a

ssp. *padus*

32 Leute, G.-H. 1974

persica Stokes****

- 16 Kobel, F. 1927b, 1928 ; Okabe, S. 1927, 1928 ; Darlington, C.D. 1928, 1930a ; Crane, M.B. & Lawrence, W.J.C. 1929, 1931b

persica Batsch

Persica vulgaris Mill.

- 16 Asami, Y. 1927 ; Abdushukurova, R.A. (Fedorov)

salicina Lindl.

- 16 Flory, W.S. 1940c ; Dermen, H. 1941 ; Salesses, G. 1970

triflora Roxb.

- 16 Darlington, C.D. 1927a, 1928 ; Kobel, F. 1927b ; Okabe, S. 1927, 1928 ; Salesses, G. 1970

* The combination *Prunus cornuta* should be attributed to Steudel (FEH : 125).

** The combination *P. nepalensis* (not 'nepalensis') should be attributed to Steudel (FEH : 126).

*** *P. padus sensu* Hook. f. (non Linn.) FBI, 2 : 315 is a synonym of *P. cornuta* (Wall. ex Royle) Steudel.

**** The combination *P. persica* should be attributed to Batsch (DFPI : 139).

serotina Ehrh.

32 Kobel, F. 1927b, 1928

serrulata Lindl.16 Kobel, F. 1927b, 1928 ; Sax, K. 1931a
16, 24, 25 Okabe, S. 1927, 1928*tomentosa* Thunb.

16 Okabe, S. 1927, 1928

* *Pyracantha* Roem.10 ; South East Europe to Central China
and Indo-China. 1 ; Himalaya (between
820 and 2, 640m), and Bhutan.*crenulata* (D. Don) Roem.

34 Egolf, D.R. & Drechsler, R.F. 1967

Crataegus crenulata Roxb.34 Mehra, P.N. & Sareen, T.S. 1969; Mehra,
P.N., Sareen, T.S. & Hans, A.S. 1973*Pyrus* Linn.30 ; temperate Eurasia. 5 ; Himalaya
(up to 3,300m) and Punjab, and Bhutan, 1
cultivated.*communis* Linn.34 Rybin, V.A. (Fedorov) ; Lawrence,
W.J.C. 1930 ; Moffett, A.A. 1931a, b ;
Adati, S. 1933 ; Tischler, G. 1934 ; Delay
C. 194734, 51 Uhlik, J. 1961 ; Zielinski, Q.B. &
Thompson, M.M. 1967*pashia* Buch.-Ham. ex D. Don34 Zielinski, Q.B. & Thompson, M.M. 1967;
Mehra, P.N., Sareen, T.S. & Hans, A.S.
1973*Rhaphiolepis* Lindl. corr. Poir.

15 ; subtropical East Asia. 1 ; cultivated.

indica Lindl.

34 Moffett, A.A. 1931a, b

Rosa Linn.250 ; North temperate, and tropical
mountains. About 30 ; chiefly in Himalaya
(up to 4, 600m), a few in Gangetic Plain and
South Western India, and Nepal and Bhutan -
many cultivated.*alba* Linn.

28 Yarnell, S.H. 1940b

42 Täckholm, G. 1922

banksiae Ait. f.14 Täckholm, G. 1920, 1922 ; Hurst, C.C.
1928, 1929, 1931*bracteata* Wendl.14 Hurst, C.C. 1928 ; Erlanson, E.W. 1929 ;
Yarnell, S.H. 1940b ; Lewis, W.H. &
Basye, R.E. 1961*brunonii* Lindl.14 Hurst, C.C. 1925, 1928, 1931 ; Lewis,
W.H. & Basye, R.E. 1961*centifolia* Linn.28 Täckholm, G. 1920, 1922 ; Hurst, C.C.
1928, 1931var. *major* Hort.

21 Täckholm, G. 1922

chinensis Jacq.

14 Hurst, C.C. 1931 ; Wylie, A.P. 1954

14, 21, 28 Hurst, C.C. 1928

14, 28 Täckholm, G. 1920, 1922

damaecena Mill.

14 Suzuka, O. 1953

28 Täckholm, G. 1920, 1922 ; Hurst, C.C.
1925, 1929, 1931 ; Wylie, A.P. 1954 ;
Subramanian, D. 1979b*egianterea* Lion.*

35 Hurst, C.C. 1931 ; Klasteraka, I. 1969a,b

foetida Herrm.28 Hurst, C.C. 1929 ; Yarnell, S.H. 1940b ;
Yarnell, S.H. & Blackhurst, H.T. 1941 ;
Wylie, A.P. 1954* *Rosa egianterea* auct. (non Linn.) FBI, 2 : 366 is a synonym of *R. foetida* Herrm.

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gallica Linn.

- 21, 28 Täckholm, G. 1920, 1922
 28 Hurst, C.C. 1925, 1929; Yarnell, S.H. & Blackhurst, H.T. 1941; Wylie, A.P. 1954; Klasterka, I. 1971

indica Linn.

- 14 Hurst, C.C. 1925

leschenaultiana Wight & Arn.

- 14 Hurst, C.C. 1928, 1931; Sampathkumar, R. 1970
 28 Subramanian, D. 1979b

longicauspis Bertol.

- 14 Hurst, C.C. 1928, 1931

macrophylla Lindl.

- 14 Täckholm, G. 1920, 1922; Hurst, C.C. 1925, 1931; Mehra, P.N. & Dhawan, H. 1966a
 14, 28 Hurst, C.C. 1928

microcarpa Lindl.

- 14 Hurst, C.C. 1928

moschata Mill.*

- 14 Täckholm, G. 1922; Hurst, C.C. 1925, 1928, 1929, 1931; Yarnell, S.H. & Blackhurst, H.T. 1941; Wylie, A.P. 1954; Lewis, W.H. & Basye, R.E. 1961; Mehra, P.N. & Dhawan, H. 1966a
 14, 28 Yarnell, S.H. 1940b
 28 Flory, W.S. 1940a

multiflora Thunb. ex J. Murr.

- 14 Täckholm, G. 1922; Hurst, C.C. 1928, 1931; Erlanson, E.W. 1933; Flory, W.S. 1940a; Yarnell, S.H. 1940b; Wylie, A.P. 1954

odorata (Andr.) Sweet

cv. 'Gigantes'

gigantea Collett & Cresp.

- 14 Hurst, C.C. 1928; Wylie, A.P. 1954

rapalli Boiss. & Bal.

- 28 Hurst, C.C. 1928

rouburghii Tratt.

- 14 Flory, W.S. 1940a; Yarnell, S.H. 1940b; Lewis, W.H. & Basye, R.E. 1961

sericea Lindl.

- 14 Täckholm, G. 1920, 1922; Hurst, C.C. 1925, 1928, 1931; Mehra, P.N. & Dhawan, H. 1966a

webbiana Wall. ex Royle

- 14 Täckholm, G. 1920, 1922; Hurst, C.C. 1928, 1931; Yarnell, S.H. 1940b

sp.

- 14 Mehra, P.N. & Dhawan, H. 1966a

cv. 'Charles Mailerin'

- 28 Meenakshi 1977

cv. 'Chitchor'

- 21 Meenakshi 1977

cv. 'Crimson Glory'

- 28 Meenakshi 1977

cv. 'Crown Princess Victoria'

- 21 Meenakshi 1977

cv. 'Docteur Vaisois'

- 28 Meenakshi 1977

cv. 'Etoile de Hollande'

- 28 Meenakshi 1977

cv. 'Flaming Sunset'

- 28 Meenakshi 1977

cv. 'Ganga'

- 28 Meenakshi 1977

cv. 'Gondvinder'

- 28 Meenakshi 1977

cv. 'Happiness'

- 28 Meenakshi 1977

cv. 'Kiss of Fire'

- 28 Meenakshi 1977

cv. 'Lady Frost'

- 28 Meenakshi 1977

cv. 'Michelle Melland'

- 28 Meenakshi 1977

cv. 'Mirandy'

- 21 Meenakshi 1977

cv. 'Montezuma'

- 28 Meenakshi 1977

- 28, 30 Lata, P. & Gupta, M.N. 1975

cv. 'Queen Elizabeth'

- 28 Meenakshi 1977

* *Rosa moschata sensu* Hook. f. *FBI*, 2 : 367 is a synonym of *R. brunonii* Lindl. (PEH : 127).

- cv. 'Soraya'
28 Meenakshi 1977
- cv. 'Spartan'
28 Meenakshi 1977
- cv. 'Super Star'
28 Meenakshi 1977
- cv. 'Una Wallace'
28 Meenakshi 1977

Robus Linn.

250; cosmopolitan, especially North temperate, ± 3,000 critical segregates and apomictic forms of *R. fruticosus* Linn. 50; tropical, temperate and subalpine Himalaya (up to 4,660m), a few in North Eastern and South Western India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

- acuminatiss* Lindb.*
28 Gustafsson, Å. 1933
- acuminatus* Smith
28 Malla, S.B. *et al.* 1975
- biflorus* Buch.-Ham.
14 Malik, C.P. 1965 ; Mehra, P.N. & Dhawan, H. 1966a
- calycinus* Wall.
42 Sharma, A. & Sarkar, A.K. 1967-1968
- ellipticus* Smith
14 Malik, C.P. 1965 ; Mehra, P. N. & Dhawan, H. 1966a; Mehra, P.N., Sareen, T.S. & Hans, A.S. 1973 ; Malla, S.B. *et al.* 1974 ; Subramanian, D. 1979b
- foliosus* D. Don
28 Malla, S.B., Bhattarai, S. *et al.* 1977b
- fruticosus* Linn.
28 Tischler, G. 1934 ; Marks, G.E. 1952 ; Baquar, S.R. & Abid Askari, S.H. 1970a
- hexagynus* Roxb.
28 Sarkar, A.K., Chakraverty, M. *et al.* 1977
- macilentus* Camb.
14 Malik, C.P. 1965
- mesogaeus* Focke
14 Jinno, T. 1958
- niveus* Wall.
14 Crane, M.B. 1940 ; Thomas, P.T. 1940b ; Malik, C.P. 1965 ; Subramanian, D. 1979b
14, 28 Mehra, P.N. & Dhawan, H. 1966a
28 Crane, M.B. & Darlington, C.D. 1927 ; Mehra, P.N., Sareen, T.S. & Hans, A.S. 1973
- nepalensis* (Hook. f.) O. Kuntze
- nutans* Wall.
14 Malik, C.P. 1965
28 Mehra, P.N. & Dhawan, H. 1971
- niveus* Thunb.
lastocarpus Smith
14 Vaarama, A. 1954 ; Malik, C.P. 1965 ; Mehra, P.N. & Dhawan, H. 1966a
- var. *concolor* Hook. f.
concolor Wall.
28 Heslop-Harrison, Y. 1953a
- paniculatus* Smith
14 Malik, C.P. 1965 ; Mehra, P.N. & Dhawan, H. 1966a
- racemosus* Roxb.
14 Subramanian, D. 1979b
- rugosus* Smith
14 Malla, S.B. *et al.* 1975
- var. *thwaitesii*
c.98 Nybom, H. 1980
- saxatilis* Linn.
28 Scheerer, H. 1939 ; Vaarama, A. 1939, 1954 ; Löve, A. & Löve, D. 1944b, 1956b ; Löve, A. 1954b ; Larsson, G. 1957 ; Sorsa, V. 1963b ; Zhukova, P.G. 1967b
- sumatranus* Miq.
asper Wall.
14 Jinno, T. 1958
- sp.
c.70 Nybom, H. 1980

* The combination *Robus acuminatus* should be attributed to Smith (FBI, 2 : 327).

Sibbaldia Linn.

20 ; temperate Eurasia to Himalaya. 4 ; temperate and subalpine Himalaya (up to 5,300m), and Nepal.

micropetala (D. Don) Hand.-Mazz.

Potentilla albifolia Wall.

36 Mehra, P.N. & Dhawan, H. 1966a

Sorbaria (Ser. ex DC.) A. Br.

10 ; Central and East Asia, and North America. 2 ; Himalaya (up to 3,300m).

sorbifolia (Linn.) A. Br.

36 Grusenkov (Fedorov)

Spiraea sorbifolia Linn.

18 Mehra, P.N. & Dhawan, H. 1966a ; Mehra, P.N. & Sareen, T.S. 1969 ; Mehra, P.N., Sareen, T.S. & Hans, A.S. 1973 ; Singhal, V.K. *et al.* 1980a

36 Malik, C.P. 1965

Sorbus Linn.

100 ; North temperate. 7 ; temperate Himalaya (between 2,160 and 4,600m).

aucuparia Linn.

34 Sax, K. 1931a ; Liljefors, A. 1934, 1953 ; Tischler, G. 1934 ; Löve, A. 1954b ; Löve, A. & Löve, D. 1956b ; Sorens, V. 1962 ; Taylor, R.L. & Mulligan, G.A. 1968

Pyrus aucuparia Linn.*

34 Moffett, A.A. 1931a, b

foliolosa (Wall.) Spach.

Pyrus foliolosa Wall.

68 Singhal, V.K. *et al.* 1980a

Spiraea Linn.

100 ; North temperate, South to

Himalaya and Mexico. 10 ; temperate Himalaya (between 1,600 and 4,600m), and Nepal, Pakistan and Bhutan—a few cultivated.

bella Sims

18 Sharma, A. & Sarkar, A.K. 1967-1968

canescens D. Don

18 Sharma, A. & Sarkar, A.K. 1967-1968

36 Malik, C.P. 1965 ; Mehra, P.N. & Dhawan, H. 1966a ; Mehra, P.N., Sareen, T.S. & Hans, A.S. 1973

corymbosa Roxb.**

18 Sharma, A. & Sarkar, A.K. 1967-1968

corymbosa Raf.

27 Sax, K. 1936

36 Baldwin, J.T. 1951 ; Subramanian, D. 1979b

hypericifolia Linn.

18 Sax, K. 1936

japonica Linn. f.

14 Sharma, A. & Sarkar, A.K. 1967-1968

18 Sax, K. 1936

34 Baldwin, J.T. 1951

maeranthia Hook. f.***

18 Sharma, A. & Sarkar, A.K. 1967-1968

vestita Wall.

18 Mehra, P.N. & Dhawan, H. 1971

Stranvaesia Lindl.

10 ; Himalaya to China, Formosa and Philippine Islands. 1 ; Western and Central Himalaya, Kumaon and Khasi Hills, and Nepal.

musita (D. Don) Decne

glaucescens Lindl.

34 Mehra, P.N. & Sareen, T.S. 1969 ; Mehra, P.N., Sareen, T.S. & Hans, A.S. 1973

* The combination *Pyrus aucuparia* should be attributed to Gaertn.

** The combination *Spiraea corymbosa* should be attributed to Raf. (DFPI : 161).

*** Probably the specific epithet is *microantha* (FBI, 2 : 325).

RUBIACEAE Juss.

500/6,000 ; mostly in tropics, but many in temperate, and a few in arctic. 96/568 ; chiefly in tropical and subtropical Eastern Himalaya and the mountains of Southern and Western India, ascending up to 4,620m in the Himalaya, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka—some cultivated.

Anthocephalus A. Rich.

3 ; Indo-Malesia. 1 ; Wild or cultivated throughout India, and Sri Lanka.

chinensis (Lam.) A. Rich. ex Walp.

cadamba Miq.

44 Mehra, P.N. & Bawa, K.S. 1969

Argostemma Wall.

100 ; tropical Africa and Asia. 10 ; mostly in subtropical Himalaya, with 2 extending to North Western Himalaya, 2 confined to Southern India, and Bhutan.

pumilum Benn.

22 Mangenot, S. & Mangenot, G. 1962

verticillatum Wall.

28 Khosho, T.N. & Bhatia, S.K. 1963a

Asperula auct.

(= *Cynanchia* Fourr.)

Above 200 ; Europe, Asia, especially Mediterranean, 16 in East Australia and Tasmania. 1 ; Western Himalaya.

cynanchica Linn.*

20 Václavá, M. & Májovský, J. 1976 ;

Václavá, M. & Záborský, J. 1976

20, 22, 44 Romero, M. 1965

22, 44 Homeyer, H. 1932

44 Fagerlind, F. 1934 ; Pouques, M.L. de 1949 ; Piotrowicz, M. (Skalińska, M. et al. 1964) ; Skalińska, M. (Fedorov)

Borreria G.F.W. Mey.

150 ; warm regions. 7 ; Western and Southern India, a few throughout India (up to 1,650m in Himalaya), and Sri Lanka.

articularis (Linn. f.) Williams

56 Majumdar, L. 1971, 1975 ; Philip, O. & Mathew, P.M. 1976

hispidula K. Schum.

56 Sanjappa, M. & Sathyananda, N. 1979

Spermacoce hispidula Linn.

28 Raghavan, T.S. & Rangaswamy, K. 1941 ; Khosho, T.N. & Bhatia, S.K. 1963a

56 Raghavan, T.S. & Srinivasan, A.R. 1941b

cradli Ravi

28 Philip, O. & Mathew, P.M. 1975b

ocymoides (Burm. f.) DC.

c.28 Lewis, W.H. 1962b, 1966

pusilla (Wall.) DC.

Spermacoce stricta Linn. f.

56 Raghavan, T.S. & Rangaswamy, K. 1941

Canthium Lam.

200 ; palaeotropics. 14 ; chiefly in South Western India, a few in Eastern Himalaya, North Eastern India and the Andaman Islands, and Bangla Desh and Sri Lanka.

* *Asperula cynanchica* Aitch. (non Linn.), *JFBI*, 3 : 209 is a synonym of *A. oppositifolia* Reg. & Schum. sep. *pseudo-cynanchica* Ebrand.

348 RUBIACEAE

angustifolium Roxb.

22 Raghavan, R.S. & Kamble, S.Y. 1979

dicoccum (Gaertn.) Teys. & Binn.

44 Philip, O. & Mathew, P.M. 1975b

parviflorum Lam.

Plectronia parviflora Bedd.

44 Raghavan, T.S. & Rangaswamy, K. 1941

reedii DC.

44 Philip, O. & Mathew, P.M. 1975b

Catesbaea Linn.

10 ; Florida Keys and West Indies. 1 ; cultivated.

spinosa Linn.

24 Raman, V.S. & Kesavan, P.C. 1963a ; von Reinhard, F. 1970 ; Majumdar, L. 1971 ; Sarkar, A.K., Chakraverty, M. *et al.* 1978 ; Visalakshi, B. 1980

Cephaelis Swartz

180 ; tropics. 1 ; cultivated.

ipocaccum (Stokes) Baill.

22 Janaki Ammal, E.K. (D. 1945)

Chiococca P. Br.

20 ; South Florida, West Indies and tropical America. 1 ; cultivated.

racemosa Linn.

24 Raman, V.S. & Kesavan, P.C. 1963a

Cinchona Linn.

40 ; Andes. 5 ; introduced and cultivated.

calisaya Wedd.

34 Mendes, A.J.T. 1939b ; Mathew, P.M. & Philip, K.O. 1979b

34, 68 Dawson, R.F. 1948

c.40 Fagerlind, F. 1937

ledgeriana Moens ex Trimen

34 Mendes, A.J.T. 1939b ; Mathew, P.M. & Philip, K.O. 1979b

34, 68 Dawson, R.F. 1948

c.40 Fagerlind, F. 1937

hybrida

34 Mathew, P.M. & Philip, K.O. 1979b

officinalis Hook.*

34 Philip, O. & Mathew, P.M. 1976 ;

Mathew, P.M. & Philip, K.O. 1979b

robusta

34 Mathew, P.M. & Philip, K.O. 1979b

saccirubra Pav.

34 Mathew, P.M. & Philip, K.O. 1979b

34, 68 Dawson, R.F. 1948

40-44 Homeyer, H. 1935

Coffea Linn.

40 ; palaeotropics, especially Africa. 9 ; Eastern Himalaya, 1 extending to North Western Himalaya and Western Ghats, and Bangla Desh and Sri Lanka—a few cultivated.

arabica Linn.

22 Homeyer, H. 1932 ; Bacchi, O. 1941 ; Sybeaga, J. 1960

22,44 Mendes, A.J.T. 1938, 1949 ; Medina, D.M. 1949 ; Krug, C.A. & Carvalho, A. 1951

44 Fagerlind, F. 1934, 1937 ; Krug, C.A. 1934 ; Douifoligne, J. 1939 ; Mendes, A.J.T. & Bacchi, O. 1940 ; Mendes, A.J.T. 1945 ; Bouharmont, J. 1959 ; Majumdar, L. 1971, 1975 ; Williams, J.A. 1972

44, 66, 88 Krug, C.A. 1936, 1937

44, 88 Mendes, A.J.T. 1939a

50, 66 Medina, D.M. *et al.* 1978

88 Chinappa, C.C. 1969

benghalensis Heyne ex Roem. & Schult.

bengalensis Roxb.

22 Fagerlind, F. 1937 ; Majumdar, L. 1975 ; Bedi, Y.S. *et al.* 1980

* The combination *Cinchona officinalis* should be attributed to Linn. (Willis : 254).

- horsfieldiana* Miq.
 22 Bouharmont, J. 1939
 44 Leliveld, J.A. 1938
- jenkinsii* Hook. f.
 88 Mehra, P.N. & Bawa, K.S. 1969
- iberica* Bull.*
 22 Fagerlind, F. 1937; Mendes, A.J.T. 1938; Simmonds, N.W. 1954; Bouharmont, J. 1959
 44 Heyn, A.N.J. 1936 (Sybenga, J. 1961); Ordoño, N.M. & Capinpin, J.M. 1957
- iberica* Hiern
 22 Chinappa, C.C. 1970; Reddy, A.G.S. & Narayan, K.N. 1974; Medina, D.M. *et al.* 1977
- robusta* Linden
 22 Heyn, A.N.J. 1936; Fagerlind, F. 1937; Simmonds, N.W. 1954
 44 Ordoño, N.M. & Capinpin, J.M. 1957
- Dentella* J.R. & G. Forst.
 10; Indo-Malesia and Australia. 2; throughout the greater part of India.
- repens* (Linn.) Forst.
 36 Raghavan, T.S. & Rangaswamy, K. 1941; Majumdar, L. 1971, 1973
- Galium* Linn.
 400; cosmopolitan. About 25; chiefly in temperate North Western Himalaya, and Nepal, Pakistan, Bhutan and Sri Lanka.
- acutum* Edgew.
 22 Khoshoo, T.N. & Bhatia, S.K. 1963a
- asperine* Linn.
 22, 44, 66 Poucques, M. L. de 1949
 42 Piotrowicz, M. (Skalińska, M. *et al.* 1959)
 44 Homeyer, H. 1932; Lewis, W.H. 1962b
 44, 63, 64, 66 Kliphuis, E. 1962
 44, 64, 86 Heiser, C.B. & Whitaker, T.W. 1948
- 63, 64, 66 Gadella, T.W.J. & Kliphuis, E. 1963
 64 Böcher, T.W. *et al.* 1955a
 c.64 Taylor, R.L. & Mulligan, G.A. 1968
 64, 66 Kramer, K.U. *et al.* 1972
 c.66 Löve, A. & Löve, D. 1956b
 66 Murin & Váchoš (Fedorov); Podlech, D. & Dieterle, A. 1969; Májovský, J. *et al.* 1970a; Štáid, A. 1971; Ančev, M.E. 1974a; Moore, R.J. 1975a; Váchošová, M. & Feráková, V. 1978; Van Loon, J. Chr. & de Jong, H. 1978; Brand, C.V.D. *et al.* 1979
 66 ? (64),
 88 ? (86) Fagerlind, F. 1934
 66, 88 Tischler, G. 1934, 1937
- asperifolium* Wall.
 22 Khoshoo, T.N. & Bhatia, S.K. 1963a; Majumdar, L. 1971
- Asperula asperifolia* Wall.
 22 Khoshoo, T.N. & Bhatia, S.K. 1963a
 22, 44, 66 Fagerlind, F. 1937
- boreale* Linn.
 44 Fagerlind, F. 1934; Poucques, M.L.de 1949; Löve, A. 1954a; Löve, A. & Löve, D. 1954, 1956b; Bakšay (Löve, A. & Löve, D. 1961b); Surova, T.D. 1973; Ančev, M.E. 1974a
 44, 55, 66 Piotrowicz, M. (Skalińska, M. *et al.* 1961)
 44, 66 Tischler, G. 1934; Böcher, T.W. & Larsen, K. 1950; Löve, A. & Löve, D. 1954; Hara, H. 1956; Rahn, K. 1961
 66 Homeyer, H. 1932; Piotrowicz, M. (Skalińska, M. *et al.* 1959); Lewis, W.H. 1962b; Taylor, R.L. & Brockman, R.P. 1966; Zhukova, P.G. 1967a, 1969; Zhukova, P.G. *et al.* 1973
- mollugo* Linn.**
 22 Krendl, F. 1967; Mulligan, G. A. 1967
 22, 44 Kliphuis, E. 1962; Soraa, V. 1963b
 22, 44, 66 Rohwedder, H. 1937
 22, 44, 45, 66 Fagerlind, F. 1937
 22, 44, 88 Piotrowicz, M. 1958
 44 Homeyer, H. 1932; Pólya, L. 1949; Gadella, T.W.J. & Kliphuis, E. 1963; Laane, M.M. 1971; Surova, T. D. 1973
 45, 46 Fagerlind, F. 1934

* The combination *Coffea iberica* should be attributed to Hiern (DFPI : 42).

** *Galium mollugo auct. pl.* (non Linn.), FBI, 3 : 207 is a synonym of *G. asperifolium* Wall. (HPDD : 223).

rotundifolium Linn.*

- 22 Piotrowicz, M. 1956 ; Kliphuis, E. 1962, 1974 ; Khoshoo, T.N. & Bhatia, S.K. 1963a ; Skalińska, M. *et al.* 1964 ; Hsu, C.-C. 1968 ; Anđev, M.E. 1974a

Asperula rotundifolia Linn.

- 22 Khoshoo, T.N. & Bhatia, S.K. 1963a

setaceum Lam.

- 22 Dahlgren, R. *et al.* 1971
22, 44 Fagerlind, F. 1934
44 Faure, J. & Pietrera, D. 1969

spurium Linn.

- 20 Fagerlind, F. 1934 ; Kliphuis, E. 1962, 1974 ; Podlech, D. & Dieterle, A. 1969 ; Anđev, M.E. 1974a,b ; Moore, R.J. 1975a ; Murin, A. & Záborský, J. 1976
44 Homeyer, H. 1935

triflorum Michx.

- c.44 Sorsa, V. 1963b
66 Taylor, R.L. & Mulligan, G.A. 1968 ; Kliphuis, E. 1974 ; Löve, A. & Löve, D. 1975c ; Moore, R.J. 1975b

Asperula triflora Michx.

- 22 Khoshoo, T.N. & Bhatia, S.K. 1963a

vetum Scop.

- 44 Fagerlind, F. 1934 ; Löve, A. & Löve, D. 1956b ; Piotrowicz, M. 1958 ; Lövkvist, B. 1962

vetum Linn.

- 22 Lövkvist, B. 1962 ; Anđev, M.E. 1974a
22, 44 Hara, H. 1956 ; Kliphuis, E. 1962
22, 44, 66 Fagerlind, F. 1934, 1937
(22), 44, 66 Tischler, G. 1934
44 Homeyer, H. 1932 ; Jinno, T. 1956b ; Löve, A. & Löve, D. 1956b ; Piotrowicz, M. (Skalińska, M. *et al.* 1959) ; Sorsa, V. 1962 ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Murin & Váchoá (Fedorov) ; Májovský, J. *et al.* 1970a ; Schotsman, H.D. 1970 ; Surova, T.D. 1973 ; Murin, A. & Záborský, J. 1976 ; Brand, C.V.D. *et al.* 1979
44, 66 Rohweder, H. 1937

Gardenia Ellis

250 ; palaeotropics. 8 ; South Western India, 1 in tropical Himalaya, 1 in Eastern Himalaya, 1 almost throughout India, and Bhutan and Bangla Desh a few cultivated.

jasmnoides Ellis

- 22 Fagerlind, F. 1937 ; Bhattacharyya, N.K. 1959 ; Deramus, R. *et al.* 1964

florida Linn.

- 22 Fagerlind, F. 1934 ; Bedi, Y.S. *et al.* 1980

latifolia Ait.

- 22 Bir, S.S., Gill, B.S. & Bedi, Y.S. 1979 ; Sanjappa, M. & Sathyananda, N. 1979

lucida Roxb.

- 22 Bhattacharyya, N.K. 1959

thunbergia Linn. f.

- 22 Fagerlind, F. 1937 ; Deramus, R. *et al.* 1964 ; Bedi, Y.S. *et al.* 1980

tubifera Wall.

- 22 Bhattacharyya, N.K. 1959

Guettarda Linn.

20 ; New Caledonia, 60 in tropical America and 1 in tropical coasts. 1 ; littoral and tidal forests of India and the Andamans, and Sri Lanka.

speciosa Linn.

- 44 Raghavan, T.S. & Rangaswamy, K. 1941 ; Raghavan, T.S. & Srinivasan, A.R. 1941b

Hamelia Jacq.

40 ; Mexico to Paraguay and West Indies. 1 ; cultivated.

patens Jacq.

- 24 Fagerlind, F. 1937 ; Raghavan, T.S. & Rangaswamy, K. 1941 ; Lewis, W.H. 1962b ; Von Reinhard, F. 1970 ; Majumdar, L. 1971 ; Sarkar, A.K., Datta N. & Chatterjee, U. 1975

* *Galium rotundifolium* auct. pl. (non Linn.), FBI, 2 : 304 is a synonym of *G. elegans* Wall. (HFDD : 223).

Hamiltonia Roxb.

1; tropical and subtropical Himalaya, Madhya Pradesh and Western Peninsula, and Bhutan, also cultivated.

suaveolens Roxb.

- 22 Hardas, M.W. & Joshi, A.B. 1954
24 Ahuja, M.R. & Natarajan, A.T. 1957
24, 26 Khoshoo, T.N. & Bhatia, S.K. 1963a

Spermodictyon suaveolens Roxb.

- 18, 22, 44 Majumdar, L. 1971
20 Malla, S.B., Bhattarai, S. *et al.* 1977a
22, 24 Majumdar, L. 1975

Hedyotis Linn.

150; tropical Asia. About 50; chiefly in the mountains of Southern India, a few in the Himalaya (up to 2,970m), and Nepal, Pakistan², Bhutan, Bangla Desh and Sri Lanka.

uncinella Hook. & Arn.

- 36 Hsu, C.-C. 1968

verticillata (Linn.) Lam.*aspida* Retz.

- 32 Khoshoo, T.N. & Bhatia, S.K. 1963a

Hydnophytum Jack.

80; Andamans, Indo-China, Malaysia (especially New Guinea) and Pacific. 1; South Andamans.

formicarum (Spreng.) Jack

- 44 Homeyer, H. 1935; Fagerlind, F. 1937

Hymenodictyon Wall.

20; tropical Africa, Madagascar, and Himalaya to Celebes. 3; Himalaya (up to 2,000m), Central and South Western India, and Nepal, Bangla Desh and Bhutan.

exaltatum Wall.

- 22 Fagerlind, F. 1937
66 Mehra, P.N. 1972

Ixora Linn.

400; tropics. 34; chiefly in South Western India, some in Eastern Himalaya and the Andamans, and Nepal, Bhutan, Bangla Desh and Sri Lanka—a few cultivated.

acuminata Roxb.

- 22 Fagerlind, F. 1937; Sharma, A.K. & Chatterji, T. 1960c; Mehra, P.N. & Bawa, K.S. 1969

arborea Roxb. *ex* Smith

- 22 Mitra, K. & Datta, N. 1967

parviflora Vahl

- 22 Sharma, A.K. & Chatterji, T. 1960c; Sidhu, S.S. 1968

brachlata Roxb.

- 22 Philip, O. & Mathew, P.M. 1975b

chinensis Lam.

- 22 Fagerlind, F. 1937; Sharma, A.K. & Chatterji, T. 1960c

coccinea Linn.

- 22 Raghavan, T.S. & Rangaswamy, K. 1941; Sharma, A.K. & Chatterji, T. 1960c; Lewis, W.H. 1962b; Philip, O. & Mathew, P.M. 1975b

bandhuca Roxb.

- 22 Sharma, A.K. & Chatterji, T. 1960c

nigricans Blume*

- 22 Mehra, P.N. & Bawa, K.S. 1969

stricta Roxb.

- 22 Fagerlind, F. 1937; Sharma, A.K. & Chatterji, T. 1960c

rosea Wall.

- 22 Bedi, Y.S. *et al.* 1980
33 Sharma, A.K. & Chatterji, T. 1960c

* The combination *Ixora nigricans* should be attributed to R. Br. *ex* Wight & Arn. (FHD : 579).

subsessilis Wall.

- 22 Sharma, A.K. & Chatterji, T. 1960c

undulata Roxb.

- 22 Fagerlind, F. 1937; Sharma, A.K. & Chatterji, T. 1960c; Sarkar, A.K., Datta, N. & Chatterjee, U. 1975

villosa Roxb.

- 22 Mehra, P.N. & Bawa, K.S. 1969

Knoxia Linn.

15; Indo-Malesia. 9; mostly in the mountains of Southern India and Himalaya (up to 1,650m), and Sri Lanka.

sumatrensis (Retz.) DC.

- 20 Philip, O. & Mathew, P.M. 1975b

Kobautia Cham. & Schlecht.

About 50; tropical and South Africa. 7; chiefly in tropical parts, ascending up to 2,640m in the Himalaya, and Pakistan.

aspera (Heyne & Roth) Bremek.

- 36 Lewis, W.H. 1965

Oldenlandia aspera (Heyne) DC.

- 18 Baquar, S.R.
- et al.*
- 1965
-
- 22 Sanjappa, M. & Sathyananda, N. 1979
-
- 36 Raghavan, T.S. & Rangaswamy, K. 1941

coccinea Royle

- 18 Lewis, W.H. 1965

Oldenlandia coccinea Royle

- 18 Khoshoo, T.N. & Bhatia, S.K. 1963a

Leptodermis Wall.

30; Himalaya to Japan. 4; Himalaya (up to 3,500m).

lanceolata Wall.

- 22 Pouqueq, M.L. de 1949; Khoshoo, T.N. & Bhatia, S.K. 1963a
-
- >60 Fagerlind, F. 1937

Localla Sweet

5; Himalaya to South West China. 2;

temperate and Eastern Himalaya (up to 2,000m), and Bhutan.

gratissima (Wall.) Sweet

- 44 Malla, S.B.
- et al.*
- 1976; Philip, O. & Mathew, P.M. 1976

pinceana Hook.

- 44 Fagerlind, F. 1937; Mehra, P.N. & Bawa, K.S. 1969

Morinda Linn.

80; tropics. 9; tropical Himalaya, Assam, Khasi Hills, Bengal, Peninsular India, a few throughout the hotter parts of India, and Nepal, Bangla Desh and Sri Lanka—some also cultivated.

angustifolia Roxb.

- 22 Mehra, P.N. & Bawa, K.S. 1969

citrifolia Linn.

- 22 Majumdar, L. 1975.
-
- 44 Sarker, A.K.
- et al.*
- 1974; Philip, O. & Mathew, P.M. 1975b

corcia Buch.-Ham.

- 22 Majumdar, L. 1975

tinctoria Roxb.

- 22 Raghavan, T.S. & Rangaswamy, K. 1941

var. *tomentosa* Hook. f.

- 22 Sanjappa, M. & Sathyananda, N. 1979

umbellata Linn.

- 22 Philip, O. & Mathew, P.M. 1975b

Mussaenda Linn.

200; palaeotropics. 14; chiefly in tropical Himalaya, and Nepal and Bangla Desh—a few cultivated.

corymbosa Roxb.

- 22 Raghavan, T.S. & Rangaswamy, K. 1941; Majumdar, L. 1971

erythrophylla Schum. & Thonn.

- 22 Fagerlind, F. 1937; Majumdar, L. 1971

- frondosa* Linn.
22 Fagerlind, F. 1937 ; Khoshoo, T.N. & Bhatia, S.K. 1963a ; Malla, S.B. *et al.* 1974 ; Philip, O. & Mathew, P.M. 1976
- glabra* Vahl
22 Mehra, P.N. & Bawa, K.S. 1969
- glabrata* (Hook. f.) Hutch.
22 Sarkar, A.K. *et al.* 1973a
- incana* Wall.
22 Mehra, P.N. & Bawa, K.S. 1969
- lateola* DeHile
22 Fagerlind, F. 1937 ; Raghavan, T.S. & Rangaswamy, K. 1941 ; Raghavan, R.S. & Arora, C.M. 1958 ; Nanda, P.C. 1962 ; Khoshoo, T.N. & Bhatia, S.K. 1963a ; Majumdar, L. 1971
- macrophylla* Wall.
22 Mehra, P.N. & Bawa, K.S. 1969
- pentasacmia* Fisch.
22* Fagerlind, F. 1937
- philippica* A. Rich
22 Majumdar, L. 1971 ; Philip, O. & Mathew, P.M. 1976
- roxburghii* Hook. f.
22 Sharma, A. & Sarkar, A.K. 1967-1968 ; Mehra, P.N. & Bawa, K.S. 1969 ; Majumdar, L. 1971
- Neanotis* Lewis
28 ; tropical Asia and Australia. 18 ; temperate Himalaya and South Western India, and Nepal, Bhutan and Sri Lanka.
- gracilis* (Hook. f.) Lewis
18 Malla, S.B., Bhattarai, S. *et al.* 1978a
- Oldenlandia* Linn. *emend.* Brem.
300 ; warm regions. About 25 ; chiefly in Southern and Western India, a few in the Himalaya (up to 1,980m), and Pakistan, Bangla Desh and Sri Lanka.
- affinis* (Roem. & Schult.) DC.
18 Lewis, W.H. 1965
- alata* Koch*
36 Raghavan, T.S. & Rangaswamy, K. 1941
- corymbosa* Linn.
18 Lewis, W.H. 1966; Majumdar, L. 1971
18,36 Majumdar, L. 1973
18,36,54 Lewis, W.H. 1965
36 Raghavan, T.S. & Rangaswamy, K. 1941
54 Harvey 1966
- Hedyotis corymbosa* (Linn.) Lam.
18 Lewis, W.H. 1958, 1962a
- diffusa* Roxb.
54 Philip, O. & Mathew, P.M. 1976
- Hedyotis diffusa* Willd.
32 Lewis, W.H. *et al.* 1967
- herbacea* (Linn.) Roxb.
18 Philip, O. & Mathew, P.M. 1975b
18,36 Lewis, W.H. 1965
- nitida* (Wight & Arn.) Gamble
72 Philip, O. & Mathew, P.M. 1976
- paniculata* Linn.*
36 Majumdar, L. 1973; Sarkar, A.K., Datta, N. & Chatterjee, U. 1980
72 Raghavan, T.S. & Rangaswamy, K. 1941
- peruviana* O. Kuntze
72 Philip, O. & Mathew, P.M. 1976
- pumila* (Linn. f.) DC.
18 Lewis, W.H. 1965
- crystallina* Roxb.
18 Raghavan, T.S. & Rangaswamy, K. 1941
- senegalensis* Hiern**
18 Hagerup, O. 1932

* *Oldenlandia alata* Koch and *O. paniculata* are now placed under the genus *Thecagonum* Babu.

** *O. senegalensis sensu* Hook. f. FBI, 3: 68 (non Hiern) is a synonym of *Kohawia nagporensis* (Brace ex Haines) Santap. & Merck. (SFUGP: 93).

umbellata Linn.

36 Raghavan, T.S. & Rangaswamy, K. 1941

Ophiorrhiza Linn.

150 ; Indo-Malesia. 37 ; chiefly in Eastern Himalaya (up to 2,310m) and Western Ghats, and Bhutan, Bangla Desh and Sri Lanka.

brunneis Wight & Arn.

22 Raghavan, T.S. & Rangaswamy, K. 1941

eriantha Wight

22 Mathew, P.M. & Philip, K.O. 1979a

hirsutula Wight

22 Mathew, P.M. & Philip, K.O. 1979a

mongoa Linn.

22 Gajapathy, C. 1961 ; Philip, O. & Mathew, P.M. 1975a ; Mathew, P.M. & Philip, K.O. 1979a

oppositiflora Hook. f.

24 Majumdar, L. 1971, 1973

prostrata D. Don

22 Majumdar, L. 1971, 1973

harristana Heyne

22 Sharma, A. & Sarkar, A.K. 1967-1968 ; Philip, O. & Mathew, P.M. 1976 ; Mathew, P.M. & Philip, K.O. 1979a

Favetta Linn.

400 ; palaeotropics. 32 ; chiefly in Himalaya and South Western India, and in Bhutan, Bangla Desh and Sri Lanka.

calycina Korth.

22 Philip, O. & Mathew, P.M. 1976

indica Linn.

22 Homeyer, H. 1933 ; Fagerlind, F. 1937

tomentosa Roxb. ex Smith

22 Bedi, Y.S. et al. 1980

Pentas Benth.

50 ; Africa and Madagascar. 1 ; cultivated.

lanceolata (Forsk.) K. Schum.

18,20 Majumdar, L. 1971

20 Lewis, W.H. 1962b

20,40 Lewis, W.H. 1965

carnea Benth.

20 Fagerlind, F. 1934, 1937 ; Raghavan, T.S. & Rangaswamy, K. 1941 ; Sarkar, A.K., Chakraverty, M. et al. 1978 ; Visalakshi, B. 1981

var. *alba* Hort.

18,20 Majumdar, L. 1971, 1973

var. *occinea* Hort.

20 Majumdar, L. 1971

var. *kermesiana* Hort.

20 Majumdar, L. 1971, 1973

var. *ilacina* Hort.

18, 20 Majumdar, L. 1973

var. *quartiniana* Hort.

20 Majumdar, L. 1973

Portlandia P. Br.

25 ; Mexico, Central America and West Indies. 1 ; cultivated.

grandiflora Linn.

c.22 Fagerlind, F. 1937

22 Sarkar, A.K., Chakraverty, M. et al. 1980

Posoqueria Aubl.

15 ; Central and tropical South America and West Indies. 1 ; cultivated.

longiflora Roxb.*

34 Fagerlind, F. 1937 ; Majumdar, L. 1975

*The combination *Posoqueria longiflora* should be attributed to Aubl.

Psychotria Linn.

700 ; warm regions. About 50 ; chiefly in Western Ghats and in Southern India, Eastern Himalaya and the Andaman and Nicobar Islands, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

connata Wall.

44 Philip, O. & Mathew, P.M. 1975b

curvifolia Wall.

44 Philip, O. & Mathew, P.M. 1975b

flavida Talb.

44 Philip, O. & Mathew, P.M. 1976

globicephala Gamble

44 Philip, O. & Mathew, P.M. 1976

subintegra Hook.

22 Philip, O. & Mathew, P.M. 1976

Randia Linn.

200-300 ; tropics. 11 ; chiefly in tropical and subtropical Eastern Himalaya and Western Peninsular India, and Nepal, Bhutan Bangla Desh and Sri Lanka.

dametorum Lam.*

22 Fagerlind, F. 1936

44 Mehra, P.N. & Bawa, K.S. 1969

fasciculata DC.

22 Mehra, P.N. & Bawa, K.S. 1969

longiflora Lam.

22 Fagerlind, F. 1937

longistyla DC.

22 Majumdar, L. 1971, 1975

macrantha DC.

22 Majumdar, L. 1975

utiginosa DC.

22 Bir, S.S., Gill, B.S. & Bedi, Y.S. 1979

Richardia Linn.

10 ; tropical South America. 1 ; introduced.

scabra Linn.

28 Fagerlind, F. 1937

56 Lewis, W.H. 1962b

pilosa HBK

28 Fagerlind, F. 1937

Rondeletia Linn.

120 ; warm America and West Indies. 1 ; cultivated.

odorata Jacq.

44 Fagerlind, F. 1937 Majumdar, L. 1971

Rubia Linn.

60 ; West and Central Europe, Mediterranean, East tropical and South Africa, temperate Asia, Himalaya, and Mexico to tropical South America. 9-10 ; mostly confined to the Himalaya (up to 4,620m), and Nepal, Bhutan and Sri Lanka.

chinensis Regel & Maack

22 Fagerlind, F. 1937

cordifolia Linn.

22 Fagerlind, F. 1934 ; Homeyer, H. 1935 ; Hara, H. & Kurosawa, S. 1963c ; Khoshoo, T.N. & Bhatia, S.K. 1963a ; Sokolovskaya, A.P. (Fedorov) ; Hsu, C.-C. 1968

manjith Roxb.

66 Kurosawa, S. 1966 ; Majumdar, L. 1971

sikkimensis Kurz

c. 132 Kurosawa, S. 1966

* The combination *Randia dametorum* was made by Poir. and it is a synonym of *Xeromphis spinosa* (Thunb.) Keay (DFPI : 185).

336 RUBIACEAE

tinctorum Linn.

- 22, 44 Pouqueas, M.L. de 1949
- 44 Homeyer, H. 1932 ; Fagerlind, F. 1934, 1937

wallichiana Deene

- 44 Kurosawa, S. 1966 ; Majumdar, L. 1971

Serissa Comm. ex Juss.

1-3 ; East Asia. 1 ; cultivated.

japonica (Thunb.) Thunb.

foetida Lam.

- 22 Fagerlind, F. 1937 ; Majumdar, L. 1971, 1975

Vangueria Comm. ex Juss.

27 ; tropical Africa and Madagascar. 2 ; 1 in Hills and plains of Eastern India, 1 cultivated.

madagascariensis J.F. Gmel.

edulis Vahl

- 44 Fagerlind, F. 1937

Wendlandia Bartl. ex DC.

70 ; India, South East Asia, Formosa, Malaysia and Queensland. 20 ; tropical Himalaya, dry forests of India, Eastern and Southern India, and Nepal and Bangla Desh.

puberula DC.

- 22 Mehra, P.N. & Bawa, K.S. 1969 ; Malla, S.B., Bhattarai, S. *et al.* 1978a

tinctoria DC.

- 22 Mehra, P.N. & Bawa, K.S. 1969

wallichii Wight & Arn.

- 22 Mehra, P.N. & Bawa, K.S. 1969

Xeromphis Rafin.

10 ; tropics. 2 ; subtropical Himalaya, Eastern, Central and South Western India, and Bangla Desh and Sri Lanka.

spinosa (Thunb.) Keay

- 22 Majumdar, L. 1975 ; Bedi, Y.S. *et al.* 1980

Randia dimetorum (Retz.) Poir.

- 22 Majumdar, L. 1971

RUTACEAE Juss.

150/900 ; tropics and temperate, especially South Africa and Australia. 29/86 ; mainly in tropical and subtropical Himalaya and Western Peninsular India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka —many cultivated.

Acronychia J.R. & G. Forst.

50 ; Hainan, Malaysia, Australia and Pacific. 2 ; Himalaya, Assam Hills, the Andamans, Eastern and Western Ghats, and Bangla Desh and Sri Lanka.

pedunculata (Linn.) Miq.

- 36 Mehra, P.N. & Khosla, P.K. 1969, 1973

Aegle Corrêa ex Koen.

3 ; Indo-Malesia. 1 ; dry regions of India (up to 1,300m in Himalaya), also cultivated.

marmelos Corrêa

- 18 Banerji, I. & Pal, S. 1957 ; Raghavan, R.S. 1957 ; Nanda, P.C. 1963 ; Sanjappa, M. 1979

- 18,36 Mehra, P.N. & Khosla, P.K. 1973
36 Janaki Ammal, E.K. (D. 1945)

Boehninghausenia Reichb. ex Meissn.

1 ; Himalaya to Japan. Himalaya (between 660 and 2,640m).

albiflora (Hook.) Meissn.

- 20 Kurosawa, S. 1966

Casimiroa La Llave

6 ; Central America. 1 ; cultivated.

edulis La Llave & Lex.

- 36 Nanda, P.C. 1962

Citrus Linn.

About 20; South China, South East Asia and Indo-Malesia. About 18 ; native ones in Himalaya (up to 1,300m), Khasi Hills and Western Ghats, and Bangla Desh—some cultivated.

assamensis

- 18 Naithani, S.P. & Raghuvanshi, S.S. 1958 ; Raghuvanshi, S.S. 1962a, b

aurantifolia (Christm.) Swingle

- 18 Longley, A.E. 1925 ; Krug, C.A. 1943 ; Nakamura, M. 1934b ; Simmonds, N.W. 1954 ; Raghuvanshi, S.S. 1962b
18,27 Bacchi, O. 1940
27 Krug, C.A. & Bacchi, O. 1943

acida Roxb.

- 18 Sharma, A.K. & Bal, A.K. 1957a,b

aurantium Linn.

- 18 Sugiura, T. 1931, 1936b ; Nakamura, M. 1934b ; Yarnell, S.H. 1940a ; Simmonds, N.W. 1954

grandis (Linn.) Osbeck

- 18 Longley, A.E. 1925 ; Nakamura, M. 1934b ; Banerji, I. 1951b, 1954 ; Raghuvanshi, S.S. 1962b
18, 36 Frost, H.B. & Krug, C.A. 1942

decumana Murr.

- 18 Sugiura, T. 1936b
18,21 Sharma, A.K. & Bal, A.K. 1957a, b

maxima (Burm.) Merr.

- 18 Frost, H.B. 1925b ; Toxopeus, H.J. 1933
18,36 Lapin, V.K. (Fedorov)

hystrix DC.

- 18 Krug, C.A. 1943

japonica Thunb.

- 18 Gill, B.S. *et al.* 1979b

limetta Risso

- 18 Nakamura, M. 1934b ; Sharma, A.K. & Bal, A.K. 1957a, b ; Raghuvanshi, S.S. 1962b ; Sahrigy, M.A. *et al.* 1973

limon (Linn.) Burm. f.

- 18 Nakamura, M. 1934b
18,36 Krug, C.A. 1943

limonia Osbeck

- 18 Nakamura, M. 1934b ; Bacchi, O. 1940 ; Naithani, S.P. & Raghuvanshi, S.S. 1958, 1963 ; Raghuvanshi, S.S. 1962b
18,27,36 Lapin, V.K. (Fedorov)
18,36 Frost, H.B. 1925a, b

medica Linn.

- 18 Longley, A.E. 1925 ; Nakamura, M. 1934b ; Lapin, V.K. (Fedorov) ; Raghuvanshi, S.S. 1962b
18, 28 ? Bacchi, O. 1940

microcarpa Bunge

- 18 Sharma, A.K. & Bal, A.K. 1957a, b ; Raghuvanshi, S.S. 1962b ; Vasil, I.K. 1962
18,36 Nakamura, M. 1934a, b

paradisi Macf.

- 18 Nakamura, M. 1934b ; Raghuvanshi, S.S. 1962b
18,27,36 Lapin, V.K. (Fedorov)

poonensis Hort.

- 18 Nakamura, M. 1934a, b

reticulata Blanco

- 18 Raghuvanshi, S.S. 1962b
18,36 Frost, H.B. & Krug, C.A. 1942

sinensis Osbeck

- 18 Frost, H.B. 1925b ; Longley, A.E. 1925 ;
Toxopeus, H.J. 1933 ; Nakamura, M.
1934b ; Negodi, G. 1937c ; Bacchi, O.
1940 ; Raghuvanshi, S.S. 1962b
18,27,36 Lapin, V.K. (Fedorov)
45 Krug, C.A. 1943

tangerinae Hort.

- 18 Nakamura, M. 1934a, b

Clausena Burm. f.

30 ; palaeotropics. 7 ; tropical Himalaya (up to 800m), Bengal and Western Peninsular India, and Nepal, Bhutan, Bangla Desh and Sri Lanka—a few cultivated.

dentata (Willd.) Roem.

- 18 Gajapathy, C. 1962a

willdenowii Wight & Arn.

- 36 Raghavan, R.S. & Arora, C.M. 1958

heptaphylla Wight & Arn.

- 36 Mehra, P.N. & Khosla, P.K. 1973

laosiana (Lour.) Skeels

- 18 Krug, C.A. 1943

wampi Blanco

- 18 Singhal, V.K. *et al.* 1980a

pentaphylla DC.

- 36 Mehra, P.N. & Khosla, P.K. 1973

Dictamnus Linn.

6 ; Central and South Europe to East Siberia and North China. 1 ; temperate Western Himalaya (between 2,000 and 2,600m).

alba Linn.

- 30 Negodi, G. 1939
36 Bowden, W.M. 1940a, 1945b ; Lovka,
M. *et al.* 1971
72 Desai, S. 1960

Euodia J.R. & G. Forst.

45 ; tropical Africa, Asia, Australia and Pacific, 4 ; Eastern Himalaya (up to 3,300m), Assam and Hills of Peninsular India, and Nepal and Sri Lanka.

fraxinifolia Hook. f.

- 72 Bowden, W.M. 1945b
78 Mehra, P.N. & Khosla, P.K. 1969, 1973

melinaefolia Benth.

- 36 Mehra, P.N. & Khosla, P.K. 1969,
1973 ; Mehra, P.N. 1972

Fortunella Swingle

6 ; East Asia and Malay Peninsula. 2 ; cultivated.

Japonica (Thunb.) Swingle

- 18 Longley, A.E. 1925

margarita (Lour.) Swingle

- 18 Longley, A.E. 1925 ; Lapin, V.K.
(Fedorov) ; Nakamura, M. 1941

Glycosmis Corrêa

60 ; Indo-Malesia. 7 ; tropical and subtropical Himalaya, Assam and Southern India, and Sri Lanka.

pentaphylla (Retz.) Corrêa*

- 16 Nanda, P.C. 1962
18 Ghosh, R.B. 1960, 1966b ; Malla, S.B.
et al. 1979

Limonia Linn.

1 ; India to Java. Throughout India (up to 500m in Himalaya), and Pakistan and Sri Lanka, wild or cultivated.

acidissima Linn.

- 18 Singhal, V.K. *et al.* 1980a

* The combination *Glycosmis pentaphylla* was made by DC. and it is a synonym of *G. mauritiana* (Lam.) Tanaka (FHD : 395).

Feronia limonia (Linn.) Swingle

18 Toxopeus, H.J. 1933

F. elephantum Corrèa18 Gilr, B.S. *et al.* 1979b ; Sanjappa, M. 1979**Micromelum** Blume

10 ; Indo-Malesia and Pacific, 3 ; North Western India, tropical and subtropical Himalaya (up to 2,300m), Eastern and South Eastern India, the Andamans, and Sri Lanka.

integerrimum Wight & Arn.

18 Mehra, P.N. & Khosla, P.K. 1969, 1973

Murraya Koen. *ex* Linn., *mut.* Murr.

12 ; East Asia, Indo-Malesia and Pacific. 2 ; almost throughout India (up to 1,600m in Himalaya), and Bangla Desh and Sri Lanka.

koenigii Spreng.18 Janaki Ammal, B.K. (D. 1945) ; Raghavan, R.S. 1957 ; Mehra, P.N. & Khosla, P.K. 1973 ; Sarkar, A.K., Datta, R. *et al.* 1975 ; Sanjappa, M. 1979*paniculata* (Linn.) Jack.

18 Toxopeus, H.J. 1933 ; Hsu, C.-C. 1967 ; Mehra, P.N. & Khosla, P.K. 1973

exotica Linn.18 Pathak, G.N. *et al.* 1949 ; Raghavan, R.S. 1957 ; Sanjappa, M. 1979**Paramignya** Wight

20 ; Indo-Malesia, 7 ; Eastern Himalaya Assam, Western Peninsular India, and Bangla Desh and Sri Lanka.

monophylla Wight

36 Mehra, P.N. & Khosla, P.K. 1973

Pancirus Rafin.

1 ; North China. Introduced.

trifoliata (Linn.) Rafin.18 Longley, A.E. 1925
18,36 Lapin, V.K. (Fedorov)*Citrus trifoliata* Linn.

18 Simonet, M. & Miedzyrzecki, Ch. 1932

Ravenia Vell.

18 ; Central and tropical South America, and West Indies. 1 ; cultivated.

spectabilis Engl.

36 Ghosh, R.B. 1970c

Ruta Linn.

7 ; Canaries etc., and Mediterranean region to South West Asia. 2 ; cultivated.

chalepensis Linn.

36 Negodi, G. 1939

angustifolia Pers.36+4B Natarajan, G. 1978
40 Dahlgren, R. *et al.* 1971*graveolens* Linn.72 Negodi, G. 1937c, 1939
81 Revell (D. 1945)**Skimmia** Thunb.

7-8 ; Himalaya, East Asia and Philippine Islands. 1 ; temperate Himalaya (between 1,600 and 3,300m).

arborescens T. Anders. *ex* Gamble*laureola* Hook. f.

30 Mehra, P.N. & Khosla, P.K., 1969, 1973

Toddalia Juss.

1 ; tropical Africa, Madagascar and tropical Asia. Subtropical Himalaya, Khasi Hills and Western Peninsula, and Sri Lanka.

asiatica Lam.36 Mehra, P.N. & Khosla, P.K. 1969, 1973
72 Raghavan, R.S. 1957

360 RUTACEAE

Triphasia Loze:

2 ; tropical Asia and Philippine Islands.
1 ; cultivated and has run wild.

trifolia (Burm.) P. Wilson

18 Longley, A.E. 1925

Zanthoxylum Linn.

20-30 ; temperate and subtropical East Asia, Philippines, East Malaysia and North America. 10 ; temperate, subtropical and tropical Himalaya (up to 3,000m), Assam and Peninsular India, and Bhutan, Bangla Desh and Sri Lanka.

acanthopodium DC.

64 Mehra, P.N. & Khosla, P.K. 1969, 1973

armatum DC.

66 Mehra, P.N. & Khosla, P.K. 1969, 1973;
Mehra, P.N. & Sareen, T.S. 1969

alatum Roxb.

66 Singhal, V.K. *et al.* 1980a

limbata Alston

68 Mehra, P.N. & Khosla, P.K. 1969, 1973

nitidum DC.

68 Mehra, P.N. & Khosla, P.K. 1969, 1973

ovatifolium Wight

36,68.

c.136 Mehra, P.N. & Khosla, P.K. 1969,
1973

oxyphyllum Edgew.

72 Mehra, P.N. & Khosla, P.K. 1969, 1973 ;
Mehra, P.N. & Sareen, T.S. 1969

scandens Blume

68 Mehra, P.N. & Khosla, P.K. 1969, 1973

tomentellum Hook. f.

72 Mehra, P.N. & Khosla, P.K. 1973

SABIACEAE Blume

1/55 ; India and East Asia to Solomons. 1/10 ; chiefly in Himalaya and South Western India, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

Sabia Colebr.

55 ; East and South East Asia, Indo-Malesia and Solomon Islands. 10 ; chiefly in Himalaya and South Western India, and

Nepal, Bhutan, Bangla Desh and Sri Lanka.

purpurea Hook. f.

48 Malla, S.B., Bhattarai, S. *et al.* 1977b

SALICACEAE Mirbel.

3/530 ; chiefly North temperate. 2/45 ; many in Himalaya (up to 5,330m), a few in North Western and South Western India, and Nepal, Pakistan and Bhutan—some cultivated.

Populus Linn.

35 ; North temperate. 9 ; chiefly in Western Himalaya (up to 4,500m), and Bhutan and Pakistan a few cultivated.

alba Linn.

- 38 Wettstein-Westerheim, W. von 1933
38,57 Dillewijn, C. van 1939a, b, 1940 ; Smith, E.C. 1943
57 Peto, F.H. 1938

balsamifera Linn.*

- 38 Meurman, O. 1925; Löve, A. & Löve, D. (Löve, A. & Löve, D. 1961b)
76? Blackburn, K.B. & Harrison, J.W.H. 1924

ciliata Wall.

- 38 Mehra, P.N. & Singh, A. 1963 ; Bedi, Y.S. *et al.* 1980

deltoides Marsh.

- 38 Dillewijn, C. van 1939b, 1940 ; Smith, E.C. 1943 ; Löve, A. & Löve, D. (Löve, A. & Löve, D. 1961b)

lawrfolia Ledeb.

- 38 Smith, E.C. 1943

 nigra Linn.

- 38 Blackburn, K.B. & Harrison, J.W.H. 1924 ; Tischler, G. 1934 ; Dillewijn, C. van 1939a, b, 1940 ; Smith, E.C. 1943 ; Uhríková, A. & Schwarzová, T. 1978 ; Eckenwalder, J.E. 1978
38,57 Sutb, T. 1944

var. italica Kochno**italica Moench.**

- 38 Dillewijn, C. van 1939b

var. pyramidalis

- 38 Mehra, P.N. & Singh, A. 1963

robusta Schrad.

- 38 Dillewijn, C. van 1939b, 1940 ; Smith, E.C. 1943

Salix Linn.

500 ; chiefly North temperate. 36 ; almost all in Himalaya (up to 5,330m), a few in North Western and South Western India, and Nepal, Pakistan and Bhutan some cultivated.

acmophylla Boiss.

- 38 Mehra, P.N. & Sareen, T.S. 1969, 1973b

alba Linn.

- 76 Blackburn, K.B. & Harrison, J.W.H. 1924 ; Holmberg, O.R. 1931 ; Tischler, G. 1934 ; Wilkinson, J. 1944 ; Suda, Y. & Argus, G.W. 1968 ; Mehra, P.N. & Sareen, T.S. 1973b

babylonica Linn.

- 76 Nakajima, G. 1937b, 1942 ; Bowden, W.M. 1945b ; Almeida, J.L.F. de 1946 ; Suda, Y. 1960, 1963 ; Mehra, P.N. & Sareen, T.S. 1973b ; Váchová, M. & Chmelář, J. 1976

caprea Linn.

- 38 Blackburn, K.B. & Harrison, J.W.H. 1924 ; Meurman, O. 1924 ; Hákansson, A. 1929b ; Holmberg, O.R. 1931 ; Tischler, G. 1934 ; Nakajima, G. 1937b ; Löve, A. & Löve, D. 1975b ; Váchová, M. & Feráková, V. 1978 ; Javůrková, V. 1979
38, 76 Wilkinson, J. 1944
57 Marklund (Löve, A. & Löve, D. 1942b)

daltoniana Anderss.

- 38 Malla, S.B., Bhattarai, S. *et al.* 1978a

daphnoides Vill.

- 38 Blackburn, K.B. & Harrison, J.W.H. 1924 ; Holmberg, O.R. 1931 ; Váchová, M. & Májovský, J. 1976
57 Wilkinson, J. 1944, 1954
152 Mehra, P.N. & Sareen, T.S. 1969, 1973b

elegans Wall.

- 38 Mehra, P.N. & Singh, A. 1963 ; Mehra, P.N. & Sareen, T.S. 1973b

* *Populus balsamifera* Hook. f. (non Linn.) FBI, 5 : 638 is a synonym of *P. ciliata* Wall. ex Royle (FBI : 44).

362 SALICACEAE

fragilis Linn.

- 76 Blackburn, K.B. & Harrison, J.W.H. 1924; Holmberg, O.R. 1931; Tischler, G. 1934; Wilkinson, J. 1944; Suda, Y. 1963; Neumann, V.A. & Polatschek, A. 1972
 114 Marklund (Löve, A. & Löve, D. 1942b)

hastata Linn.

- 38 Marklund (Holmberg, O.R. 1931); Zhukova, P.G. 1967a; Neumann, V.A. & Polatschek, A. 1972; Váchová, M. & Chmelář, J. 1976
 38,c.100 Dorn, R.D. 1975
 c.100 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)

psilostigma Anderss.

- 38 Mehra, P.N. & Hans, A.S. 1969

smithiana Willd.

- 38 Váchová, M. & Chmelář, J. 1976

tetrasperma Roxb.

- 38 Sohi, S.N. & Singh, S.D. 1961
 76 Mehra, P.N. & Sareen, T.S. 1969, 1973b

viminatis Linn.

- 38 Blackburn, K.B. & Harrison, J.W.H. 1924; Sinotó, Y. 1928a, 1929b; Hákan-son, A. 1929b; Holmberg, O.R. 1931; Tischler, G. 1934; Wilkinson, J. 1944

SALVADORACEAE Lindl.

3/12; dry hot regions (often coastal or saline) of Africa, Madagascar and Asia. 3/4; Punjab, Bombay, Bengal, Orissa, Uttar Pradesh, Peninsular India, and Pakistan and Sri Lanka.

Salvadora Linn.

4-5; warm Africa and Asia. 2; drier parts of North Western and Peninsular India and Uttar Pradesh, and Pakistan and Sri Lanka.

oleoides Decne

- 24 Baquar, S.R. & Husain, S.A. 1967

persica Linn.

- 24 Koul, A.K. & Singh Chauhan, B.P. 1962
 26 Sidhu, S.S. 1961; Sarkar, A.K., Mallick, R. *et al.* 1977

SAMBUCACEAE Link

1/40; cosmopolitan. 1/8; Kashmir, Sikkim, Assam and Khasi Hills, and Nepal--1 cultivated.

Sambucus Linn.

40; cosmopolitan (excluding Amazonia, Africa (1 on East African mountains),

Arabia, Peninsular India, West Australia and Pacific). 8; Kashmir, Sikkim, Assam and Khasi Hills, and Nepal - 1 cultivated.

adsata Wall.

36 Kurosawa, S. 1966 ; Sharma, A. & Sarkar, A.K. 1967-1968 ; Mehra, P.N. & Bawa, K.S. 1969

36+1B Mehra, P.N. 1972

38+0-1B Mehra, P.N. & Bawa, K.S. 1968

canadensis Linn.

36 Sax, K. & Kribs, D.A. 1930 ; Ferguson, I.K. 1966 ; Heussell, R.W. 1968 ; Mehra, P.N. & Bawa, K.S. 1969 ; Ourecky, D.K. 1970

36+0-2B Mehra, P.N. 1972

38+0-2B Mehra, P.N. & Bawa, K.S. 1968

ebulus Linn.

36 Pouques, M.L.de 1945b, 1949 ; Battaglia, E. 1946, 1948 ; Battaglia, E. & Dolcher, T. 1947 ; Heussell, R.W. 1968 ; Ourecky, D.K. 1970 ; Česdhmedjiev, I.V. 1976 ; Lessani, H. & Chariat-Panahi, S. 1979 ; Aryavand, A. 1980

houkeri Rehder

36 Kurosawa, S. 1966

javaalca Reinw. ex Blume

36 Bowden, W.M. 1940a, 1945a ; Mehra, P.N. & Bawa, K.S. 1969 ; Subramanyam, K. & Kamble, N.P. 1971

chinesis Lindl.

36 Suzuka, O. 1950a ; Hsu, C.-C. 1968

nigra Linn.

36 Bönicke, L. 1911 ; Winge, O. 1917b, 1944 ; Kleinmann, A. 1923 ; Sax, K. & Kribs, D.A. 1930 ; Tischler, G. 1934 ; Pouques, M.L. de 1945b, 1949 ; Delay, C. 1947 ; Pólya, L. 1950 ; Heussell, R.W. 1968 ; Ourecky, D.K. 1970 ; Brand, C.V.D. *et al.* 1979 ; Bedi, Y.S. *et al.* 1980

f. nigra

36 Česdhmedjiev, I.V. 1976

SANTALACEAE R. Br.

30/400 ; tropics and temperate. 7/10 ; mostly in tropical and subtropical Himalaya, and the mountains of Southern India, and Nepal, Bhutan and Sri Lanka.

Osyris Linn.

6 - 7 ; Mediterranean and Africa to India. 1 ; subtropical Himalaya (up to 2,310m), and Western Ghats, and Bhutan and Sri Lanka.

wightiana Wall. ex Wight*arborea* Wall.

30 Rao, L.N. 1942

Santalum Linn.

25 ; East Malaysia and Australia to East Polynesia and Juan Fernandez. 1 ; Peninsular India, also cultivated.

album Linn.

10 Iyengar, G.S. 1937
20 Sanjappa, M. 1978
20, 40 Kapoor, M.L. 1981

Theaenum Linn.

325 ; Europe, Africa, Asia (to Philippine Islands and Lesser Sunda Islands) and Australia. 3 ; Western Himalaya, Chota Nagpur and Western Ghats.

wightianum Wall.

20 Rao, L.N. 1942

SAPINDACEAE Juss.

150/2,000 ; tropics and subtropics. 27/60 ; chiefly in tropical Eastern Himalaya and Western Peninsular India, and Nepal, Bangla Desh and Sri Lanka.

Blighia Koenig

7 ; tropical Africa. 1 ; cultivated.

sapida Koenig

32 Mangenot, S. & Mangenot, G. 1957, 1962

Cardiospermum Linn.

12 ; tropics, especially America. 2 ; 1 Peninsular India, 1 throughout India, and Sri Lanka.

halicacabum Linn.

22 Sugiura, T. 1931, 1936b ; Bowden, W.M. 1945b ; Kadry, A. el R. 1951 ; Guervin, C. 1961a

Dimocarpus Lour.

5 ; Indo-Malesia. 1 ; Bengal and Western Ghats.

longan Lour.**Euphoria longana** Lam.

30 Bhaduri, P.N. & Bose, S. 1949 ; Mehra, P.N., Khosla, P.K. & Sareen, T.S. 1972

Nephelium longana (Lam.) Camb.

24 Guervin, C. 1961a
30 Bhaduri, P.N. & Bose, S. 1949 ; Singhal, V.K. *et al.* 1980a

Dodonaea Mill.

60 ; tropics and subtropics, especially Australia. 1 ; almost throughout India and Sri Lanka, also cultivated.

viscosa (Linn.) Jacq.

28 Hair, J.B. & Beuzenberg, E.J. 1959 ; Mehra, P.N., Khosla, P.K. & Sareen, T.S. 1972 ; Sarkar, A.K., Datta, R. *et al.* 1975 ; Sarkar, A.K., Datta, N. *et al.* 1976 ; Miège, J. 1960b
30 Guervin, C. 1961b
32 Ahuja, M.R. & Natarajan, A.T. 1957

Erioglossum Blume

1 ; Indo-Malesia and Australia. North Eastern India, Eastern Himalaya southwards to Peninsular India and the Andamans.

rubiginosum Blume

26 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N., Khosla, P.K. & Sareen, T.S. 1972

Filicium Thwaites *ex* Benth. & Hook. *f.*

3 ; tropical Africa and Asia. 1 ; Western Ghats, cultivated elsewhere. *

decipiens Wight & Arn.*

32 Guervin, C. 1961b

Koelreuteria formosana Hayata

32 Singhal, V.K. *et al.* 1980a

Lepisanthes Blume

40 ; tropical Asia. 6 ; Assam and South Western India, and Sri Lanka.

canescens Radlk. *ex* Pierre**Hemigyrostis canescens** Thwaites

26 Sarkar, A.K. *et al.* 1976

Litchi Sonner.

10-12 ; India, South China, South East Asia and West Malaysia. 1 ; cultivated.

* The combination **Filicium decipiens** should be attributed to Thwaites (DFPI : 68).

ehlensis (Gaertn.) Sonner.

28 Chaudhuri, K. 1940

28, 30, 32 Sharma, A.K. & Majumdar, A. 1959

30 Janaki Ammal, F.K. (D. 1945)

Nephelium Itchi Camb.

30 Mehra, P.N., Khosla, P.K. & Sareen, T.S. 1972

Nephelium Linn.

35 ; Burma to Indo-China and West Malaysia. 1 ; cultivated.

nappaceum Linn.

22 Ramirez, D.A. 1961

Sapindus Linn.

13 ; tropical and subtropical Asia, Pacific (not Australia) and America. About 9 ; North West India, Eastern Himalaya, Assam, Bengal and Peninsular India, and Bhutan, Bangla Desh, and Sri Lanka - a few cultivated.

attenuatus Wall.*

30 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N., Khosla, P.K. & Sareen, T.S. 1972

mukorossi Gaertn.

36 Sarkar, A.K., Datta, N. *et al.* 1976

detergens Roxb.

30 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N. & Sareen, T.S. 1969 ; Mehra, P.N., Khosla, P.K. & Sareen, T.S. 1972

trifoliatum Linn.

36 Sarkar, A.K., Datta, N. *et al.* 1976

Schleichera Willd.

1 ; Indo-Malesia. Sub-Himalayan tracts, Bihar, the Punjab, Madhya Pradesh southwards to Peninsular India and Sri Lanka.

oleosa (Lour.) Oken

32 Sareen, T.S. & Kumari, S. 1973

Xerospermum Blume

20-25 ; Assam, South East Asia and West Malaysia. 1 ; Assam.

arobhlanum Blume

32 Mehra, P.N. & Khosla, P.K. 1969 ; Mehra, P.N., Khosla, P.K. & Sareen, T.S. 1972

SAPOTACEAE Juss.

35-75/800 ; tropics. 13/45 ; mostly in Eastern Himalaya, Assam and South Western Peninsula, and Bhutan, Bangla Desh and Sri Lanka.

Chrysophyllum Linn.

150 ; tropics, especially America. 3 ; Assam, Khasi Hills and Western coasts, and Bangla Desh, 1 cultivated.

cañito Linn.

24 Krishnaswamy, N. & Ramao, V.S. 1949

26 Tjao, J.H. 1948 ; Midge, J. 1954

* *Sapindus attenuatus* Wall. ex Hiern, *FBI*, 1 : 684, *pro parte* is a synonym of *Agbania rubra* (Roxb.) Radik. (FEH : 193).

Madhuca J.F. Gmel.

85 ; Indo-China, Indo-Malesia (especially West Malaysia) and Australia. 8 ; subtropical Himalaya (up to 1,660m), Central India, Bengal, South Western India and the Andamans, and Bhutan, Bangla Desh and Sri Lanka.

latifolia Macbride

Bassia latifolia Roxb.

22 Singh, B. 1951

longifolia (Koen.) Macbride

indica J. F. Gmel.

24 Mehra, P.N. 1972

Bassia longifolia Linn.

24 Sanjappa, M. & Sathyananda, N. 1979

Mauilcara Adans.

70 ; tropics. 4 ; Peninsular India and Andaman Islands, and Sri Lanka - some cultivated.

achras (Mill.) Fosberg

sapota (Linn.) van Royen

24 Bawa, K.S. 1973

Achras sapota Linn.

26 Janaki Ammal, E.K. (D. 1945); Mihge, J. 1954

hexandra (Roxb.) Dubard

Mimusops hexandra Roxb.

24 Mehra, P.N. & Bawa, K.S. 1969

Mimusops Linn.

57 ; tropical Africa, and 1 from Malaysia to Pacific. 2 ; 1 Peninsular India, also cultivated, 1 in the Hills of Southern India.

efengi Linn.

24 Sen, S. & Sen, N.K. 1954 ; Sobti, S.N. & Singh, S.D. 1961

Palaquium Blanco

Above 115 ; Formosa, South East Asia, Indo-Malesia and Solomon Islands. About 12 ; Western Ghats, and Bangla Desh and Sri Lanka - a few cultivated.

gutia (Hook. f.) Ball.

24 Heyn, A.N.J. 1938 ; Janaki Ammal, E.K. (D. 1954)

Xantolis Rafin.

14 ; Southern India, South East Asia and North Philippine Islands. 4 ; Southern and Eastern India - 1 introduced.

assamicum (Clarke) van Royen

Sideroxylon assamicum Clarke

26 Mehra, P.N. & Bawa, K.S. 1969

SARCOSPERMATACEAE H.J. Lam.

1/6 ; South East Asia and Malaysia. 1/2 ; Eastern Himalaya.

Sarcosperma Hook. f.

6-10 ; Eastern Himalaya to South and East China, and scattered in West Malaysia

and Moluccas. 2 ; Eastern Himalaya.

arboreum Benth.

24 Mehra, P.N. & Bawa, K.S. 1969

SAURURACEAE A. Rich.

5/7 ; East Asia and North America. 2/7 ; temperate and tropical Himalaya (up to 2,330m), Assam and West Bengal, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

Houttuynia Thunb.

1 ; Himalaya to Japan. Tropical Himalaya and Khasi Hills.

cordata Thunb.

- 24 Hsu, C.-C. 1968
56 Shibata, K. & Miyake, K. 1908
c.96 Okabe, S. 1934 ; Kurosawa, S. 1966
96 Mihara, T. 1960
100-104 Söderberg, E. 1927

SAXIFRAGACEAE Juss.

30/580 ; chiefly North temperate, a few South temperate and tropical mountains. 6/64 ; confined to temperate and alpine Himalaya (up to 5,940m), and Nepal and Bhutan.

Astilbe Buch.-Ham.

25 ; East Asia and North America. 2 ; temperate Himalaya (up to 3,000m) and Khasi Hills, and Bhutan.

revularis Buch.-Ham.

- 14 Mehra, P.N. & Dhawan, H. 1971
28 Hamel, J.L. 1949

Bergenia Moench.

6 ; Central and East Asia. 4 ; Himalaya (between 2,310 and 4,620m), and Nepal and Bhutan.

ciliata (Haw.) Sternb.*f. ligulata* Yeo*ligulata* (Wall.) Engl.

- 34 Hamel, J.L. 1948

Chrysopteron Linn.

55 ; North temperate and arctic, North Africa and temperate South America. 7 ; Himalaya (between 2,300 and 5,000m) and Bhutan.

alternifolium Linn.

- 18 Pólya, L. 1949
24 Flovik, K. 1940
36 Fürnkranz, D. 1963
48 Skovsted, A. 1934b ; Hamel, J.L. 1953 ; Löve, A. 1954b ; Sorsa, V. 1963b ; Jankun (Skalińska, M. *et al.* 1966) ; Zhukova, P.G. (Fedorov) ; Laane, M.M. 1971
48, 96 Packer, J.G. 1959
66 Zhukova, P.G. & Petrovskii, V.V. 1977

lanuginosum Hook. f. & Thoms.

- 14 Kurosawa, S. 1966

nepalense D. Don

- 24 Hara, H. & Kurosawa, S. 1963a ; Kurosawa, S. 1966

Saxifraga Linn.

370 ; North temperate, arctic, and Andes, chiefly alpine. 50 ; Himalaya (between 3,000 and 6,000m), Nepal and Bhutan.

brachypoda D. Don

- 16 Hamel, J.L. 1953

368 SAXIFRAGACEAE

oernea Linn.

- 36, c.60 Sokolovskaya, A.P. (Fedorov); Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)
 48-50, 70 Zhukova, P.G. 1968
 c.50 Johnson, A.W. & Packer, J.G. 1968
 50 Chiarugi (Tischler, G. 1950)
 52 Zhukova, P.G. & Tikhonova, A.D. 1971
 c.54, 72 Mosquin, T. & Hayley, D.E. 1966
 c.56 Knaben, G. & Engelskjøn, T. 1967
 56 Zhukova, P.G. & Petrovsky, V.V. 1971
 56, 60 Zhukova, P.G. 1969
 60 Löve, A. & Löve, D. 1948
 c.60 Sørensen & Westergaard (Löve, A. & Löve, D. 1948)
 60-70 Jørgensen, C.A. *et al.* 1958
 62 Zhukova, P.G. *et al.* 1973
 64 Löve, A. & Löve, D. 1951
 c.64 Löve, A. & Löve, D. 1956b
 c.66 Skovsted, A. 1934b
 c.70 Hedberg, O. 1967
 70 Mulligan, G.A. & Forsild, A.E. 1969

diversifolia Wall.

- 20 Mehra, P.N. & Dhawan, H. 1971

flagellaris Willd.

- 16 Packer, J.G. 1964; Johnson, A.W. & Packer, J.G. 1968; Mulligan, G.A. & Forsild, A.E. 1969
 18 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)
 32 Flovik, K. 1940; Holmen, K. 1952; Wiens, D. & Halleck, D. 1962; Mosquin, T. & Hayley, D.E. 1966

gouldii Fisch.

- 16 Hamel, J.L. 1953

hirculus Linn.

- 16 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov); Sokolovskaya, A.P. (Löve,

A. & Löve, D. 1961b); Mosquin, T. & Hayley, D.E. 1966; Johnson, A.W. & Packer, J.G. 1968

- 28 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)

- 32 Flovik, K. 1940; Sørensen & Westergaard (Löve, A. & Löve, D. 1948); Löve A. & Löve, D. 1951, 1956b; Hamel, J.L. 1958a; Jørgensen, C.A. *et al.* 1958; Sokolovskaya, A.P. (Fedorov); Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov); Packer, J.G. 1964; Zhukova, P.G. 1967a, 1969; Zhukova, P.G. & Tikhonova, A.D. 1971

sibirica Linn.

- 26 Zhukova, P.G. *et al.* 1973

stolonifera Meerb.

sarmentosa Linn.

- 32 Sharma, A. & Sarkar, A.K. 1967-1968
 36 Skovsted, A. 1934b; Hamel, J.L. 1953

strigosa Wall.

- 16 Hamel, J.L. 1960

umbellulata Hook. f. & Thoms.

- 16 Hamel, J.L. 1953

tiarella Linn.

5; Himalaya and East Asia, Pacific and Atlantic North America. 1; temperate Eastern Himalaya, and Nepal and Bhutan.

polyphylla D. Don

- 14 Schoenagel, E. 1931; Skovsted, A. 1934b; Kurosawa, S. 1966
 18 Matsuura, H. & Sudo, T. 1935

SCHISANDRACEAE Blume

2/47; East Asia, West Malaysia and South East United States. 2/8; Himalaya (up to 3,330m), Assam and Western Ghats, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

Schisandra Michx.

25 ; tropical and warm temperate Asia and East North America. 6 ; temperate Himalaya (up to 3,000m) and Khasi Hills,

and Nepal and Bhutan.

grandiflora (Wall.) Hook. f. & Thoms.

- 14 Malla, S. B., Bhattarai, S. *et al.* 1977a
28 Singhal, V.K. *et al.* 1980a

SCROPHULARIACEAE Juss.

220/3,000 ; cosmopolitan. 63/355 ; chiefly in Himalaya (up to 2,540m), many in marshy localities in the plains, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka—a few cultivated.

Adenosma R. Br.

15 ; China, Indo-Malesia and Australia. 5 ; lower Himalaya, Khasi Hills, Bengal, Assam and Southern India, and Bangla Desh and Sri Lanka.

indianum (Lour.) Merr.

capitatum Benth.

- 72 Mehra, P.N. & Vasudevan, K.N. 1972

Angelonia Humb. & Bonpl.

30 ; tropical America and West Indies. 3 ; cultivated.

cubensis

- 20 Raghavan, T.S. & Srinivasan, V.K. 1940b

grandiflora C. Morr.

- 20 Srinivasan, V.K. 1939 ; Raghavan, T.S. & Srinivasan, V.K. 1940b ; Bhattacharyya, N.K. 1967 ; Verma, S.C. & Dhillon, S.S. 1967

salicariaefolia Humb.

- 20 Verma, S.C. & Dhillon, S.S. 1967

Antirrhinum Linn.

42 ; Pacific North America and West Mediterranean. 2 ; 1 in Himalaya and Pun-

jab, also cultivated, 1 cultivated.

majus Linn.

- 16 Tischler, G. 1920 ; Baur, E. 1924, 1932 ; Winge, O. 1925 ; Heitz, E. 1927a, b ; Vilmorin, R. de & Simonet, M. 1927b ; Propach, H. 1934, 1935 ; Straub, J. 1939 ; Belling (Tischler, G. 1950) ; Rieger, R. 1957, 1958 ; Afanassjeva, A.S. (Fedorov) ; Ortiz, E. 1961 ; Stubbe, H. 1966 ; Bhattacharyya, N.K. 1967 ; Verma, S.C. & Dhillon, S.S. 1967 ; Bose, S. and Panigrahi, U.C. 1969b ; Gill, L.S. 1971e ; Vij, S.P. & Kashyap, S.K. 1976a
16, 17 Stubbe, H. 1934
18 Breslawetz, L. (Fedorov)
32 Bamford, R. & Winkler, F.B. 1941 ; Morrison, J.W. & Rajhathy, T. 1960a ; Khoshoo, T.N. 1979

oreoceras Linn.

- 14 Sobti, S.N. & Singh, S.D. 1961
16 Heitz, E. 1926, 1927b ; Tischler, G. 1934 ; Larsen, K. 1960 ; Verma, S.C. & Dhillon, S.S. 1967 ; Gill, L.S. 1971e ; Van Loon, J.C. *et al.* 1971 ; Kliphuis, E. & Wieffering, J.H. 1972 ; Vij, S.P. & Kashyap, S.K. 1976a
32 Khoshoo, T.N. 1979

Bacopa Aubl.

100 ; warm regions. 4 ; warmer parts of India, ascending up to 1,320m in the Himalaya, and Pakistan and Sri Lanka.

370 SCROPHULARIACEAE

hamiltoniana (Benth.) Wettst.

Herpestis hamiltoniana Benth.

24 Gill, L.S. 1971e

monieri (Linn.) Penn.

64 Raghavan, R.S. 1959b; Lewis, W.H. *et al.* 1962

68 Chennaveerajab, M.S. 1953; Carr, G.D. 1978

procumbens (Mill.) Greenm.

Herpestis chamaedryoides HBK

20 Mehra, P.N. & Vasudevan, K.N. 1972

Mecardonia dianthera (Swartz) Penn.

22 Koul, M.L.H. 1965; Bhattacharyya, N.K. 1967; Kaul, M.L.H. 1969, 1970; Sarkar, A.K., Datta, N. & Chatterjee, U. 1975

38-46, 44 Kaul, M.L.H. 1975

M. procumbens (Mill.) Small

20 Löve, A. 1971

Calceolaria Linn.

300-400; Mexico to South America, 2; 1 in Western Himalaya, 1 naturalized in certain regions of Western Ghats and Assam.

mexicana Benth.

60 Sugiura, T. 1928; Srinath, K.V. 1940

Calorhabdos Benth.

4-5; Eastern Himalaya to Formosa, 1; Eastern Himalaya, and Nepal.

brunoniana Benth.

34 Lepper, L. 1968a, 1970b

Centranthera R. Br.

9; China, Indo-Malesia and Australia. 4; Eastern Himalaya, Southern India with 1 extending to the Himalaya (up to 1,320m) and 1 to Eastern India, and Sri Lanka.

hispida R. Br.*

30 Vij, S.P. & Kashyap, S.K. 1975, 1976a

tranquebarica (Spreng.) Merr.

36 Bhattacharyya, N.K. 1969a

Chaenorrhinum (DC.) Reichb.

20; Europe, Mediterranean and West Asia, 1; Western Himalaya,

johnstonii Penn.

42 Podlech, D. & Dieterle, A. 1969

Digitalis Linn.

20-30; Europe, Mediterranean and Canary Islands, 2; cultivated.

lanata Ehrh.

48 Haase-Bessel, G. 1921

56 Buxton, B.H. & Dark, S.O.S. 1934; Olah, L. 1952; Bunterfass, T. 1960; Tarnavski, I.T. & Lungescu, I. 1967; Gadella, T. & Kliphuis, E. 1972; Gill, L.S. 1972; Gupta, P.P. & Molnar, G.Y. 1979; Yakar-Tan, N. 1979

purpurea Linn.

48 Haase-Bessel, G. 1916, 1921

56 Buxton, B.H. & Newton, W.C.F. 1928; Huskins, C.L. 1928 (Tischler, G. 1950); Michaelis, P. 1931; Kernart, H.C. 1935; Buxton, B.H. & Dark, S.O.S. 1934; Sakai, K. 1935a; Yakar, N. 1945; Linnert (Tischler, G. 1950); Löve, A. & Löve, D. 1956b; Carpio, M.D.A. 1957, 1963; Bhattacharyya, N.K. 1967; Verma, S.C. & Dhillon, S.S. 1967; Hsu, C.-C. 1968; Taylor, R.L. & Mulligan, G.A. 1968; Gill, L.S. 1972

56, 112 Tarnavski, I.T. & Lungescu, I. 1967

ssp. *purpurea*

56 Van Loon, J. Chr. and de Jong, H. 1978

* *Centranthera hispida* auct. pl. (non R. Br.), FBI, 4: 301 is a synonym of *C. nepalensis* D. Don (HFDD: 348).

Dopatrium Buch.-Ham. ex Benth.

20 ; tropical Africa, Asia and Australia.
3 ; Southern India, 1 throughout India, and
Sri Lanka.

junceum (Roxb.) Buch.-Ham.

28 Bhattacharyya, N.K. 1969a

lobelioides Benth.

14 Srinivasan, V.K. 1939 ; Raghavan, T.S.
& Srinivasan, V.K. 1940b

Euphrasia Linn.

200 ; North temperate, mountains of
Malaysia, New Zealand and temperate South
America. 25 ; chiefly in North Western
Himalaya, and in Bhutan.

officinalis Linn.

22 Tischler, G. 1950
22, 44 Reese, G. 1952b

platyphylla Penn.

44 Mehra, P.N. & Vasudevan, K.N. 1972

Glossostigma Wight & Arn. ex Arn.

5 ; India, Australia and New Zealand.
2 ; Upper Gangetic Plain southwards to
Peninsular India, and Pakistan.

spatulatum (Hook.) Arn.

32 Bhattacharyya, N.K. 1969a

Kickxia Dum.

25 ; Mediterranean to Western India. 2 ;
1 in Western Himalaya, the Punjab, Bihar
and Maharashtra, 1 throughout India, and
Nepal, Pakistan and Sri Lanka.

ramosissima (Wall.) Janch.

18 Verma, S.C. & Dhillon, S.S. 1967 ; Vij,
S.P. & Kashyap, S.K. 1973, 1976a
18, 18+18 Bhattacharyya, N.K. 1969a

Landria ramosissima Wall.

12 Gill, L.S. 1971e

Lagotis Gaertn.

20 ; North and Central Asia, South to
Caucas, Himalaya and West China. 5 ;
alpine and Eastern Himalaya (between 3,660
and 5,660m).

glauca Gaertn.

22 Sakai, K. 1934 ; Sokolovskaya, A.P.
(Fedorov) ; Zhukova, P.G. et al. 1973

var. **cashmeriana** Hook.**cachmiriana** Royle

22 Sokolovskaya, A.P. & Streikova, O.S.
(Fedorov)

Leptorhabdos Schrenk.

1 ; Caucasia and Persia to Central Asia
and Himalaya. Temperate Western Himalaya
(between 1,600 and 3,600m).

pariflora (Benth.) Benth.**benthamiana** Walp.

14 Mehra, P.N. & Vasudevan, K.N. 1972

Limnophila R. Br.

35 ; tropical Africa, Asia, Australia and
Pacific. 18 ; chiefly in Eastern India, and
Bangla Desh and Sri Lanka.

aromatica (Lam.) Merr.

68 Borgmann, E. 1964

heterophylla Benth.

34 Bhattacharyya, N.K. 1969a ; Sarker,
A.K. et al. 1976

indica (Linn.) Druce

34 Shetty, B.V. & Subramanyam, K. 1971

racemosa Benth.

34 Bhattacharyya, N.K. 1969a

rugosa (Roth) Merr.**roxburghii** G. Don

36 Mehra, P.N. & Vasudevan, K.N. 1972

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Limosella Linn.

15 ; cosmopolitan. 1 ; Western Himalaya (between 1,500 and 2,400m).

aquatica Linn.

- 36 Svensson, H.G. 1928 ; Tischler, G. 1934
40 Blackburn, K.B. 1939 ; Vachell, E. & Blackburn, K.B. 1939 ; Löve, A & Löve, D. 1944b, 1956b ; Löve, A. 1954b ; Jørgensen, C.A. *et al.* 1958 ; Quézel, P. & Contandriopoulos, J. 1965 ; Murin & Váchvoš (Fedorov) ; Skaliňská, M. *et al.* 1968 ; Májovský, J. *et al.* 1970a ; Schotzman, H.D. 1970 ; Mészék, J. & Sojak, J. 1972

linearis Mill.

150 ; extra-tropical North hemisphere, especially Mediterranean region. 9 ; Western and Central Himalaya, the Punjab and Bihar, and Pakistan - some cultivated.

bipartita (Vent.) Willd.

- 12 Heitz, E. 1926, 1927b ; Verma, S.C. & Dhillon, S.S. 1967 ; Bhattacharyya, N.K. 1969a ; Viana, J. 1971

cymbalaria (Linn.) Mill.

- 14 East, E.M. 1933 ; Delav, C. 1947 ; Verma, S.C. & Dhillon, S.S. 1967 ; Sharma, A. & Sarkar, A.K. 1967-1968 ; Viana, J. 1971

gonistifolia (Linn.) Mill.

ssp. dalmatica (Linn.) Maire & Petitm.

dalmatica (Linn.) Mill.

- 12 Heitz, E. 1926, 1927b ; Tjebbes, K. 1928 ; Matsuura, H. & Sutó, T. 1935 ; Valdes, B. 1970 ; Markowa, M. & Ivanova, P. 1971 ; Sz-Borbos, O. 1971 ; Gill, L.S. 1972

var. grandiflora (Desf.) Boiss.

- 12 Viana, J. 1972

maroccana Hook. f.

- 12 Heitz, E. 1926, 1927b ; Tjebbes, K. 1928 ; East, E.M. 1933
12, 24 Tandon, S.L. & Bali, P.N. 1958c

odorata M. Bieb.

26 Sharma, A. & Sarkar, A.K. 1967-1968
striata DC.

- 12 Heitz, E. 1926, 1927b ; Ritter, J. 1974

subsessilis Penn.

- 36 Mehra, P.N. & Vasudevan, K.N. 1972

triphylla Mill.

- 12 Heitz, E. 1926, 1927b
12, 14 East, E.M. 1933

vulgaris (Linn.) Mill.

- 12 Heitz, E. 1926, 1927b ; Tjebbes, K. 1928 ; Lawrence, W.J.C. 1930 ; East, E.M. 1933 ; Tischler, G. 1934 ; Rohweder, H. 1937 ; Ehrenberg, L. 1945 ; MacLachlaine, S. 1954 ; Löve, A. & Löve, D. 1956b ; Tandon, S.L. & Bali, P.N. 1958a ; Pálková, M. 1959 ; Afanassjeva, N.G. (Fedorov) ; Sorsa, V. 1962 ; Gadella, T.W.J. & Kliphuis, E. 1966, 1970a, 1972 ; Laane, M.M. 1969b ; Lepper, L. 1970b ; Valdes, B. 1970 ; Brand, C.V.D. *et al.* 1979
14 Bhattacharyya, N.K. 1969a

sp.

8+1-3B,

- 14 Bhattacharyya, N.K. 1967

Lindenbergia Lehm.

15 ; tropical Africa to East Asia. 7 ; mostly in subtropical Himalaya (up to 1,980m), and Bhutan, Bangla Desh and Pakistan.

grandiflora (Buch.-Ham.) Benth.

- 28 Bhattacharyya, N.K. 1969a ; Mehra, P.N. & Vasudevan, K.N. 1972
30 Malla, S.B., Bhattarai, S. *et al.* 1977a

indica (Linn.) O. Kuntze

- 28 Bhattacharyya, N.K. 1967
30 Pal, N. & Pal, S. 1971

urticaefolia Lehm.

- 50 Mehra, P.N. & Vasudevan, K.N. 1972 ; Vij, S.P. & Kashyap, S.K. 1975, 1976a

macrostachya Benth.

- 32 Mehra, P.N. & Vasudevan, K.N. 1972

Lindernia All.

100 ; warm regions, especially Africa and Asia. 28 ; chiefly in Southern and Western India, and Nepal, Bangla Desh and Sri Lanka.

anagallis (Burm. f.) Penn.

angustifolia (Benth.) Wettst.

18 Bhattacharyya, N.K. 1968a, 1969a

cordifolia (Colsm.) Merr.

22 Bhattacharyya, N.K. 1968a

antipoda (Linn.) Alston

verbenaefolia (Colsm.) Penn.

54 Bhattacharyya, N.K. 1967

veronicaefolia Spreng.

18 Bhattacharyya, N.K. 1968a

var. *grandiflora*

36, 38 Bhattacharyya, N.K. 1968a

var. *verbenaefolia*

36, 54 Bhattacharyya, N.K. 1968a

Bonnaya veronicaefolia Spreng.

22 Sharma, A. & Sarkar, A.K. 1967-1968

36 Mehra, P.N. & Vasudevan, K.N. 1972

ciliata (Colsm.) Penn.

18 Bhattacharyya, N.K. 1967, 1968a

Bonnaya brachylata Link & Otto

18 Mehra, P.N. & Vasudevan, K.N. 1972

crustacea (Linn.) F. Moell.

32 Baquer, S.R. 1967-1968

42 Bhattacharyya, N.K. 1967, 1968a

Vandellia crustacea Benth.

14, 28 Vij, S.P. & Kashyap, S.K. 1976a

42 Raghavan, T.S. & Srinivasan, V.K. 1940
b; Sarkar, A.K., Datta, N. & Chatterjee, U. 1975

hirta (Cham. & Schl.) Mukerjee*

20, 40 Bhattacharyya, N.K. 1968a, 1969a

hyssopoides Haines

18 Bhattacharyya, N.K. 1968a

multiflora (Roxb.) Mukerjee

20 Bhattacharyya, N.K. 1967, 1968a ;
Sarkar, A.K. *et al.* 1973a

nummularifolia (D. Don) Wettst.

Vandellia nummularifolia D. Don

24 Gill, L.S. 1971e ; Mehra, P.N. & Vasu-
devan, K.N. 1972

parviflora (Roxb.) Haines

26 Bhattacharyya, N.K. 1968a, 1969a

Hysanthes parviflora Benth.

26 Raghavan, T.S. & Srinivasan, V.K. 1941

pyxidaria All.**

30 Bhattacharyya, N.K. 1968a, 1969a

tennifolia (Vahl) Alston

18 Bhattacharyya, N.K. 1968a, 1969a

viscosa (Hornem.) Merr.

20 Sarkar, A.K., Datta, N. & Chatterjee, U.
1980

hirsuta (Benth.) Wettst.

38 Bhattacharyya, N.K. 1967, 1968a

Maurandya Ortega

10 ; South West United States to tropical South America and West Indies. 1 ; cultivated.

lophospermum Bailey

20 Bhattacharyya, N.K. 1969a

Mazus Lour.

20 ; East and South East Asia, Indo-Malesia and Australia. 8 ; Himalaya (up to 2,320m) with it extending to the plains of Northern India, and Nepal and Bhutan.

* The combination *Lindernia hirta* was made by Pennell and it is a synonym of *L. pudica* (Willd.) Boid. (FHD : 523).

** The combination *L. pyxidaria* was made by Linu. and it is a synonym of *L. procumbens* (Krock.) Philcox (HFDD : 356).

pusillus (Burm. f.) Steen.

18, 20 Markovich, N. Ya (Fedorov)

japonicus (Thunb.) O. Kuntze

18, 36 Zhukova, P.G. 1967b

40 Bhattacharyya, N.K. 1967 ; Pal, N. & Pal, S. 1971 ; Bir, S.S. & Sidhu, M. 1980

52 Sharma, A. & Sarkar, A.K. 1967-1968

rugosus Linn.

16 Sarkar, A.K., Datta, R. *et al.* 1975

40 Verma, S.C. & Dhillon, S.S. 1967 ; Vij, S.P. & Kashyap, S.K. 1975, 1976a

sarculosus D. Don

20 Mehra, P.N. & Vasudevan, K.N. 1972

Mimulus Linn.

100 ; cosmopolitan (especially America), 3 ; Himalaya, Punjab and Bengal, and Nepal Bhutan and Bangla Desh.

gracilis R. Br.*

16 Gill, L.S. 1971e

moschatum Dougl. ex Lindl.

32 Vickery, R.K. *et al.* 1958 ; Mukherjee, B.B. & Vickery, R.K. 1961

Nelsonia R. Br.

1 ; tropical Africa, India to Indo-China, Malay Peninsula and Australia. Throughout India (up to 1, 200m in Himalaya), and Sri Lanka.

canescens (Lam.) Spreng.

campestris R. Br.

28 Sarkar, A.K., Chakraverty, M. *et al.* 1980

32 Joseph, J. 1964

72 Manguot, S. & Manguot, G. 1962

Nemesia Vent.

50 ; South Africa. 1 ; cultivated.

stramonium Benth.

18 Heitz, E. 1927b ; Afanasjeva, N.G. (Fedorov) ; Verma, S.C. & Dhillon, S.S. 1967

Odontites Ludw.

30 ; Mediterranean, West and South Europe, and West Asia. 2 ; Western Himalaya.

serotina (Lam.) Dum.

20 Witsch, H. 1932

Paulownia Sieb. & Zucc.

17 ; East Asia. 1 ; cultivated.

tomentosa (Thunb.) Steud.

34 Delay, C. 1947

40 Westfall, J.J. 1949

Pedicularis Linn.

500 ; North hemisphere, especially on mountains of Central and East Asia. 100 ; chiefly in temperate and alpine Himalaya and Eastern Himalaya (up to 5,500m), a few in Peninsular India, and Nepal and Sri Lanka.

asplendifolia Fiebrk.

16 Mattick (Tischler, G. 1950)

blechnata Klotz.

14 Mehra, P.N. & Vasudevan, K.N. 1972

bibida (Ruch.-Ham.) Penn.

carnea Wall.

12 Verma, S.C. & Dhillon, S.S. 1967

brevifolia D. Don

16 Mehra, P.N. & Vasudevan, K.N. 1972

clarkii Hook. f.

16 Malla, S.B., Bhattarai, S. *et al.* 1977a

furfuracea Wall.

16 Malla, S.B., Bhattarai, S. *et al.* 1977b

garckeana Prain ex Maxim.

16 Mehra, P.N. & Gill, L.S. 1968a ; Gill, L.S. 1972

* *Mimulus gracilis* auct. pl. (non R. Br.) FBI, 4 : 259 is a synonym of *M. strictus* Benth. (HFDD : 359).

gracilis Wall.

- 16 Mehra, P.N. & Gill, L.S. 1968a; Gill, L.S. 1972

megalantha D. Don

- 16 Mehra, P.N. & Vasudevan, K.N. 1972; Malla, S.B. *et al.* 1979

mollis Wall.

- 16 Malla, S.B., Bhattarai, S. *et al.* 1977a

pectinata Wall.

- 16 Verma, S.C. & Dhillon, S.S. 1967; Mehra, P.N. & Gill, L.S. 1968a; Gill, L.S. 1972; Bhat, B.K. *et al.* 1975

pyramidata Royle

- 16 Mehra, P.N. & Vasudevan, K.N. 1972; Bhat, B.K. *et al.* 1975

pyrenaica Gay

- 16 Kupfer, P. & Favarger, C. 1967; Verma, S.C. & Dhillon, S.S. 1967; Favarger, C. & Kupfer, P. 1968

rhinanthoides Schrenk

- 16 Mehra, P.N. & Vasudevan, K.N. 1972

siphonantha D. Don

- 16 Verma, S.C. & Dhillon, S.S. 1967; Mehra, P.N. & Gill, L.S. 1968a; Gill, L.S. 1972

tenuirostris Benth.

- 16 Mehra, P.N. & Vasudevan, K.N. 1972

verticillata Linn.*

- 12 Favarger, C. 1953, 1965; Zhukova, P.G. (Fedorov); Johnson, A.W. & Packer, J.G. 1968; Sokolovskaya, A.P. 1968; Taylor, R.L. & Mulligan, G.A. 1968; Favarger, C. 1969b

Russelia Jacq.

40; Mexico to tropical South America. 5; cultivated.

coecinea (Linn.) Wettst.

- 20 Pal, N. 1961

equisetiformis Schlecht. & Cham.

- 20 Pal, N. 1961; Bhattacharyya, N.K. 1967; Verma, S.C. & Dhillon, S.S. 1967; Sarkar, A.K., Chakraverty, M. *et al.* 1980

uncea Zucc.

- 20 Takagi, N. 1938; Srinivasan, V.K. 1939; Raghavan, T.S. & Srinivasan, V.K. 1940b

floribunda

- 20 Bhattacharyya, N.K. 1967

rotundifolia Cav.

- 20 Raghavan, T.S. & Srinivasan, V.K. 1940b

sarmentosa Jacq.

- 20 Verma, S.C. & Dhillon, S.S. 1967

Scoparia Linn.

20; tropical America. 1; naturalized throughout India.

dulcis Linn.

- 20 Lewis, W.H. *et al.* 1962; Baquar, S.R. 1967-1968; Sarkar, A.K. *et al.* 1973a; Gill, L.S. 1978b
40 Raghavan, T.S. & Srinivasan, V.K. 1940b; Chuang, T.I. *et al.* 1963; Bhattacharyya, N.K. 1967

Scrophularia Linn.

300; temperate Eurasia, 12 in North and tropical America. 23; confined to Himalaya (between 1,300 and 4,600m), and Nepal, Bhutan and Pakistan.

calycina Benth.

- 26 Gill, L.S. 1971e

dantata Royle

- 24 Mehra, P.N. & Vasudevan, K.N. 1972

edgeworthii Benth.

- 48 Mehra, P.N. & Vasudevan, K.N. 1972

himalensis Royle

- 20 Mehra, P.N. & Gill, L.S. 1968a
48+2-4B Dhillon, S.S. 1979

* *Pedicularis verticillata sensu* Hook. f., *FBI*, 4 : 309 is a synonym of *P. roylei* Maxim.

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laevis Linn.

- 26 Shaw, R.J. 1962 ; Vaarama, A. & Hiirsalmi, H. 1967

obtusata Edgew.

- 48 Mehra, P.N. & Vasudevan, K.N. 1972

polyantha Royle

- 24+2B Dhillon, S.S. 1979

scaberrimifolia Benth.

- 40 Gill, L.S. 1971c

scopolii Hoppe

- 26 Murin & Váchová (Fedorov); Vaarama, A. & Hiirsalmi, H. 1967 ; Májovský, J. *et al.* 1970a ; Vaarama, A. & Leikas, R. 1970 ; Skallínska, M. *et al.* 1971 ; Pev, D. 1976

var. *scopolii*

f. *scopolii*

- 26 Markova, M. & Ivanova, P. 1971

variegata Bieb.

- 24 Shaw, R.J. 1962 ; Vaarama, A. & Hiirsalmi, H. 1967 ; Vaarama, A. & Leikas, R. 1970

ssp. *depauperata* (Boiss.) Lall

- 32 Lall, S.S. 1970

Sopubia Buch.-Ham.

40; tropical and South Africa, Madagascar, Himalaya to Indo-China and Formosa, 1 Queensland. 3 ; Himalaya (up to 2,100m) Bihar to Peninsular India, and Sri Lanka.

delphinifolia G. Don

- 36 Iyengar, K. 1937

Stemodia Linn.

30 ; tropics. 2 ; Central India, Bihar southwards to Peninsular India.

viscosa Roxb.

- 42 Raghavan, T.S. & Srinivasan, V.K. 1940b, 1942

Striga Lour.

40 ; tropical and South Africa, Asia and Australia. 7 ; mostly in the plains of

Western and Southern India and Gangetic Delta, and Pakistan and Sri Lanka.

asiatica (Linn.) Kuntze

lutea Lour.

- 40 Kumar, L.S.S. & Abraham, A. 1941

densiflora Benth.

- 40 Kumar, L.S.S. & Abraham, A. 1941 ; Bhattacharyya, N.K. 1967

euphrasioides Benth.

- 40 Kumar, L.S.S. & Abraham, A. 1941 ; Verma, S.C. & Dhillon, S.S. 1967 ; Vij, S.P. & Kashyap, S.K. 1975, 1976a

gemeroides (Willd.) Vatke *ex* Engler

orobanchoides Benth.

- 40 Kumar, L.S.S. & Abraham, A. 1941

Torenia Linn.

50 ; tropics. 12 ; Himalaya (up to 1,650m) and Western Ghats, and Nepal, Bangia Desh and Sri Lanka.

asiatica Linn.

- 16 Simon, S.V. & Lowig, E. 1930

cordifolia Roxb.

- 32 Mehra, P.N. & Vasudevan, K.N. 1972 ; Vij, S.P. & Kashyap, S.K. 1975, 1976a

fournleri Linden

- 18 Simon, S.V. & Lowig, E. 1930 ; Sugiura, T. 1931, 1936b ; Sraub, J. 1939 ; Tandon, S.L. & Bhutani, K. 1964 ; Bhattacharyya, N.K. 1967

Verbascum Linn.

360 ; North temperate Eurasia. 6 ; Himalaya (up to 3,630m), 1 occurs throughout India, and Pakistan, Bhutan and Sri Lanka.

Nattaria Linn.

- 30 Arts-Damier, Th. 1960
30, 32 Håkansson, A. 1926 ; Ferino (Tischler, G. 1927a)

celsioides Benth.

- 36 Vij, S.P. & Kashyap, S.K. 1975, 1976a

chinaense (Linn.) Santap.*Celsia coromandelina* Vahl

- 80 Malik, C.P. 1960b ; Sobti, S.N. & Singh, S.D. 1961
92 Bhattacharyya, N.K. 1969a

thapsus Linn.

- 34, 36 Håkansson, A. 1926
c.36 Tischler, G. 1934 ; Packer, J.G. 1964
36 Heiser, C.B. & Whitaker, T.W. 1948 ; Mulligan, G.A. 1961a ; Gadella, T.W.J. & Kliphuis, E. 1966 ; Verma, S.C. & Dhillon, S.S. 1967 ; Podlech, D. & Dieterle, A. 1969 ; Gill, L.S. 1971e ; Kliphuis, E. & Wieffering, J.H. 1972 ; Vij, S.P. & Kashyap, S.K. 1975, 1976a ; Brand, C.V.D. *et al.* 1979
48 Bhattacharyya, N.K. 1969a

virgatum Stokes

- 52 Håkansson, A. 1926
66 Arts-Damler, Th. 1960

Veronica Linn.

300 ; mostly North temperate, many alpine, a few in South temperate and tropical mountains. 32 ; chiefly between 990 and 4,280 m in North Western Himalaya, and Nepal, Pakistan and Bhutan.

agrestis Linn.

- 14 Yamashita, K. 1937a ; Delay, C. 1947 ; Peov, D. 1972 ; Bir, S.S. & Sidhu, M. 1978, 1980
28 Beatus, R. 1936 a, b ; Rohweder, H. 1937 ; Tischler, G. 1937 ; Wulff, H.D. 1937b ; Lehmann, E. & Schmitz-Lohner, M. 1954 ; Fischer, M. 1969 ; Vij, S.P. & Kashyap, S.K. 1975, 1976a

polita Fries

- 14 Huber, A. 1927 ; Tischler, G. 1934 ; Beatus, R. 1936b ; Lehmann, E. & Schmitz-Lohner, M. 1954 ; Fischer, M. 1969 ; Dahlgren, R. *et al.* 1971

anagallis Linn.*

- 18 Fischer, M. 1969
28, 32 Bhattacharyya, N.K. 1969a
36 Schlenker, G. 1936
54 Verma, S.C. & Dhillon, S.S. 1967 ; Vij, S.P. & Kashyap, S.K. 1976a

anagallis-aquatica Linn.

- 18 Kliphuis, E. & Wieffering, J.H. 1979
36 Ehrenberg, L. 1945 ; Löve, A. & Löve, D. 1956b ; Afanassjeva, N.G. & Meshkova, L.E. (Fedorov) ; Strid, A. 1971

var. *oxycarpa**oxycarpa* Boiss.

- 18 Schlenker, G. 1936 ; Afanassjeva, N.G. & Meshkova, L.E. (Fedorov) ; Meshkova, L.E. (Fedorov)

arvensis Linn.

- 14 Yamashita, K. 1937a ; Löve, A. & Löve, D. 1956b ; Afanassjeva, N.G. & Meshkova, L.E. (Fedorov)
16 Hofelich, A. 1935 ; Larsen, K. 1956b ; Gadella, T.W.J. & Kliphuis, E. 1967, 1968a ; Taylor, R.L. & Mulligan, G.A. 1968 ; Fischer, M. 1969 ; Dahlgren, R. *et al.* 1971 ; Speta, F. 1971a ; Hedberg, I. & Hedberg, O. 1977 ; Kieft, B. & Van Loon, J. Chr. 1978
16-18 Heitz, E. 1926 ; Tischler, G. 1934

baccabunga Linn.

- 16 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)
18 Huber, A. 1927 ; Simonet, M. 1934b ; Tischler, G. 1934 ; Schlenker, G. 1936 ; Ehrenberg, L. 1945 ; Mattick (Tischler, G. 1950) ; Löve, A. 1954b ; Gadella, T.W.J. & Kliphuis, E. 1963, 1972 ; Meshkova, L.E. (Fedorov) ; Marchant, N. 1967 ; Kuzmanov, B. & Kožuharov, S. 1969 ; Václavová, M. & Feráková, V. 1978
18, 36 Sokolowska-Kulczycka (Skalińska, M. *et al.* 1964)

var. *baccabunga*

- 18 Peov, D. 1972

* The specific epithet is *anagallis-aquatica* (HFDD : 364).

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bloba Linn.

- 28 Hofelich, A. 1935 ; Zündorf, W. 1939

cana Wall.

- 50 Mehra, P.N. & Vasudevan, K.N. 1972

ciliata Fisch.

- 16 Mehra, P.N. & Vasudevan, K.N. 1972

hederifolia Linn.

- 18 Mehra, P.N. & Vasudevan, K.N. 1972
 28 Gadella, T.W.J. & Kliphuis, E. 1966
 36, 54 Gadella, T.W.J. & Kliphuis, E. 1975a
 54 Yamazaki, T. & Tateoka, T. 1959 ;
 Fischer, M. 1967 ; Nordenstam, B. &
 Nilsson, O. 1969 ; Spets, F. 1970a,
 1971a ; Fernandes, A. & Queiros, M.
 1970-1971 ; Peev, D. 1972
 56 Hofelich, A. 1935 ; Rohweder, H. 1937 ;
 Lehmann, E. & Schmitz-Lohner, M.
 1954 ; Szrasa, V. 1963b ; Moshkova, L.E.
 (Fedorov)

laxa Benth.

- 46 Yamazaki, R. 1936 ; Mehra, P.N. &
 Gill, L.S. 1968a

mammularisefolia Gouan

- 16 Favarger, C. & Huynh 1964 ; Verma,
 S.C. & Dhillon, S.S. 1967 ; Favarger, C.
 & Kupfer, P. 1968

perpusilla Boiss.

- 14 Meshkova, L.E. (Fedorov)

persica Poir.

- 28 Yamashita, K. 1937a ; Delay, C. 1947 ;
 Löve, A. & Löve, D. 1956b ; Mulligan,
 G.A. 1959 ; Lewis, W.H. *et al.* 1962 ;
 Borgmann, E. 1964 ; Meshkova, L.E.
 (Fedorov) ; Gadella, T.W.J. & Kliphuis,
 E. 1970a ; Brand, C.V.D. *et al.* 1979

robusta (Prain) Yamazaki

- 42 Maila, S.B., Saiju, H. *et al.* 1977

serpyllifolia Linn.

- 14 Simonet, M. 1934b ; Hofelich, A. 1935 ;
 Rutland, J.P. 1941 ; Heiser, C.B. &
 Whitaker, T.W. 1948 ; Mattick (Tischler,
 G. 1950) ; Hara, H. 1956 ; Löve, A. &
 Löve, D. 1956b ; Sokoļovskaya, A.P.
 (Fedorov), 1968 ; Gadella, T.W.J. &
 Kliphuis, E. 1966, 1970b, 1972 ; Skali-
 řska, M. *et al.* 1968 ; Taylor, R.L. &
 Mulligan, G.A. 1968 ; Bhattacharyya,
 N.K. 1969a ; Fischer, M. 1969 ;
 Májovský, J. *et al.* 1970b ; Spets, F.
 1970b

verna Linn.

- 14 Fischer, M. 1969
 16 Hofelich, A. 1935 ; Mehra, P.N. &
 Vasudevan, K.N. 1972

sp.

- 14 Bhattacharyya, N.K. 1967

Wulffenia Jacq.

3 ; South East Europe and Western
 Himalaya. 1 ; Western Himalaya (between
 2,100 and 3,300m).

ambertigana Benth.

- 16 Verma, S.C. & Dhillon, S.S. 1967 ;
 Lepper, L. 1968a, 1970a ; Mehra, P.N.
 & Gill, L.S. 1968a

var. *nepalensis* (Yamazaki) Yamazaki

nepalensis Yamazaki

- 16 Kurosawa, S. 1971b

SIMAROUBACEAE DC.

20/120 ; tropics and subtropics. 6/17 ; subtropical Himalaya, North Western and Eastern
 India, Peninsular India, and the Andaman Islands, and Nepal, Bhutan, Bangla Desh and
 Sri Lanka.

Ailanthus Desf.

10 ; Asia and Australia. 4 ; North Western India, Bihar, Uttar Pradesh and Peninsular India, and Sri Lanka a few cultivated.

excelsa Roxb.

- 62 Pathak, G.N. *et al.* 1949
86 Ghosh, R.B. 1970a

grandis Prain

- 62 Mehra, P.N. & Khosla, P.K. 1969
64 Gill, B.S. *et al.* 1979b

Brucea J.F. Mill.

10 ; palaeotropics. 2 ; subtropical Eastern Himalaya (up to 1,800m), Assam and the Andamans, and Bangla Desh.

mollis Will.

- 24 Mehra, P.N. & Khosla, P.K. 1969

Plectanema Blume

6 ; Western Himalaya to Japan,

Malaysia and Fiji. 4 ; subtropical Himalaya (up to 2,400m), Khasi Hills, and the Andamans, and Nepal and Bhutan - a few cultivated.

excelsa (Swartz) Planch.

- c.60 Janaki Ammal, E.K. (D. 1945)

javanica Blume

- 24 Mehra, P.N. & Khosla, P.K. 1969

nepalensis Benn.

- 24 Mehra, P.N. & Khosla, P.K. 1969

quasioides Benn.

- 50 Nakajima, G. 1942

Quassia Linn.

40 ; tropics, especially America. 2 ; Western Peninsula, and Sri Lanka, 1 cultivated.

amara Linn.

- 36 Janaki Ammal, E.K. (D. 1945); Desai, S. 1960 ; Ghosh, R.B. 1968b, 1970b

SOLANACEAE Juss.

90/2,000 ; tropical and temperate regions, with chief centre in Central and South America. 26/131 ; mostly in Himalaya and the mountains of Southern India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka—many cultivated.

Atropa Linn.

4 ; Europe, Mediterranean to Central Asia and Himalaya. 2 ; 1 in Himachal Pradesh (up to 3,300m) and Kashmir, 1 cultivated.

- S.N. 1954 ; Baquar, S.R. 1967a ; Mehra, P.N. & Gill, L.S. 1968a ; Gill, L.S. 1972

acuminata Royle ex Lindl.

- 72 Dutt, M. 1952a ; Mehra, P.N. & Sobti,

belladonna Linn.

36, 72, 108,

- 144 (callus cultures) Eapen, S. *et al.* 1978
50 Hornedes Ranquini, D.J. 1943 (D. 1955)
72 Marchal, E. 1920 ; Vilmorin, R. de &

Simonet, M. 1928; Delay, C. 1947; Gottschalk, W. 1954a; Mehra, P.N. & Sobti, S.N. 1954; Gill, L.S. 1972; Krumbiegel, G. & Schieder, O. 1979; Lessani, H. & Charat-Panahi, S. 1979

Browallia Linn.

6; tropical America and West Indies.
4; 1 in Khasi Hills, 3 cultivated.

americana Linn.

- 22 Shibata, K. 1962a; Wiggins, I.L. & Porter, D.M. 1971; Gentry, J.L. & Pearce, K.G. 1977, 1978
44 Huynh, K.L. 1965

elata Linn.

- 20 Madhavadian, P. 1968
22 Sugiura, T. 1936a, b; Menzel, M.Y. 1950

demissa Linn.

- 22 Sugiura, T. 1936a, 1937a; Sarkar, A.K. *et al.* 1974

speciosa Hook.

- 44 Sugiura, T. 1936a, b; Desai, S.R. 1970

Brugmansia Pers.

14; tropical America. 3; cultivated and naturalized.

sanguinea (Ruiz & Pav.) D. Don

Datura sanguinea Ruiz & Pav.

- 24 Heiser, C.B. 1963; Madhavadian, P. 1968; Bristol, M.L. 1969

suaveolens (Humb. & Bonpl. ex Willd.) Bercht. & Presl

Datura suaveolens Humb. & Bonpl. ex Willd.

- 24 Gottschalk, W. 1954a

Brunfelsia Linn.

30; tropical America and West Indies.
About 6; cultivated.

americana Swartz*

- 22 Bbaduri, P.N. 1933; Bedi, Y.S. *et al.* 1980

americana Linn.

- 22 Madhavadian, P. 1968; Plowman, T. 1979

- 22+2f Sharma, A.K. & Bal, A.K. 1958b

grandiflora D. Don

- 22 Sharma, A.K. & Bal, A.K. 1958b

latifolia (Pohl) Benth.

- 22 Plowman, T. 1979; Bedi, Y.S. *et al.* 1980

pauciflora (Cham. & Schlecht.) Benth.

var. *calycina* (Benth.) Schmidt

calycina Benth.

- 22 Janaki Ammal (D. 1945)

Capsicum Linn.

50; Central and South America. 3-5; cultivated.

annuum Linn.

- 12 Kostoff, D. 1926 (Tischler, G. 1927); Christensen & Bamford (Fedorov); Milovidov, P. 1960; Thombre, M.V. & Mehetre, S.S. 1979

- 22 Lakshmi, N. *et al.* 1978

- 24 Vilmorin, R. de & Simonet, M. 1928; Huskins, C.L. & La Cour, L. 1930; Sugiura, T. 1931, 1936b; Yamamoto, K. & Sakai, K. 1932; Tokunaga, K. 1934; Pal, B.B. *et al.* 1941; Janaki Ammal, E.K. (D. 1945); Delay, C. 1947; Sinha, N.P. 1950a; Smith, P.G. & Heiser, C.B. 1951, 1957; Heiser, C.B. & Smith, P.G. 1953; Pichonot, M. 1959; Ohta, Y. 1961, 1962a, b; Shopova, M. 1966b, c; Baquar, S.R. *et al.* 1966; Baquar, S.R. 1967a; Novak, F. & Betlach, J. 1970; Gill, L.S. 1972; Reddi, M.V. & Rao, G.M. 1974; Katiyar, R.B. 1977, 1978; Lakshmi, N. & Rao, N.B. 1977b, 1978; Joshi, M.M. & Khataikar, A.S. 1978; Meheiro, S.S. *et al.* 1979; Meshram, L.D. 1979; Bir, S.S. & Neelam 1980; Sadanandam, A. *et al.* 1981

* The combination *Brunfelsia americana* was made by Linn. (DFPI: 27).

- 24, 48 Murthy, B.S. *et al.* 1968 ; Indira, C. & Abraham, S. 1977
- var. *acuminatum*
24 Datta, P.C. 1968
- var. *cerasiforme*
24 Datta, P.C. 1968
- var. *conoides*
24, 36 Datta, P.C. 1968
- var. *grossum*
24, 36, 48 Datta, P.C. 1968
- var. *longum*
24 Datta, P.C. 1968
- frutescens* Linn.
24 Greenleaf, W.H. 1947 ; Sinha, N.P. 1950a ; Smith, P.G. & Heiser, C.B. 1951, 1957 ; Heiser, C.B. & Smith, P.G. 1953 ; Morgan, D.T. & Rapplseye, R.O. 1954 ; Ohta, Y. 1961, 1962a, b ; Raghuvanshi, S.S. & Joshi, S. 1964 ; Raman, V.S. *et al.* 1964 ; Shopova, M. 1966b, c ; von Reinhard, F. 1970

Cestrum Linn.

About 150 ; warm America and West Indies. About 12 ; cultivated.

- aurantiacum* Lindl.
16 Sharma, A.K. & Sharma, A. 1958b ; Dyer, A.F. 1963 ; Madhavadian, P. 1968
- corymbosum*
16 Chauhan, B.P.S. 1968
- diurnum* Linn.
15, 16 Sharma, A.K. & Sharma, A. 1957, 1958b
16 Dugcy, R.S. *et al.* 1966 ; Gill, L.S. 1972
16+0-6B Sobti, S.N. *et al.* 1979
- elegans* (Brongn.) Schlecht.
16 Carniel, K. 1952 ; Pavari, F. 1957 ; Dyer, A.F. 1963 ; Madhavadian, P. 1968
- purpureum* Standl.
16 Sharma, A.K. & Sharma, A. 1958b
- fasciculatum* Miers
16 Goodspeed, T.H. 1954 ; Madhavadian, P. 1968 ; Mehra, P.N. & Bawa, K.S. 1969

hirsutum Jacq.

- 16 Sharma, A.K. & Sharma, A. 1958b

lanatum Mart.

- 16 Nanda, P.C. 1962

newellii Nichol.

- 16 Sharma, A.K. & Sharma, A. 1957
24 Sharma, A.K. & Sharma, A. 1958b

nocturnum Linn.

- 14, 16 Sharma, A.K. & Sharma, A. 1957, 1958b
c.16 Bhaquri, P.N. 1933
16 Baquar, S.R. 1967a ; Baquar, S.R. 1968 ; Madhavadian, P. 1968

var. *foetidissimum*

- 16 Sharma, A.K. & Sharma, A. 1958b

orientaceum Linn.

- 16 Dubey, R.S. & Singh, S.P. 1967

parqui L'Herit.

- 16 Schnack, B. & Covas, G. 1947 (D. 1955) ; Carniel, K. 1952 ; Tschischow, N.T. *de* 1956 ; Sharma, A.K. & Sharma, A. 1958b ; Dyer, A.F. 1963

Cyphomandra Mart. *ex* Sendtn.

30 ; Central and South America and West Indies. 1 ; cultivated.

betacea (Cav.) Sendtn.

- 24 Whitaker, T.W. 1933c ; Vignoli, L. (Fedorov) ; Delay, C. 1947 ; Roe, K.E. 1967b, c ; Madhavadian, P. 1968 ; Van Der Mey, I.A. *et al.* 1969 ; Satkar, A.K. *et al.* 1974

Datura Linn.

10 ; tropical and warm temperate regions of the world, with the chief centre in America. 5 ; naturalized.

arborea Linn.*

- 24 Heiser, C.B. 1963 ; Madhavadian, P. 1968

**Datura arborea auct. pl.* (non Linn.) is a synonym of *Brugmansia candida* Pers. (HFDD : 331).

innoxia Mill.

- 24 Blakeslee, A.F. *et al.* 1935; Buchholz, J.T. *et al.* 1935; Sobti, S.N. & Singh, S.D. 1961; Baquar, S.R. 1967a; Gill, L.S. 1972

24, 48 Krumbiegel, G. & Schieder, O. 1979

metel Linn.

- 24 Glišić, L.N. 1928; Yamamoto, K. & Sakai, K. 1932; Blakeslee, A.F. *et al.* 1935; Buchholz, J.T. *et al.* 1935; Delay, C. 1947; Singh, D.N. & Fatima, R. 1966; Baquar, S.R. 1967a; Simak, M. *et al.* 1968; Chandy, L.P. & Narayanaswamy, S. 1971; Gill, L.S. 1972; Iyer, R.D. & Raina, S.K. 1972

24, 24-48 Mukherjee, S. 1981a

24, 48 Janaki Ammal, E.K. & Zutshi, U. 1970

48 Humphries, C.J. *et al.* 1978

alba Nees

- 24 Yamamoto, K. & Sakai, K. 1932; Suzuka, O. & Koriba, S. 1949 (D. 1955)

fastuosa Linn.

- 24 Vilmorin, R. de & Simonet, M. 1927a, 1928; Bhaduri, P.N. 1933; Bhaduri, P.N. & Sharma, A.K. 1946

var. *alba* Clarke

24 Madhavadian, P. 1968

stramonium Linn.

- 24 Bönicke, L. 1911; Belling, J. & Blakeslee, A.F. 1924; Blakeslee, A.F. *et al.* 1927, 1935, 1937; Lewitsky, G.A. (Fedorov); Blakeslee, A.F. 1931, 1932, 1934; Bergner, A.D. & Blakeslee, A.F. 1932; Yamamoto, K. & Sakai, K. 1932; Bergner, A.D. *et al.* 1933; Tokunaga, K. 1934; Favorski, N.V. (Fedorov); Satina, S. *et al.* 1941; Bergner, A.D. 1943; Delay, C. 1947; Satina, S. 1960; Murin (Fedorov); Baquar, S.R. 1967a; Madhavadian, P. 1968; Májovský, J. *et al.* 1970a; Gill, L.S. 1972; Leasani, H. & Chariar-Panahi, S. 1979

48 Belling, J. & Blakeslee, A.F. 1922

ferox Nees

- 24 Blakeslee, A.F. 1928; Kostoff, D. & Kendall, J. (Fedorov); Bergner, A.D. & Blakeslee, A.F. 1932; Blakeslee, A.F. *et al.* 1933, 1937; Buchholz, J.T. *et al.*

1935; Bergner, A.D. 1943; Delay, C. 1947

inermis Jacq.

24 Yamamoto, K. & Sakai, K. 1932; Arora, C.M. 1960

ratula Linn.

24 Bönicke, L. 1911; Yamamoto, K. & Sakai, K. 1932; Tokunaga, K. 1934; Rudolf, W. & Schwarze, P. 1951

Hyoscyamus Linn.

20; Europe, North Africa, Sahara, to South West and Central Asia. 3; temperate Western Himalaya (between 2,400 and 3,300 m) and Punjab, and Pakistan.

maticus Linn.

28 Griesinger, R. 1937; Mehra, P.N. & Sobti, S.N. 1954; Reese, G. 1957

alger Linn.

34 Vilmorin, R. de & Simonet, M. 1928; Tischler, G. 1934, 1937; Griesinger, R. 1937, Delay, C. 1947; Löve, A. & Löve, D. 1948; Vaarama, A. 1950; Gottschalk, W. 1954a; Mehra, P.N. & Sobti, S.N. 1954; Garajová, S. 1959; Baquar, S.R. 1967a; Gill, L.S. 1972; Hammer, K. & Melchers, G. 1977

36 Mehra, P.N. 1945

pusillus Linn.

34 Podlech, D. & Dieterle, A. 1969
68 Mehra, P.N. & Sobti, S.N. 1954

lochroma Benth.

25; tropical South America. 1; cultivated.

tabulosum Benth.

24 Madhavadian, P. 1967; Mehra, P.N. & Bawa, K.S. 1969

Lycianthes Hassl.

200; tropics and temperate. 6; temperate Himalaya, Assam, Khasi Hills and Hills of Peninsular India, and Nepal, Bhutan and Sri Lanka.

taevis (Dunal) Bitter

Solanum bigeminatum Nees

24 Krishnappa, D.G. 1968

Lycium Linn.

80-90; temperate and subtropics (45 in America, especially Argentina). 4; Kashmir and Western India, and Pakistan.

barbarum Linn.

24, 36 Baquar, S.R. *et al.* 1965

europaeum Linn.

24 Malik, C.P. 1960b; Bhattacharya, S.S. *et al.* 1971

24, 36 Baquar, S.R. 1967a

ruthenicum Murr.

24 Mesiock, J. & Sojak, J. 1972; Hanelt, P. 1973

Lycopersicon Mill.

7; Pacific South America and Galapagos. 4; introduced and cultivated.

lycopersicum (Linn.) Karst. ex Farw.

esculentum Mill.

12 Haploid Lindstrom, E.W. 1929

23 Ramanna, M.S. 1969; Ecochord, R. & Merckx, G. 1972

24 Humphrey, L.M. 1932, 1937; Afify, A. 1933b; Bhaduri, P.N. 1933; Lindstrom, E.W. & Humphrey, L.M. 1933; Luckwill, L.C. 1943; Barton, D.W. 1950; Rick, C.M. 1956a, b, 1960; Lima-de-Faria, A. & Sarvella, P. 1958; Lebedewa, N.A. (Fedorov); Haskell, G. 1964; Upadhyaya, M.D. & Majid, R. 1964; Titu, H. 1966; Baquar, S.R. 1967a; Dose, S. & Banerjee, B. 1968; Gill, B.S., Burnham, C.R. *et al.* 1980

24, 48 Masubuchi, N. 1961

25 Chaney, L.A. & Reeves, A.F. 1973; Gill, B.S. 1978

36 Upcott, M. 1935

48 Morrison, J.W. & Rajhathy, T. 1960a; Gulcan, R. & Sybenga, J. 1967

Solanum humboldtii Willd.

24 Gottschalk, W. 1954a

24,36 Lesley, M.M. & Lesley, J.M. 1935 (Tischler, G. 1938)

S. lycopersicum Linn.

24 Lesley, M.M. 1925; Vilmorin, R. de & Simonet, M. 1927a, 1928; Krenke, N.P. (Fedorov); Tokunaga, K. 1934; Delay, C. 1947; Gottschalk, W. 1954a; Lima-de-Faria, A. & Sarvella, P. 1962

24,26 Tarnavski, I.T. & Rădulescu, D. 1960

24,48 Kostoff, D. & Kendall, J. (Fedorov); Favorski, N.V. (Fedorov)

48 Jørgensen, C.A. 1928; Lesley, M.M. & Lesley, J. 1930, 1935

hirsutum Humb. & Bonpl.

24 Luckwill, L.C. 1943; Lebedewa, N.A. (Fedorov); Upadhyaya, M.D. & Majid, R. 1964

peruvianum Mill.

24 Lesley, J.W. 1935; Luckwill, L.C. 1943; Diers, L. 1961; Lebedewa, N.A. (Fedorov); Upadhyaya, M.D. & Majid, R. 1964

pimpinellifolium Dun.*

24 Humphrey, L.M. 1932, 1937; Lindstrom, E.W. & Humphrey, L.M. 1933; Luckwill, L.C. 1943; Rick, C.M. 1956a; Upadhyaya, M.D. & Majid, R. 1964

24,48 Lindstrom, E.W. 1932

Nicandra Adans.

1; Peru. Naturalized.

physaloides (Linn.) Gaertn.

19, 20 Darlington, C.D. & Janaki Ammal, E.K. 1945

20 Vilmorin, R. de & Simonet, M. 1928; Delay, C. 1947; Gottschalk, W. 1954a; Venkateswarlu, J. & Rao, B.G.S. 1962, 1963; Madhavadian, P. 1968

20+1B Gill, L.S. 1971e

* The combination *Lycopersicon pimpinellifolium* should be attributed to Mill. (DFPI: 100).

384 SOLANACEAE

- 21 Sinha, N.P. 1951a
 22 Sharma, A. & Sarkar, A.K. 1967-1968

Nicotiana Linn.

66; 21 Australia and Polynesia, 45 in extra-tropical North and South America. 4; 3 cultivated, 1 naturalized.

glauca Link & Otto

- 16 Christoff, M. 1928
 18 Goodspeed, T.H. 1924, 1933, 1934, 1945a, c; Ruttle, M.L. 1927; Clausen, R.E. 1928; Vilmorin, R. de & Simonet, M. 1928; Avery, P. 1929; Lawrence, W.J.C. 1930; Ghimpu, V. 1933; Sarana (Fedorov); Kostoff, D. (Fedorov); Modilewski, J.S. (Fedorov); Ternovsky, M.F. (Fedorov); Pal, A. 1976; Singh S.P. *et al.* 1980
 18-20 Vilmorin, R. de & Simonet, M. 1928; Delay, C. 1947

plumbaginifolia Viv.

- 20 Christoff, M. 1928; Bhaduri, P.N. 1933; Ghimpu, V. 1933; Goodspeed, T.H. 1933, 1934, 1945a, c; Kostoff, D. (Fedorov); Gottschalk, W. 1954b; Takenaka, Y. 1954, 1955; Gupta, S.B. 1968a,b,c; Singh, S.P. *et al.* 1980; Sanjappa, M. & Sathyananda, N. 1979
 c.24 Baquar, S.R. 1968

plumbaginifolia (2n=20) × *glauca* (2n=18)

- 19 Singh, S.P. *et al.* 1980

rustica Linn.

- 48 East, E.M. 1921; Goodspeed, T.H. 1923, 1924, 1933, 1945a,c, 1954; Rybin, V.A. (Fedorov); Vilmorin, R. de & Simonet, M. 1927a, 1928; Christoff, M. 1928; Clausen, R.E. 1928; Kostoff, D. (Fedorov); Persidskii, D. & Modilewski, J.S. (Fedorov); Sarana (Fedorov); Modilewski, J.S. (Fedorov); Ternovsky, M.F. (Fedorov); Modilewski, J.S. & Dzyubenko, L.K. (Fedorov); Ivanov, M.A. (Fedorov); Delay, C. 1947; Baquar, S.R. 1967a; Luneva, M.Z. *et al.* 1974; Pal, A. 1976; Singh, S.P. *et al.*

- 1980; Ubrliková, A. & Feráková, V. 1980

tabacum Linn.

- 24 Clausen, R.E. & Mann, M.C. 1924; Kostoff, D. (Fedorov)
 24,48 Powoloscenko (Fedorov)
 26-41
 43-49 Niizeki, M. & Kita, F. 1975a
 42,48,72
 c.90,c.94 Ogura, H. 1976
 48 White, O.E. 1913; Goodspeed, T.H. 1923, 1924, 1930, 1933, 1945b,c; Rybin, V.A. (Fedorov); Brieger, F.G. 1928; Christoff, M. 1928; Clausen, R.E. 1928; Ruttle, M.L. 1928; Vilmorin, R. de & Simonet, M. 1928; Kostoff, D. (Fedorov); Ghimpu, V. 1933; Medwedewa, G.B. (Fedorov); Ternovsky, M.F. (Fedorov); Modilewski, J.S. (Fedorov); Gerstel, D.U. 1945; Delay, C. 1947; Takenaka, Y. *et al.* 1956; Smith, H.H. *et al.* 1958; Baquar, S.R. 1967a; Gupta, S.B. 1968a,b,c; Schweppenhauser, M.A. & Mann, T.I. 1968; Asuwa, N. 1972; Gill, L.S. 1972; Mouras, A. *et al.* 1978; Singh, S.P. *et al.* 1980; Pal, A. 1976

48,54,59,
 67,72,73,

- 96 Niizeki, M. & Kita, F. 1975b
 48,72 Goodspeed, T.H. 1947
 48(77-96) Shimada, T. & Tabata, M. 1967

tabacum (2n=48) × *glutinosa* (2n=24)

- 36 Singh, S.P. *et al.* 1980

Hybrid 52-58 (*tabacum* × *plumbaginifolia*) × *tabacum*

- 46-55 Gerstel, D.U. & Burns, J.A. 1976

tabacum × *plumbaginifolia*

- 48+4f,49 Gerstel, D.U. & Burns, J.A. 1976

Petunia Juss.

40; South and warmer North America. A few cultivated.

axillaris (Lam.) Juss.*

- 14 Steers, W.C. 1932; Sullivan, T.D. 1947; Goodspeed, T.H. 1954

* The combination *Petunia axillaris* should be attributed to Britton, Stern and Poggenb. (HFDD : 316).

axillaris (Lam.) Britton, Stern & Poggenb.

- 14 Rangaswamy, N.S. & Shivanna, K.R. 1967; Khoshoo, T.N. 1979

nyctaginiflora Juss.

- 14 Ferguson, M.C. 1927; Bhaduri, P.N. 1933; Levan, A. 1937a; Delay, C. 1947

axillaris × **violacea**

- 14 Khoshoo, T.N. 1979

hybrida Vilmor.

13+tele.

- 1, 14 Maizonnier, D. & Moessner, A. 1980
14 Takehisa, S. 1964; Baquar, S.R. 1967a; Madhavadian, P. 1968; Gill, L.S. 1972; Smith, F.J. *et al.* 1973; Kashikar, S.G. 1979; Khoshoo, T.N. 1979; Maizonnier, D. & Cornu, A. 1979

14. 14+1-2B Gohil, R.N. & Kaul, R. 1980b

14,16,21-28 Takehisa, S. 1961a

21,28 Steere, W.C. 1932

- 28 Kostoff, D. (Fedorov); Morrison, J.W. & Rajhathy, T. 1960a; Breuer, K. 1961

2n=14×3n=21

14-21 Smith, F.J. *et al.* 1975

2n=14×4n=28

21 Smith, F.J. *et al.* 1975

'Snow Ball' (2n=14)

× 'California Giant' (2n=28)

18-25 Takehisa, S. 1967

integrifolia Schinz & Thell.

- 14 Sullivan, T.D. 1947

violacea Lindl.

- 14 Belling (Tischler, G. 1931); Matsuda, H. 1927; Skalińska, M. & Cuchtman, S. 1927; Vilmorin, R. de & Simonet, M. 1928; Kostoff, D. (Fedorov); Dermen, H. 1931a; Ferguson, M.C. & Coolidge, E.B. 1932; Sarana (Fedorov); Kostoff, D. *et al.* (Fedorov); Levan, A. 1937a; Delay, C. 1947; Khoshoo, T.N. 1979

14,28 Lawrence, W.J.C. 1930; Kostoff, D. & Kendall, J. (Fedorov)

Physalis Linn.

About 100; throughout the world, abundant in America. 7; 4-5 naturalized, 2-3 cultivated.

angulata Linn.

24 Nakajima, G. 1931; Gottschalk, W. 1954c

- 48 Yamamoto, K. & Sakai, K. 1932; Tokunaga, K. 1934; Baldwin, J.T. & Speese, B.M. 1951a; Menzel, M.Y. 1951; Morton, J.K. 1964; Podlech, D. & Dieterle, A. 1969; Venkateswarlu, J. & Rao, K.G.R. 1979b

heterophylla Nees

24 Menzel, M.Y. 1951

ixocarpa Brot. ex Hornem.

24 Menzel, M.Y. 1951; Sinha, N.P. 1951b; Gottschalk, W. 1954c; Fernandez, R.B. 1970; Rao, K.G.R. 1979

micrantha Link

24 Morton, J.K. 1964

minima Linn.

48 Bhaduri, P.N. 1933; Gottschalk, W. 1954a; Baquar, S.R. *et al.* 1963; Baquar, S.R. 1967a; Madhavadian, P. 1968; Gupta, S.K. & Roy, S.K. 1981

48,72 George, L. & Rao, P.S. 1979

divaricata D. Don

24 Baldwin, J.T. & Speese, B.M. 1951a; Morton, J.K. 1964

peruviana Linn.

24 Yamamoto, K. & Sakai, K. 1932

- 48 Vilmorin, R. de & Simonet, M. 1927a, 1928; Bhaduri, P.N. 1933; Delay, C. 1947; Baldwin, J.T. & Speese, B.M. 1951a; Menzel, M.Y. 1951; Gottschalk, W. 1954c; Shibata, K. 1962a; Helmer, C.B. 1963; Baquar, S.R. 1967a; Madhavadian, P. 1968; Gill, L.S. 1972

Physochlaina G. Don

10; Central Asia to Himalaya and China, 1; Kashmir.

praecox Micro

82 Mehra, P.N. & Sobti, S.N. 1954

Schizanthus Ruiz & Pav.

15; Chile, 2; cultivated.

pinnatus Ruiz & Pav.

- 20 Marchal, E. 1920 ; Sugiura, T. 1937b,
1940a, Gottschalk, W. 1954a

wisetonensis Hort.

- 20 Sugiura, T. 1936b; Madhavadian, P.
1968

Scopolia Jacq. *corr.* Link

6 ; Central and South Europe to India
and Japan. 1 ; Sikkim (up to 1,500m),
and Nepal.

anomala (Link & Otto) Airy Shaw*lurida* Dun.

- 24 Vilmorin, R. de & Simonet, M. 1928 ;
Grif (Fedorov)

Solanandra Swartz

10 ; Mexico to tropical South America.
1 ; cultivated.

grandiflora Swartz

- 22-24 Campin, M.G. 1924
24 Janaki Ammal (D. 1945)

Solanum Linn.

About 1,700 ; tropical and temperate
regions. 54 ; mostly in the mountains of
Southern and Western India and temperate
Himalaya, and Nepal, Pakistan, Bhutan,
Bangla Desh and Sri Lanka--some intro-
duced and cultivated.

aculeatissimum Jacq.

- 24 Brock, R.D. 1952 (D. 1955) ; Gerasi-
menko, I.I. & Reznikova, S.A. 1968 ;
Krishnappa, D.G. 1968 ; Madhavadian,
P. 1968

alatum Moench

- 48 Jørgensen, C.A. 1928 ; Vilmorin, R. de &
Simonet, M. 1927a, 1928 ; Westergaard,

M. 1948 ; Gerasimenko, I.I. & Rezni-
kova, S.A. (Fedorov), 1968

roxburghii Dun.

- 48 Bhatt, R.P. 1974, 1976

auriculatum Ait.

- 24 Vilmorin, R. de & Simonet, M. 1928 ;
Krishnappa, D.G. 1968 ; Madhavadian,
P. 1968

denticulatum Blume*

- 24 Madhavadian, P. 1968

dulcamara Linn.

- 24 Jørgensen, C.A. 1928; Vilmorin, R. de &
Simonet, M. 1928 ; Datta, S. 1933 ;
Tischler, G. 1934 ; Rohwedder, H. 1937 ;
Pólya, L. 1949 ; Gottschalk, W. 1954a,
b ; Hruby, K. 1957 ; Mulligan, G.A.
1957 ; Dersch, G. & Sander, H. 1962 ;
Turaja, K. & Urbanska-Worytkiewicz,
K. 1964 ; Gadella, T.W.J. & Kliphuis,
E. 1966 ; Delay, J. 1967 ; Baquar, S.R.
1967a ; Curran, P.L. 1968 ; Laane, M.M.
1969a ; Májovský, J. *et al.* 1970b ;
Labadie, J.P. 1976 ; Brand, C.V.D. *et*
al. 1979 ; Javůrková, V. 1979
28 Turcason, G. 1938
48 Suzuki, O. 1953*
72 Delay, C. 1947

eleagnifolium Cav.

- 24 Heiser, C.B. & Whitaker, T.W. 1948 ;
Krishnappa, D.G. 1968, 1975 ; Madha-
vadian, P. 1968
72 Ratera (Löve, A. & Löve, D. 1961b)

erianthum D. Don

- 24 Roe, K.E. 1967a, b

ferox Linn.

- 24 Bezbaruah, H.P. & Bezbaruah, B. 1963 ;
Madhavadian, P. 1968 ; Krishnappa,
D.G. 1975

gigantum Jacq.

- 24 Gerasimenko, I.I. & Reznikova, S.A.
1968 ; Krishnappa, D.G. 1968, 1975

gracilipes DCne

- 24 Baquar, S.R. 1967a

* Transferred to *Lycianthes*.

grandiflorum Ruiz & Pav.

- 24 Matsuura, H. & Sutó, T. 1935 ; Ramirez, D.A. 1959b

hispidum Pers.

- 24 Heiser, C.B. 1963 ; Mitra, K. 1967

incanum Linn.

- 24 Miège, G. 1962 ; Baquar, S.R. 1967a ; Zutshi, U. 1967 ; Gill, L.S. & Abubakar, A.M. 1975 ; Siddiqui, B.A. & Khan, I.A. 1978

coagulans Forsk.

- 24 Gerasimenko, I.I. & Reznikova, S.A. 1968

incanum × *melongena*

- 24 Siddiqui, B.A. & Khan, I.A. 1978 ; Baksh, S. 1979

indicum Linn.

- 24 Bhaduri, P.N. 1933, 1935 ; Miège, G. 1962 ; Rao, B.G.S. 1962 ; Bezbaruah, H.P. & Bezbaruah, B. 1963 ; Baquar, S.R. 1967a ; Zutshi, U. 1967 ; Baquar, S.R. 1967-1968 ; Gerasimenko, I.I. & Reznikova, S.A. 1968 ; Rajasekaran, S. 1970 ; Gill, L.S. 1972 ; Krishnappa, D.G. & Chennaveeraiah, M.S. 1975 ; Rao, N.N. *et al.* 1980

indicum × *melongena* Linn.

- 24,48 Rangasamy, P. & Kadambavanasundaram, M. 1974

var. *multiflora* Clarke

- 24 Zutshi, U. 1967 ; Madhavadian, P. 1968 ; Kirti, P.B. & Rao, B.G.S. 1979a

javanoides Paxt.

- 24 Vilmorin, R. de & Simonet, M. 1927a, 1928 ; Jørgensen, C.A. 1928 ; Krishnappa, D.G. 1968 ; Madhavadian, P. 1968

var. *grandiflorum* Hort.

- 24 Bir, S.S. & Kumari, S. 1975 ; Bir, S.S., Kumari, S. *et al.* 1978

macranthum Dun.*

- 24 Rai, U.K. 1959c ; Nanda, P.C. 1962

mamosum Linn.

- 22 Madhavadian, P. 1968 ; Heiser, C.B. Jr 1971

marginatum Linn. f.

- 24 Vilmorin, R. de & Simonet, M. 1927a, 1928 ; Heiser, C.B. 1963 ; Gerasimenko, I.I. & Reznikova, S.A. 1968 ; Krishnappa, D.G. 1968, 1975 ; Madhavadian, P. 1968

melongena Linn.

- 24 Kojima, H. 1925 ; Vilmorin, R. de & Simonet, M. 1928 ; Hrubý, K. (Fedorov); Tokunaga, K. 1984 ; Gottschalk, W. 1954a, b ; Rai, U.K. 1959a, d ; Rao, B.G.S. 1962 ; Capinpin, J.M. *et al.* 1963 ; Kapoor, B.M. & Tandon, S.L. 1964c ; Baquar, S.R. 1967a ; Rajasekaran, S. 1970 ; Uchimiya, H. *et al.* 1971 ; Choudhuri, H.C. 1972 (1973) ; Kuriachan, P. 1979b ; Rao, G.R. & Baksh, S. 1979

24,48

(large
petal

cells)

24,36

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Choudhuri, H.C. 1980

- 48 Janaki Ammal, E.K. 1934 ; Hrubý, K. 1957

36 Janaki Ammal, E.K. 1935

var. *cumingii* Dun.

- 24 Capinpin, J.M. *et al.* 1963

melongena × *integrifolium*

24,48 Rao, G.R. & Baksh, S. 1979

var. *depressum* Bail.

- 24 Bir, S.S. & Neelam 1980

* The plant reported seems to be *Solanum grandiflorum* Ruiz & Pav. as it was erroneously known in India as *S. macranthum* Dun. (FD : 224).

388 SOLANACEAE

- cv. 'Zaria'
24 Choudhuri, H.C. 1975a
- cv. 'Bassawa'
24 Choudhuri, H.C. 1975b
- cv. 'Insanam'
24 Rao, N.N. *et al.* 1980
- cv. 'Narki Balgan'
24 Siddiqui, B.A. & Khan, I.A. 1978
- cv. 'Pusa Purple Long'
24 Rao, N.N. *et al.* 1980
- miniatum* Bernh. ex Willd.
48 Jørgensen, C.A. 1928; Vilmorin, R. de & Simonet, M. 1928; Nisimura, Y. 1939; Westergaard, M. 1948; Okabe, S. 1955
- myriacanthum* Dun.
- rhomboides* Clarke
22 Mehra, P.N. & Gill, L.S. 1968a
24 Bezbaruah, H.P. & Bezbaruah, B. 1963; Krishnappa, D.G. 1968, 1975; Gill, L.S. 1972; Rao, N.N. *et al.* 1980
24, 48 Janaki Ammal, E.K. & Bhatt, B. 1971
25-38 Ghose, S.K. *et al.* 1981
48 Bhatt, B. 1975
- nigrum* Linn.
24 Baylis, G.T.S. 1958; Roy, R.P. & Saran, J. 1960; Diers, L. 1961; Nanda, P.C. 1962; Shibata, K. 1962a; Venkateswarlu, J. & Bhiravamurty, P.V. 1962, 1969; Chuang, T. I. *et al.* 1963; Borgmann, E. 1964; Baquar, S.R. *et al.* 1965; Baquar, S.R. 1967a; Hsu, C.-C. 1967, 1968; Baquar, S.R. 1968; Bhattacharya, S.S. *et al.* 1971; Averett, J.E. & Powell, A.M. 1972; Rao, G.R., Khan, A.H. & Khan, R. 1978; Rao, G.R., Siddiqui, N.H. & Khan, R. 1978
24, 36, 48 Winkler, H. 1921
24, 48 Venkateswarlu, J. & Rao, M.K. 1967; Krishnappa, D.G. 1968; Khan, R. *et al.* 1975 (1978); Khan, A.H. & Rao, G.R. 1977
24, 48, 72 Bhaduri, P.N. 1933; Bezbaruah, H.P. & Bezbaruah, B. 1963; Tandon, S.L. & Rao, G.R. 1964-1965, 1966; Khan, A.H. *et al.* 1972; Venkateswarlu, J. & Rao, M.K. 1972
24, 72 Rao, M.K.M.K. 1971
36 Chennaveeraiah, M.S. & Patil, S.R. 1968; Dnyansagar, V.R. & Kothekar, V.S. 1978
36, 40 Rai, U.K. 1959b
36, 72, 96, 144 Jørgensen, C.A. 1928
36, 72, 108 Harn, C. 1972
48 Mitra, K. 1967; Rao, G.R., Khan, R. & Khan, A.K. 1971; Bir, S.S. & Sidhu, M. 1980
48, 72 Westergaard, M. 1948; Okabe, S. 1955; Dahlgren, R. *et al.* 1971; Gill, L.S. 1972
54 Labadie, J.P. 1976
56 Crompton, C.W. & Bassett, J.J. 1976
72 Winkler, H. 1910; Winge, O. 1925; Jørgensen, C.A. & Crane, M.B. 1927; Vilmorin, R. de & Simonet, M. 1927a, 1928; Hrubý, K. 1932b; Tischler, G. 1934; Tokunaga, K. 1934; Persidskii (Fedorov); Janaki Ammal, E.K. 1935; Nakamura, M. 1937; Rohweder, H. 1937; Stebbins, G.L. & Paddock, E.P. 1949; Pólya, L. 1950; Gottschalk, W. 1954a, b; Löve, A. 1954b; Masubuchi, N. 1961; Mulligan, G.A. 1961a; Skalińska, M. *et al.* 1964; Gadella, T.W.J. & Kliphuis, E. 1967; Gerasimenko, I.I. & Reznikova, S.A. 1968; Van Loon, J.C. 1974; Khan, A.H. *et al.* 1978; Rao, G.R. & Kumar, A. 1980
72, 144 Hrubý, K. 1957
144 Winkler, H. (Fedorov)
- miniatum* Bernh.
48 Jørgensen, C.A. 1928; Vilmorin, R. de & Simonet, M. 1928; Nisimura (Fedorov); Westergaard, M. 1948; Okabe, S. 1955
- rubrum* Mill.
48 Westergaard, M. 1948
2n=48×72
60 Rao, M.K. 1971
- nigrum* 2n=72 × *farctum* (2n=72)
72 Rao, G.R. & Kumar, A. 1980
- nigrum* × *luteum*
48 Rao, G.R. & Tandon, S.L. 1969
- nigrum* × *nodiflorum*
24 Rao, G.R., Khan, A.H. & Khan, R. 1978

nigrum (2n=72) × *opacum* (2n=72)

- 72 Kumar, A. & Rao, G.R. 1979

ssp. *nigrum*

- 72 Kliphuis, E. & Wieffering, J.H. 1972

f. *nigrum*

- 72 Popova, M.T. & Česčhmedjiev, I.V. 1978

nodiflorum Jacq.

- 24 Heiser, C.B. & Whitaker, T.W. 1948 ; Westergaard, M. 1948 ; Stebbins, G.I. & Paddock, E.P. 1949 ; Mulligan, G.A. 1961a ; Venkateswarlu, J. & Bhiravamurthy, P.V. 1962 ; Roe, K.E. 1967b ; Venkateswarlu, J. & Rao, M.K. 1967, 1969, 1972 ; Rao, G.R. *et al.* 1971 ; Khan, A.H. *et al.* 1972, 1978 ; Rao, M.K. 1972 ; Khan, R. *et al.* 1975 (1978) ; Khan, A.H. & Rao, G.R. 1977 ; Rao, G.R., Khan A.H. & Khan, R. 1978
- 72 Baylis, G.T.S. 1958 ; Zbukova, P.G. 1967b ; Gerasimenko, I.I. & Reznikova, S.A. 1968

nodiflorum × *nigrum*

- 48 Khan, A.H.
- et al.*
- 1978

pseudocapsicum Linn.

- 24 Vilmorin, R. de & Simonet, M. 1927a, 1928 ; Bezbaruah, H.P. & Bezbaruah, B. 1963 ; Kawano, S. 1965 ; Baquar, S.R. 1967a ; Madhavadian, P. 1968 ; Gill, L.S. 1971e ; Sarkar, A.K., Datta, N.
- et al.*
- 1978

var. *weatherillii*

- 24 Bir, S.S., Kumari, S.
- et al.*
- 1978

pseudoflavum Pojark.

- 24 Krishnappa, D.G. 1968
-
- 48 Gerasimenko, I.I. & Reznikova, S.A. 1968

pubescens Willd.

- 24 Krishnaswamy, N.
- et al.*
- 1954 ; Bezbaruah, H. P. & Bezbaruah, B. 1963 ; Krishnappa, D.G. 1968

purpurellineatum Sabria & Bhatt

- 48 Bhatt, R.P. 1974, 1976

quitoense Lam.

- 24 Sarveilla, P. 1956 ; Roe, K.E. 1967b, c ; Madhavadian, P. 1968

robustum Wendl.

- 24 Hardas, M. W. & Joshi, A. B. 1954 ; Krishnappa, D.G. 1968, 1975 ; Madhavadian, P. 1968

seafortblanum Andr.

- 24 Sinha, N.P. 1950b ; Roe, K.E. 1967b ; Gerasimenko, I.I. & Reznikova, S.A. 1968 ; Krishnappa, D.G. 1968 ; Madhavadian, P. 1968 ; Sarkar, A.K., Datta, N. & Chatterjee, U. 1980
-
- 32 Gottschalk, W. 1954a

stymbrifolium Lam.

- 24 Jørgensen, C.A. & Crane, M.B. 1927 ; Vilmorin, R. de & Simonet, M. 1927a, 1928 ; Tokunaga, K. 1934 ; Delay, C. 1947 ; Kedharnath, S. 1950 ; Brücher, H. 1954 ; Gottschalk, W. 1954a ; Heiser C.B. 1963 ; Bhattacharyya, N.K. 1968b ; Gerasimenko, I.I. & Reznikova, S.A. 1968 ; Krishnappa, D.G. 1968, 1975 ; Madhavadian, P. 1968 ; Gadella, T.W.J.
- et al.*
- 1969 ; Rao, N.N.
- et al.*
- 1980

surattense Burm. f.

- 24 Bezbaruah, H.P. & Bezbaruah, B. 1963 ; Baquar, S.R. 1967a ; Gerasimenko, I.I. & Reznikova, S.A. 1968 ; Bir, S.S. & Sidhu, M. 1980

xanthocarpum Schrad. & Wendl.

- 24 Jørgensen, C.A. 1928 ; Bhaduri, P.N. 1933 ; Rao, B.G.S. 1962 ; Baquar, S.R.
- et al.*
- 1965 ; Hsu, C.-C. 1968 ; Krishnappa, D.G. 1968, 1975 ; Mehra, P.N. & Gill, L.S. 1963a ; Podlech, D. & Dietzle, A. 1969 ; Gill, L.S. 1972 ; Rao, N.N.
- et al.*
- 1980

surattense × *melongena*

- 24 Rao, S.V. & Rao, B.G.S. 1977a

surattense × *trilobatum*

- 24 Rao, S.V. & Rao, B.G.S. 1977b

torvum Swartz

- 24 Bhaduri, P.N. 1933 ; Heiser, C.B. 1956 ; Rao, B.G.S. 1962, 1972 ; Bezbaruah, H.P. & Bezbaruah, B. 1963 ; Roe, K.E. 1967b ; Hsu, C.-C. 1968 ; Krishnappa, D.G. 1968, 1975 ; Von Reinhard, P. 1972 ; Pitz, G.E. 1980

trifolatum Linn.

- 24 Bhaduri, P.N. 1933 ; Rao, B.G.S. 1962 ;
Mitra, K. 1967 ; Krishnappa, D.G.
1968, 1975 ; Madhavadian, P. 1968 ;
Sanjappa, M. & Sathyananda, N. 1979

taberosum Linn.

- 12 Van Breukelen, E.W.M. *et al.* 1975
12,36 Foroughi-Wehr, B. *et al.* 1977
24 Ramanna, M.S. & Wagenvoort, M.
1976 ; Iwanaga, M. & Peloquin, S.J.
1979
24-26 Wagenvoort, M. & Lange, W. 1975
24,36,48 Müntzing, A. 1933b
24,36,48
60,72 Turkov, V.D. & Shelepina, G.A. 1974
24, 48 Longley, A.E. & Clark, C.F. 1930 ;
Müller, K.O. 1930 ; Cipar, M.S. *et al.*
1967 ; Subramanyam, K.N. *et al.* 1972 ;
Bijok, K. *et al.* 1974 ; Mendiburi, A.O.
& Peloquin, S.J. 1977
24,48,72 Rybin, V.A. (Fedorov)
24,48,96 Ratera, E.L. 1942
25,26,27 Wagenvoort, M. & Ramanna, M.S.
1979
36,48 Oppenheimer, H.C. 1933
c.48,48 Brücher, H. 1969
48 Stow, I. 1926, 1927 ; Fukuda, Y. 1927 ;
Lewitsky, G.A. & Benetskaya, G.K.
(Fedorov) ; Smith, H.B. 1927a ; Vil-
morin, R. de & Simonet, M. 1927a ;
Jørgensen, C.A. 1928 ; Rybin, V.A.
(Fedorov) ; Bukasov, S.M. (Fedorov) ;
Ellison, W. 1935 ; Beilis, R.A.
(Fedorov) ; Delay, C. 1947 ; Avanzi,
M.G. 1949 ; Swaminathan, M.S. &
Howard, H.W. 1953 ; Gottschalk, W.
1954a ; Peters, N. 1954 ; Swaminathan,
M.S. 1954 ; Wangenheim, K.H. 1954,
1957 ; Lhoas, P. 1956 ; Gilles, A. 1955,
1960 ; Hawkes, J.G. 1956 ; Lebedeva,
N.A. (Fedorov) ; Vasil, I.K. 1962 ;
Avdeev, Y.I. 1971
48,96 Vilmorin, R. de & Simonet, M. 1928 ;
Krenke, N.P. (Fedorov) ; Hrubý, K.
1957

4x x 2x

- 36 Lange, W. & Wagenvoort, M. 1973

ragum Heyne

- 24 Madhavadian, P. 1968

verbascifolium Linn.*

- 24 Bhaduri, P.N. 1933 ; Ratera, E.L. 1943
(D. 1955) ; Bezbaruah, H.P. & Bezba-
ruah, B. 1963 ; Chandola, R.P. *et al.*
1966 ; Baquar, S.R. 1967a ; Mitra, K.
1967 ; Krishnappa, D.G. 1968 ; Madha-
vadian, P. 1968 ; Mehra, P.N. & Gill,
L.S. 1968a ; Mehra, P.N. & Bawa, K.S.
1969 ; Gill, L.S. 1972

virum Dun.

- 24 Pingle, A.R. & Dnyansagar, V.R. 1976 ;
Dnyansagar, V.R. & Pingle, A.R. 1979
24+0-2B Dnyansagar, V.R. & Pingle, A.R. 1977

*khasianum*var. *chatterjeanum* Sen Gupta

- 24 Mitra, K. 1967

villosum Lam.

- 48 Vilmorin, R. de & Simonet, M. 1927a,
1928 ; Westergaard, M. 1948 ; Stebbins,
G.L. & Paddock, E.P. 1949 ; Okabe,
S. 1955 ; Venkateswarlu, J. & Rao,
M.K. 1967, 1969 ; Gerasimenko, I.I. &
Reznikova, S.A. 1968 ; Khan, A.H. *et al.*
1972 ; Zutshi, U. & Kaul, B.L. 1974 ;
Khan, R. *et al.* 1975 (1978) ; Khan,
A.H. & Rao, G.R. 1977

wendlandii Hook. f.

- 24 Vilmorin, R. de & Simonet, M. 1928 ;
Chennaveeralah, M.S. & Krishnappa,
D.G. 1964-1965, 1968 ; Roe, K.E. 1967b,
c ; Madhavadian, P. 1968 ; Krishnappa,
D.G. 1975

Streptosolen Miers.

1 ; tropical South America. Cultivated.

Jamesonii Miers.

- 22 Madhavadian, P. 1968

* *Solanum verbascifolium* *aut. pl.* (non Linn.), FBI, 4 : 230, is a synonym of *S. erianthum* D. Don (HFDD : 339-340).

Withania Pauquy

10 ; South America, South Africa, Canaries and Mediterranean to India. 2 ; drier parts of India, and Pakistan.

coagulans Dun.

48 Baquar, S.R. 1967a

sonnifera (Linn.) Dun.

- 24 Mohan Ram, H.Y. & Kamini, I. 1964
 48 Bhaduri, P.N. 1933 ; Gottschalk, W. 1954a ; Midge, J. 1960b ; Baquar, S.R. *et al.* 1965 ; Baquar, S.R. 1967a ; Madhavadian, P. 1968 ; Bir, S.S. & Sidhu, M. 1980
 72 Bir, S.S. & Neelam 1980

SONNERATIACEAE Engl. & Gilg.

2/7 ; tropical East Africa and Asia to Australia and West Pacific. 2/4 ; Assam, Sikkim, Sundarbans, along the coastal and tidal waters of Peninsular India, and Nepal, Bhutan, and Sri Lanka.

Duabanga Buch.-Ham.

3 ; Indo-Malesia. 1 ; Assam and Sikkim, and Nepal and Bhutan.

grandiflora (Roxb. ex DC.) Walp.

- 48 Mehra, P.N. & Bawa, K.S. 1969 ; Mehra, P.N. 1972

sonneratioides Buch.-Ham.

- 36 Nanda, P.C. 1962
 48 Roy, R.P. & Thakur, M. 1961b ; Thomas, J.L. 1962

Sonneratia Linn. f.

5 ; coasts of tropical East Africa and Madagascar to Hainan and Ryukyu Islands, Micronesia, Malaysia, New Hebrides and Solomons, North Australia and New Caledonia. 2 ; Sunderbans and along the coastal and tidal waters of Peninsular India, and Sri Lanka.

apatala Buch.-Ham.

- 18 Raghavan, R.S. 1959b
 24 Sidhu, S.S. 1961

SPHENOCLEACEAE (Lindl.) Mart. ex DC.

1/2 ; tropics. 1/1 ; throughout India.

Sphenoclea Gaertn.

2 ; 1 pantropics and 1 in West Africa. 1 ; throughout India.

seylanica Gaertn.

- 24 Lewis, W.H. *et al.* 1962
 32 Bir, S.S. & Sidhu, M. 1974
 42 Bhattacharyya, N.K. 1972b

SPIGELIACEAE Mart.

3/90 ; Madagascar, tropical Asia to North Australia, warm North and South America.
2/4 ; Khasi Hills, Assam, Bihar and Peninsular India, and Nepal and Sri Lanka.

Cynoctonum J.F. Gmel.*

6 ; Madagascar, Indo-Malesia, Australia
and America. 1-2 ; Khasi Hills, and Eastern

to Western India.

mitreola (Linn.) Britt.

20 Lewis, W.H. *et al.* 1962

STACHYURACEAE J.G. Agardh.

1/10 ; East Asia. 1/1 ; Eastern temperate Himalaya (between 1,500 and 2,400 m), and
Nepal and Bhutan.

Stachyurus Sieb. & Zucc.

10 ; Himalaya to Formosa and Japan.
1 ; Eastern temperate Himalaya (between

1,500 and 2,400 m), and Nepal and Bhutan.

himalensis Hook. f. & Thoms.

24 Kurosawa, S. 1966

STAPHYLEACEAE (DC.) Lindl.

5/60 ; tropical Asia and America and North temperate. 2/5 ; Western temperate and
subtropical Eastern Himalaya, Assam and Peninsular India, and Nepal, Bangla Desh and
Sri Lanka.

Turpinia Vent.

30-40 ; Sri Lanka to Japan, Malaysia
and Central and tropical South America. 4 ;
subtropical Eastern Himalaya, Assam and
Peninsular India, and Nepal, Bangla Desh
and Sri Lanka.

nepalensis Wall. ex Wight & Arn.

cochinchinensis (Lour.) Merr.

26 Mehra, P.N. & Khosla, P.K. 1969 ;
Mehra, P.N., Khosla, P.K. & Sreen,
T.S. 1972

semifera Wall. ex DC.

26 Mehra, P.N. & Khosla, P.K. 1969 ;
Mehra, P.N., Khosla, P.K. & Sreen,
T.S. 1972

*The species dealt under *Cynoctonum* has been transferred to *Mitreola* Linn. ex Schaeffer

STERCULIACEAE Vent.

60/700 ; chiefly tropics. 24/80 ; chiefly in tropics, a few are Himalayan, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka some cultivated.

Cola Schott & Endl.

125 ; Africa, 2 ; cultivated.

acuminata (P. Beauv.) Schott & Endl.

40 Janaki Ammal, E.K. (D. 1945) ;
Bodard, M. 1962 ; Poty, J. & Hamel,
J.-L. 1968

nitida (Vent.) Schott & Endl.*

40 Mangenot, S. & Mangenot, G. 1962

nitida Cheval

40 Poty, J. & Hamel, J.-L. 1968

Dombeya Cav.

Above 350 ; 50 in Africa, above 300 in Madagascar and Mascarene. A few cultivated.

dawei Sprague

60 Sarcon, T.S. & Singh, P.D. 1973

spectabilis Bojer

46 Chatelier, G. & Gazet du 1939
60 Gill, B.S. *et al.* 1979b

Eriolaena DC.

17 ; China, South East Asia and Indo-Malesia. 7 ; Chiefly in South Western Peninsula, a few in Central Himalaya and Bihar, and Nepal and Bhutan.

hookeriana Wight & Arn.

120 Nanda, P.C. 1962 ; Pal, M. 1964

Firmiana Marsigli

15 ; East Africa, Indo-Malesia, South East and East Asia. 2 ; tropical Western Himalaya, Eastern India, Madhya Pradesh,

Western Peninsula and Deccan, and Sri Lanka.

colorata (Roxb.) R. Br.*Sterculia colorata* Roxb.

40 Pathak, G.N. *et al.* 1949 ; Nanda,
P.C. 1968

fulgens Corn. ex Kost.*Sterculia pallens* Wall.

40 Nanda, P.C. 1962, 1968 ; Mehra, P.N.
& Sarcon, T.S. 1973c

Guazuma Mill.

4 ; tropical America. 1 ; cultivated.

ulmiifolia Lam.

16 Krishnappa, D.G. & Munirajappa
1980

tomentosa HBK

16 Youngman, W. 1931 ; Bawa, K.S.
1973

Helicteres Linn.

60 ; tropical Asia and America. 4 ; Eastern India, Sikkim, Andaman Islands, 1 in dry forests of Central and Western India and South Western Peninsula, and Sri Lanka.

bireuta Lour.

20 Sarkar, A.K. *et al.* 1973a
24 Nanda, P.C. 1962

isera Linn.

18 Sarkar, S.S. 1966 ; Sarkar, A.K. *et al.*
1975 ; Krishnappa, D.G. & Munirajappa
1980
24 Nanda, P.C. 1962

*The combination *Cola nitida* was made by Cheval (DPPF : 42).

Heritiera Dryand.

35 ; West tropical Africa, Indo-Malesia, tropical Australia and Pacific. 5 ; Assam, Bengal, the Gangetic Delta and South Western India, and Bangla Desh and Sri Lanka.

littoralis Dryand.

- 20 Poty, J. & Hamel, J.-L. 1968
38 Sidhu, S.S. 1968

Kleinbovia Linn.

1 ; tropical Asia. Cultivated.

hospita Linn.

- 24 Hsu, C.-C. 1968

Melochia Linn.

54 ; tropics, especially America. 3 ; 2 in hotter parts of India, 1 adventive in Eastern India, and Sri Lanka.

corchorifolia Linn.

- 46 Bir, S.S. & Sidhu, M. 1975

pyramidalis Linn.

- 18 Cristobal, C.L. 1967

Pentapetes Linn.

1 ; Indo-Malesia. Throughout the hotter parts of India, also cultivated.

phoenicia Linn.

- 76 Sarkar, S.S. 1966

Pterospermum Schreb.

40 ; Eastern Himalaya, South East Asia and West Malaysia. 12 ; chiefly in South Western Peninsula, and Bangla Desh and Sri Lanka - a few also cultivated.

acerifolium Willd.

- 38 Poty, J. & Hamel, J.-L. 1968 ; Mehra, P.N. & Sareen, T.S. 1973c

suberfolium Lam.

- 38 Poty, J. & Hamel, J.-L. 1968 ; Singhal, V.K. *et al.* 1980b

Pterygota Schott & Endl.

20 ; tropics, chiefly Old World. 1 ; Eastern Himalaya and Assam, Western Ghats and the Andamans, also cultivated.

alata R. Br.

- 40 Nanda, P.C. 1962 ; Mehra, P.N. & Sareen, T.S. 1973c

Sterculia alata Roxb.

- 40 Nanda, P.C. 1968

Sterculia Linn.

300 ; tropics. 14 ; chiefly in South Western Peninsula, a few in Himalaya, North Western and Eastern India, and Bhutan, Bangla Desh and Sri Lanka a few cultivated.

acrifolia A. Cunn.

- 40 Singhal, V.K. *et al.* 1980a

foetida Linn.

- 40 Tantra, I.G. & Jong, K. 1976

urens Roxb.

- 40 Raghavan, R.S. & Arora, C.M. 1958 ; Nanda, P.C. 1962, 1968

villosa Roxb.

- 40 Singhal, V.K. *et al.* 1980a

Theobroma Linn.

30 ; tropical America. 1 ; cultivated.

cuneo Linn.

- 16 Cheesman, E.E. 1927 ; Heyn (Milovidov, P. 1960)
20 Davie, J.H. 1933, 1935 ; Simmonds, N.W. 1954
20, 40 Martinson, V.A. 1975
26 Delay, C. 1947

Waltheria Linn.

50 ; tropical America and West Indies, 1 South Rhodesia, 1 Madagascar, 1 Malay Peninsula and 1 Formosa. 1 ; hotter parts of India, and Sri Lanka.

indica Linn.

- 14 Brizicky, G.K. 1965a
40 Harvey, M.J. 1957; Gill, I.S. 1978b

americana Linn.

- 26 Krishnappa, D.G. & Munirajappa
1980
40 Harvey 1966

STULAGINACEAE C.A. Agardh.

1/170; tropical and subtropical Africa and Asia. 1/17; chiefly in tropical Eastern Himalaya and Western Ghats, and Nepal, Bangla Desh and Sri Lanka.

Antidesma Linn.

170; Old World tropics and subtropics, especially Asia. 17; chiefly in tropical Eastern Himalaya and Western Ghats, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

acuminatum Wall.

- 26, 78 Hans, A.S. 1970a
78 Mehra, P.N. & Hans, A.S. 1972

bumia Spreng.

- 26 Datta, N. 1967; Sarkar, A.K. &
Datta, N. 1980
234 Hans, A.S. 1970a

diandrum Roth

- 26 Mehra, P.N. & Hans, A.S. 1969;
Hans, A.S. 1970a
26+0-2B Mehra, P.N. & Gill, B.S. 1971
26-2B Mehra, P.N. 1972

ghaeseimbilla Gaertn.

- 26 Datta, N. 1967; Sarkar, A.K. &
Datta, N. 1980

STRYCHNACEAE Link

4/250; tropics and subtropics. 2/27; chiefly in South Western Peninsula, and Bangla Desh and Sri Lanka.

Strychnos Linn.

200; tropics. 25; temperate Himalaya (up to 2,100 m), Assam, South Western Peninsula, Andaman Islands, 1 throughout tropical India, Bangla Desh and Sri Lanka.

laurina Wall.

- 24 Mohrbutter, C. 1936

aux-vunilca Linn.

- 24 Janaki Ammal, F.K. (D. 1945)
44 Raghavan, R.S. 1959b; Gadella,
T.W.J. 1972; Bedi, Y.S. *et al.* 1980

STYRACACEAE Dum.

12/180; East Asia to West Malaysia, South East United States, Mexico to tropical South America and 1 species in Mediterranean. 5/8; Eastern India and Sikkim, and Nepal and Bhutan.

396 STYRACACEAE

Styrax Linn.

130 ; warm Eurasia, Malaysia, America and 1 Mediterranean. 4 ; Eastern India and Sikkim, and Nepal and Bhutan.

hookeri Clarke

32 Mehra, P.N. & Bawa, K.S. 1969

serrulatum Roxb.

16 Mehra, P.N. & Bawa, K.S. 1969

SYMPHOREMATACEAE Van Tiegh.

3/34 ; tropical America, Africa and Asia. 2/3 ; Peninsular India and Bihar, and Bangla Desh and Sri Lanka.

Congea Roxb.

10 ; Bangla Desh, South East Asia Malay Peninsula and Sumatra. 1 ; Bangla Desh.

tomentosa Roxb.

34 Sharma, A.K. & Mukhopadhyay, S. 1963b ; Sarkar, A.K., Datta, N. *et al.* 1978

SYMPLOCACEAE Desf.

2/500 ; tropics and subtropics (excluding Africa). 2/60 ; chiefly in Himalaya (up to 3,600 m) and South Western Peninsula, and Nepal, Bhutan and Sri Lanka.

Symplocos Jacq.

350 ; tropical and subtropical Asia, Australia, Polynesia, and America. 57 ; chiefly in Himalaya (up to 3,600 m) and Western Peninsular India, and Nepal, Bhutan and Sri Lanka.

glomerata King ex Gamble

22 Mehra, P.N. & Bawa, K.S. 1969

22+0-2B Mehra, P.N. & Bawa, K.S. 1968

22+1-2B Mehra, P.N. 1972

paniculata Miq.

crataegoides Buch.-Ham. ex D. Don

22 Mehra, P.N. & Bawa, K.S. 1969

22+1B Mehra, P.N. & Gill, B.S. 1971 ; Mehra, P.N. 1972

phyllocalyx Clarke

22 Mehra, P.N. & Bawa, K.S. 1969

canosissima Wall.

22 Mehra, P.N. & Bawa, K.S. 1969

TAMARICACEAE Link

4/120 ; temperate and subtropical desert, steppe and coastal areas. 2/9 ; Himalaya (up to 4,500 m) Assam, Bengal, Punjab, Central and South Western India, and Pakistan and Sri Lanka.

Myricaria Desv.

10 ; temperate Eurasia. 2 ; Himalaya (up to 4,500 m).

germanica (Linn.) Desv.

24 Frisendahl, A. 1912 ; Zabban, B. 1935 ; Knaben, G. 1950 ; Váchová, M. & Májovský, J. 1980

Tamarix Linn.

54 ; West Europe. Mediterranean to

India and North China. 7 ; chiefly in North Western India, a few in Assam, Bengal, Central and South Western India, and Pakistan and Sri Lanka.

aphylla (Linn.) Karst.

24 Bowden, W.M. 1945b

dioca Roxb. ex Roth

24 Malik, C.P. 1960b

ericoides Rottl.

24 Sharma, Y.M.L. 1939 ; Bowden, W.M. 1940a

TETRACENTRACEAE Van Tiegh.

1/1 ; South East Asia. Eastern Himalaya, and Nepal.

Tetracentron Oliv.

1 ; North Eastern India, Burma and South West China. Eastern Himalaya, and Nepal.

sinense Oliv.

38 Whitaker, T.W. 1933a

TETRAGONIACEAE Link

2/60 ; mostly Southern hemisphere. 1/1 ; cultivated.

Tetragonia Linn.

50-60 ; Africa, East Asia, Australia, New Zealand and temperate South America. 1 ; cultivated.

tetragonioides (Pall.) O. Kuntze

16 Hsu, C.-C. 1968

32 Hair, J.B. & Beuzenberg, E.J. 1959

TETRAMELACEAE (Warb.) Airy Shaw

2/2 ; tropical Asia. 1/1 ; Sikkim, West Coast and Western Ghats and the Andamans, and Sri Lanka.

Tetrameles R. Br.

1 ; Indo-China and Indo-Malesia excluding Borneo, Philippines and Moluccas).

1 ; Sikkim, the Andamans, West Coast and Western Ghats, and Sri Lanka.

nudiflora R. Br.

c.46 Mehra, P.N. & Bawa, K.S. 1969

THEACEAE D. Don

16/500 , tropics and subtropics. 8/35 ; chiefly in Eastern Himalaya, and Nepal, Bhutan, Bangla Desh and Sri Lanka.

Camellia Linn.

82 ; Indo-Malesia, China and Japan.
10 ; chiefly in Eastern Himalaya, and Nepal,
Bhutan and Bangla Desh - a few introduced.

E.K. 1952a ; Kato, M. & Simura, T.
1970

60 Bezbaruah, H.P. & Gogoi, S.C.
1972

caudata Wall.

30 Bezbaruah, H.P. 1971

sinensis (Linn.) O. Kuntze

60 Goswami, L.C. & Sarma, P.C. 1979

irrawadensis Burua

30 Bezbaruah, H.P. 1968, 1971

Thea sinensis Linn.

30 Morinaga, T. *et al.* 1929 ; Terazaka, O.
& Tanaka, R. 1974

japonica Linn.

30 Janaki Ammal, E.K. 1952a ; Bezbaruah,
H.P. & Gogoi, S.C. 1972
30, 45 Bezbaruah, H.P. 1971

var. *assamica* (Mast.) Kitam.

30, 45 Bezbaruah, H.P. 1971

var. *macrophylla*

45, 60 Janaki Ammal, E.K. 1952a
60 Simura, T. 1935

kinii Wall.

30 Janaki Ammal, E.K. 1952a ; Bezbaruah,
H.P. 1971

Thea sinensis Linn.

var. *macrophylla*

45 Karasawa, K. 1932 ; Kawpayan, A.S.
(Fedorov)

drupifera Lour.

30 Arora, C.M. 1961

var. *sinensis*

30 Bezbaruah, H.P. 1971

rudiflora Hook.

45 Bezbaruah, H.P. 1971

thalifera (Griff.) Dyer**

30 Cohen-Stuart, C.F. 1918 ; Zaldastani-
shvili, S.G. (Fedorov)

assamica Thunb.

90 Janaki Ammal, E.K. 1952a ; Bezbaruah,
H.P. 1971

*p.

30, 45 Bezbaruah, H.P. 1971

sinensis Linn.*

30 Zaldastanishvili, S.G. (Fedorov) ;
Yamashita, K. 1937b ; Janaki Ammal,

*The combination *Camellia sinensis* should be attributed to O. Kuntze.

**The combination *C. thalifera* should be attributed to Griff. and it is a synonym of *C. sinensis* var. *assamica* (Mast.) Kitamura (FEH : 208).

Eurya Thunb.

130 ; East Asia, Indo-Malesia and Pacific. 6 ; chiefly in Himalaya (up to 3,000 m), and Nepal, Bhutan, Bangla Desh and Sri Lanka.

acuminata DC.

46 Mehra, P.N. & Sreen, T.S. 1973e

japonica Thunb.

42 Nakajima, G. 1942 ; Santamour, F.S. 1963

Gordonia Ellis

40 ; China, Formosa, and Indo-Malesia, 1 South East United States. 5 ; South Western Peninsula, and Bhutan and Sri Lanka.

excelsa Blume

30 Bezbaruah, H.P. 1971 ; Mehra, P.N. & Sreen, T.S. 1973c

Pyrenaria Blume

20 ; South East Asia and West Malaysia. 2 ; Eastern India.

barringtoniaefolia Seem.

30 Bezbaruah, H.P. 1971

Schima Reinw. ex Blume

15 ; Eastern Himalaya to Formosa, Bonin and Ryukyu Island and West Malaysia. 3 ; Eastern Himalaya (up to 1,800 m) and Assam, and Nepal, Bhutan and Bangla Desh.

wallichii Choisy*

36 Bezbaruah, H.P. 1971

wallichii (DC) Korth.

30 Malla, S.B., Bhattaraj, S. et al. 1977a
36 Mehra, P.N. 1972

Ternstroemia Mutis ex Linn. f.

100 ; tropics (2 Africa and 1 Queensland). 3 ; Bengal, Assam, Western Peninsula and the Andaman Islands, and Sri Lanka.

gymnanthera (Wight & Arn.) Sprague

40 Hsu, C.-C. 1967

japonica Thunb.

50 Morinaga, T. & Fukushima, E. 1931a

THEOPHRASTACEAE Link

5/110 ; tropical America and West Indies. 2/2 ; cultivated.

Clavija Ruiz & Pav.

55 ; tropical America. 1 ; cultivated.

macrophylla Miq.

22 Sarkar, A.K., Mallick, R. et al. 1977

THUNBERGIACEAE Van Tiegh

4/205 ; tropics. 2/11 ; chiefly in Himalaya and Peninsular India, and Bhutan, Bangla Desh and Sri Lanka - a few cultivated.

*The combination *Schima wallichii* should be attributed to Korth. (FEH : 209).

Thunbergia Retz.

About 200 ; palaeotropics. 10 ; chiefly in tropical and subtropical Himalaya and South Western Peninsula, and Bhutan, Bangla Desh and Sri Lanka a few cultivated.

alata Bojer

- 18 Sugiura, T. 1931 ; Tjio, J.H. 1948 ,
Grant, W.F. 1955 ; Takizawa, Y. 1957
32 Snoad, B. 1952 (D. 1955)

var. surattica O. Kuntze

- 18 Kaur, J. 1970

cocinea Wall.

- 20 Sharma, A. & Sarkar, A.K. 1967-1968

erecta T. Anders.

- 52 Narayanan, C.R. 1951a
c.56 Grant, W.F. 1955
60 Mangenot, S. & Mangenot, G. 1957
62 Sareen, T.S. & Sanjogta, K. 1976

- 64 Mangenot, S. & Mangenot, G. 1962

Meyenia erecta Benth.

- 60 Kaur, J. 1969

fragrans Roxb.

var. *laevis* (Nees) Clarke

laevis Nees

- 48 Kaur, J. 1965b

grandiflora Roxb.

- c.28 Janaki Ammal, E.K. (D. 1945)
28 Nanda, P.C. 1962
56 Snoad, B. 1952 (D. 1955); Grant,
W.F. 1955 ; Kaur, J. 1970

laevifolia Lindl.

- 56 Sugiura, T. 1936a, b
c.56 Grant, W.F. 1955

mysorensis T. Anders.

- 28 Sanjappa, M. & Sathyananda, N.
1979
80 Khalceel, T.K. & Boraiah, G. 1973

THYMELAEACEAE Juss.

50/500 ; temperate and tropics, especially in Africa. 13/25 ; many in Himalaya (up to 3,000 m), and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Daphne Linn.

70 ; Europe, North Africa, temperate and subtropical Asia, Australia and Pacific. 7 ; Himalaya, and Bhutan (up to 3,000 m).

obovoides Schreb.

- 18 Bhat, B.K. *et al.* 1974a

papyracea Wall. ex Steud.

- 18 Malla, S.B., Bhattarai, S. *et al.* 1977a

cannabinna Wall.

- 18 Venkateswarlu, J. 1946, 1947 ; Elaise,
S. 1959 ; Sharma, A. & Sarkar, A.K.
1967-1968

Edgeworthia Meisn.

3 ; Himalaya to Japan. 1 ; Central and Eastern Himalaya, and Nepal and Bhutan.

tomentosa Nakai**gardneri Meisn.**

- 18 Arora, C.M. 1961

papyrifera Sieb. & Zucc.

- 36 Sugiura, T. 1936a, b ; Okura, E. &
Kono, M. 1958
36, 72 Elaise, S. 1959

Lasiosiphon Fresen.

50 ; tropical and South Africa and Madagascar to Western Peninsular India and Sri Lanka. 1 ; Western Ghats, and Sri Lanka.

eriocephalus Decne

- 16 Subramanyam, K. & Kamble, N.P.
1967

Wikstroemia Endl.

70 ; South China, Indo-China, Australia and Pacific. 2 ; temperate Himalaya (up to 2,700 m) and North Eastern India, and Nepal, Bangla Desh and Sri Lanka.

canescens Meissn.

18 Strasburger, E. 1910c ; Venkateswari, J. 1946, 1947

Diplomorpha canescens (Meissn.) C.A. Mey.

18 Malla, S.B., Bhattarai, S. *et al.* 1978b

indica C.A. Mey.

36 Chuang, T.I. *et al.* 1963

52 Winkler, H. 1906 ; Strasburger, E. 1910c

viridiflora Meissn.

27, 28 Fagerlund, F. 1940

52 Winkler, H. 1906

TILIACEAE Juss.

50/450 ; tropics and temperate, chiefly South East Asia and Brazil. 13/70 ; tropical and subtropical India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Berrya Roxb. *mut.* DC.

6 ? Indo-Malesia and Polynesia. 1 ; Sri Lanka, cultivated in Southern India.

cordifolia (Willd.) Burret**ammonilla** Roxb.

40 Moussel, B. 1966

R.M. *et al.* 1975 ; Joshua, D.C. *et al.* 1976

14, 28 Bhadra, S.K. *et al.* 1979

28 Roy, K. 1962

fascicularis Lam.

14 Rao, N.S. & Datta, R.M. 1953 ; Datta, R.M. *et al.* 1966 ; Haque, A. & Ahmad, Q.N. 1972 ; Sanjappa, M. & Sathyananda, N. 1979

Corchorus Linn.

100 ; warm regions. 8-10 ; mostly in hotter parts, and Pakistan, Bangla Desh and Sri Lanka - a few cultivated.

vestitus Linn.

14 Brizicky, G.K. 1965b ; Haque, A. & Ahmad, Q.N. 1972 ; Datta, R.M. *et al.* 1975

ocrotangulus Lam.

14 Banerji, I. 1932 ; Sharma, A.K. & Roy, M. 1958

capsularis Linn.

8, 14, 16,

28 Paria, P. & Basak, S.L. 1973a

14 Banerji, I. 1932 ; Nakajima, G. 1936 ; Nandi, H.K. 1938 ; Simmonds, N.W. 1954 ; Sharma, A.K. & Roy, M. 1958 ; Dutta, R.M. & Panda, B.S. 1962 ; Brizicky, G.K. 1965b ; Datta, P.C. 1971c ; Das, P.K. 1972 ; Haque, A. & Ahmad, Q.N. 1972 ; Datta,

olitorius Linn.

7, 14 Basak, S.L. *et al.* 1979

14 Banerji, I. 1932 ; Sharma, A.K. & Roy, M. 1958 ; Dutta, R.M. & Panda, B.S. 1962 ; Brizicky, G.K. 1965b ; Datta, P.C. 1971c ; Mitra, G.C. & Singh, D.P. 1971 ; Das, P.K. 1972 ; Haque, A. & Ahmad, Q.N. 1972 ; Paria, P. & Basak, S.L. 1973b ; Bhatt, R.P. 1974, 1976 ; Datta, R.M. *et al.* 1975 ; Paria, P. *et al.* 1978

28 Roy, K. 1962

2n x 4n

21, 20-35 Patel, G.I. 1956

olitorius x **capsularis**

15 Das, P.K. 1972

pseudo-olitorius Islam & Zaid

14 Islam, A.S. & Zaid, B.A.K. 1960 ; Datta, R.M. *et al.* 1966 ; Haque, A. & Ahmad, Q.N. 1972

trideus Linn.

14 Mukherjee, S.K. 1952a ; Islam, A.S.

& Qaiyum, F. 1961 ; Baquar, S.R. *et al.* 1966 ; Datta, R.M. *et al.* 1966

trilocularis Linn.

14 Mukherjee, S.K. 1952a ; Rao, N.S. & Datta, R.M. 1953 ; Baquar, S.R. *et al.* 1966 ; Datta, R.M. *et al.* 1966 ; Podlech, D. & Dieterle, A. 1969 ; Haque, A. & Ahmad, Q.N. 1972 ; Bhatt, R.P. 1974, 1976 ; Sanjappa, M. 1979

urticaefolius Wight & Arn.

14 Datta, R.M. *et al.* 1975

Grewia Linn.

150 ; Africa, Asia and Australia, especially tropics. 43 ; chiefly in Western Peninsular India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka a few cultivated.

asiatica Linn.*

36 Bhaduri, P.N. & Bose, S. 1949

aspera Roxb.

18 Gajapathy, C. 1962a

elasticus Royle

18 Gill, B.S. *et al.* 1979a

halmesiana Hole

27 Gill, B.S. *et al.* 1979a

36 Gill, B.S. *et al.* 1979b

hirtata Vahl

18 Singhal, V.K. *et al.* 1980a

marginata Vahl

18 Mehra, P.N. & Sreen, T.S. 1969, 1973c

leptopetala Brandis

18 Gill, B.S. *et al.* 1979a

oppositifolia Roxb.

18 Mehra, P.N. & Sreen, T.S. 1969, 1973c

ovata K. Schum.

18 Nanda, P.C. 1962

tenax (Forsk) Fiori

36 Raghavan, R.S. 1959b

titifolia Vahl

18 Gill, B.S. *et al.* 1979a

villosa Willd.

36 Krishnappa, D.G. & Munirajappa 1980

Sparniannia Linn. f.

7 ; tropical and South Africa, and Madagascar. 1 ; cultivated.

africana Linn. f.

160 Svensson-Stenar, H. 1925

Triumfetta Linn.

150 ; tropics. 8 ; mostly in tropical parts, with 3 to 4 extending to the Himalaya, and Nepal, Bangla Desh and Sri Lanka.

annua Linn.

32 Krishnappa, D.G. & Munirajappa 1980

pliosa Roth

64 Krishnappa, D.G. & Munirajappa 1980

rhomboides Jacq.

32 Rao, C.V. & Rao, K.V.S. 1952 ; Mangenot, S. & Mangenot, G. 1962

32, 48 Brizicky, G.K. 1965b

46 Bhattacharjya, S.S. & Mitra, J.N. 1952

48 Krishnappa, D.G. & Munirajappa 1980

bartramia Linn.

32 Lay, K.K. 1950

rotundifolia Lam.

32 Sanjappa, M. 1979

**Grewia asiatica* auct. (non Linn.), FBI, 1 : 386 is a synonym of *G. halmesiana* Hole (SPUGP : 34).

TORICELLIACEAE (Wang.) Hu (*corr.*)

1/3 ; Himalaya and China. 1/1 ; Eastern Himalaya.

Toricellia DC.

3 ; Himalaya and China. 1 ; Eastern Himalaya.

tiliaefolia DC.24 Malta, S.B., Bhattacharai, S. *et al.* 1978a

TRAPACEAE Dum.

1/30 ; warm Eurasia and Africa. 1/1 ; throughout India, and Bangla Desh and Sri Lanka, also cultivated.

Trapa Linn.

30 (or 1 polymorphic) ; Central and South East Europe, temperate and tropical Asia and Africa. 1-2 ; throughout India, and Bangla Desh and Sri Lanka.

natans Linn.var. *blapinosa* (Roxb.) Makino*bispinosa* Roxb.

48, 56 Jash, M. & Sharma, A. 1970

TRIPLOSTEGIACEAE (Hook) Bobrov *ex* Airy Shaw

1/2 ; South East Asia and East Malaysia. 1/1 ; temperate and alpine Himalaya (between 2,400 and 4,200 m) and Bhutan.

Triplostegia Wall. *ex* DC.

2 ; Himalaya, South China, Formosa, Celebes and New Guinea. 1 ; temperate and

alpine Himalaya, and Bhutan.

glandulifera Wall.

18 Borgmann, E. 1964

TROPAEOLACEAE DC.

2/92 ; Mexico to temperate South America. 1/2 ; cultivated and have run wild.

Tropaeolum Linn.90 ; Mexico to temperate South America
2 ; cultivated and have run wild.*majus* Linn.24, 28 Chatterjee, A. & Sharma, A.K. 1970
28 Sugiura, T. 1925, 1931, 1936b ; Wings,
O. 1925 ; Warburg, E.F. 1938b ;

404 TROPAEOLACEAE

Doulai, E. 1943 ; Nagl, W. 1962 ;
Mookerjee, B. 1967
28, 56, 112 Raghuvanshi, S.S. & Pathak, C.S.
1974

peregrinum Linn.

24 Sugiura, T. (Fedorov) ; Warburg, E.F.
1938b

TURNERACEAE DC.

7/120 ; chiefly tropical America and Africa. 1/2 ; cultivated and have run wild.

Turnera Linn.

60 ; tropical and subtropical America,
1 South West Africa. 2 ; cultivated and have
run wild.

subulata Smth

ulmifolia Linn.

var. *elegans* Urban

20 Raman, V.S. & Kesavan, P.C. 1964b

ulmifolia Linn.

30 Ghosh, R.B. 1960 ; Hamel, J.L.
1965 ; Sheriff, A. *et al.* 1967

var. *angustifolia* Willd. ex Urban

30 Tarar, J.L. 1977, 1980

ULMACEAE Mirb.

15/200 ; tropics and temperate. 7/20 ; chiefly in Himalaya (up to 3,300 m), and Nepal,
Bangla Desh and Sri Lanka.

Celtis Linn.

80 ; Northern hemisphere and South
Africa. 8 ; Himalaya (up to 2,400 m), Assam,
Bengal, Bihar, Madhya Pradesh, Peninsular
India and the Andaman Islands, and Nepal,
Bangla Desh and Sri Lanka.

australis Linn.

40 Bowden, W.M. 1945b

var. *australis*

40 Mehra, P.N. & Gill, B.S. 1974

var. *urlicarpa* Decne

20 Mehra, P.N. & Gill, B.S. 1974

cinnamomea Lindl.

20 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Mehra, P.N. & Gill, B.S. 1974 ;
Sarkar, A.K., Datta, N. *et al.* 1976

sinensis Pers.

20 Bowden, W.M. 1945b

tetrandra Roxb.

20 Mehra, P.N. & Gill, B.S. 1974

Chaetachme Planch. *corr.* Planch.

4 ; tropical and South Africa, and
Madagascar. 1 ; cultivated.

aristata Planch.

60 Sarkar, A.K. *et al.* 1973b

Holoptelea Planch.

2 ; tropical Africa and Indo-Malesia.
1 ; throughout the greater part of India, and
Sri Lanka.

integrifolia Planch.

28 Kapoor, S.P. 1937b ; Mehra, P.N. &
Gill, B.S. 1974 ; Sanjappa, M.
1979

Trema Lour.

30 ; tropics and subtropics. 4 ; Himalaya, Bengal, Bihar, Southern and Central India, and Nepal, Bangla Desh and Sri Lanka.

orientalis (Linn.) Blume

20 Mehra, P.N. & Hans, A.S. 1969 ;
Hans, A.S. 1971

40 Hsu, C.-C. 1967 ; Sarkar, A.K. *et al.*
1973b

politoria Planch.*

20+1B Mehra, P.N. & Gill, B.S. 1971, 1974 ;
Mehra, P.N. 1972

tomentosa (Roxb.) Hara*amboinensis* Blume

20, 160 Hans, A.S. 1971

160 Mehra, P.N. 1972 ; Mehra, P.N. &
Hans, A.S. 1972

Ulmus Linn.

45 ; North temperate, South to Himalaya, Indo-China, and Mexico. 2 ; Himalaya (up to 3,000 m), and Nepal and Bangla Desh.

wallichiana Planch.

28 Mehra, P.N. & Gill, B.S. 1974

URTICACEAE Juss.

45/550 ; tropics and temperate. 24/124 ; mostly from Eastern Himalaya (up to 5,940 m in the Himalaya), and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka a few cultivated.

Boehmeria Jacq.

100 ; tropics and North subtropics. 8-15 ; chiefly in Himalaya, and Nepal, Bhutan, Bangla Desh and Sri Lanka a few cultivated.

elidemioides Miq.*staeafolia* Wedd.

28 Sharma, A. & Sarkar, A.K. 1967-
1968

nivea (Linn.) Gaud.-Beaup.

22 Shibukawa (Kihara, H. *et al.* 1931)

28 Krause, O. 1931 ; Breslawetz, L. *et al.*
(Fedorov) ; Medwedewa, G.B. (Fedorov) ; Delay, C. 1947 ; Chatterjee, H.
& Bhattacharya, S.S. 1957 ; Okabe, S.
1963 ; Guha, S. 1977

28, 42 Gupta, S.C. *et al.* 1960

platyphylla D. Don

28, 56 Mehra, P.N. & Gill, B.S. 1974

56 Mehra, P.N. & Hans, A.S. 1969

var. *rotundifolia* Wedd.**

28 Mehra, P.N. & Hans, A.S. 1969

polystachya Wedd.

28 Sharma, M.L. & Mehra, P.N. 1977,
1979

rugulosa Wedd.

56 Mehra, P.N. & Hans, A.S. 1969,
1972 ; Mehra, P.N. & Gill, B.S.
1974

tomentosa Wedd.*platyphylla* D. Donvar. *tomentosa* Wedd.

28 Mehra, P.N. & Hans, A.S. 1969

*The combination *Trema politoria* should be attributed to Blume (FEH : 52).

***Boehmeria platyphylla* var. *rotundifolia* Wedd. FB1, 5 : 579, in parts are synonyms of *B. platyphylla* D. Don and *B. ternifolia* D. Don (FEH, 3 : 18-19).

Chamabainia Wight

2 ; Indo-Malesia and Formosa. 1 ; tropical Himalaya, Khasi and Nilgiri Hills, and Sri Lanka.

cuspidata Wight

- 22 Sharma, M.L. & Mehra, P.N. 1977, 1979
24 Sharma, A. & Sarkar, A.K. 1967-1968 ; Guha, S. 1977

Debregeasia Gaud.

6 ; Abyssinia, Arabia, Afghanistan, Indo-Malesia and East Asia. 5 ; Himalaya (up to 1,800 m) and Peninsular India, and Bangla Desh and Sri Lanka.

longifolia Wedd.

- 28 Mehra, P.N. & Gill, B.S. 1974

relutina Gaud.

- 28 Le Coq, C. 1963

salsifolia (D. Don) Rendle**hypoleuca** Wedd.

- 28 Mehra, P.N. & Gill, B.S. 1974

Elatostema Gaud.

200 ; tropical old World. 32 ; Himalaya (between 1,320 and 4,000 m), and Nepal, Bhutan, Bangla Desh and Sri Lanka.

acuminatum Brongn.

- 32 Strasburger, E. 1910a

cuneatum Wight

- 26 Guha, S. 1977

hookerianum Wedd.

- 26 Guha, S. 1977

lanceolatum Wight

- 52 Sharma, A. & Sarkar, A.K. 1967-1968 ; Guha, S. 1977

lineolatum Wight

- 20 Guha, S. 1977

sessile Forst.

- 26 Sharma, M.L. & Mehra, P.N. 1977, 1979
32 Strasburger, E. 1910a
52 Krause, O. 1931 ; Le Coq, C. 1963

Fleurya Gaud.

8 ; tropical and South Africa. 1 ; Himalaya, Southern and Western India, and Sri Lanka.

interrupta Gaud.*

- 26 Guha, S. 1977

Forskalea Linn.

6 ; Canary Islands, South East Spain, Africa, Arabia and Western India. 1 ; Punjab plains, and Pakistan.

tenacissima Linn.

- 22 Reese, G. 1957

Girardinia Gaud.

8 ; tropical Africa, Madagascar, East Asia and Indo-Malesia. 2 ; Himalaya (up to 1,650 m), and Central and Southern India.

palmata (Forsk.) Gaud.**heterophylla** Decne

- 20 Sharma, B.R. 1961

zeylanica Decne**heterophylla** Decnevar. **zeylanica** Decne

- 20 Gajapathy, C. 1961

Laportea Gaud.

23 ; tropics and subtropics, also temperate East Asia and East North America, South Africa and Madagascar. 5 ; tropical and subtropical Himalaya and South Western India, and Sri Lanka.

* *Fleura interrupta* is now placed under *Laportea*.

bulbifera (Sieb. & Zucc.) Wedd.

60 Sokolovskaya, A.P. (Fedorov)

terminalis Wight

26, 52 Sharma, M.L. & Mehra, P.N. 1977, 1979

Lecanthus Wedd.

3; 1 tropical Africa, 1 East Asia and Indo-Malesia and 1 Fiji Islands. 1; throughout India, and Sri Lanka.

peduncularis (Royle) Wedd.

wallichii Wedd.

24 Sharma, B.R. 1961; Gajapathy, C. 1962b

Parietaria Linn.

30; temperate and tropics (in Malaysia rare, and mountains only). 2; temperate Himalaya (up to 4,200 m) and Western Ghats.

judatica Linn.

26 Krause, O. 1930, 1931; Mennema, J. & Segal, S. 1967

micrantha Ledeb.

16 Měšiček, J. & Sojak, J. 1972

Pellionia Gaud.

50; tropical and East Asia, and Polynesia. 7; Eastern Himalaya, Assam, South Western India and Nicobar Island, and Sri Lanka.

davsoniana N.E. Brown

26 Krause, O. 1930, 1931; Guba, S. 1977

Pilea Lindl.

400; tropics. 23; mostly in Eastern Himalaya (up to 3,300 m in the Himalaya), and Nepal, Bhutan, Bangla Desh and Sri Lanka - a few cultivated.

bracteosa Wedd.

24 Sharma, M.L. & Mehra, P.N. 1977, 1979

hirta Hassk.

16 Sharma, A. & Sarkar, A.K. 1967-1968

hookeriana Wedd.

24 Sharma, M.L. & Mehra, P.N. 1977, 1979

microphylla Liebm.

muscosa Lindl.

36 Le Coq, C. 1963

scripta Wedd.

24 Sharma, B.R. 1961; Sharma, M.L. & Mehra, P.N. 1977, 1979

symmeria Wedd.

24, 32, 50 Sharma, A. & Sarkar, A.K. 1967-1968

ternifolia Wedd.

24 Sharma, M.L. & Mehra, P.N. 1977, 1979

umbrosa Blume

umbrosa Wedd.

24 Sharma, B.R. 1961; Sharma, M.L. & Mehra, P.N. 1979

Pouzolzia Gaud.

50; tropical America, tropical and South Africa and tropical Asia. 12; mostly in Southern and Western India, and Sri Lanka.

hirta Hassk.

26 Sharma, M.L. & Mehra, P.N. 1977, 1979

32 Sharma, A. & Sarkar, A.K. 1967-1968

riminea Wedd.

52 Sharma, M.L. & Mehra, P.N. 1977, 1979

zeylanica (Linn.) Benn.

indica Gaud.

26 Sharma, M.L. & Mehra, P.N. 1977, 1979

Urtica Linn.

50; mostly North temperate, few tropics and South temperate. 4-5; 3-4 indigenous in Himalaya (up to 5,100 m), 1 naturalized in Himalaya (up to 5,940 m).

408 URTICACEAE

dioica Linn.

- 32 Strasburger, E. 1910a
 48 Meurman, O. 1924, 1925 ; Heitz, E. 1926 ; Tischler, G. 1934 ; Rohweder, H. 1937 ; Löve, A. & Löve, D. 1942a, 1956b ; Sorsa, V. 1962 ; Murin & Váňková (Fedorov) ; Laane, M.M. 1969b ; Májovský, J. *et al.* 1970a
 48, 52 Gadella, T.W.J. & Kliphuis, E. 1963 ; Skalińska, M. *et al.* 1971
 52 Fothergill, P.G. 1936 ; Taylor, R.L. & Mulligan, G.A. 1968 ; Gadella, T.W.J. & Kliphuis, E. 1971a ; Bassett, I.J. & Crompton, C.W. 1972 ; Löve, A. & Löve, D. 1975b

ssp. *dioica*

- 52 Bassett, I.J. *et al.* 1974

perriflora Roxb.*

- 24 Sharma, M.L. & Mehra, P.N. 1977, 1979

26, 38-40,

- 52 Sharma, B.R. 1961

pitulifera Linn.

- 24 Heitz, B. 1926, 1927b ; Delay, C. 1947
 26 Krause, O. 1931 ; Fothergill, P.G. 1936 ; Bassett, I.J. & Crompton, C.W. 1972

urens Linn.

- 24 Meurman, O. 1924, 1925 ; Tischler, G. 1934 ; Fothergill, P.G. 1936 ; Rohweder, H. 1937 ; Heiser, C.B. & Whitaker, T.W. 1948 ; Löve, A. & Löve, D. 1948, 1956b ; Pólya, L. 1949 ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Skalińska, M. *et al.* 1971
 24, 26, 52 Löve, A. & Löve, D. 1942a

VACCINIACEAE S.F. Gray

1/300-400 ; North temperate and tropical mountains, Andes, South Africa and Madagascar. 1/17 ; Eastern Himalaya and mountains of Southern India, and Bhutan and Sri Lanka a few cultivated.

Vaccinium Linn.

300-400 ; North temperate, tropical mountains (excluding Africa), Andes, South Africa and Madagascar. 17 ; Eastern Himalaya (between 1,000 and 4,300 m) a few in mountains of Southern India, and Bhutan and Sri Lanka - a few cultivated.

griffithianum Wight

- 24 Mehra, P.N. & Bawa, K.S. 1969

vacciniaceum (Roxb.) Suismer

serratum Wight

- 24 Arora, C.M. 1961 ; Mehra, P.N. & Bawa, K.S. 1969

VAHLIACEAE (Reichb.) Dandy

1/4 ; tropical and South Africa to North Western India. 1/1 ; tropical and dry regions of India, and Pakistan and Sri Lanka.

* *Urtica perriflora* Roxb., *FBI*, 5 : 548, in parts are synonyms of *U. urens* Link and *U. umbellata* Levelle (*FEH*, 3 : 28-29).

Valbia Thunb.

4: tropical and South Africa, South West Asia to North Western India. 1: tropical and dry regions, and Pakistan and Sri Lanka.

dichotoma (Murr.) O. Kuntze

orientandroides Roxb.

12 Skovsted, A. 1934b; Raghavan, T.S. & Srinivasan, V.K. 1942

14 Patil, B.C. & Chennaveeraiah, M.S. 1971

viscosa Roxb.

18 Raghavan, T.S. & Srinivasan, V.K. 1942

VALERIANACEAE Batsch.

13/400; Europe, Asia, Africa and America. 4/18; Himalaya (between 1,320 and 5,610 m), 3 endemic to mountains of Southern India, and Bhutan and Sri Lanka.

Nardostachys DC.

2; Himalaya and West China. 1; temperate Himalaya (up to 3,000 m).

grandiflora DC.

16 Kumar, V. & Chauhan, K.P.S.

Valeriana jatamansi Jones

16 Engel, K. 1972

16, 32 Seitz, W. 1972

32 Kurosawa, S. 1971b

V. wallichii DC.

28 Kishore, H. 1951

32 Mehra, P.N. & Sobti, S.N. 1955

Valeriana Linn.

Above 200; Eurasia, South Africa, temperate North America and Andes. 12-14; 11 confined between 1,320 and 5,610 m in the Himalaya, 3 in the mountains of Southern India, and Bhutan and Sri Lanka.

dioica Linn.

16 Meurman, O. 1924, 1925; Tischler, G. 1934; Feltsldy, L.J.M. 1947a; Gadella, T.W.J. & Kliphuis, E. 1963; Taylor, R.L. & Brockman, R.P. 1966; Lavka, M. *et al.* 1971; Engel, K. 1973; Váchová, M. & Schwarzková, T. 1978, 1980

hardwickii Wall.

14 Kurosawa, S. 1966

56 Mehra, P.N. & Sobti, S.N. 1955

officinalis Linn.

14 Fratasonj, O.D. (Fedorov); Runquist, E. 1937; Poucques, M.L. de 1949; Skalińska, M. 1950; Titz, W. 1964, 1969a

14, 16, 18,

28, 32, 56,

64 Ferguson, I.K. 1965

14, 28 Tischler, G. 1934

14, 28, 56 Soujaninowa, M. (Fedorov); Keller, L. 1973

28 Meurman, O. 1924, 1925, 1931; Pólya, L. 1949; Murla & Váchová, (Fedorov); Májovský, J. *et al.* 1970a

28, 56 Skalińska, M. 1947

42 Poghosian, A.J. *et al.* 1971

56 Gadella, T.W.J. & Kliphuis, E. 1963; Zhukova, P.G. 1967b; Brand, C.V.D. *et al.* 1979

64 Asplund, E. 1920

pyrolaeifolia Decne

16 Kurosawa, S. 1971b

stracheyi Clarke

16 Mehra, P.N. & Sobti, S.N. 1955

Valerianella Mill.

80; West Europe to Central Asia and Afghanistan. 2; Kashmir.

dentata (Linn.) Poll.

14 Tischler, G. 1934

410 VALERIANACEAE

16 Weberling, F. 1970 ; Ernet, D. 1972 ;
Ančov, M.E. 1978

microcarpa Loisel.

14 Elvers, I. 1932

morsanii DC.

14 Elvers, I. 1932

szovitziana Fisch. & Mey.

c.32 Elvers, I. 1932

VERBENACEAE Jaume St-Hil.

75/3,000 ; almost all tropics and subtropics. 24/124 ; Southern and Western India, tropical and subtropical Himalaya, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka—some cultivated and a few naturalized.

Callicarpa Linn.

140 ; tropics and subtropics. 11 ; chiefly in Eastern and Central Himalaya (up to 3,630 m), and Nepal, Bangla Desh and Sri Lanka.

acuminata Wall.*

34 Mehra, P.N. & Bawa, K.S. 1969

macrophylla Vahl

34 Sharma, A.K. & Mukhopadhyay, S. 1963b

incana Roxb.

34 Sharma, A.K. & Mukhopadhyay, S. 1961

paucicalyx Clarke

34 Mehra, P.N. & Bawa, K.S. 1969

tomentosa Nutt.

130, 136 Mehra, P.N. & Bawa, K.S. 1969

136 Mehra, P.N. 1972

Caryopteris Bunge

15 ; Himalaya to Japan. 3 ; subtropical Himalaya (up to 1,480 m), and Nepal and Bhutan.

foetida (D. Don) Thell.

grata Benth.

60 Mehra, P.N. & Gill, L.S. 1968a ; Gill, L.S. 1972

odorata (Hoch.-Ham.) Robinson

40 Malla, S.B., Bhattarai, S. *et al.* 1977a

Citharexylum Mill.

115 ; South United States to Argentina. 1 ; cultivated.

subserrata Linn.**

60 Mitra, S. 1968

Clerodendrum Linn.

400 ; tropics and subtropics. 18 ; chiefly in Eastern Himalaya, and Bhutan, Bangla Desh and Sri Lanka - a few cultivated.

aculeatum Griseb.

24 Nevling 1963

bracteatum Wall.

52 Mehra, P.N. & Bawa, K.S. 1969

colobrookiasum Walp.

52 Mehra, P.N. & Bawa, K.S. 1969

52+0-2B Mehra, P.N. & Bawa, K.S. 1968 ; Mehra, P.N. 1972

*The combination *Callicarpa acuminata* should be attributed to Roxb. (FBI, 4 : 570).

**The combination *Citharexylum subserratum* should be attributed to Swartz (DFPI : 40).

- indicum* (Linn.) O. Kuntze
 48 Sobti, S.N. & Singh, S.D. 1961
- siphonanthus* R. Br.
 30 Raman, V.S. & Kesavan, P.C. 1963b ;
 Baquar, S.R. 1967-1968
 52 Sharma, A.K. & Mukhopadhyay, S.
 1961, 1963b
- inermis* (Linn.) Gaertn.
 46 Raman, V.S. & Kesavan, P.C. 1963b ;
 Sharma, A.K. & Mukhopadhyay, S.
 1963b
 48 Sobti, S.N. & Singh, S.D. 1961
- kaempferi* (Jacq.) Sieb.
squamatum Vahl
 52 Sharma, A.K. & Mukhopadhyay, S.
 1963b
- multiflorum* (Burm. f.) Kuntze
phlomoides Linn.
 48 Sobti, S.N. & Singh, S.D. 1961
 52 Raman, V.S. & Kesavan, P.C. 1963b
- philippinum* Schauer
fragrans Vent.*
 46 Raman, V.S. & Kesavan, P.C. 1963b
 52 Sharma, A.K. & Mukhopadhyay, S.
 1961, 1963b
- serratum* (Linn.) Moon**
 48 Bir, S.S. & Kumari, S. 1975
- splendens* G. Don
 46 Sharma, A.K. & Mukhopadhyay, S.
 1961, 1963b
 48 Raman, V.S. & Kesavan, P.C. 1963b
- thomsoniae* Balf.
balfourii Hort.
 46 Sharma, A.K. & Mukhopadhyay, S.
 1961
- ugandense* Prain
 184 Sharma, A.K. & Mukhopadhyay, S.
 1961, 1963b
- viscosum* Vent.
 48 Gajinpathy, C. 1961
 52 Mehra, P.N. & Bawa, K. S. 1969
- infortunatum* Gaertn.
 20 Mitra, S. 1968
 48 Chaudhuri, J. 1971
 52 Patil, R.P. 1958 ; Sharma, A.K. &
 Mukhopadhyay, S. 1961, 1963b ; Bir,
 S.S. & Saggoo, M.I.S. 1979
- wallichii* Merr.
nusans Wall.
 52 Sharma, A.K. & Mukhopadhyay, S.
 1963b
- Duranta* Linn.
 36 ; tropical and South America, and
 West Indies. 2 ; cultivated.
macrophylla (hort. var.)
 34 Sharma, A.K. & Mukhopadhyay, S.
 1963b
- repens* Linn.
 16 Hsu, C.-C. 1967
- plumifera* Jacq.
 24 Nanda, P.C. 1962
 32 Sharma, A.K. & Mukhopadhyay, S.
 1963b
 34 Bir, S.S., Gill, B.S. & Bedl, Y.S.
 1979
 36 Patermann, H. 1935
- Gmelina* Linn.
 35 ; 2 tropical Africa and Mascarene,
 33 East Asia, Indo-Malesia and Australia.
 4 ; Peninsular India, Bengal, Western Hima-
 laya and Nicobars, and Bangla Desh and
 Sri Lanka.
arborescens Roxb.
 36 Mangenot, S. & Mangenot, G. 1962
 38 Raman, V.S. & Kesavan, P.C. 1963a ;
 Mehra, P.N. & Bawa, K.S. 1969
- asiatica* Linn.
 38 Raman, V.S. & Kesavan, P.C. 1963a
 40 Sobti, S.N. & Singh, S.D. 1961

*The combination *Clerodendrum fragrans* should be attributed to Willd. (PHD : 487).

**The combination *C. serratum* should be attributed to Spreng. and it is a synonym of *C. divaricatum* Jack (FEH : 268-269).

412 VERBENACEAE

philippensis Cham.

Aystrix Schult. ex Kurz

- 38 Sharma, A.K. & Mukhopadhyay, S. 1963b ; Sarkar, A.K., Datta, N. *et al.* 1978

Holmskioldia Retz.

11 ; tropical Africa, Madagascar, Mascarene, India to West Malaysia, 1 ; subtropical Himalaya, and Bhutan, also cultivated.

sanguinea Retz.

- 32 Sharma, A.K. & Mukhopadhyay, S. 1963b ; Sarkar, A.K., Datta, N. & Chatterjee, U. 1978
36 Malla, S.B., Bhattarai, S. *et al.* 1977a

Hymenopyramis Wall. ex Griff.

6 ; India and South East Asia. 1 ; cultivated.

brachiata Wall.

- 32 Mitra, S. 1968

Lantana Linn.

150 ; tropical America, West Indies, and tropical and South Africa. 8 ; widely distributed, perhaps all introduced, and Bangla Desh and Sri Lanka a few cultivated.

camara Linn.

- 22 Tandon, S.L. & Chandi, A. Sh. 1955
22-77 Khoshoo, T.N. 1979
22, 33, 44 Sen, N. & Sahni, V.M. 1955 ; Raghavan, R.S. & Arora, C.M. 1960
22, 33, 44, 66 Natarajan, A.T. & Ahuja, M.R. 1957
28, 32, 44 Mitra, S. 1968
28, 34, 36, 56(46) Chaudhuri, I. 1971
32, 44 Schnack, B. & Covas, G. 1947 (D. 1955)
33, 44, 55 Sen, N.K. & Sahni, V.M. 1955
38 Sharma, A. & Sarkar, A.K. 1967-1968
44 Tjio, J.H. 1948 ; Singh, B. 1951

indica Roxb.

- 22 Malik, N.A. & Ahmad, A.J. 1963
36 Chaudhuri, I. 1971

- 72 Natarajan, A.T. & Ahuja, M.R. 1957

var. *albiflora* Wight ex Clarke
wightiana Wall.

- 72 Arora, C.M. 1960

lavocrata Linn.

- 36 Natarajan, A.T. & Ahuja, M.R. 1957

lilacina Desf.

- 36 Natarajan, A.T. & Ahuja, M.R. 1957

montevideensis Briq.

- 36 Arora, C.M. 1960 ; Khoshoo, T.N. 1979
48 Henderson, R.F.J. 1963

trifolia Linn.

- 48 Patermann, H. 1935

Lippia Linn.

220 ; tropical America and Africa. 4 ; widely distributed in India, and in Bangla Desh - a few cultivated.

alba (Mill.) N.E. Brown

- 30 Bose, R.B. & Choudhury, J.K. 1960

geminata HBK

- 30 Choudhury, J.K. & Bose, R.B. 1956 ; Choudhury, J.K. 1961

citriodora (Lam.) Kunth

- 36 Doulat, E. 1943

Nyctanthes Linn.

2 ; India, Siam, Sumatra and Java. 1 ; cultivated.

arbor-tristis Linn.

- 44 Sharma, A.K. & Mukhopadhyay, S. 1963b
46 Kundu, B.C. & Das, A. 1968

Petrea Linn.

30 ; tropical America and West Indies. 2 ; cultivated.

arbores HBK

- 34 Chaudhuri, I. 1971

volubilis Linn.

- 14 Sarkar, A.K., Chakraverty, M. *et al.* 1977
 34 Sharma, A.K. & Mukhopadhyay, S. 1963b ; Chaudhuri, I. 1971

Phyla Lour.

10 ; North and Central America. 1 ; throughout India, and Pakistan, Bangla Desh and Sri Lanka.

nodiflora (Linn.) Greene

- 34 Mitra, S. 1968
 36 Covas, G. & Schnack, B. 1946 (D. 1955) ; Chaudhuri, I. 1971

Lippia nodiflora (Linn.) Michx.*

- 18 Malik, N.A. & Ahmad, A.J. 1963
 36 Junell, S. 1934

L. nodiflora A. Rich.

- 36 Bir, S.S. & Sidhu, M. 1974

Premna Linn.

200 ; tropical and subtropical Africa and Asia. 29 ; chiefly in Himalaya and Southern and Western India, and Bhutan, Bangla Desh and Sri Lanka.

bengalensis Clarke

- 38 Mehra, P.N. & Bawa, K.S. 1969

integrifolia Linn.

- 20 Mitra, S. 1968

latifolia Roxb.

- 38 Mehra, P.N. & Bawa, K.S. 1969

var. *macronota* (Roxb.) Clarke

- 38 Bedi, Y.S. *et al.* 1980

péguis Clarke

- 38 Mehra, P.N. & Bawa, K.S. 1969

Priva Adans.

20 ; tropics and subtropics. 1 ; Peninsular India.

cordifolia (Linn. f.) Druce**

- 36 Shetty, B.V. 1961

Stachytarpheta Vahl

100 ; America, some widely dispersed as weeds in tropics. 3 ; 1 tropical India, and Bangla Desh and Sri Lanka, 2 introduced and cultivated.

jamalocensis (Linn.) Vahl

indica Vahl

- 160 Sharma, A.K. & Mukhopadhyay, S. 1961, 1963b

Tectona Linn. f.

3 ; Indo-Malesia. 2 ; 1 Western Peninsula, Central India and Bihar, also cultivated, 1 cultivated.

grandis Linn. f.

- 24 Nanda, P.C. 1962
 36 Sharma, A.K. & Mukhopadhyay, S. 1963b ; Mehra, P.N. & Bawa, K.S. 1969 ; Mehra, P.N. 1972

hamiltoniana Wall.

- 24 Nanda, P.C. 1962
 36 Bedi, Y.S. *et al.* 1980

Verbena Linn.

250 ; tropical and temperate America, and 2-3 in Old World. About 12 ; naturalized and/or cultivated throughout India.

bipinnatifida Nutt.

- 10 Bir, S.S., Kumari, S. *et al.* 1978
 30 Lewis, W. H. & Oliver, R.L. 1961

bonariensis Linn.

- 28 Der men, H. 1936 ; Noack, K.L. 1937 ; Covas, G. & Schnack, B. 1947 ; Schnack, B. *et al.* 1959

canadensis (Linn.) Britt.

aubletia Jacq.

- 10 Sharma, A.K. & Mukhopadhyay, S. 1963b

*The combination *Lippia nodiflora* was made by A. Rich. (HFDD : 399).

**The combination *Priva cordifolia* should be attributed to Roxb.

- 30 Noack, K.L. 1937; Khoshoo, T.N. & Arora, O.P. 1969; Arora, O.P. 1978
- velutoides* Lam.
- 10 Junell, S. 1934; Dermen, H. 1936; Noack, K.L. 1937; Sharma, A.K. & Mukhopadhyay, S. 1963b
- hybrida* Grönl. & Rpl.
- 10 Karpechenko (Tischler, G. 1927); Dermen, H. 1936; Noack, K.L. 1937; Arora, O.P. 1978
- 10,20(40) Furusato, K. 1940
- laetostachys* Link
- prostrata* R. Br.
- 14 Junell, S. 1934; Dermen, H. 1936; Noack, K.L. 1937; Solbrig, O.T. 1959
- officinalis* Linn.
- 10 Mitra, S. 1968
- 12 Schnarf, K. 1923; Patermann, H. 1935
- 14 Junell, S. 1934; Tischler, G. 1934; Dermen, H. 1936; Noack, K.L. 1937; Schnack, B. & Covas, G. 1944; Hsu, C.-C. 1967; Björkqvist, I. *et al.* 1969; Murin, A. & Sheikh, M.Y. 1971; Aryavand, A. 1980; Van Loon, J. Chr. & Kieft, B. 1980
- 56 Bir, S.S. & Saggoo, M.I.S. 1979
- parviflora* (Linn.) Britt.
- 10 Beale, G.H. 1940; Chaudhuri, I. 1971
- 10, 20 Schnack, B. & Covas, G. 1945
- rigida* Spreng.
- 42 Junell, S. 1934; Dermen, H. 1936; Schnack, B. *et al.* 1959; Lewis, W. H. & Oliver, R.L. 1961
- venosa* Gill. & Hook.
- 42 Noack, K.L. 1937
- tenra* Spreng.
- 10 Datta, P.C. 1953
- 30 Beale, G.H. 1940
- tenuisecta* Briq.
- 10 Lewis, W.H. & Oliver, R.L. 1961; Arora, O.P. 1978
- 10-16 Arora, O.P. 1977
- Vitex* Linn.
- 250; tropics and temperate. 13; chiefly in Peninsular India, a few throughout India, and Sri Lanka.
- agnus-castus* Linn.
- 24 Patermann, H. 1935
- 32 Sharma, A.K. & Mukhopadhyay, S. 1963b; Murin, A. & Sheikh, M.Y. 1971; Kramer, K.U. *et al.* 1972
- leucocylon* Linn. f.
- 32 Sarkar, A.K. *et al.* 1974
- negundo* Linn.
- 24 Malik, N.A. & Ahmad, A.J. 1963
- 26 Sobti, S.N. & Singh, S.D. 1961
- 28 Mitra, S. 1968
- 32 Mehra, P.N. & Bawa, K.S. 1969; Chaudhuri, I. 1971
- 32,34 Mehra, P.N. 1972
- 34 Sharma, A.K. & Mukhopadhyay, S. 1961, 1963b
- peduncularis* Will.
- 34 Mehra, P.N. & Bawa, K.S. 1969
- pinnata* Linn.
- pubescens* Vahl
- 28 Mitra, S. 1968
- quinata* (Lour.) N.F. Williams
- heterophylla* A. Juss.*
- 32 Sarkar, A.K. *et al.* 1975
- trifolia* Linn.
- 26 Sobti, S.N. & Singh, S.D. 1961
- 32 Sugiura, T. 1936a, b
- 34 Sharma, A.K. & Mukhopadhyay, S. 1963b

*The combination *Vitex heterophylla* should be attributed to Roxb. (FBI, 4 : 585).

VIOLACEAE Batsch.

22/900 ; cosmopolitan. 3/24; mostly in Himalaya and mountains of Southern and Western India and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka a few cultivated.

Hybanthus Jacq.

150 ; tropics and subtropics. 1-2 ; warmer parts of India, and Sri Lanka.

enneaspermus (Linn.) F. Muell.

- 31 Mangenot, S. & Mangenot, G. 1962 ;
Sarkar, A.K., Chakraverty, M. *et al.*
1980

tonditum heterophyllum Vent.

- 32 Sarkar, A.K., Datta, R. *et al.* 1975

l. suffruticosum (Linn.) Ging. ex DC.

- 32 Sanjappa, M. 1979

ssp. *enneaspermus*

- ^ 16 Bennett, E.M. 1972

Viola Linn.

500 ; cosmopolitan, chiefly North temperate, but many Andine. 15 ; mainly in the temperate Himalaya (up to 6,600 m), a few in the mountains of Western and Southern India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka a few cultivated.

arcuata Blume

distans Wall.

- 24 Sharma, A. & Sarkar, A.K. 1967-1968
44 Chatterjee, A. & Sharma, A.K. 1972

biflora Linn.

- 12 Clausen, J. 1926, 1927 ; Gershoy, A. 1928, 1932, 1934 ; Miyaji, Y. 1929 ; Skolifiska, M. *et al.* 1959 ; Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov) ; Schmidt, A. 1962 ; Sorsa, V. 1963b ; Laane, M.M. 1967 ; Sokolovskaya, A.P. (Fedorov), 1968 ; Engel-skjøn. T. & Knaben, G. 1971 ;

Kobayashi, S. 1972 ; Contandriopoulos, J. & Gamisans, J. 1974

- 12,20 Chatterjee, A. & Sharma, A.K. 1972
18 Sokolovskaya, A. P. & Strelkova, O. S. (Fedorov)
34-35 Sokolovskaya, A.P. & Strelkova, O.S. (Fedorov)

diffusa Ging.

- . 26 Miyaji, Y. 1929

hookeri Thoms. ex Hook. f.

- 18 Sharma, A. & Sarkar, A.K. 1967-1968
18,72 Chatterjee, A. & Sharma, A.K. 1972

odorata Linn.

- 18 Gershoy, A. 1928
20 Clausen, J. 1926, 1927, 1931c ; Hejlbom, O. 1926 ; Miyaji, Y. 1929, 1930a ; Gershoy, A. 1932, 1934 ; Tischler, G. 1934 ; Schöfer, G. 1954 ; Gadella, T.W.J. 1963a ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Chatterjee, A. & Sharma, A.K. 1972

patrizii DC.*

- 24 Miyaji, Y. 1913, 1929 ; Sokolovskaya, A.P. (Fedorov)

villosa Blume

serpens Wall. ex Ging.

- 12 Kishore, H. 1951
18,48 Sharma, A. & Sarkar, A.K. 1967-1968 ;
Chatterjee, A. & Sharma, A.K. 1972

tricolor Linn.

- 26 Clausen, J. 1924, 1926, 1927, 1931d ; Gershoy, A. 1932, 1934 ; Tischler, G. 1934 ; Rohweder, H. 1937 ; Fothergill, P.G. 1938, 1944 ; Löve, A. & Löve, D. 1956b ; Gadella, T.W.J. 1963a ; Gadella, T.W.J. & Kliphuis, E. 1963 ; Clausen, J. *et al.* 1964 ; Pettet, A. 1964 ; Laane, M.M. 1969b ; Mukherjee, I. & Khoshoo, T.N. 1969

* *Viola patrizii* auct. pl. (non DC.) FBI, 1 : 183, *pro parte* is a synonym of *V. petonicifolia* J.E. Smith sp. *nepalensis* (Ging.) Becker (HFDD : 55).

- 28 Srid, A. 1980
42,46 Chatterjee, A. & Sharma, A.K.
1972

- witrockiana* Gams
48-50 Miyaji, Y. 1930a
48,52 Mukherjee, I. & Khoshoo, T.N. 1969

VITIDACEAE Juss.

12/700 ; mostly tropics and subtropics. 8/62 ; chiefly in Western Peninsular India, with the secondary centre in the Himalaya, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

Ampelocissus Planch.

95 ; tropics. About 10 ; chiefly in Eastern Himalaya and South Western Peninsula, and Bangla Desh and Sri Lanka.

aracosa (Laws.) Planch.

- 80 Shetty, B.V. & Ramani, V.S. 1960

latifolia (Roxb.) Planch.

- 40 Shetty, B.V. 1958, 1959 ; Shetty, B.V.
& Ramani, V.S. 1960
40,60 Hazra, R. & Sharma, A. 1970

Vitis latifolia Roxb.

- 40 Syamal, N.B. & Patel, G.I. 1953

tomentosa Planch.

- 40 Shetty, B.V. 1958, 1959 ; Shetty, B.V.
& Ramani, V.S. 1960

Cayratia Juss.

45 ; Africa, Madagascar, Indo-Malesia, Australia, New Caledonia and Pacific. About 9 ; Himalaya and Western Peninsular India, and Nepal, Pakistan, Bhutan, Bangla Desh and Sri Lanka.

japonica (Thunb.) Gagnep.

- 60 Mitsukuri, Y. & Hayashi, M. 1953
(Shetty, B.V. 1959)

pedata Juss.

- 40 Patil, V.P. *et al.* 1980
c.72 Shetty, B.V. 1958,1959
80 Vatsala, P. 1960 ; Hazra, R. &
Sharma, A. 1970

tennifolia Gagnep.

- 30 Shetty, B.V. 1958,1959 ; Vatsala, P.
1960

trifolia (Linn.) Dom.*sarrosa* Gagnep.

- 80 Vatsala, P. 1960 ; Mitra, K. & Datta,
N. 1967 ; Hazra, R. & Sharma, A.
1970
c.98 Shetty, B.V. 1959
120 Patil, V.P. *et al.* 1980

Cissus Linn.

350 ; tropics, rarely subtropics. About 16 ; Himalaya, Eastern India, Western Ghats, a few in hotter parts of India, and Bangla Desh and Sri Lanka.

adnata Roxb.

- 20 Hazra, R. & Sharma, A. 1970
48 Shetty, B.V. 1958,1959

assamica (Lansson) Craib

- 48 Hazra, R. & Sharma, A. 1970

auriculata

- 22 Patil, V.P. *et al.* 1980

cactiformis Linn.

- 20 Hazra, R. & Sharma, A. 1970
24 Eicua, P. 1967

canarensis

- 44 Patil, V.P. *et al.* 1980

elongata

- 24 Patil, V.P. *et al.* 1980

glauca Roxb.

- 24 Krishnaswamy, N. *et al.* 1954

- Shetty, B.V. 1958, 1959; Elena, P. 1967
50 Vatsala, P. 1960
- heyneana* Planch.
24 Shetty, B.V. 1958, 1959
28 Krishnaswamy, N. *et al.* 1954
- javanica* DC.
24 Elena, P. 1967; Hazra, R. & Sharma, A. 1970
- discolor* Blume
24 Krishnaswamy, N. *et al.* 1954; Shetty B.V. 1958, 1959
- pallida* Planch.
24 Shetty, B.V. 1958, 1959; Shetty, B.V. & Raman, V.S. 1960; Patil, V.P. *et al.* 1980
26 Krishnaswamy, N. *et al.* 1954
- quadrangularis* Linn.
24 Raghavan, R.S. 1957; Shetty, B.V. 1958, 1959; Mitra, K. & Datta, N. 1967; Hazra, R. & Sharma, A. 1970; Patil, V.P. *et al.* 1980
44-53 Ghimpu, V. 1929b
- Vitis quadrangularis* Wall. ex Wight & Arn.
44-53 Ghimpu, V. 1930
- repanda* Vahl
24 Shetty, B.V. & Raman, V.S. 1960
- repens* Lam.
96 Vatsala, P. 1960
- setosa* Roxb.
22 Shetty, B.V. 1958, 1959
24 Patil, V.P. *et al.* 1980
- trifolia* Linn.
80 Patil, V.P. *et al.* 1980
- trilobata* Lam.
24 Vatsala, P. 1960
- vitifolia* Linn.
26 Shetty, B.V. 1958, 1959; Brizicky, G.K. 1965a
- woodrowii* (Stapf) Santap.
24 Patil, V.P. *et al.* 1980
- sp. ornamental* var.
48 Patil, V.P. *et al.* 1980

Parthenocissus Planch.

15; temperate Asia and America. About 5; Himalaya (up to 3,300 m) and South Western Peninsula, and Sri Lanka.

nellgherrensis Planch.

40 Shetty, B.V. 1958, 1959

Tetrastigma Planch.

90; South East Asia, Indo-Malesia and Australia. About 7; chiefly Himalayan, and Nepal, Bangla Desh and Sri Lanka.

lancofolium Planch.

44 Krishnaswamy, N. *et al.* 1954; Shetty, B.V. 1958, 1959; Elena, P. 1967

auriculatum Gamble

44 Shetty, B.V. & Raman, V.S. 1960

sulcatum Gamble

22 Krishnaswamy, N. *et al.* 1954; Shetty, B.V. 1958, 1959; Shetty, B.V. & Raman, V.S. 1960
52 Patil, V.P. *et al.* 1980

Vitis Linn.

60-70; North hemisphere. 6; Himalaya, and Nepal and Bangla Desh a few cultivated.

labrusca Linn.

38 Ghimpu, V. 1929b; Hirayanagi, H. 1929; Kobel, F. 1929; Nebel, B.R. 1929b, c; Sax, K. 1929; Takusagawa, H. 1952; Mitsukuri, Y. & Hayashi, M. 1953; Shetty, B.V. 1958, 1959; Brizicky, G.K. 1965a

vinifera Linn.

38 Ghimpu, V. 1929b; Hirayanagi, H. 1929; Ivanov-Paroiskaya, H. (Fedorov); Negru, A.M. (Fedorov); Araratyan, A.G. (Fedorov); Krishnaswamy, N. *et al.* 1954; Patil, G.I. & Oimo, H.P. 1957; Shetty, B.V. & Raman, V.S. 1960; Vatsala, P. 1960; Constantinescu, G. *et al.* 1964; Takusagawa, H. 1952; Elena, P.

- 1967 ; Hazra, R. & Sharma, A. 1970 ;
Raj, A.S. & Seethaiah, L. 1969
- 38, 40 Sax, K. 1929
- 38, 57, 76 Olmo, H.P. 1937
- 38, 76 Nebel, B.R. 1929c
- 76 Brauns, M.M. 1932
- cv. 'Bangalore Blue'
38 Patil, V.P. *et al.* 1980
- cv. 'Bangalore Purple'
38 Patil, V.P. *et al.* 1980
- cv. 'Barbarossa'
38 Patil, V.P. *et al.* 1980
- cv. 'Black Champa'
38 Patil, V.P. *et al.* 1980
- cv. 'Black Mosukka Castiza'
38 Patil, V.P. *et al.* 1980
- cv. 'Chassolas New Chattle'
38 Patil, V.P. *et al.* 1980
- cv. 'Convent Large Black'
38 Patil, V.P. *et al.* 1980
- cv. 'Country Bangalore'
38 Patil, V.P. *et al.* 1980
- cv. 'Delight'
38 Patil, V.P. *et al.* 1980
- cv. 'Kishmish Charni'
38 Patil, V.P. *et al.* 1980
- cv. 'Lomint Tokay'
38 Patil, V.P. *et al.* 1980
- cv. 'Lugleanga'
38 Patil, V.P. *et al.* 1980
- cv. 'Oral White'
38 Patil, V.P. *et al.* 1980
- cv. 'Ribier'
38 Patil, V.P. *et al.* 1980
- cv. 'Rubi Red'
38 Patil, V.P. *et al.* 1980
- cv. 'Spin Sahebi'
38 Patil, V.P. *et al.* 1980
- cv. 'Tag'
38 Patil, V.P. *et al.* 1980

ZYGOPHYLLACEAE R. Br.

25/240 ; tropics and subtropics. 7/10 ; chiefly in drier parts of Northern India, and Pakistan, Bangla Desh and Sri Lanka.

Fagonia Linn.

40 ; South West United States, Chile, Mediterranean, South West Africa and South West Asia to North Western India. 1 ; North Western India and Peninsular India, and Pakistan.

cretica Linn.

- 18 Negodi, G. 1939 (D. 1935) ; Borgen, L. 1970
- 18, 20, 22 Baquar, S.R. 1967b
- 20 Bhanjali, A.K. & Bhandari, M.M. 1974
- 22 Baquar, S.R. *et al.* 1965 ; Baquar, S.R. 1970

Gnisiacum Linn.

6 ; warm America and West Indies. 1 ; cultivated.

officinale Linn.

- c.26 Janaki Ammal, S.K. (D. 1945)

Kalstroemia Scop.

23 ; 7 North and North East Australia, 16 South United States and West Indies to Argentina. 1 ; West Bengal.

subseca (G. Don) Dandy

- 32 Sarkar, A.K., Datta, N. & Chatterjee, U. 1980

36 Pandey, R.M. & Pal, M. 1980b

Peganum Linn.

5-6 ; Mediterranean to Mongolia, South United States and Mexico. 1 ; Kashmir, Upper Gangetic Plain, Bihar, Rajasthan, Gujarat, Deccan and Konkan, and Pakistan.
harmala Linn.

- 22 Negodi, G. 1937c
- 24 Warburg, E.F. 1936b ; Lorenzo-Andreu, A. 1951 ; Baquar, S.R. *et al.* 1965 ; Zakharyeva, O.I. & Astanova, S.B. 1968 ; Amin, A. 1973a ; Aryavand, A. 1975 ; Humphries, C.J. *et al.* 1978 ; Hillu, K.W. 1979
- 48 Hanselt, P. 1973

Tribulus Linn.

20 ; tropics and subtropics. 4 ; Eastern, Southern and Western India, Punjab, 1 throughout India (up to 3,630 m in the Himalaya), and Pakistan and Sri Lanka.

alatus Del.

- 24 Bhansali, A.K. & Bhandari, M.M. 1974 ; Hillu, K.W. 1979

cistoides Linn.

- 12 Porter, D. 1964 ; Porter, D.M. 1967, 1968

rajasthanensis Bhandari & Sharma

- 12 Bhandari, M.M. & Sharma, V.S. 1977

terrestris Linn.

- 12 Baquar, S.R. *et al.* 1965 ; Porter, D.M. 1968
- 12, 24, 36, 48 Malik, C.P. 1966b
- 24 Sugiura, T. 1940b, d ; Heiser, C.B. & Whitaker, T.W. 1948 ; Bhansali, A.K. 1980
- 32 Sarkar, A.K., Mallick, R. *et al.* 1977
- 36 Shetty, B.V. 1961 ; Zakharyeva, O.I. & Astanova, S.B. 1968 ; Ramachandran, K. & Kuriachan, P.I. 1970 ; Rashid, A. 1974 ; Hillu, K.W. 1979
- 48 Schnack, B. & Covaa, G. 1947 ; Fotedar, J.L. & Roy, S.K. 1969b ; Sanjappa, M. 1979

Zygophyllum Linn.

100 ; Mediterranean to Central Asia, South Africa and Australia in deserts and steppes. 2 ; Punjab, and Pakistan.

coctaeum Linn.

- 16 Baquar, S.R. 1969b
- 18 Eid, S.E. 1970

stimplex Linn.

- 16 Baquar, S.R. *et al.* 1965 ; Baquar, S.R. 1969b ; Eid, S.E. 1970
- 20 Miège, J. 1960b

Appendix 1. Cytological status of genera and species in each family of the Indian subcontinent

Family	No. of Genera	No. of Genera studied for chromosome number	No. of Species	No. of Species studied for chromosome number	Family	No. of Genera	No. of Genera studied for chromosome number	No. of Species	No. of Species studied for chromosome number
Acanthaceae	82	c. 41	425	115	Caesalpinaceae	35	23	120	74
Aceraceae	1	1	18	16	Callitrichaceae	1	1	3	2
Adoxaceae	1	1	1	1	Campanulaceae	9	7	50	12
Actinidiaceae	1	—	2	—	Canellaceae	1	1	1	1
Aizoaceae	10	9	18	14	Cannabaceae	2	2	2	2
Alangiaceae	1	1	3	3	Capparidaceae	5	4	38	10
Altingiaceae	2	1	2	1	Caprifoliaceae	5	3	64	23
Amaranthaceae	17	15	60	40	Cardiophyllaceae	1	—	1	—
Anacardiaceae	24	11	74	25	Caricaceae	1	1	1	1
Ancistrocladaceae	1	—	7	—	Carlemanniaceae	2	—	5	—
Annonaceae	26	8	131	21	Carpinaceae	1	1	2	2
Apiaceae	60	47	197	154	Caryophyllaceae	25	18	112	62
Apocynaceae	46	31	111	53	Casuarinaceae	1	1	3	1
Aquifoliaceae	1	1	22	18	Celastraceae	13	5	100	16
Araliaceae	17	11	56	18	Ceratophyllaceae	1	1	1-2	1
Aristolochiaceae	4	3	22	11	Chenopodiaceae	18	12	46	33
Asclepiadaceae	43	21	209	47	Chloranthaceae	2	1	2	1
Asteraceae	155	137	762	444	Chrysobalanaceae	3	—	4	—
Aucubaceae	1	1	1	1	Circaeasteraceae	1	1	1	1
Averrhoaceae	1	1	2	2	Cleomaceae	1	1	15	8
Avicenniaceae	1	1	3	2	Clusiaceae	8	4	57	8
Balanitaceae	1	1	1	1	Cobaeaceae	1	1	1	1
Balanophoraceae	2	1	8	1	Cochlospermaceae	1	1	1	1
Balsaminaceae	2	2	200	82	Combretaceae	6	5	32	16
Barringtoniaceae	4	4	11	6	Connaraceae	3	—	16	—
Basellaceae	2	2	3	2	Convolvulaceae	22	16	170	76
Begoniaceae	1	1	45-50	19	Coriariaceae	1	1	1	1
Berberidaceae	3	2	86	12	Cornaceae	3	3	7	4
Betulaceae	2	2	6	4	Corylaceae	1	1	3	3
Biebersteiniaceae	1	—	1	—	Crassulaceae	7	4	74	10
Bignoniaceae	35	29	68	53	Crypteroniaceae	1	—	1	—
Bischofiaceae	1	1	1	1	Cucurbitaceae	40	24	104	47
Bixaceae	1	1	1	1	Cuscutaceae	1	1	12	7
Bombacaceae	7	7	8	7	Daphniphyllaceae	1	1	4	1
Borraginaceae	39	18	145	45	Datisacaceae	1	1	1	1
Brassicaceae	61	41	168	86	Diapensiaceae	1	—	3	—
Broxiaaceae	1	1	1	1	Dichapetalaceae	1	—	1	—
Buddlejaceae	2	1	12	7	Dilleniaceae	4	3	24	4
Burseraceae	6	6	25	11	Dipentodontaceae	1	—	1	—
Buxaceae	2	2	6	4	Dipsacaceae	3	2	12	5
Cabothbaceae	1	1	1	1	Dipterocarpaceae	8	4	76	8
Cactaceae	7	6	18	13	Droseraceae	2	2	4	4

Family	No. of Genera	No. of Genera studied for chromosome number	No. of Species	No. of Species studied for chromosome number	Family	No. of Genera	No. of Genera studied for chromosome number	No. of Species	No. of Species studied for chromosome number
Ebenaceae	1	1	58	9	Loranthaceae	14	10	61	21
Ehretiaceae	5	3	32	8	Lythraceae	8	8	50	17
Elaeagnaceae	2	2	10	5	Magnoliaceae	8	7	35	23
Elaeocarpaceae	3	2	40	5	Malpighiaceae	6	4	19	11
Elatinaceae	2	2	6	4	Malvaceae	21	19	102	83
Ellisiophyllaceae	1	1	1	1	Martyniaceae	1	1	1	1
Ericaceae	12	6	153	52	Mastixiaceae	1	—	4	—
Erythropalaceae	1	—	2	—	Meibomiaaceae	15	5	120	10
Erythroxylaceae	1	1	7	2	Meliaceae	20	19	80	31
Escalloniaceae	1	—	1	—	Meliantaceae	1	1	1	1
Euphorbiaceae	72	49	466	157	Meliosmaceae	1	1	7	4
Eupteleaceae	1	1	1	1	Memecylaceae	2	1	50	1
Euryalaceae	2	2	2	2	Menispermaceae	19	7	42	12
Fabaceae	120	99	790	441	Mezuyanthaceae	3	2	8	5
Fagaceae	5	5	42	32	Mimosaceae	19	15	78	58
Flacourtiaceae	14	6	44	9	Monotropaceae	4	1	4	1
Flindersiaceae	1	1	1	1	Moraceae	12	7	114	62
Frankeniaceae	1	1	1	1	Morinaceae	1	1	6	2
Fumariaceae	3	3	41	9	Moringaceae	1	1	2	1
Gentianaceae	15	9	148	35	Myricaceae	1	1	1	1
Geraniaceae	4	4	32	31	Myristicaceae	4	3	16	3
Gesneriaceae	26	12	130	21	Myrsinaceae	11	4	117	10
Goodeniaceae	1	1	2	2	Myrtaceae	16	11	150	70
Grossulariaceae	1	1	9	6	Nandiniaceae	1	1	1	1
Gyrocarpaceae	1	1	1	1	Napoleonaceae	1	—	1	—
Haloragidaceae	3	2	12	5	Nelumbonaceae	1	1	1	1
Hamelidaceae	6	3	8	3	Nepenthaceae	1	—	1	—
Helwingiaceae	1	1	2	2	Nouradaceae	1	1	1	1
Hernandiaceae	2	1	6	1	Nyctaginaceae	5	3	19	11
Hippocastanaceae	1	1	4	3	Nymphaeaceae	1	1	18	13
Hydrangeaceae	3	3	10	8	Nyssaceae	1	1	2	2
Hydrophyllaceae	1	1	1	1	Ochnaceae	2	1	8	1
Hymenocardiaceae	1	—	1	—	Oleaceae	5	3	16	3
Hypericaceae	1	1	2	1	Oleaceae	9	7	88	44
Hypericaceae	1	1	24	9	Onagraceae	6	6	44	28
Isacianaceae	12	1	21	1	Opiliaceae	4	1	4	1
Illiciaceae	1	—	1	—	Orobanchaceae	7	3	28	6
Itaceae	1	1	3	2	Oxalidaceae	2	2	16	6
Ironanthaceae	1	—	3	—	Paeoniaceae	1	1	1	1
Juglandaceae	3	2	4	3	Papaveraceae	6	5	32	22
Lamiaceae	67	51	405	171	Parnassiaceae	1	1	11	4
Lardizabalaceae	4	1	6	1	Passifloraceae	2	1	30	11
Lauraceae	17	12	180	56	Pedaliaceae	3	3	6	6
Lecythidaceae	3	3	3	3	Peperoniaceae	1	1	22	6
Leeaceae	1	1	20	7	Periplocaceae	12	2	20	2
Lentibulariaceae	2	2	29	9	Philadelphaceae	2	2	9	8
Lipaceae	4	2	14	8	Phrymataceae	1	1	1	1
Lobeliaceae	1	1	22	7	Phytolaccaceae	4	3	5	4
Loganiaceae	1	1	1	1	Piperaceae	1	1	53	15

Family	No. of Genera	No. of Genera studied for chromosome number	No. of Species	No. of Species studied for chromosome number	Family	No. of Genera	No. of Genera studied for chromosome number	No. of Species	No. of Species studied for chromosome number
Pistaciaceae	1	1	2	2	Solanaceae	27	24	132	105
Pittosporaceae	2	1	13	3	Sonneratiaceae	2	2	4	2
Plagiopteraceae	1	—	1	—	Sphaerosepalaceae	1	—	1	—
Plantaginaceae	1	1	10	10	Sphenocleaceae	1	1	1	1
Platanaceae	1	1	1	1	Spigeliaceae	2	1	4	1
Plumbaginaceae	6	1	9	3	Stachyuraceae	1	1	1	1
Podoaceae	1	1	1	1	Staphyleaceae	2	1	5	2
Podophyllaceae	1	1	1	1	Sterculiaceae	24	15	80	24
Podostemaceae	10	2	19	2	Strilaginaceae	1	1	17	4
Polemoniaceae	3	2	3	2	Strychnaceae	2	1	27	2
Polygalaceae	3	2	24	9	Stylidiaceae	1	—	2	—
Polygonaceae	13	10	116	61	Styracaceae	5	1	8	2
Portulacaceae	3	2	11	7	Surianaceae	1	—	1	—
Potaliaceae	1	1	11	3	Symphoremataceae	2	1	3	1
Primulaceae	9	7	164	69	Symplocaceae	2	1	60	4
Proteaceae	7	6	14	8	Tamaricaceae	2	2	9	4
Punicaceae	1	1	1	1	Tetracontracae	1	1	1	1
Pyrolaceae	1	1	2	1	Tetragoniaceae	1	1	1	1
Rafflesiaceae	1	—	1	—	Tetrandraceae	1	1	1	1
Ranunculaceae	22	16	160	102	Theaceae	8	6	35	14
Resedaceae	3	2	5	3	Theophrastaceae	2	1	2	1
Rhamnaceae	15	7	77	22	Thunbergiaceae	2	1	11	7
Rhizophoraceae	8	3	16	8	Thymelaeaceae	13	4	25	7
Rosaceae	35	29	244	125	Tiliaceae	13	5	70	25
Rubiaceae	95	42	568	128	Toricelliaceae	1	1	1	1
Rutaceae	29	21	86	49	Trapaceae	1	1	1	1
Sabiaceae	1	1	10	1	Triplostegiaceae	1	1	1	1
Salicaceae	2	2	45	19	Tropaeolaceae	1	1	2	2
Salvadoraceae	3	1	4	2	Turneraceae	1	1	2	2
Sambucaceae	1	1	8	7	Ulmaceae	7	5	20	10
Santalaceae	7	3	10	3	Urticaceae	24	14	124	39
Sapindaceae	27	12	60	15	Vacciniaceae	1	1	17	2
Sapotaceae	13	6	45	8	Vahliaceae	1	1	1	1
Sarcospermataceae	1	1	2	1	Valerianaceae	4	3	18	7
Saururaceae	2	1	7	1	Verbenaceae	24	19	124	66
Saxifragaceae	6	5	64	16	Violaceae	3	2	24	10
Schisandraceae	2	1	8	1	Vitidaceae	8	6	62	31
Scrophulariaceae	63	38	355	125	Xanthophyllaceae	1	—	3	—
Sinaroubaceae	6	4	17	8	Zygophyllaceae	7	6	11	10
Siphonodontaceae	1	—	1	—					

Appendix 2. List of genera and number of species in the Indian subcontinent not screened for chromosome number

Family/Genera	No. of species in world	No. of species in Indian subcontinent	Family/Genera	No. of species in world	No. of species in Indian subcontinent
Acanthaceae			Aizoaceae		
Acanthopale	15	1	Carbichonia	1	1
Azystasiella	3	2	Altingiaceae		
Baphicacanthus	1	1	Altingia	7	1
Calacanthus	1	1	Amaranthaceae		
Calophanoides	9	2	Psilotrichum	27	5
Carvia*	1	1	Stilbanthus*	1	1
Codonacanthus	2	1	Anacardiaceae		
Difluggosa	16	5	Bouea	3-4	3
Diotacanthus	2	2	Drimycarpus*	1	1
Ditrichospermum	1	1	Gluta	13	1
Echinacanthus	9	6	Harpophyllum	1	1c
Gantelbua*	1	1	Holigarna	8	6
Gymnostachyum	30	8	Melanorrhoea	20	1
Haplantus	3	3	Nothopegia	7	6
Hymenochlaena	3	1	Parishia	12	1
Hypoestes	150	2	Pegia	1	1
Kanjarum*	1	1	Pleiogynium	2	1c
Leptacanthus*	5	5	Sclerocarya	5	1c
Leptostachya	10-20	2	Sorindela	50	1c
Listrobantes*	1	1	Swintonia	15	1
Mackenzia*	9	9	Ancistrocladaceae		
Monothecium	3	1	Ancistrocladus	20	7
Neuracanthus	20	3	Anaxagorea	30	4
Nilgirianthus*	20	20	Annonaceae		
Perilepta	8	2	Alphonsea	30	5
Phialacanthus	5	1	Anaxagorea	30	1
Phlebophyllum*	8	8	Cyathocalyx	38	2
Pseudostenosiphonium*	9	9	Cyathostemma	8	1
Pyrothrix	10	1	Ellipeiopsis	2	1
Santapau*	1	1	Fissistigma	7	1
Sericocalyx	15	1	Friesodielsia	55	1
Siaurogyne	80	10	Melogyne	10	1
Stenosiphonium*	6	6			
Strophacanthus	6	1			
Sympagis*	5	5			
Taeniandra*	1	1			
Tarphochlamys*	1	1			
Tetragoga	2	1			
Thelepapale*	1	1			
Triacacanthus*	1	1			
Xenacanthus*	4	4			

* = Endemics
c = Cultivated

Family/Genera	No. of species in world	No. of species in Indian subcontinent	Family/Genera	No. of species in world	No. of species in Indian subcontinent
Mitrephora	25	3	Testudipes	1	1
Orophea	60	8	Willughbeia	25	1
Phacanthus	20	1			
Popowia	50	3	Araliaceae		
Pseuduvaria	17	1	Arthropodium	15	1
Sagerata	9	4	Dendropanax	75	1
Trivalvaria	5	2	Heteropanax	2	1
Uvaria	150	10	Merrillioanax	2	1
Xylopia	100-150	1	Trevesia	10	2
			Tupidanthus	1	1
Apiaceae					
Acronema	15	2	Aristolochiaceae		
Anthriscus	20	1	Isotrema	12	1
Chamaejasum	7	1			
Dorema	16	1	Asclepiadaceae		
Ducrosia	5	1	Brachystelma	30	7
Elaeosticta	7	1	Dittoceras	3	1
Meeboldia*	1	1	Genianthus	10	2
Physospermopsis	9	1	Glossonema	4-5	1
Pituranthus	12	3	Gongronema	15	2
Pleurospermopsis*	1	1	Heterostemma	30	5
Polyzygus*	1	1	Holostemma	1-2	1
Pternopetalum	27	2	Marsdenia	5-10	2
Pycnocycla	10	1	Micholitzia*	1	1
Scaligeria	22	1	Oianthus*	4	4
Schultzia	2	1	Orphanthera	5	1
Tongolox	14	2	Pentabottra*	1	1
Trachydium	10	3	Pentaxacme	8	2
Zosima	10	1	Raphistemma	2	1
			Riocreuxia	6	1
Apocynaceae			Sarcolobus	15	2
Alyxia	80	3	Secamone	100	1
Anodendron	20	1	Seshagiria*	1	1
Chilocarpus	15	1	Toxicarpus	40	8
Chonemorpha	20	2	Treutlera*	1	1
Dyera	2-3	1c			
Elkertonia	4	1	Asteraceae		
Forsteronia	50	1g	Antennaria	100	2
Landlophia	55	2c	Athroisma	8	1
Micrechites	20	3	Blepharispernum	15	2
Ochrosia	30	1	Blumeopsis	1	1
Parabarium	20	1	Catamixis*	1	1
Parameria	6	3	Cavea*	1	1
Parsonia	100	1	Chlamyditis	1	1
Potula	4	1	Chrysanthellum	5	1
Rhynchosia	8	1			

Family/Genera	No. of species in world	No. of species in Indian subcontinent	Family/Genera	No. of species in world	No. of species in Indian subcontinent
<i>Crossostephium</i>	4	1	<i>Microcaryum</i>	4	2
<i>Dolomiaea</i>	5	1	<i>Microula</i>	15	2
<i>Epilasia</i>	4	1	<i>Moltkia</i>	6	2
<i>Jurinea</i>	100	4	<i>Paracaryum</i>	20	2
<i>Losiopogon</i>	2-3	1	<i>Pedinogyne*</i>	1	1
<i>Melampodium</i>	12	1c	<i>Rochelia</i>	20	3
<i>Moonia</i>	7	2	<i>Sericostoma</i>	8	1
<i>Nanothamnus*</i>	1	1	<i>Solenanthus</i>	15	1
<i>Phagnalon</i>	40	1	<i>Tournefortia</i>	150	9
<i>Rhagadiolus</i>	1	1	<i>Trigonotis</i>	40	6
<i>Serratula</i>	70	1			
<i>Theopsis</i>	3	1	Brassicaceae		
<i>Waldheimia</i>	8	2	<i>Alyssum</i>	2	1
<i>Werneria</i>	40	2	<i>Aphragmus</i>	6	3
<i>Zoega</i>	6	1	<i>Arcyosperma*</i>	1	1
Balanophoraceae			<i>Atelantha</i>	3	2
<i>Rhopalocnemis</i>	2	1	<i>Christola</i>	13	5
Barberidaceae			<i>Diplotaxis</i>	27	1
<i>Epimedium</i>	21	1	<i>Dipterygium</i>	1	1
Biebersteiniaceae			<i>Dontostemon</i>	8	1
<i>Biebersteinia</i>	5	1	<i>Eutrema</i>	15	2
Elgoniaceae			<i>Hedinia</i>	1	1
<i>Colea</i>	20	1c	<i>Iberidella</i>	8	2
<i>Heterophragma</i>	2	1	<i>Lepidostemon*</i>	1	1
<i>Incarvillea</i>	11-14	3	<i>Loxostemon</i>	5	1
<i>Nyctocalos</i>	5	1	<i>Megacarpaea</i>	7	1
<i>Radermachera</i>	40	5	<i>Microsisymbrium</i>	6	3
<i>Tecomella</i>	1	1	<i>Notoceras</i>	2	1
Beragionaceae			<i>Parryodes</i>	1	1
<i>Actinocarya</i>	2	1	<i>Pegaeophyton</i>	2	1
<i>Anoplocaryum</i>	4	1	<i>Schouwia</i>	2	1
<i>Bothriospermum</i>	5	1	<i>Soins-Laubachia</i>	9	1
<i>Chionocharis*</i>	1	1	<i>Trochiscus*</i>	1	1
<i>Gastrocotyle</i>	2	1	<i>Vvedenskyella</i>	2	1
<i>Hackelia</i>	40	1			
<i>Lacaites*</i>	1	1	Buddlejaceae		
<i>Laticaryum*</i>	7	2-3	<i>Nicodemia</i>	6	1c
<i>Mattiastrum</i>	35	4			
<i>Messerschmidia</i>	3	1	Caesalpinjiaceae		
			<i>Acrocarpus</i>	3	1c
			<i>Copaifera</i>	25	1c
			<i>Cynometra</i>	60	6
			<i>Dialium</i>	41	8
			<i>Gymnocladus</i>	4	1
			<i>Humboldtia*</i>	6	6

Family/Genera	No. of species in world	No. of species in Indian subcontinent	Family/Genera	No. of species in world	No. of species in Indian subcontinent
Intala	9	3	Chenopodiaceae		
Kingiodendron	4	1	Anabasis	30	2
Pterolobium	11	1	Halocharts	12	2
Schizolobium	5	1	Halostachys	1	1
Trachylobium	1	1	Hammada	12	1
Wagatea*	1	1	Microgynoecium	1	1
Campanulaceae			Salicornia	35	1
Leptocodon*	1	1	Chloranthaceae		
Phyteuma	40	1	Chloranthus	15	1
Capparidaceae			Chrysobalanaceae		
Stixis	7	1	Chrysobalanus	4	1c
Capellifoliaceae			Parastemon	2	1c
Abelia	30	1	Perinari	60	1
Trionetum	6	1	Clusiaceae		
Cardiopharyngaceae			Cratoxylum	6	2
Peripterygium	3	1	Pocilioneuron*	2	2
Carlemanniaceae			Rhodia	45	1c
Carlemannia	c.4	c.4	Combretaceae		
Silvianthus	2	1	Lumnitzera	2	1
Caryophyllaceae			Connaraceae		
Acanthophyllum	50	1	Connarus	100	8
Brachystemma*	1	1	Ellipanthus	14	3
Minuartia	120	1	Rourea	80-90	5
Pleioneura	2	1	Convolvulaceae		
Polycarpaea	50	3	Bonania	40	1
Pseudostellaria	15	2	Erycibe	66	7
Thylacospermum	1	1	Lepistemon	10	2
Tunica	10	1	Neuropeltis	12	2
Celastraceae			Seddera	20	2
Bhesa	5	2	Stictocardia	6-7	1
Catha	1	1	Crassulaceae		
Glyptopetalum	27	4	Cotyledon	40	2
Lophopetalum	4	3	Sempervivella*	4	4
Microtropis	70	7	Sinocrassula	5	1

Family/Genera	No. of species in world	No. of species in Indian subcontinent	Family/Genera	No. of species in world	No. of species in Indian subcontinent
Crypteroniaceae			Elaeocarpaceae		
Crypteronia	4	1	Sloanea	120	4
Cucurbitaceae			Ericaceae		
Actinostemma	1	1	Cassiope	12	2
Biswarea*	1	1	Craibiodendron	7	1
Cucumella	4	1	Eckianthus	10	1
Dactyliandra	1	1	Leucothoe	44	1
Dicoelospermum*	1	1	Erythropalaceae		
Gynostemma	2	2	Erythropalum	2	2
Hemsleya	1	1	Escalloniaceae		
Herpetospermum	1	1	Polysoma	60	1
Hodgsonia	1	1	Euphorbiaceae		
Indofevillea*	1	1	Actephila	35	2
Neosalomitra	12	1	Agrostistachys	8-9	2
Neoluffa*	1	1	Blumeodendron	6	1
Schizopepon	3	2	Chaetocarpus	10	3
Telfairia	2	1c	Cleidion	25	2
Zanonía	1	1	Coesmone	10	1
Diapensiaceae			Dalechampia	110	4
Diapensia	4	1	Dimorphocalyx	12	2
Diplarcho	2	2	Doryxylon	1	1
Dichapetalaceae			Epiprinus	5-6	2
Dichapetalum	15	1	Fahrenheltia	4	2
Dipentodon taceae			Givotia	4	1
Dipentodon	1	1	Hippomane	5	1c
Dipentocaceae			Margaritaria	10-12	1
Pterocepalus	25	1	Meineckia	19	4
Dipterocarpaceae			Neoscortechinia	4	1
Anisoptera	13	1	Pterococcus	1	1
Vateria	21	2	Trigonostemon	40-50	4
Ehretiacae			Fabaceae		
Coldenia	20	1	Amphicarpaea	24	1
Rotula	3	1	Christia	12	1
			Clianthus	2-3	1c
			Cochlianthus	2	1
			Colutea	26	1
			Cytisus	25-30	4
			Dunbaria	25	6
			Ebenus	18	1

Family/Genera	No. of species in world	No. of species in Indian subcontinent	Family/Genera	No. of species in world	No. of species in Indian subcontinent
<i>Eriosema</i>	140	1	Hamamelidaceae		
<i>Euchresta</i>	5	1	<i>Distylium</i>	15	1
<i>Geissaspis</i>	30	2	<i>Loropetalum</i>	3	1
<i>Guldenstaedtia</i>	10	4	<i>Sycopsis</i>	7	1
<i>Leptodesmia</i>	5	1	Hernandiaceae		
<i>Mastorsia</i>	3	1	<i>Hligora</i>	30	5
<i>Nogra</i>	3	1	Hippocastanaceae		
<i>Onobrychis</i>	120	1	<i>Reisantia</i>	7	3
<i>Spatholobus</i>	40	3	<i>Selacia</i>	200	17
<i>Stracheya</i>	1	1	Hymenocardaceae		
<i>Swartzia</i>	100	10	<i>Hymenocardia</i>	5	1
<i>Taverniera</i>	7	1	Icacinaceae		
<i>Thermopsis</i>	30	2	<i>Gopocaryum</i>	9	1
Flacourtiaceae			<i>Iodes</i>	14	2
<i>Casearia</i>	160	10	<i>Miquelia</i>	5-6	3
<i>Doryalis</i>	30	1	<i>Natsiatum</i>	1	1
<i>Ryparosa</i>	18	1	<i>Platea</i>	5	1
<i>Scelopia</i>	45	1	<i>Pyrenacantha</i>	20	1
Gentianaceae			<i>Sarcostigma</i>	6	2
<i>Cotylantbera</i>	4	1	<i>Stemonurus</i>	12	3
<i>Megacodon</i> *	1	1	Illiciaceae		
<i>Melocanna</i>	2	1	<i>Illicium</i>	42	1
<i>Parajaschkea</i> *	1	1	Ixonanthaceae		
<i>Pleurogyna</i>	15	4	<i>Ixonanthes</i>	10	3
<i>Sebaea</i>	100	1	Juglandaceae		
Gesneriaceae			<i>Carya</i>	25	1
<i>Boea</i>	25	1	Lamiaceae		
<i>Boeica</i>	6	4	<i>Achyroserpnum</i>	30	1
<i>Beiggia</i>	14	2	<i>Acrocophalus</i>	100	4
<i>Episcia</i>	40	10	<i>Calamintha</i>	6-7	6
<i>Epithema</i>	10	1	<i>Chamaesphacos</i>	1	1
<i>Gaeneria</i>	50	10	<i>Endostemon</i>	16	1
<i>Hemiboga</i>	8	1	<i>Eriophyton</i> *	1	1
<i>Leptobaea</i>	3	2			
<i>Lexostigma</i>	5	1			
<i>Rhychotechum</i>	12	6			
<i>Stauranthera</i>	10	1			
<i>Tetraphyllum</i>	2	1			
<i>Triepalum</i>	3	1			
Halmurugiaceae					
<i>Lauremburgia</i>	4	3			

Family/Genera	No. of species in world	No. of species in Indian subcontinent	Family/Genera	No. of species in world	No. of species in Indian subcontinent
Gomphostemma	40	17	Melastomataceae		
Lagochilus	35	1	Alomorphia	25	1
Mesona	12	1	Blastus	6	1
Microtoena	20	1	Kendrickia*	1	1
Moluccella	4	1	Medinilla	400	5
Notochaete*	1	1	Otanthra	15	1
Otostegia	20	1	Phyllagathis	20	1
Paraphlomis	10	1	Pseudodissochaeta	4	1
Stiptanthus*	1	1	Pternandra	1	1
Lardizabalaceae			Sarcopyramis	6	2
Parvatia	3	1	Tibouchina	200	1
Decalanea	1	1	Meilaceae		
Stauntonia	15	3	Turraea	90	2
Lauraceae			Memecylaceae		
Apollonia	2	1	Mouriri	50	1
Dehaasia	20	1	Menispermaceae		
Endiandra	81	1	Aspidocarya	1	1
Neoolinnamomum	8	1	Diptoclisia	4	1
Potameia	20	1	Fibraurea	5	1
Linaceae			Haematocarpus	3	1
Anisadenia	2	2	Hypserpa	20	2
Hugonia	40	2	Jateorhiza	2	1c
Loranthaceae			Pachygone	12	1
Elytranthe	10	4	Parabacna	15	1
Ginalloa	15	1	Pericampylus	7	2
Tolypanthus	4	2	Pycnarrhena	25	1
Magnoliaceae			Tinomiacium	8	1
Alcimandra	1	1	Menyanthaceae		
Malpighiaceae			Villardia	10	1
Aspidopterys	20	9	Mimosaceae		
Byrsonima	120	2c	Abarema	50	2
Malvaceae			Entada	30	1
Malvaviscus	3	1c	Iodoptadenia*	1	1
Wissadula	40	1	Inga	200	1
			Monotropaceae		
			Cheilothea	2	1

Family/Genera	No. of species in world	No. of species in Indian subcontinent	Family/Genera	No. of species in world	No. of species in Indian subcontinent
Hypopitys	1	1	Oleaceae		
Monotropanthum	1	1	Anacolsa	21	4
Monotropastrum	4	1	Strombosia	17	1
Moraceae			Oleaceae		
Antiaris	4	1	Linociera	80-100	9
Chlorophora	12	1	Opiliaceae		
Cudrania	4	2	Cansjera	5	1
Dorstenia	170	1	Champerea	6	1
Myristicaceae			Opilia	22	1
Gymnacranthera	17	1	Orobanchaceae		
Myrsinaceae			Agrostia	10	2
Amblyanthopsis	4	2	Boschniakia	2	1
Amblyanthus	4	3	Christisonia	17	11
Antistrophe	4	2	Papaveraceae		
Embella	130	16	Dicranostigma	2-3	1
Hymenandra*	1	1	Passifloraceae		
Rapanea	200	8	Adenia	92	3
Sadleria*	5	5	Periplocaceae		
Myrtaceae			Bacolepis*	1	1
Decaspermum	30	1	Cryptolepis*	12	3
Rhodamnia	20	1	Decalepis*	1	1
Rhodomyrtus	20	1	Finlaysonia	1	1
Tristania	50	1	Janakia*	1	1
Napoleonaceae			Myriopteris*	1	1
Napoleonaea	15	10	Pentanura	2	1
Nepentaceae			Periploca	10	3
Nepenthes	67	1	Streptocaulon	5	2
Nyctaginaceae			Utleria*	1	1
Oxybaphus	25	1	Phytolaccaceae		
Piscinia	50	3	Trichostigma	4	1
Ochnaceae			Plttosporaceae		
Gomphia	30-35	1	Citriobatus	5	10

Family/Genera	No. of species in world	No. of species in Indian subcontinent	Family/Genera	No. of species in world	No. of species in Indian subcontinent
Plagiopteraceae			Rhamnaceae		
Plagiopteron	1	1	Ceanothus	50	a few c
Phanbagnaceae			Colubrina	24	22
Acantholimon	120	1	Gouania	20	3
Aegialitis	2	1	Helinus	6	1
Ceratostigma	8	1	Noitea	2	1
Dyerophytum	3	1	Rhamnella	10	1
Limonium	300	1	Scutia	9	1
Podostemaceae			Smythea	7	1
Dicrasia	5	3	Rhizophoraceae		
Farmeria*	2	2	Blepharistemma*	1	1
Griffithella*	1	1	Carallia	10	1
Hydrobryopsis*	1	1	Cassipourea	80	1
Hydrobryum	2	1	Kandelia	1	1
Indotristicha*	1	1	Rosaceae		
Willisia*	1	1	Docynia	6	2
Zeylandidium	3	3	Dryadantho	1	1
Polemoniaceae			Maddenia	4	2
Gilia	120	1c	Lauro-Cerasus	75	10
Polygonaceae			Quillaja	3	1c
Homocladium	1	1c	Rubiaceae		
Portulacaceae			Acranthera	40	4
Portulacaria	2	1c	Adina	20	6
Primulaceae			Aidia	50	1
Bryocarpum*	1	1	Brachytome	4	1
Omphalogramma	15	2	Byrsophyllum	2	2
Rafflesiaceae			Cephalanthus	17	3
Sapria	1-2	1	Chassalia	42	1
Ranunculaceae			Clarkella	2	1
Batrachium	30	1	CreMASpora	3	1c
Calathodes	3	1	Dalhousiea	2	1
Callianthemum	10	1	Exallago	24	1
Coptis	15	1	Fergusonia*	1	1
Paroxygraphis*	1	1	Gaertnera	30	1
			Geophila	30	1
			Hydrophylax	3	1
			Hymenopogon	3	2
			Hyptianthera	2	1
			Keenania	5	1
			Lasianthus	170	13
			Meyna	11	2
			Mitracarpus	40	1

Family/Genera	No. of species in world	No. of species in Indian subcontinent	Family/Genera	No. of species in world	No. of species in Indian subcontinent
<i>Mitragyna</i>	12	3	Sapindaceae		
<i>Mycotis</i>	25	5	<i>Allophylus</i>	190	8
<i>Myriopneuron</i>	15	2	<i>Aphania</i>	25	4
<i>Nanlea</i>	35	5	<i>Arfeuillea</i>	1	1
<i>Nertera</i>	12	1	<i>Arytera</i>	25	1
<i>Neurocalyx*</i>	4-5	4-5	<i>Cassinia</i>	4	1c
<i>Octotropis</i>	2	2	<i>Ganophyllum</i>	2	1
<i>Paderia</i>	50	5	<i>Harpullia</i>	37	1
<i>Petunga</i>	10	1	<i>Jagera</i>	3	2c
<i>Pleiocarpidia</i>	27	1	<i>Lepidopetalum</i>	6	1
<i>Plectropterium</i>	4	2	<i>Mischocarpus</i>	25	4
<i>Pogonopus</i>	3	1c	<i>Otonophellum*</i>	1	1
<i>Polysolenia*</i>	1	1	<i>Pometia</i>	10	1
<i>Polyura*</i>	1	1	<i>Thraulococcus</i>	2	2
<i>Prismatomeris</i>	25	1	Sapotaceae		
<i>Pubistylus*</i>	1	1	<i>Calocarpum</i>	9	1c
<i>Saprosma</i>	30	6	<i>Diploknema</i>	7	1
<i>Scyphiphora</i>	1	1	<i>Donella</i>	3	1
<i>Spiradellis</i>	4	2	<i>Isonandra</i>	10	5
<i>Tareana</i>	370	9	<i>Payena</i>	16	1
<i>Timonius</i>	154	1	<i>Planchonella</i>	100	2
<i>Tricalysia</i>	100	2	<i>Pouteria</i>	50	1c
<i>Uncaria</i>	60		Saururaceae		
<i>Urophyllum</i>	150	1	<i>Saururus</i>	2	1
Rutaceae			Saxifragaceae		
<i>Atalantia</i>	18	5	<i>Pottingeria</i>	1	1
<i>Hesperothusa</i>	1	1	Schinandraceae		
<i>Luvunga</i>	12	2	<i>Kadsura</i>	22	2
<i>Melicope</i>	70	2	Scrophulariaceae		
<i>Pamburus</i>	1	1	<i>Antioharis</i>	10	1
<i>Paramigoya</i>	20	7	<i>Artanema</i>	4	1
<i>Pilocarpus</i>	22	1	<i>Bonnayodes*</i>	1	1
<i>Pleiospermium</i>	7	1	<i>Brandisia</i>	13	1
<i>Vepria</i>	41	1	<i>Buchnera</i>	100	3
Salvadoraceae			<i>Bythophyton</i>	1	1
<i>Azima</i>	4	1	<i>Cuempylanthus</i>	7	1
<i>Dobera</i>	2	1	<i>Curanga</i>	1	1
Santalaceae			<i>Cyrtandromoea</i>	10	1
<i>Dentrotrophe</i>	4	2			
<i>Phacelaria</i>	7	1			
<i>Pyrularia</i>	4	1			
<i>Scleropyrum</i>	6	1			

Family/Genera	No. of species in world	No. of species in Indian subcontinent	Family/Genera	No. of species in world	No. of species in Indian subcontinent
Ellisiophyllum	1	1	Stylidiaceae		
Falconeria*	1	1	Stylidium	136	2
Gratiola	20	1	Styracaceae		
Hemiphragma*	1	1	Alniphyllum	8	1
Jamesbrittenia	1	1	Bruinsmia	2	1
Leptorhabdos	1	1	Huodendron	6	1
Melampyrum	35	1	Parastyrax	1	1
Melasma	30	3	Symphoremataceae		
Micrargeria	4-5	1	Symphorema	4	2
Microcarpaea	1	1	Symplocaceae		
Oreosolen	3	1	Cordyloblaste	7	3
Peplidium	2	1	Theaceae		
Phtheirospermum	7	1	Adinandra	80	1
Schweinfurthia	3	2	Theophrastaceae		
Wightia	2-3	1	Jacquinia	50	1c
Simaroubaeae			Thubergiaceae		
Eurycoma	4	1	Meyenia*	1	1
Harrisonia	4	4	Thymelaeaceae		
Solanaceae			Aquilaria	15	2
Paula	1	1	Diarthron	2	1
Sphaerosepalaceae			Enklela	3	3
Rhopalocarpus	13	1c	Gyrinops	8	1
Spigelliaceae			Linostoma	6	2
Mitrasacme	35	3	Thymelaea	20	1
Staphyleaceae			Tiliaceae		
Staphylea	10	1	Brownlowia	25	2
Sterculiaceae			Colona	30	1
Byttneria	70	5	Diplodiscus	7	1c
Commerçonis	9	1c	Erinocarpus*	1	1
Leptonychia	30	1	Luehea	20	1c
Mansonia	5	1	Microcos	53	1
Melbania	60	8	Trichospermum	20	1
Pterocymbium	15	1c			
Reevesia	13	2			
Scaphium	6	1c			
Strychnaceae					
Gardneria	5	2			

Family/Genera	No. of species in world	No. of species in Indian subcontinent	Family/Genera	No. of species in world	No. of species in Indian subcontinent
Ulmaceae			Valerianaceae		
Aphananthe	5	1	Patrinia	20	1
Gironniera	15	3	Verbenaceae		
Urticaceae			Paradaya	17	2c
Drosera	12	1	Pygmaopromna	6	1
Macoutia	15	1	Svensonia	4	1
Neodistemon	1	1	Violaceae		
Oreocnide	20	2	Rinorea	340	5
Pipturus	40	1	Vitaceae		
Plecospermum	2	2	Ampelopsis	2	2
Poikilospermum	20	2	Zygophyllaceae		
Procris	20	1	Sectaria	2	1
Sarcochlamys	1	1			
Smithiella*	1	1			

Appendix 3. Cytological status of the monotypic genera in Indian subcontinent

Family/Genera	Cytological Report	Geographical Distribution
Acanthaceae		
Baphicacanthus	—	N.E. India, S. China and Indo-China
Calacanthus	—	Indo-Malesia
Carvia*	—	Peninsular India
Ditrichospermum	—	Assam and Burma
Gantebus*	—	Peninsular India
Kanjarum*	—	Kerala
Listrobanthes	—	E. Himalaya and Assam
Pseudacmnanthera*	+	Himalaya
Santapaua*	—	Tamil Nadu
Tacniandra*	—	Peninsular India
Tarphochlamys*	—	Assam
Thelepaepale*	—	Peninsular India
Trienacanthus*	—	Assam
Adoxaceae		
Adoxa	+	N. temperate
Aizoaceae		
Corbichonia	—	Tropical Africa to India
Amaranthaceae		
Indobanslia*	+	Western Ghats
Nothosaerva	+	Tropical Africa, Mauritius and tropical Asia
Stilbanthus*	—	Himalaya
Anacardiaceae		
Choerospondias	+	N.E. India to S.E. China and N. Siam
Drimycarpus*	—	E. Himalaya
Harpephyllum	—	S. Africa, Cultivated
Aptaceae		
Koelzella	+	Afghanistan and N.W. Himalaya
Meeboldia*	—	N.W. Himalaya
Pleurospermopsis*	—	E. Himalaya
Polyzygus*	—	S. India
Apocynaceae		
Testudipes	—	Assam and Burma
Araliaceae		
Tupidanthus	—	Assam to Malay Peninsula

* = endemics

Chromosome number known: (+), Unknown (—)

Family/Genera	Cytological Report	Geographical Distribution
Asclepiadaceae		
<i>Frerea</i> *	+	Western Ghats
<i>Micholitzia</i> *	—	Assam and Manipur
<i>Pentabotria</i> *	—	Assam
<i>Seshagiria</i> *	—	Maharashtra
<i>Treutlera</i> *	—	E. Himalaya
Asteraceae		
<i>Adenoon</i>	+	Indo-Malesia
<i>Blumeopsis</i>	—	India to Hainan, Nicobar, Malay Peninsula and Sumatra
<i>Caesulia</i> *	+	India and Bangla Desh
<i>Callistephus</i>	+	China and Japan. Cultivated
<i>Catanixis</i> *	—	Himalaya
<i>Cavea</i> *	—	E. Himalaya
<i>Chlamyditis</i>	—	Tibet and Himalaya
<i>Eleutheranthera</i>	+	America, Madagascar and W. Bengal
<i>Goniochaeton</i>	+	Indo-Malesia
<i>Lampraebantium</i> *	+	Peninsular India
<i>Nanothamnus</i> *	—	Bombay
<i>Rhagadiolus</i>	—	Mediterranean and Kashmir
<i>Struchium</i>	+	Tropical America, W. Indies and tropical Africa. Kerala
<i>Tussilago</i>	+	Temperate Eurasia and North Africa
Balsaminaceae		
<i>Hydrocera</i>	+	Indo-Malesia
Barringtoniaceae		
<i>Chydenanthus</i>	+	Burma, Andamans, Borneo and Sumatra to W. New Guinea
Bigoniaceae		
<i>Doxantha</i>	+	Tropical America. Cultivated
<i>Kigelia</i>	+	Tropical Africa. Cultivated
<i>Millingtonia</i>	+	S.E. Asia. Cultivated
<i>Pajanelia</i>	+	Indo-Malesia
<i>Phaedranthus</i>	+	Mexico. Cultivated
<i>Tecomella</i>	+	S.W. Asia and Arabia. Rajasthan
Bombacaceae		
<i>Ochroma</i>	+	S. Mexico to Bolivia and W. Indies. Cultivated
Boraginaceae		
<i>Asperugo</i>	+	Europe. Punjab and Kashmir
<i>Chionocharis</i> *	—	Himalaya

Family/Genera	Cytological Report	Geographical Distribution
Lacaitaea*	—	E. Himalaya
Pedinogyne*	—	E. Himalaya
Brassicaceae		
Arcyosperma*	—	Himalaya
Cardaria	+	Mediterranean and W. Asia, N.W. India
Dipterygium	—	Egypt to W. Pakistan
Hedinia	—	C. Asia, Tibet and N.W. Himalaya
Lepidostemon	—	E. Himalaya
Lignariella	+	Tibet and E. Himalaya
Parryodes	—	S. Tibet and E. Himalaya
Trochiscus*	—	N.E. India
Cruciferae		
Brasenia	+	Tropical America, Africa, India, temperate E. Asia and Australia.
Casimiroiaceae		
Amherstia	+	Burma. Cultivated
Ceratonia	+	Mediterranean. Cultivated
Colvillea	+	Madagascar. Cultivated
Hardwickia*	+	Peninsular India
Lysidice	+	S. China. Cultivated
Tamarindus	+	Tropical Africa. Cultivated
Trachylobium	—	Tropical E. Africa, Madagascar and Mauritius. Cultivated
Wagatea*	—	S. W. India
Campanulaceae		
Leptocodon*	—	Himalaya
Peracarpa	+	Himalaya to Japan, Formosa and Philippine Islands
Platycodon	+	N.E. Asia. Cultivated
Cannabaceae		
Cannabis	+	N. temperate zone. Cultivated
Caryophyllaceae		
Brachystemma*	—	Himalaya
Cucubalus	+	N. temperate
Thylacospermum	—	C. Asia, Himalaya and W. China
Calastroleae		
Catha	—	Africa, Madagascar and Arabia. Cultivated

Family/Genera	Cytological Report	Geographical Distribution
Chenopodiaceae		
<i>Halimolobos</i>	--	S. E. Russia and Armenia to C. Asia, Punjab
<i>Microgynocidium</i>	-	Tibet, Sikkim and Kumaon
Circaeasteraceae		
<i>Circaeaster</i>	+	Temperate Asia
<i>Kandelia</i>		E. Asia and W. Malaysia
Combretaceae		
<i>Getonia</i>	+	Indo-Malesia
Convolvulaceae		
<i>Mina</i>	+	Mexico to tropical S. America. Cultivated
Cucurbitaceae		
<i>Actinostemma</i>	--	India to Japan
<i>Benincasa*</i>	+	Tropical Asia. Cultivated
<i>Biswara*</i>	-	Himalaya
<i>Dactyliandra</i>	--	S.W. Africa to India
<i>Dicoelospermum*</i>	-	S. India
<i>Edgaria*</i>	+	E. Himalaya
<i>Hemstleya</i>	-	E. Himalaya and China
<i>Herpetospermum</i>	-	Himalaya and China
<i>Hodgsonia</i>	-	Indo-Malesia
<i>Indofevillea*</i>	--	Assam
<i>Neoluffa*</i>	-	E. Himalaya
<i>Praecitrullus</i>	+	Cultivated
<i>Sechium</i>	+	Tropical America. Cultivated
<i>Zanonia</i>	-	Indo-Malesia
Dipentodontaceae		
<i>Dipentodon</i>	--	E. Himalaya, Burma and S. China
Droseraceae		
<i>Aldrovanda</i>	+	C. Europe, Caucasia, E. and S.E. Asia, Timor and Queensland, Calcutta
Ehretiaceae		
<i>Carmona</i>	+	Peninsular India
Ellisiophyllaceae		
<i>Ellisiophyllum</i>	+	India to Formosa, Philippines and New Guinea

Family/Genera	Cytological Report	Geographical Distribution
Euphorbiaceae		
Cicca	+	Tropics. Cultivated
Doryxylon	—	Philippines, Java and Lesser Sunda Islands
Mischodon*	+	S. India and Sri Lanka
Pterococcus	—	E. Himalaya, S.E. Asia, W. Malaysia and Moluccas
Ricinus	+	Tropical Africa and Asia
Euryalaceae		
Euryale	+	China and South East Asia
Fabaceae		
Bolusanthus	+	S. Africa. Cultivated
Castanospermum	+	Subtropical Australia. Cultivated
Eleiotis*	+	India and Sri Lanka
Goniogyna*	+	India, Pakistan and Sri Lanka
Gynocardia	+	Sikkim, Khasi Hills and Burma
Lablab	+	Tropical Africa. Cultivated
Ongelina*	+	Tropical India
Parochelus	+	Tropical Africa and India
Pongamia	+	Indo-Malesia
Pycnospora	+	Africa, Asia and Australia
Securigera	+	Cultivated
Spartium	+	Mediterranean. Cultivated
Stracheya	—	Tibet and Himalaya
Voandzeia	+	Tropical Africa and Madagascar. Cultivated
Flacourtiaceae		
Chloroxylon*	+	Western Ghats and Sri Lanka
Gentianaceae		
Megacodon*	—	Himalaya
Parajarschkea*	—	E. Himalaya
Gesneriaceae		
Jerdonia*	+	S.W. India
Platyacma*	+	Himalaya
Hamamelidaceae		
Parrotiopsis*	+	W. Himalaya
Ischiaceae		
Natsiatum	—	E. Himalaya to Lower Burma and Indo-China

Family/Genera	Cytological Report	Geographical Distribution
Lamiaceae		
Chamaejasmos	—	C. Asia, Persia and Afghanistan. Punjab
Colebrookea*	+	India and Pakistan
Craniotome*	+	Temperate Himalaya
Eriophyton*	—	Himalaya
Notochacte*	—	Himalaya
Roylea*	+	N.W. Himalaya
Stiptanthus*	—	E. Himalaya
Lardizabalaceae		
Decaisnea	—	Himalaya and China
Loranthaceae		
Helicanthes*	—	Peninsular India
Lythraceae		
Lawsonia	+	Palaentropics
Magnoliaceae		
Alcimandra	—	S. E. Asia
Malvaceae		
Modiola	+	America. Cultivated
Martyniaceae		
Martynia	+	Mexico. Naturalized
Melastomataceae		
Kendrickia*	--	S. India and Sri Lanka
Pternandra	—	S.E. Asia and Malaysia
Meliaceae		
Soymida	+	Indo-Malesia
Menispermaceae		
Aspidocarya	—	E. Himalaya and S.E. Asia
Menyanthaceae		
Menyanthes	+	N. temperate
Mimosaceae		
Indopiptadenia	—	India

Family/Genera	Cytological Report	Geographical Distribution
Monotropaceae		
Hypopitys*	—	Himalaya to N.E. Asia, temperate N. America to Columbia
Monotropanthum	—	Himalaya to Japan
Myrsinaceae		
Hymenandra*	—	E. Himalaya and Assam
Nandiniaceae		
Nandina	+	China and Japan. Cultivated
Neuradaceae		
Neurada	+	Mediterranean to India
Papaveraceae		
Hunnemannia	+	Mexico. Cultivated
Pedaliaceae		
Pedaliium	+	Tropical Africa, Madagascar and tropical Asia
Periplocaceae		
Baeolopis*	—	S. India
Decalepis*	—	Peninsular India
Finlaysonia	—	Indo-Malesia
Homidestmus	+	S.E. Asia and Malaysia
Jasakia	—	Kerala
Myriopterom	—	Assam to Malay Peninsula
Utleria*	—	S. India
Phytolaccaceae		
Fetiveria	+	Warm America and W. Indies. Cultivated
Plagiopteraceae		
Plagiopterom	—	Burma and India
Podostemaceae		
Griffithella*	—	W. Ghats
Hydrobryopsis*	—	S. India
Indotristicha*	—	S. India
Terniola*	+	Peninsular India and Sri Lanka
Willisia*	—	S. India

Family/Genera	Cytological Report	Geographical Distribution
Polygonaceae		
Homalocladium	—	N. Guinea, Solomons and N. Caledonia. Cultivated
Oxyria	+	N. Arctic and subarctic mountains of temperate Eurasia and California
Keiskeerkerjes*	--	Nepal
Primulaceae		
Bryocarpum*	—	E. Himalaya
Ranunculaceae		
Paroxygraphis*	--	E. Himalaya
Rhizophoraceae		
Blepharistemma*	—	W. Peninsula
Rosaceae		
Cydonia	+	E. Asia Minor, Caucasus, N. Persia and C. Asia. Cultivated
Dryadanthe	--	C. Asia and Himalaya
Kerria	+	E. Asia. Cultivated
Rubiaceae		
Fergusonia*	—	S. India and Sri Lanka.
Polysolenia*	--	Assam
Polyura*	.	Assam
Pubistylus*	—	Andaman Islands
Scyphiphora	.	Indo-Malesia and Australia
Rutaceae		
Boeninghausenia	+	Himalaya to Japan
Hesperethusa	--	W. Himalaya to Sri Lanka and S.E. Asia
Limonia	+	India to Java
Pamburus*	--	S. India and Sri Lanka
Poncirus	+	N. China. Introduced
Toddalia	+	Tropical Africa, Asia and Madagascar
Sapindaceae		
Arfeuillea	—	Siam and Indo-china. Cultivated
Erioglossum	+	Indo-Malesia and Australia
Ottonophelium*	—	Peninsular India
Schleichera	+	Indo-Malesia

Family/Genera	Cytological Report	Geographical Distribution
Saururaceae		
Houttuynia	+	Himalaya to Japan
Saxifragaceae		
Pottingeria	—	Assam, N.E. Burma and N.W. Siam
Scrophulariaceae		
Bonnayodes*	—	Bombay
Bythophyton	—	Indo-Malesia
Curanga	—	Indo-Malesia
Ellisiohyllum	—	India to Japan, Formosa and Philippine Islands and E. New Guinea
Falconeria*	—	W. Himalaya
Hemiphragma*	—	W. Himalaya to Assam
Jamesbrittenia	—	Egypt to N.W. India
Leptorhabdos	+	Caucasia and Persia to C. Asia and Himalaya
Microcarpaea	—	E. Asia, Indo-Malesia and Australia
Nelsonia	+	Tropical Africa, India to Indo-China, Malay Peninsula and Australia
Solanaceae		
Nicandra	+	Peru. Naturalized
Paullinia	—	Arunachal Pradesh
Stemmataceae		
Kleinhowia	+	Tropical Asia, Cultivated
Pentapetes	+	Indo-Malesia
Styracaceae		
Parastyrax	—	Burma and India
Surianaceae		
Suriana	—	Tropical coasts
Tetracentraceae		
Tetracentron	+	S.E. Asia and E. Himalaya
Tetramelaceae		
Tetrameles	+	Indo-China and Indo-Malesia

Family/Genera	Cytological Report	Geographical Distribution
Thunbergiaceae		
Meyenia	—	India and Sri Lanka
Tiliaceae		
Erinocarpus*	—	S.W. India
Urticaceae		
Neodiatemon	—	Indo-Malesia
Sarcooblattaris	—	Indo-Malesia
Smithiella*	—	E. Himalaya

Appendix 4. Cytological status of the monotypic families in the India subcontinent

Family	Genus	Cytological Report	Geographical Distribution
Adoxaceae	Adoxa	+	N. Temperate
Ancistrocladaceae	Ancistrocladus	—	Tropical Africa, Sri Lanka and E. Himalaya to W. Malaysia
Aucubaceae	Aucuba	+	Himalaya to Japan
Balanitaceae	Balanites	+	Tropical Africa and Asia
Biebersteinaceae	Biebersteinia	—	S.E. Europe to C. Asia
Bischofiaceae	Bischofia	+	Tropical Asia
Bixaceae	Bixa	+	Tropics, Cultivated in India
Callitricheaceae	Callitriche	+	Cosmopolitan
Cardiopharyngaceae	Peripterygium	—	S.E. Asia to Australia
Ceratophyllaceae	Ceratophyllum	+	Cosmopolitan
Circaeasteraceae	Circaeaster	+	Temperate Asia
Cobaeaceae	Cobaea	+	America, Cultivated in India
Coriariaceae	Coriaria	+	Eurasia, New Zealand, C. and S. America
Corylaceae	Corylus	+	N. temperate
Cuscutaceae	Cuscuta	+	Cosmopolitan
Daphniphyllaceae	Daphniphyllum	+	E. Asia and Malaysia
Datisceae	Datisca	+	Dry W. Eurasia and N. America
Dipentodontaceae	Dipentodon	—	E. Himalaya, Burma and S.W. China
Elisiophyllaceae	Elisiophyllum	+	India to Formosa, Philippines and New Guinea
Erythraliaceae	Erythralium	—	Indo-Malesia
Eupteleaceae	Euptelea	+	Assam, S.W. & C. China and Japan
Helwingiaceae	Helwingia	+	Himalaya and E. Asia
Hymenocardiaceae	Hymenocardia	—	Tropical Africa and S. E. Asia
Hypecoaceae	Hypecoum	+	Warm temperate Eurasia
Mastixiaceae	Mastixia	—	Indo-Malesia
Morinaceae	Morina	+	Temperate Eurasia
Moringaceae	Moringa	+	Africa to India
Nandinaeae	Nandina	+	China and Japan. Cultivated in India
Nelumbonaceae	Nelumbo	+	Warm Asia, Australia and America
Paeoniaceae	Paeonia	+	N. temperate
Parnassiaceae	Parnassia	+	N. temperate
Phrymataceae	Phryma	+	E. Asia and E.N. America
Pistaciaceae	Pistacia	+	Widely distributed
Plagiopteraceae	Plagiopteron	—	Burma and India
Platanaceae	Platanus	+	N. temperate. Cultivated
Punicaceae	Punica	+	S.E. Europe to Himalaya and Socotra
Sabiaceae	Sabia	+	Chiefly N. Temperate
Sambucaceae	Sambucus	+	Cosmopolitan
Sarcospermataceae	Sarcosperma	+	S.E. Asia and Malaysia
Siphonodontaceae	Siphonodon	—	S.E. Asia to Australia. Cultivated in India
Sphenocleaceae	Sphenoclea	+	Tropics
Stachyuraceae	Stachyurus	+	E. Asia
Stilaginaceae	Antidesma	+	Old World tropics and subtropics, especially Asia
Surianaceae	Suriana	—	Tropical coasts
Tetracentraceae	Tetracentron	+	S.E. Asia

Family	Genus	Cytological Report	Geographical Distribution
Toricelliaceae	Toricellia	+	Himalaya and China
Trapaceae	Trapa	+	Warm Eurasia and Africa
Triplostegiaceae	Triplostegia	+	Himalaya, S. China, Formosa, Celebes and N. Guinea
Vacciniaceae	Vaccinium	+	N. temperate and tropical mountains, Andes, S. Africa and Madagascar
Vahliaceae	Vahlia	+	Tropics and S. Africa to N.W. India
Xanthophyllaceae	Xanthophyllum	—	Indo-Malesia

chromosome numbers : known (+), unknown (—)

Appendix 5. Cytological status of the species in endemic genera of the Indian subcontinent

Family/Genera	No. of Species	No. of Species Studied for Chromosome Number	Geographical Distribution
Acanthaceae			
Aechmanthera	3	1	Himalaya and Nepal
Carvia	1		Peninsular India
Didyplosandra	3	1	Southern India and Sri Lanka
Gantelbua	1		Peninsular India
Indoneesiella	2	1	Greater part of India
Kanjarum	1		Kerala
Leptacanthus	5		Peninsular India and Sri Lanka
Listrobanthes	1		E. Himalaya and Assam
Mackenzia	9		India and Sri Lanka
Nilgirianthus	20		Peninsular India
Phlebophyllum	8		Peninsular India
Pseudaechmanthera	1	1	Himalaya
Pseudostenosiphonium	9		Sri Lanka and India
Pteracanthus	20	1	Himalaya, Assam, Nepal and Bhutar
Santapaua	1		Tamil Nadu
Stenosiphonium	6		Peninsular India and Sri Lanka
Sympagis	5		E. Himalaya and Assam
Taeniandra	1		Peninsular India
Tarphochlamys	1		Assam
Thelepaepale	1		Peninsular India
Trienacanthus	1		Assam
Xenacanthus	4		Peninsular India
Amaranthaceae			
Indobanalia	1	1	Western Ghats
Stilbanthus	1		Himalaya
Ascardiaceae			
Drimycarpus	1		E. Himalaya
Apiaceae			
Meeboldia	1		N.W. Himalaya
Pleurospermopsis	1		E. Himalaya
Polzygus	1	1	S. India
Asclepiadaceae			
Frerea	1	1	W. Ghats
Micholitzia	1		Assam and Manipur
Oianthus	4		Chiefly in South Western India

Family/Genera	No. of Species	No. of Species Studied for Chromosome Number	Geographical Distribution
Pentstemonaceae			
<i>Pentstemon</i>	1		Assam
<i>Trentepedolium</i>	1		E. Himalaya
<i>Sesuvium</i>	1		Maharashtra
Asteraceae			
<i>Caesulia</i>	1	1	India and Bangla Desh
<i>Catantaxis</i>	1		Himalaya
<i>Cavea</i>	1		E. Himalaya
<i>Glossocardia</i>	2	2	W. and C. India
<i>Lamprachneium</i>	1	1	Peninsular India
<i>Nanotamnus</i>	1		Bombay
Boraginaceae			
<i>Chionocharis</i>	1		Himalaya
<i>Lacaituca</i>	1		E. Himalaya
<i>Pedinogyne</i>	1		E. Himalaya
Brassicaceae			
<i>Arcyosperma</i>	1		W. Himalaya
<i>Lepidostemon</i>	1		E. Himalaya
<i>Trochiscus</i>	1		N. E. India
Celastraceae			
<i>Hardwickia</i>	1	1	Peninsular India
<i>Humboldtia</i>	6		S. India and Sri Lanka
<i>Wagataea</i>	1		S. W. India
Campylaceae			
<i>Leptocodon</i>	1		Himalaya
Caryophyllaceae			
<i>Brachystemma</i>	1		Himalaya
Cistaceae			
<i>Poeciloneuron</i>	2		S. India
Crambaceae			
<i>Sempervivella</i>	4		W. Himalaya
Cucurbitaceae			
<i>Blawarea</i>	1		E. Himalaya
<i>Dicoelospermum</i>	1		S. India
<i>Edgaria</i>	1	1	E. Himalaya
<i>Indofavillea</i>	1		Assam
<i>Neoluffa</i>	1		E. Himalaya

Family/Genera	No. of Species	No. of Species Studied for Chromosome Number	Geographical Distribution
Ehretiaceae			
Carmona	1	1	Peninsular India
Euphorbiaceae			
Mischodon	1	1	S. India and Sri Lanka
Fabaceae			
Eleiotis	1	1	India and Sri Lanka
Goniogyna	1	1	India, Pakistan and Sri Lanka
Ougeinia	1	1	Tropical India
Flindersiaceae			
Chloroxylon	1	1	S. W. India and Sri Lanka
Gentianaceae			
Hopaea	2	1	India and Sri Lanka
Jacschkea	3	1	Himalaya
Megacodon	1		Himalaya
Parajacschkea	1		E. Himalaya
Geomariaceae			
Jerdonia	1		S. W. India
Platystemma	1	1	Himalaya
Hamamelidaceae			
Parrotlopsis	1	1	W. Himalaya
Lamiaceae			
Colebrookia	1	1	India and Pakistan
Craniotome	1	1	Temperate Himalaya
Eriophyton	1		Himalaya
Notochaete	1		Himalaya
Roylea	1	1	N. W. Himalaya
Stiptanthus	1		E. Himalaya and Assam
Loasaceae			
Helicanthes	1	1	Peninsular India
Melastomataceae			
Kendrickia	1		S. India and Sri Lanka
Mimosaceae			
Indopiptadenia	1		Upper Gangetic Plain
Myrsinaceae			
Hymenandra	1		E. Himalaya and Assam
Sadiria	3		E. Himalaya and Assam

Family/Genera	No. of Species	No. of Species Studied for Chromosome Number	Geographical Distribution
Periplocaceae			
Bacolepis	1		S. India
Decalepis	1		Peninsular India
Janakia	1		Kerala
Utleria	1		S. India
Podostemaceae			
Farmeria	2		S. India and Sri Lanka
Griffithella	1		W. Ghats
Hydrobryopsis	1		S. India
Indotristicha	1		S. India
Terniola	1	1	Peninsular India and Sri Lanka
Willisia	1		S. India
Polygonaceae			
Eskenakurjea	1		Nepal
Prismnaceae			
Bryocarpum	1		E. Himalaya
Ranunculaceae			
Paroxygraphis	1		E. Himalaya
Rhizophoraceae			
Blepharistemma	1		W. Peninsula
Rubiaceae			
Ryrsophyllum	2		India and Sri Lanka
Fergusonia	1		S. India and Sri Lanka
Neurocalyx	5		S. India and Sri Lanka
Polysolenia	1		Assam
Polyura	1		Assam
Publisyfus	1		Andaman Islands
Rutaceae			
Pamburus	1		S. India and Sri Lanka
Sapindaceae			
Ottonophellium	1		Peninsular India
Thraulococcua	2		India and Sri Lanka
Scrophulariaceae			
Bonnayodes	1		Bombay
Falconeria	1		W. Himalaya
Hemiphragma	1		W. Himalaya to Assam

Family/Genera	No. of Species	No. of Species Studied for Chromosome Number	Geographical Distribution
Salamacaceae			
Pauia	1		Arunachal Pradesh
Thunbergiaceae			
Meyenia	1		India and Sri Lanka
Tiliaceae			
Eriocarpus	1		S. W. India
Urticaceae			
Smithiella	1		E. Himalaya

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