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MATERIALS
FOR THE
FLORA OF BHUTAN

Edited by
The Director
Botanical Survey of India

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PREFACE

The Botanical Survey of India carried out a series of plant explorations in Bhutan during 1963-65 with the specific object of studying the plant wealth, especially the medicinal plants as desired by the Government of Bhutan.

Explorations to different parts of Bhutan were conducted from Calcutta and Shillong by the scientific staff of the Botanical Survey of India at the Central National Herbarium and Headquarters Organisation at Calcutta and the Eastern Regional Circle of the Survey at Shillong. The present study includes an enumeration of plants, information on localities, dates of collection and medicinal uses wherever known. The present account, as the title indicates is a preliminary step towards the preparation of a detailed Flora of Bhutan.

The Botanical Survey of India is deeply grateful to His Majesty's Government of Bhutan for constant assistance, encouragement and kind courtesies, extended to all the concerned staff of the Botanical Survey of India during the several botanical explorations in Bhutan.

Botanical Survey of India
14 Madan Street
Calcutta-13
June, 1973

K. SUBRAMANYAM
Director

MATERIALS FOR THE FLORA OF BHUTAN

INTRODUCTION

At the request of the Government of Bhutan and with the concurrence of the Government of India, the Director, Botanical Survey of India, organised the botanical explorations of Bhutan and sent fourteen expeditions with officers of the Central National Herbarium, the Eastern Circle and the Central Botanical Laboratory, as given below:

<i>Sl. No.</i>	<i>Year and month of visit</i>	<i>Name of Officers who participated</i>	<i>Areas explored and plants collected</i>
1	1963 August	G. Sengupta N. P. Balakrishnan P. K. Hajra B. M. Wadhwa	Phuntsholing Paro Chi - La Ha Valley
2	1963 October	S. K. Mukerjee K. C. Malick	Paro
3	1963-64 December-January	G. V. Subbarao	Phuntsholing Kamji
4	1963-64 December-January	K. Thothathri	Samchi Sangura Dorokha
5	1963-64 December-January	G. Sengupta	Gaylegphug Sureylakha Sham Khara
6	1964 April-May	J. K. Maheshwari	Phuntsholing Chaisilakha Chima Kothi Thimpu
7	1964 April-May	G. Sengupta	Sham Khara Gaylegphug Tama Birti Shemgang
8	1964 September	J. N. Vohra P. K. Hajra V. Abraham	Phuntsholing Thimpu Dochu La
9	1964 November	D. B. Deb	Gaylegphug Sham Khara Rani Camp Tama Manas Camp Dakpai Shemgang
10	1964 November	S. K. Mukerjee	Samchi Dorokha

INTRODUCTION

Sl. No.	Year and month of visit	Name of Officers who participated	Areas explored and plants collected
11	1965 March	N. P. Balakrishnan	Tashigang-Tobrang Samdrup-Jhonkar Tashigang Tashiyangsti to Tobrang
12	1965 August-September	G. Sengupta J. N. Vohra	Thumpu Punaka Honslu Dochu La Lumichawa
13	1965 August-September	A. S. Rao	Samdrup-Jhonkar Tashigang
14	1965 November-December	N. P. Balakrishnan	Tashiyangsti Dongla Lhunsti Monger Bangong La Tashigong Samdrup-Jhonkar

PREVIOUS EXPLORATIONS

Botanical explorations in Bhutan started with Dr. William Griffith who entered Bhutan from the south-east, reached Dewangiri on 3rd January, 1838 and proceeded north *via* Tashigong up to Khumna, then turned to the west and passed through Lengloon, Tongsa, Punakha up to Thimphu. He then turned south *via* Chapcha, crossed the borders and reached Buxa Duar on 18th May, 1838. He made an extensive collection of 1700 specimens, which were sent from the Calcutta Botanic Gardens to the Court of Directors of the East India Company, with a view to their being examined and distributed to the herbaria of Great Britain and Europe. This collection was transferred to the Royal Botanic Gardens, Kew, in 1858, one set of which, received back from Kew, is at present in the Central National Herbarium, Calcutta.

Sir J. C. White of the Indian Political Service, in his mission to Bhutan during 1905-07, made a considerable collection of plants, a set of which was presented to the herbarium, Indian Botanic Gardens, Calcutta.

R. E. Cooper led an exploration trip to the country in 1914-15, for 348 days and made extensive collections from western and central Bhutan, following more or less the same route traversed by Griffith. He made a number of important discoveries especially in the genera *Rhododendron* and *Primula*. His collections are preserved in the Herbarium, Royal Botanic Gardens, Edinburgh.

INTRODUCTION

At various times between 1933 and 1949 the British Museum Natural History Division, London sent exploratory parties led by F. Ludlow, G. Sherriff, J. A. Hicks and K. Lumsden. These explorers covered considerable areas of Bhutan and made large collections of specimens which are now housed in the herbarium of the museum. The results of these expeditions appeared in the Bulletin of the above Museum at different periods (1955, 1956, 1958, 1960, 1961, 1962 and 1970).

PHYSICAL FEATURES OF BHUTAN

Situated between latitudes 26°40' and 28°0' N and longitudes 89°10' and 91°45' E, Bhutan is bounded on the north by Tibet, on the south by Assam and West Bengal, on the west by Sikkim and Chumbi Valley of Tibet and on the east by North East Frontier Agency. It is about 336 km in the longer east-west direction and about 144 km at the broadest region north to south, and covers an area of about 4662 sq. kilometers.

Bhutan is lying entirely in the heart of the Eastern Himalayas amidst the highest mountain ranges of the world, varying in height from below 300 m to 7500 m above sea-level.

The Mountain system: The mountain system is a series of parallel ranges running north to south and springing from the expansive snowy ranges which form the southern buttress of the Tibetan Plateau. These ranges are again cut into innumerable smaller hills forming a vast labyrinth of valleys running in several directions, while the main ranges divide the river systems.

The Chola Range descends from Pauhunri to the east of Donkhia La and divides the Teesta and the Amo Chu (Torsa River). There are many passes through this range, of which Nathu La and Jelep La deserve mention.

The Massong-chung-dong (Masang Kyungdu) runs down from Chomo Lhari, past Ha to Buxa Duar in the plains, and forms the watershed between the Amo Chu (Torsa River) and the Wang Chu (Raidhak River). The Dokyong La Range runs down from Chomo Lhari and divides the waters of the Wang Chu and the Mo Chu. The Black Mountain Range which separates the Mo Chu and the Manas river-systems also divides Bhutan into two ethnically distinct parts.

The Tawang Range to the east of the Manas river-system, originates from the snow ranges to the north-east of Tawang. One of its main

INTRODUCTION

ramifications forms the eastern boundary of Bhutan and ends in the hills to the east of Dewangiri.

Other noteworthy ranges are the Chiu-Li-La dividing the Ha Chu and the Paro Chu, the Bei-La Range between Paro Chu and the Wang Chu, the Yoto-La Range which springs from the snows to the east of Kula Kangri and divides the Manghee Chu and the Bumthang Chu and the Radung-La Range springing from the snows near Kar-Chu Pass and dividing the Kuru Chu from the Mangbe Chu.

The River system: Bhutan is drained by a number of river systems, the important among which are : the Amo Chu or the Torsa which drains the Chumbi Valley ; the Wang Chu or the Raidhak with its tributaries, the Ha Chu and the Paro Chu which drain the valleys of Ha, Paro and Tashi-chodzong (Thimphu) ; the Mo Chu or the Sankhos which drains the valley of Punakha, one branch taking its rise on the southern slopes of Chomo Lhari and another in the snows to the east of Kala-tso ; the Manas, the largest of all, has its main source in the glaciers on the northern slopes of the Kula Kangri and its adjacent snows.

Soil: Along the southern boundary the soil is fine alluvium and in the areas near the rivers is mixed with sand. Further interior the upper layer of the forest floor is dark brown to nearly black in colour and rich in humus made up of decaying organic matters. From Gaylegphug to Sureylakha, the soil is very loose and micaceous at places. Along the roadcuttings large micaceous schists are visible at places. The forests have moist sticky soil, dark in colour. In the shallow valleys, through which the rivers and their tributaries flow, the soil is sandy alluvium and becomes coarse and gravelly higher up. Patches of ferruginous soil are seen in places and lime soil underlies the pine forest.

Climate: Climatologically Bhutan may be broadly divided into three zones — the southern, the central and the northern. These zones run more or less parallel to one another in a south-west to north-east direction. The maximum precipitation occurs in the southern zone. The rainfall, however, diminishes gradually towards the central and the northern zones. The southern zone receives an average annual rainfall of about 499 cm while the central and the northern zone receives 200-300 cm and less than 100 cm respectively. The south-eastern corner of Bhutan, south of the Tawang Range, which includes Dewangiri, has much less precipitation than other parts of the southern zone, as the monsoon current does not strike the hills directly. The south-east monsoon arrives earlier in the eastern part of the country in May. Heaviest rainfall prevails from June to August.

INTRODUCTION

VEGETATION OF BHUTAN

The general characteristics of the vegetation of Bhutan are dependent on the peculiar physical feature of the country and influenced by the strong moisture-laden monsoon winds from the south and south-east. As the ramifying outer spurs have a heavy rainfall, these are densely clad by moist tropical and subtropical forests. The deep valleys, running more or less parallel, receive moisture-laden winds and heavy precipitation, which allows a luxuriant tropical vegetation, in contrast to the comparatively bare slopes of the lateral transverse valleys with moist deciduous forests with or without sal (*Shorea robusta* Gaertn.) and pine (*Pinus roxburghii* Sarg.). At higher elevation, between 1800-3000 m, *Pinus wallichiana* A.B. Jacks., occurs. High ridges in the interior get enough moisture to develop a moist temperate flora comprising usually of moss-clad and lichen-draped Rhododendrons, maples, poplars and birches. In some ranges the forest is dominated by Magnolias, Oaks, Acer, Strobilanthes, etc.

The portion of Bhutan lying north of Khasi Hills is deprived of the full force of the south-east monsoon up to an altitude of about 2000 m. Consequently lower ranges have a much drier climate than those of the same altitude in western Bhutan, the latter receiving unhindered the moist winds from the Bay of Bengal. Griffith accordingly described the hills and valleys of Bhutan to the north of Khasi Hills as bare of forests up to 1800 m (6000 ft.).

In the present survey, specimens of about 2000 species of Angiosperms, Gymnosperms and Pteridophytes were collected. All the specimens cited in this work are deposited in the Central National Herbarium, Calcutta (CAL) except those of Dr. A. S. Rao & Shri N. P. Balakrishnan which are housed in the Regional Herbarium, Shillong (ASSAM). It is estimated that the total number of species of plants occurring in Bhutan is four times as many as are enumerated in the present work. However, the present contribution is made to present available information on a region botanically little known.

ACKNOWLEDGEMENTS

The present contribution to the Flora of Bhutan is the result of the combined efforts of many officers of the Botanical Survey. The following officers, who took part in the botanical expeditions to Bhutan, also assisted in writing notes on many families in the Flora: Dr. S. K. Mukerjee, Dr. A. S. Rao, Dr. D. B. Deb, Shri G. Sen Gupta, Shri N. P. Balakrishnan, Shri K. C. Malick and Shri K. Thothathri. The following

INTRODUCTION

officers, who did not participate in the botanical expeditions to Bhutan, assisted in the writing of families mentioned against their names: Dr. N. C. Nair (all the Pteridophyte families), Shri D. C. S. Raju (Magnoliaceae, Schisandraceae, Cyperaceae), Dr. Debika Das (Annonaceae, Iridaceae, Eriocaulaceae), Dr. N. C. Majumdar (Caryophyllaceae, Liliaceae), Shri S. N. Biswas (Hypericaceae, Cannaceae, Marantaceae, Fagaceae), Dr. M. P. Nayar (Melastomataceae), Shri P. K. Mukherjee (Umbelliferae), Shri R. N. Banerjee (Araliaceae, Arecaceae, Potamogetonaceae), Shri S. Sen (Gentianaceae), Shri S. P. Banerjee (Boraginaceae, Dioscoreaceae), Dr. K. Subramanyam (Lentibulariaceae), Shri R. M. Dutta (Moraceae, Urticaceae), Dr. S. K. Jain (Haemodoraceae, Hypoxidaceae, Poaceae) and Shri K. Ramamurthy (Araceae). Thanks are also due to Dr. S. K. Mukerjee, Ex-Keeper of the Central National Herbarium, for compiling the entire Flora. Finally, Dr. K. Subramanyam, Director of the Botanical Survey of India, would like to record his appreciation of the facilities accorded to the Survey's botanical expeditions by His Majesty's Government of Bhutan.

ENUMERATION OF SPECIES

PTERIDOPHYTES

N. C. NAIR

PSILOTACEAE

Psilotum nudum (Linn.) Beauv. Prodr. Fam. Aetheog. 112, 1805 ; Clarke in Trans. Linn. Soc. London 2, Bot. 1 : 589, 1880. *Lycopodium nudum* Linn. Sp. Pl. 2 : 1100, 1753.
Yangtzi, 1200 m, March 1965, *Balakrishnan* 41274.

EQUISETACEAE

Equisetum debile Roxb. ex Vaucher in Mem. Soc. Phys. Hist. nat. Genev. 1 : 387, 1822 ; Roxb. in Calc. Jour. nat. Hist. 4 : 468, t. 26, 1844 ; Clarke in Trans. Linn. Soc. London 2, Bot. 1 : 594, 1880.
Tashigong, Oct. 1965, *Balakrishnan* 43960.

This taxon has been treated as a subspecies of *E. ramosissimum* Desf. by Hauke (*Amer. Fern Jour.* 51 : 131-137, 1961). Mehra & Bir (*Amer. Fern Jour.* 49 : 86-87, 1959) have shown that these two horse tails differ in several respects and hence considered here as distinct species.

E. diffusum D. Don Prodr. Fl. Nepal 19, 1825 ; Clarke in Trans. Linn. Soc. London 2, Bot. 1 : 594, 1880.

10 km north on the road from Deothong to Narfong, 1400 m, Aug. 1965, *A. S. Rao* 43178 ; Tama, 1450 m, Nov. 1964, *Deb* 305 ; Tashiyangtzi forest, Sept. 1965, *Balakrishnan* 44297 ; near Ronglong on road to Tashigong, 2000 m, March 1965, *Balakrishnan* 41167.

LYCOPODIACEAE

Lycopodium setaceum Buch.-Ham. in Don Prodr. Fl. Nepal 18, 1825 ; Clarke in Trans. Linn. Soc. London 2, Bot. 1 : 590, 1880.

Kamji, Dec. 1963 *Subba Rao* 223a, 223b ; Tashiyangtzi to Tobrang, March 1965, *Balakrishnan* 41398 ; between Nyoth and Tashiyangtzi, Sept. 1965, *Balakrishnan* 44199.

L. clavatum Linn. Sp. Pl. 2 : 1566, 1753 ; Clarke in Trans. Linn. Soc. London 2, Bot. 1 : 591, 1880.

Dochu La, 3100 m, Sept. 1965, *Sen Gupta* 1688 ; Shemgang, 1950 m, Nov. 1964, *Deb* 392 ; Tashiyangtzi to Tobrang, March & Oct. 1965, *Balakrishnan* 41427 & 44309 ; Wamrung, Sept. 1965, *A. S. Rao* 43562.

- Lycopodium squarrosus** Forst. Prodr. Fl. Austral. 86, 1786; Clarke in Trans. Linn. Soc. London 2, Bot. 1:591, 1880.
Monger-Tashiyangtsi track, Oct. 1965, *Balakrishnan* 44680.

SELAGINELLACEAE

- Selaginella pennata** (Don) Spring in Mém. Acad. Roy. Sci. Belgique 24 : 257, 1850; Alston in Proceed. Nat. Inst. Sci. India 11 : 225, 1945. *Lycopodium pennatum* Don, Prodr. Fl. Nepal 18, 1825.
Narfong 2 km west of Dantak, 1800 m, Sept. 1965. *A. S. Rao* 43238.
- S. intermedia** (Bl.) Spring in Bull. Ac. Brux. 10:144, 1843. *Lycopodium intermedium* Bl. Enum. Pl. Jav. 2 : 269, 1830.
Near Deothong, 900 m, Oct. 1965, *Balakrishnan* 44206.
- S. argentea** (Wall. ex Hook. et Grev.) Spring in Bull. Ac. Brux. 10 : 137, 1843. *Lycopodium argenteum* Wall. ex Hook. et Grev. in Hook. Bot. Misc. 2 : 384, 1831.
Nyoth, Oct. 1965, *Balakrishnan* 44206.
- S. bryopteris** (Linn.) Bak. in Jour. Bot. 22 : 376, 1884. *Lycopodium bryopteris* Linn. Sp. Pl. 2 : 1103, 1753. *L. imbricatum* Roxb. in Cal. Jour. nat. Hist. 4 : 475, 1844 (non Forsk.).
Tashigong, Sept. 1965, *A. S. Rao* 43489.
- S. monospora** Spring in Mém. Acad. Sci. Brux. 24 : 135, 1850.
S. semicordata sensu Burkill in Rec. Bot. Surv. India 10 : 228, 1925.
Dorokha, 1000 m, Nov. 1964, *Mukerjee* 6116; Sham Khara, Nov. 1964, *Deb* 19; Shemgang, Nov. 1964, *Deb* 409.

OPHIOGLOSSACEAE

- Botrychium lanuginosum** Wall. ex Hook. et Grev. Ic. Fil. t. 79, 1829.
Bedd. Handb. Ferns Brit. India 469, 1883. *Sceptridium daucifolium* (Wall. ex Hook. et Grev.) Lyon in Bot. Gaz. 40 : 457, 1905; Nishida in Hara Flora East. Himal. 454, 1966.
Kamji, Dec. 1963, *Subha Rao* 218.

PLAGIOGYRIACEAE

- Plagiogyria communis** R. C. Ching in Acta Phytotax. Sini. 7 : 147, t. 35, f. 2, 1958. *Lomaria pycnophylla* Hook. Spec. Fil. 3, t. 148, 1860 (non Kze.). *Plagiogyria pycnophylla* Bedd. Handb. Ferns Brit. India 129, 1883 (non Mett.); Panigrahi in Bull. Bot. Surv. India 2:313, 1960.

Bepa (on way to Lisipong Dongla-Lhunsi tract), Oct. 1965, *Balakrishnan* 44342; 4 km away from Tobrang towards Laurijumpa, March 1965, *Balakrishnan* 41440; 9 km north on road from Wamrung to Gomchu, 2600 m, Sept. 1965, *A. S. Rao* 43374; near Wamrung at 113 km to Tashigong, March 1965, *Balakrishnan* 41151.

The species has been often called as *Plagiogyria pycnophylla* (Kze.) Mett. Ching (loc. cit.) from a study of the type of *P. pycnophylla* (Kze.) Mett. from Java concluded that the Javanese material is different from Yunan-Himalayan *P. pycnophylla* of authors.

Plagiogyria glauca (Bl.) Mett. *Plagiogyria* 273, 1858; *Bedd. Handb. Ferns Brit. India with Suppl.* 127, 1892. *Lomaria glauca* Bl. *Enum. Pl. Jav.* 204, 1828.

Lespang, Oct. 1965, *Balakrishnan* 44408.

MARATTIACEAE

Angiopteris evecta (Forst.) Hoffm. *Comm. Soc. Reg. Gott.* 12 : 29, t. 5, 1796; *Bedd. Handb. Ferns Brit. India with Suppl.* 460, t. 285, 1892.

Polypodium evectum Forst. *Prodr.* 81, 1786.

Rani Camp, Nov. 1964, *Deb* 229; 6 km N. E. to Monger towards Tashigong, *Balakrishnan* 44661.

SCHIZAEACEAE

Lygodium flexuosum (Linn.) Sw. in *Schrad. Jour.* 1800/2 : 106, 1801; *Bedd. Handb. Ferns Brit. India* 457, t. 283, 1883; Ito in *Hara Fl. East. Himal.* 455, 1966. *Ophioglossum flexuosum* Linn. *Sp. Pl.* 2 : 1063, 1753.

Malhashi Hill (Samchi), 650 m, Dec. 1963, *Thothathri* 10395; Deothong, Aug. 1965, *A. S. Rao* 43135.

ANTROPHYACEAE

Antrophyum coriaceum (Don) Hook. *Sp. Fil.* 5 : 169, 1864. *Hemionitis coreacea* Don *Prodr. Fl. Nepal.* 13, 1825. *Antrophyum reticulatum* sensu *Bedd. Handb. Ferns Brit. India* 401, 1883 (*pro parte*).

Geylegphug, 270 m, Nov. 1964, *Deb* 135.

GLEICHENIACEAE

Dicranopteris linearis (Burm.) Underw. var. **anatnom** Holtt. in *Reinwardt.* 4 : 276, 1957. *Polypodium linearis* Burm. *Fl. Ind.* 235, t. 67, f. 2, 1768.

Gleichenia linearis (Burm.) Clarke in Trans. Linn. Soc. London 2, Bot. 1 : 428, 1880 ; Bedd. Handb. Ferns Brit. India 4, t. 1, 1883.

Sham Khara, 1500 m, Dec. 1963, *Sen Gupta* 1125 ; Changtar (Samchi), 600 m, Dec. 1963, *Thothathri* 10445, 10445a ; Shemgang, April 1964, *Sen Gupta* 1269 ; Monger Dzong, Nov. 1965, *Balakrishnan* 44635.

Diplopterygium longissimu (Bl.) Nakai in Bull. Nat. Sci. Mus. Tokyo 29 : 53, 1950. *Gleichenia longissima* Bl. Enum. Pl. Jav. 250, 1828. *G. glauca* sensu Bedd. Handb. Ferns Brit. India 2, 1883 (*pro parte*). Tashiyangtsi, March 1965, *Balakrishnan* 41378 ; Peme towards Lhuntsi, March 1965, *Balakrishnan* 44474.

According to Holttum (*loc. cit.*) *Hicriopteris* does not deserve a generic status. He treats *Hicriopteris* sensu Ching (*Sunyatsenia* 5 : 285, 1940) and Copeland (*Gen. Fil.* 28, 1947) non Presl (1849) as synonym of subgenus *Diplopterygium* under *Gleichenia*.

Gleichenia glauca (Thbg.) Hook. Sp. Fil. 1 : 4, t. 3B, 1844 ; Bedd. Handb. Ferns Brit. India 2, 1883 (excl. syn. *G. longissima*). *Polypodium glaucum* Thbg. in Houtt. nat. Hist. 14 : 177, 1783. *Hicriopteris glauca* (Thbg.) Copel. Gen. Fil. 28, 1947. Shemgang, Nov. 1964, *Deb* 406.

ADIANTACEAE

Adiantum capillus-veneris Linn. Sp. Pl. 2 : 1096, 1753 ; Bedd. Handb. Ferns Brit. India with Suppl. 84, 1892.

On way to Munger from Nyalamdong, Nov. 1965, *Balakrishnan* 44572 ; Tashigong, March 1965, *Balakrishnan* 41203.

A. caudatum Linn. Mant. Pl. 308, 1771 ; Bedd. Handb. Ferns Brit. India with Suppl. 83, 1892 (*pro parte*) ; Pichi-Sermolli in *Webbia* 12 : 674, fig. 7b, 1957.

Birti, 650-850 m, April 1964, *Sen Gupta* 1322, 1322a ; on way to Munger from Nyalamdong, Nov. 1965, *Balakrishnan* 44567 ; Tashigong, March 1965, *Balakrishnan* 41220.

A. edgeworthii Hook. Sp. Fil. 2 : 14, 1851 ; Bedd. Handb. Ferns Brit. India t. 17, 1867, *A. caudatum* Linn. var. *edgeworthii* (Hook.) Bedd. Handb. Ferns Brit. India 84, 1883.

Dakpai, Nov. 1964, *Deb* 358.

A. philippense Linn. Sp. Pl. 2 : 1094, 1753. *A. humulatum* Burm. Fl. Ind. 235, 1768 ; Bedd. Handb. Ferns Brit. India with Suppl. 82, 1892.

Phuntsholing, Sept. 1964, *Hajra* 317, Aug. 1965, *Sen Gupta* 1660 ;
Pakchang, Nov. 1965, *Balakrishnan* 44580.

SINOPTERIDACEAE

Cheilanthes albomarginata Clarke in Trans. Linn. Soc. London 2, Bot.
1: 456, t. 52, 1880 ; Bedd. Handb. Ferns Brit. India with Suppl. 94,
1892. *Aleuritopteris albomarginatas* (Clarke) Panigrahi in Bull. bot.
Surv. India 2 : 312, 1960.

Phuntsholing, Sept. 1964, *Hajra* 2390 ; from Kharcheng towards
Tashigong, March 1965, *Balakrishnan* 41822.

C. farinosa (Forsk.) Kaulf. Enum. 212, 1824 ; Bedd. Handb. Ferns Brit.
India with Suppl. 92, 1892 (*pro parte*). *Pteris farinosa* Forsk. Fl.
Aeg.-Arab. 187, 1775. *Aleuritopteris farinosa* (Forsk.) Fée Gen. Fil.
154, t. 12B, f. 1, 1850-1852.

Dhoankhola, 3700 m, Dec. 1963, *Thothathri* 10407.

Notholaena marantae (Linn.) R. Br. Prodr. Fl. Nov. Holl. 146, 1810 ;
Bedd. Handb. Ferns Brit. India with Suppl. 373, t. 213, 1892.
Acrostichum marantae Linn. Sp. Pl. 2: 1071, 1753.

Honshri, Aug. 1965, *Sen Gupta* 1756.

GYMNOGRAMMACEAE

Coniogramme fraxinea (Don) Diels in Nat. Pflanzenfam. 1(4): 262,
1899. *Diplazium fraxineum* Don, Prodr. Fl. Nepal. 12, 1825.
Syngamme fraxinea Bedd. Handb. Ferns Brit. India 386, 1883 (*pro*
parte).

Dorokha forest, 500 m, Dec. 1963, *Thothathri* 10524 ; 10 km north
of Narfong on road side, March 1965, *Balakrishnan* 41144.

C. serra Fée Gen. Fil. Mem. 167, 1850-1952 ; Heiron in Hedw. 57:309,
1915. *Gymnogramme javanica* sensu Bedd. Ferns South India 77, t.
232, 1864 (non Blume). *Syngamme fraxinea* Bedd. Handb. Ferns
Brit. India 386, 1883 (*pro parte*, non Suppl. 100, 1892).

Tashigong to Yangtsi, March 1965, *Balakrishnan* 41331.

Pityrogramme calomelanos (Linn.) Link Handb. Gew. 3: 20, 1833.
Acrostichum calomelanos Linn. Sp. Pl. 2: 1072, 1753.

Phuntsholing, Dec. 1963, *Subba Rao* 135 ; Sept. 1964, *Hajra* 318 ;
Tashigong, Oct. 1965, *Balakrishnan* 44047 ; Tashigong to Yangtsi,
March 1965, *Balakrishnan* 41268.

Syngamma vestita (Hock.) Bedd. Ferns Brit. India t. 154, 1866 ; Handb. Ferns Brit. India with Suppl. 368, 1892. *Gymnogramme vestita* Hook. Ic. Pl. t. 115, 1837 ; Sp. Fil. 5 : 143, 1863. *Gymnopteris vestita* Underw. Bull. Torrey Bot. Cl. 29 : 627, 1902.
Phuntsholing, Sept. 1964, *Hajra* 2405.

VITTARIACEAE

Vittaria elongata Sw. Syn. Fil. 109, 302, 1806 ; Bedd. Handb. Ferns Brit. India with Suppl. 404, t. 238, 1892.
Tashigong Yangtzi Nyoth, March 1965, *Balakrishnan* 413346 ; Narfong, 1100 m, Aug. 1965, *A. S. Rao* 43268.

V. flexuosa Fée, Mem. 16, 1851-1852. *V. lineata* sensu Bedd. Ferns South India, t. 54, 1863 et Handb. Ferns Brit. India with Suppl. 407, 1892.
Kamji, Dec. 1963, *Subba Rao* 168 ; Changda Chungli Hill, 2000 m, Dec. 1963, *Thothathri* 10468 ; from Wamrung to Narfong, March 1965, *Balakrishnan* 41907 ; Shemgang, 2000 m, *Sen Gupta* 1233 ; Tashiyangtzi to Tobrang, March 1965, *Balakrishnan* 41422, 41334a ; Bepa, Nov. 1965, *Balakrishnan* 44371.

CRYPTOGRAMACEAE

Onychium siliculosum (Desv.) C. Chr. Ind. Fil. 469, 1906 *Pteris siliculosum* Desv. in Ges. Freunde Berlin Mag. 5:324, 1811. *Onychium auratum* Kaulf., Enum. 144, 1824 ; Bedd. Handb. Ferns Brit. India with Suppl. 96, t. 49, 1892.
Phuntsholing, Dec. 1963, *Subba Rao* 38, Sept. 1964, *Hajra* 315 ; Changtar, 350 m, Dec. 1963, *Thothathri* 10357 ; between Samdrup Jhonkar and Deothong, 350 m, March 1965, *Balakrishnan* 41107 ; Tashigong, Oct. 1965, *Balakrishnan* 43866.

O. japonicum (Thbg.) Kze. Bot. Zeit. 507, 1848 ; Bedd. Handb. Ferns Brit. India with Suppl. 96, 1892. *Trichomanes japonicum* Thbg. Fl. Jap. 340, 1784.
Dakpai, Nov. 1964, *Deb* 368 ; Tashigong, March 1965, *Balakrishnan* 41219.

PARKERIACEAE

Ceratopteris thalictroides (Linn.) Brongn. Bull. Soc. Philom. 186c, 1821 ; Bed. Handb. Ferns Brit. India with Suppl. 123, t. 63, 1892. *Acrostichum thalictroides* Linn. Sp. Pl. 2 : 1070, 1753.
Phuntsholing, Sept. 1964, *Hajra* 361, 361b.

PTERIDACEAE

Hypolepis punctata (Thbg.) Mett. Kuhn fil. Afr. 120, 1868. Bedd. Handb. Ferns Brit. India with Suppl. 19, 1892. *Polypodium punctatum* Thunb. Fl. Jap. 337, 1784. *Dryopteris punctata* C. Chr. Ind. Fil. 287, 1905. Betni, 1400 m, Dec. 1963, *Sen Gupta* 1030.

Pteridium aquilinum (Linn.) Kuhn ex Decken, Reisen in Ost. Afrika 3:11, 1879; Alston & Bonner in Candollea 15:198, 1956. *Pteris aquilina* Linn. Sp. Pl. 2: 1075, 1753; Bedd. Handb. Ferns Brit. India with Suppl. 115, 1892.

Tama, 1650-1850 m, April 1964, *Sen Gupta* 1168; Betni, 1500-1650 m, Dec. 1963, *Sen Gupta* 1083; Birti, 600-1000 m, April 1964, *Sen Gupta* 1335; Tashigong to Yangtishali, March 1965, *Balakrishnan* 41307.

Pteris biaurita Linn. Sp. Pl. 2: 1076, 1753. *Campteria biaurita* Hook. Gen. Fil. t. 65A, 1841; Bedd. Handb. Ferns Brit. India with Suppl. 116, 1892.

Dorokha, 1000 m, Nov. 1964, *Mukerjee* 6118; Changtar, 300 m, Dec. 1963, *Thothathri* 10313; Geylegphug, Dec. 1963, *Deb* 133, Dec. 1963, *Sen Gupta* 812; Phuntsholing, Dec. 1963, *Subba Rao* 51; Tashigong Dzong, March 1965, *Balakrishnan* 41209.

P. cretica Linn. Mant. 130, 1767; Bedd. Handb. Ferns Brit. India with Suppl. 106, 1892.

Between Gomchu and Tashigong, March 1965, *Balakrishnan* 41162; on way to Munger from Nyalamdong, Nov. 1965, *Balakrishnan* 44575.

P. excelsa Gaud. Freyc. Voy. Bot. 338, 1829; Bedd. Handb. Ferns Brit. India with Suppl. 114, 1892.

Tashiyangtsi to Tobrang, March 1965, *Balakrishnan* 41403.

P. longipes Don. Prodr. Fl. Nepal 15, 1825; Bedd. Handb. Ferns Brit. India with Suppl. 115, 1892.

Between Wamrung and Rongton, Nov. 1965, *Balakrishnan* 44694; Nangadzong, March 1965, *Balakrishnan* 41840; Sham Khara, Dec. 1963, *Sen Gupta* 1105; Sureylakha, 1350-1500 m, Dec. 1963, *Sen Gupta* 980.

P. quadriaurita Retz. in Obs. Bot. 6:38, 1791; Bedd. Handb. Ferns Brit. India with Suppl. 110, 1892.

Kamji, Dec. 1963, *Subba Rao* 205; Betnikhola 1500-1650 m, Dec. 1963, *Sen Gupta* 1034; Gaylegphug, 270 m, Nov. 1964, *Deb* 133; way to Mungen from Nyalamdong, Nov. 1965, *Balakrishnan* 44566.

- Pteris vittata** Linn. Sp. Pl. 2:1074, 1753, *Pteris longifolia* auct. Pl. (non Linn.); Bedd. Handb. Ferns Brit. India with Suppl. 106, t. 55, 1892.
Phuntsholing, Dec. 1963, *Subba Rao* 52; Birti, April 1964, *Sen Gupta* 1299; way to Pakchang from Nyalamdong, Nov. 1965, *Balakrishnan* 44569; Tashigong Dzong, March 1965, *Balakrishnan* 41225.
- P. wallichiana** Ag. Rec. Spec. Gen. Pterid. 69, 1839. *Campteria wallichiana* Moore Index Fil. 221, 1861; Bedd. Handb. Ferns Brit. India with Suppl. 118, 1892.
Near Deothong, 1000 m, March 1965, *Balakrishnan* 41118.

HYMENOPHYLLACEAE

- Mecodium exsertum** (Wall. ex Hook.) Copel. in Phil. Jour. Sci. 67: 23, 1938. *Hymenophyllum exsertum* Wall. ex Hook. Spec. Fil. 1: 109, t. 38a, 1844; Bedd. Handb. Ferns Brit. India with Suppl. 30, t. 16, 1892.
On way to Gongga, 6 km from Yangtzi, March 1965, *Balakrishnan* 41484; on way to Dongala from Sisipang, Oct. 1965, *Balakrishnan* 44422.
- M. livingei** (Clarke) Copel. Gen. Fil. 33, 1947. *Hymenophyllum livingei* Clarke in Trans. Linn. Soc. London 2, Bot. 1: 439, 1880; Bedd. Handb. Ferns Brit. India with Suppl. 36, 1892.
2 km away from Tobrang towards Laurijumpa, March 1965, *Balakrishnan* 41434.
- M. polyanthos** (Sw.) Copel. in Phil. Jour. Sci. 67: 19, 1938. *Trichomanes polyanthos* Sw. Prodr. Fil. Ind. Occ. 137, 1788. *Hymenophyllum polyanthos* (Sw.) Sw. Schrad. Jour. Bot. 1800: 102, 1801; Bedd. Handb. Ferns Brit. India with Suppl. 30, 1892.
Bepa, Nov. 1965, *Balakrishnan* 44359.
- Vandenboschia radicans** (Sw.) Copel. in Phil. Jour. Sci. 67: 54, 1938. *Trichomanes radicans* (Sw.) Schrad. Jour. Bot. 1800:97, 1801; Bedd. Handb. Ferns Brit. India with Suppl. 43, 1892.
Tashiyangtzi, March 1965, *Balakrishnan* 41374; on way to Gongga, March 1965, *Balakrishnan* 41486.

DENSTAEDTIACEAE

- Denstaedtia scabra** (Wall. ex Clarke) Moore Ind. Fil. 307, 1861; Bedd. Handb. Ferns Brit. India with Suppl. 24, t. 12, 1892. *Dicksonia scabra* Wall. ex Clarke in Trans. Linn. Soc. London 2, Bot. 1: 436, 1880.
Bepa to Losepang, Oct. 1965, *Balakrishnan* 44353.

- Lindsaya cultrata** (Willd.) Sw. Syn. Fil. 119, 1806 ; Bedd. Handb. Ferns Brit. India with Suppl. 72, t. 36, 1892. *Adiantum cultratum* Willd. Phytogra. 14, t. 10, f. 2, 1794.
Betni, 1500-1700 m, Dec. 1963, *Sen Gupta* 1040 ; Tashiyangtse, March 1965, *Balakrishnan* 41376 ; Nyoth forest, Oct. 1965, *Balakrishnan* 44217.
- Microlepia platyphylla** (Don) J. Sm. in Jour. Bot. 1:427, 1842 ; Bedd. Handb. Ferns Brit. India with Suppl. 66, t. 33, 1892. *Davallia platyphylla* Don Prodr. Fl. Nepal. 10, 1825.
Nyoth, Oct. 1965, *Balakrishnan* 44217.
- M. strigosa** (Thbg.) Presl, Epim. Bot. 95, 1849 ; Bedd. Handb. Ferns Brit. India with Suppl. 67, 1892. *Trichomanes strigosum* Thbg. Fl. Jap. 339, 1874.
Batase, 1700-1850 m, Dec. 1963, *Sen Gupta* 1019.
- M. speluncae** (Linn.) Moore, Index Fil. 93, 1857 ; Bedd. Handb. Ferns Brit. India with Suppl. 67, 1892 (*pro parte*). *Polypodium speluncae* Linn. Sp. Pl. 2 : 1093, 1753.
Without actual locality, Nov. 1964, *Deb* 132.
- Monachosorum subdigitatum** (Bl.) Kuhn, Chaetopt. 345, 1882. *Polypodium subdigitatum* Bl. Fl. Jav. Fil. 196, t. 93, 1828. *Phaegopteris subdigitata* Bedd. Handb. Ferns Brit. India 295, 1883.
Changda Chungli Hills, Dec. 1963, *Thothathri* 10544.
- Sphenomeris chinensis** (Linn.) Max. in Wash. Acad. Sci. Jour. 3 : 144, 1913. *Trichomanes chinensis* Linn. Spec. Pl. 2 : 1099, 1753. *Stenoloma chinensis* (Linn.) Bedd. Handb. Ferns Brit. India 70, t. 34, 1883. *Stenoloma chusana* (Linn.) Copel. in Bish. Mus. Publ. 59 : 69, 1929 ; Ito in Hara Fl. East. Himal. 467, 1966.
Kharchang towards Tashigong, March 1965, *Balakrishnan* 41823.
- S. chinensis** (Linn.) Max. var. **tenuifolia** (Sw.) N. C. Nair in Bull. bot. Surv. India 11 : 187, 1969. *Davallia tenuifolia* Sw. Schrad Jour. 1800/2 : 88, 1801. *Stenoloma chinensis* (Linn.) Bedd. Handb. Ferns Brit. India 295, 1883 (*pro parte*).
Sureylakha, 1350-1500 m, Dec. 1963, *Sen Gupta* 933.

DAVALLIACEAE

- Araiostegia pulchra** (Don) Copel. in Phil. Jour. Sci. 34 : 241, 1927.

Davallia pulchra Don, Prodr. Pl. Nepal. 11, 1825. *Leucostegia pulchra* J. Sm. in Jour. Bot. 1:426, 1842; Bedd. Handb. Ferns Brit. India with Suppl. 52, t. 25, 1892.

Honshu, 2850 m, Aug. 1965, *Sen Gupta* 1787; from Peme towards Chuntsi, Oct. 1965, *Balakrishnan* 44472.

Davallia griffithiana Hook. Sp. Fil. 1: 168, t. 49 B, 1846; Hook. et Baker Syn. Fil. 96, 1868; Bedd. Handb. Ferns Brit. India with Suppl. 60, 1892.

Dakpai, Nov. 1964, *Deb* 444.

Humata assamica (Bedd.) C. Chr. in Contrib. U.S. nat. Herb. 26: 293, 1931. *Acrophorus assamicus* Bedd. Ferns Brit. India t. 94, 1865. *Leucostegia assamica* (Bedd.) J. Sm. Hist. Fil. 841, 1875; Bedd. Handb. Ferns Brit. India with Suppl. 51, 1892.

Sham Khara, 1500 m, Dec. 1963, *Sen Gupta* 1118; Shemgang, April 1964, *Sen Gupta* 1267.

Nephrolepis cordifolia (Linn.) Presl, Tent. Pterid. 79, 1836; Bedd. Handb. Ferns Brit. India with Suppl. 282, t. 144, 1892. *Polypodium cordifolium* Linn. Sp. Pl. 1089, 1753.

Dorokha, 650 m, Dec. 1963, *Thothathri* 10490; Sureylakha, 1350-1500 m, Dec. 1963, *Sen Gupta* 960; Shamlchoru, Nov. 1964, *Deb* 73; Tashigong Dzong, March 1965, *Balakrishnan* 41208.

Oleandra wallichii (Hook.) Presl, Tent. Pterid. 78, 1836; Bedd. Handb. Ferns Brit. India with Suppl. 287, t. 147, 1892. *Aspidium wallichianum* Hook. Exotic. Fl. 1: t. 5, 1823.

Dochu La, 3100 m, Aug. 1965, *Sen Gupta* 1734; Befra; on way to Lisipang Dongala-Lhunsi, Oct. 1965, *Balakrishnan* 44344.

WOODSIACEAE

Dicalpe aspidioides Bl. Enum. Pl. Jav. 241, 1828; Bedd. Handb. Ferns Brit. India with Suppl. 18, 1892.

4 km away from Tobrang towards Laurijumpa, March 1965, *Balakrishnan* 41439.

Lithostegia foeniculacea (Hook.) Ching in Sinensia 4: 2, 1933. *Aspidium foeniculaceum* Hook. Sp. Fil. 4: 36, t. 237, 1862. *Dicalpe foeniculacea* Clarke in Trans. Linn. Soc. London 2, Bot. 1: 434, 1880; Bedd. Handb. Ferns Brit. India with Suppl. 18, 1883.

On way to Laurijumpa from Tobrang, March 1965, *Balakrishnan* 41449.

- Peranema cyatheoides** Don, Prodr. Fl. Nepal 12, 1825; Bedd. Handb. Ferns Brit. India with Suppl. 22, t. 11, 1892.
2 km away from Tobrang towards Laurijumpa, March 1965, *Balakrishnan* 41433.

CYATHEACEAE

- Cyathea latebrosa** (Wall. ex Hook.) Copel. Phil. J. Sci. 4c: 52, 1909.
Alsophila latebrosa Wall. ex Hook. Spec. Fil. 1: 37, 1844; Bedd. Handb. Ferns Brit. India with Suppl. 11, 1892.
Kamji, Dec. 1963, *Subba Rao* 224.
- C. spinulosa** Wall. ex Hook. Sp. Fil. 1: 25, t. 12c, 1884; Bedd. Handb. Ferns Brit. India with Suppl. 6, t. 3, 1892.
3 km from Kharsang towards Jhashigon, *Balakrishnan* s.n.
- C. brunoniana** (Wall. ex Hook.) Clarke et Baker in Jour. Linn. Soc. 24: 409, 1888; Holtt. in Kew Bull. 19: 486, 1965. *Hemitelia brunoniana* (Wall. ex Hook.) Clarke in Trans. Linn. Soc. London 2, Bot. 1: 430, 1880. *Alsophila brunoniana* Wall. ex Hook. Sp. Fil. 1: 52, 1844. *Amphicosmia brunoniana* (Wall. ex Hook.) Bedd. Handb. Ferns Brit. India 10, 1883.
Sham Khara, 1500 m, Dec. 1963, *Sen Gupta* 1120.

ASPIDIACEAE

- Acrophorus stipellatus** Moore in Gard. Chr. 135, 1854. *Leucostegia nodosa* Bedd. Ferns Brit. India with Suppl. 4: 1876 et Handb. Ferns Brit. India with Suppl. 54, t. 26, 1892.
From Peme towards Lhuntsi, Oct. 1965, *Balakrishnan* 44469; between Laurijumpa and Tobrang, March 1965, *Balakrishnan* 41446.
- Arachniodes aristata** (Forst. f.) Tindale in Contrib. New South Wales nat. Herb. 3: 89, 1961. *Polypodium aristatum* Forst. f. Prodr. 82, 1786. *Lastrea aristata* (Forst. f.) Moore Ind. Fil. 85, 1858; Bedd. Handb. Ferns. Brit. India with Suppl. 229, 1883. *Byrsopteris aristata* (Forst.) Morton in Amer. Fern Jour. 50: 152, 1960.
Tashiyangtsi forest, March 1965, *Balakrishnan* 41380.
- A. coniifolia** (Moore) Ching in Acta Bot. Sin. 10: 259, 1962. *Lastrea coniifolia* Moore Ind. Fil. 88, 1857; Bedd. Handb. Ferns Brit. India with Suppl. 230, 1892. *Byrsopteris coniifolia* (Moore) Morton in Amer. Fern Jour. 50: 153, 1960.
Between Tashiyangtsi and Tobrang, March 1965, *Balakrishnan* 41415.

- Bolbitis deltigera** (Hook.) C. Christ. Ind. Fil. Suppl. 3: 46, 1934. *Acrostichum costatum* var. *deltigerum* Hook. Sp. Fil. 5: 262, 1863. *Gymnopteris costata* (Hook.) Bedd. Ferns Brit. India t. 114, 1865; Bedd. Handb. Ferns Brit. India with Suppl. 438, 1892. Without exact locality, Nov. 1964, *Deb* 323.
- Cyrtomium caryotideum** (Wall. ex Hook. et Grev.) Presl, Tent. Pter. 86, 1836. *Aspidium caryotideum* Wall. ex Hook. et Grev. Ic. Fil. 1: t. 69, 1823. *Cyrtomium falcatum* var. *caryotideum* (Wall. ex Hook. et Grev.) Bedd. Handb. Ferns Brit. India 211, 1883. *Phanerophlebia caryotideum* (Wall. ex Hook. et Grev.) Copel Gen. Fil. 111, 1947. On way to Gongga, March 1965, *Balakrishnan* 41487.
- C. hookerianum** (Presl) C. Christ. Ind. Fil. Suppl. 1: 101, 1913. *Lastrea hookeriana* Presl Tent. Pter. 77, 1836. *Cyrtomium caducum* Moore Ind. Fil. 276, 1861; Bedd. Handb. Ferns Brit. India with Suppl. 211, 1892. Tashiyangtsi to Tobrang, March 1965, *Balakrishnan* 41413.
- Dryopteris fibrillosa** (Clarke) Hand.-Mazz. Akad. Anz. Akad. Wien 49, 1922; Ching in Bull. Fan. Mem. Inst. Biol. 8: 424, 1938. *Lastrea filix-mas* var. *parallelogramma* subvar. *fibrillosa* Bedd. Handb. Ferns Brit. India 250, 1883. Dochu La, 3250 m, Sept. 1964, *Hajra* 445.
- D. atrata** (Wall. ex Kunze) Ching in Sinensia 3: 326, 1933. *Aspidium atratum* Wall. ex Kunze in Linnaea 24: 279, 1851. *Lastrea hirtipes* sensu Bedd. Handb. Ferns Brit. India 232, 1883 (*pro parte*). Between Tashigong and Wamrung, Oct. 1965, *Balakrishnan* 43909A; between Narfong and Wamrung, March 1965, *Balakrishnan* 41906.
- D. wallichiana** (Spreng) Hyl. in Bot. Notiser 106:352, 1953. *Aspidium wallichianum* Spreng. Syst. Veg. 4:104, 1827. *Lastrea filix-mas* var. *parallelogramma* Bedd. Handb. Ferns Brit. India 249, 1883 (*pro parte*). Between Wamrung to Gomchu, 2600 m, Sept. 1965, *A. S. Rao* 43373.
- D. chrysocoma** (Christ) C. Christ. Ind. Fil. 257, 1905. *Aspidium filix-mas* var. *chrysocoma* Christ. Bull. Boiss. 6: 966, 1898. *A. chrysocoma* (Christ) Christ Bull. Acad. Geogr. Bot. 1902: 253, 1904. *Lastrea filix-mas* var. *schimperiana* Bedd. Handb. Ferns Brit. India Suppl. 58, 1892. Honshu, 2850 m, Aug. 1965, *Sen Gupta* 1784.

- Dryopteris cochleata** (D. Don) C. Christ. Ind. Fil. 258, 1905. *Nephrodium cochleatum* D. Don Prodr. Fl. Nepal 6, 1825. *Lastrea filix-mas* var. *cochleata* Bedd. Handb. Ferns Brit. India 250, fig. 130, 1883. Tama, 1450 m, Nov. 1964, *Deb* 295.
- Egenolfia appendiculata** (Willd.) J. Sm. Ferns Brit. For. 3 : 111, 1866. *Acrostichum appendiculatum* Willd. Sp. Pl. (ed. 4) 5: 114, 1810. *Polybotrya appendiculata* J. Sm. Jour. Bot. 4 : 150, 1841 ; Bedd. Handb. Ferns Brit. India with Suppl. 424, 1892. Betni, 1200-1500 m, Dec. 1963, *Sen Gupta* 1068.
- Elaphoglossum petiolatum** (Sw.) Urban. Symb. Ant. 4 : 61, 1903. *Acrostichum petiolatum* Sw. Prodr. 128, 1788. *Elaphoglossum viscosum* Bedd. Handb. Ferns Brit. India 204, t. 250, 1883. Monger-Tashigong Track, Nov. 1965, *Balakrishnan* 44676.
- Heterogonium pinnatum** (Copel.) Holtt. Sarawak Mus. Jour. 5 : 163, 1949. *Stenosemia pinnata* Copel. Phil. Jour. Sci. 1, Suppl. 11 : 146, 1906. *Dictyopteris chattagramica* (Clarke) Bedd. Handb. Ferns Brit. India 299, 1883 (*pro parte*). *Pleocnemia membranifolia* Bedd. Handb. Ferns Brit. India Suppl. 48, 1892 (*pro parte*). Samdrup Jhonkar Forest, Oct. 1965, *Balakrishnan* 43845.
- Polystichum auriculatum** (Linn.) Presl. Tent. Pter. 83, 1836 ; Bedd. Handb. Ferns Brit. India with Suppl. 203, 1892. *Polypodium auriculatum* Linn. Sp. Pl. 2 : 1088, 1753. Dorokha, 1000 m, Nov. 1964, *Mukerjee* 6117 ; Kamji, Dec. 1963, *Subba Rao* 204, 238 ; on way to Tashigong from Kharsang, March 1965, *Balakrishnan* 41831 : 10 km above Deothong, March 1965, *Balakrishnan* 41128.
- P. setiferum** (Forssk.) Mocre ex Woyнар, Mitt. Naturw. ver. Steiermark 49:181, 1913. *Polypodium setiferum* Forssk. Fl. Aegypt-Arab. 185, 1775. *Polystichum aculeatum* auct. plur. (non *Polypodium aculeatum* Linn.) Bedd. Handb. Ferns Brit. India with Suppl. 207, 1892. Betni, 1500-1600 m, Dec. 1963, *Sen Gupta* 1038.
- P. stimulans** Presl, Tent. Pterid. 83, 1836 ; *P. ilicifolium* sensu Bedd. Handb. Ferns Brit. India 206, t. 103, 1883 (non Don). Yespong, 2000-2500 m, Sept. 1964, *Hajra* 465.

Polystichum lentum (Don) Moore Ind. Fil. 86, 1858. *Aspidium lentum* Don Prodr. Fl. Nepal 4, 1825. *Polystichum auriculatum* var. *lentum* Bedd. Handb. Ferns Brit. India 204, 1883.
Betni, 1500-1650 m, Dec. 1963, *Sen Gupta* 1044.

Tectaria macrodonta (Fée) C. Christ. Ind. Fil. Suppl. 3: 181, 1934. *Sagenia macrodonta* Fée. Gen. Fil. 313, t. 24, 1852. *Aspidium cicutarium* sensu Bedd. Handb. Ferns Brit. India 220, 1883 (non Sw.).
Chourni Hill, Dec. 1963, *Thothathri* 10377.

T. polymorpha (Wall. ex Hook.) Copel. in Phil. Jour. Sc. 2C, 413, 1907. *Aspidium polymorphum* Wall. ex Hook. Sp. Fil. 4: 54, 1862; Bedd. Handb. Ferns Brit. India with Suppl. 218, 1892.
Betni (near Kholā), 1500-1650 m, Dec. 1963, *Sen Gupta* 1033.

ATHYRIACEAE

Athyrium atkinsonii Bedd. Ferns Brit. India Suppl. 11, t. 359, 1876; Handb. Ferns Brit. India 163, 1883 et Suppl. 32, 1892.
Between Shali and Nyoth, 1900 m, March 1965, *Balakrishnan* 41321.

A. drepanopterum (Kunze) A. Br. in Milde, Fil. Eur. 49, 1867. *Polypodium drepanopterum* Kunze in Linnaea 23: 278, 318, 1850. *Athyrium oxyphyllum* Moore, Ind. Fil. 49, 1857; Bedd. Handb. Ferns Brit. India with Suppl. 170, 1892.
Sham Khara, 1650-1850 m, Dec. 1963, *Sen Gupta* 1102; on way to Tashigong from Kharsang, March 1965, *Balakrishnan* 41825; Nangadozong, March 1965, *Balakrishnan* 41839.

A. fimbriatum Moore Ind. Fil. 185, 1860; Bedd. Handb. Ferns Brit. India 172, 1883 (*pro parte* excl. t. 83) et Suppl. 37, 1892.
Dham Dhum, 800 m, Nov. 1964, *Mukerjee* 6165; Tashigong, Oct. 1965, *Balakrishnan* 43907.

A. nigripes (Bl.) Moore, Ind. Fil. Jav. 49, 98, 1858; *Aspidium nigripes* Bl. Enum. Fil. Jav. 2: 162, 1828. *Athyrium solenopteris* Bedd. Handb. Ferns Brit. India 166, 1883 (*pro parte*).
Between Wamrung to Gomchu, 2550 m, Sept. 1965, *A. S. Rao* 4337.

A. filix-foemina (Linn.) Roth Rom. Mag. 2: 106, 1799; Bedd. Handb. Ferns Brit. India with Suppl. 168, 1892. *Polypodium filix-foemina* Linn. Sp. Pl. 2: 1090, 1753. *Asplenium filix-foemina* (Linn.) Hope in Jour. Bomb. nat. Hist. Soc. 4: 124, 1903.
Phuntsholing, Sept. 1964, *Hajra* 2537.

Cystopteris tenuisecta (Bl.) Mett. in Ann. Lugd. Bat. 1: 241, 1864. *Aspidium tenuisectum* Bl. Enum. Pl. Jav. 170, 1828. *Cystopteris setosa* Bedd. Ferns Brit. India t. 312, 1869, Handb. Ferns Brit. India with Suppl. 70, t. 35, 1892.
Phuntsholing, Sept. 1964, *Hajra* 316.

Diplazium esculentum (Retz.) Sw. Schrad Jour. Bot. 1801 : 312, 1803. *Heminoitis esculenta* Retz. Obs. 6 : 38, 1791. *Anisogonium esculentum* Presl. Tent. Pterid. 116, 1836 ; Bedd. Handb. Ferns Brit. India with Suppl. 192, t. 94, 1892.
Chourini Hill, 500 m, Dec. 1963, *Thothathri* 10370 ; Sureylakha, 1200-1500 m, Dec. 1963, *Sen Gupta* 98 ; Tashigong, Oct. 1965, *Balakrishnan* 43971.

D. latifolium (Don) Moore Ind. Fil. 141, 1859 ; Bedd. Handb. Ferns Brit. India with Suppl. 187, 1892 (*pro parte*). *Asplenium latifolium* Don, Prodr. 8, 1825.
Dorokha, Dec. 1963, *Thothathri* 10530 ; Kamji, *Subba Rao* 348 ; Rani Camp, Nov. 1964, *Deb* 98.

Dryoathyrium boryanum (Willd.) Ching in Bull. Fan Mem. Inst. Biol. 9 : 81, 1941. *Aspidium boryanum* Willd. Sp. Pl. (ed. 4) 285, 1810 ; *Phegopteris kingii* Bedd. Handb. Ferns Brit. India with Suppl. 84, 1892. *Athyrium boryanum* (Willd.) Tagawa in Acta Phytotax. et Geobot. 4 : 144, 1934.
Tashigong Dzong, March 1965, *Balakrishnan* 41213.

THELYPTERIDACEAE

Cyclosorus subpubescens (Bl.) Ching, Fan Mem. Inst. Biol. 8 : 211, 1938. *Aspidium subpubescens* Bl. Enum. Pl. Jav. 149, 1828. *Nephrodium molle* var. *major* Bedd. Handb. Ferns Brit. India Suppl. 76, 1892 (*pro parte*).
Samdrup Jhonkar Forest, Oct. 1965, *Balakrishnan* 43803.

C. aridus (Don) Tagawa in Acta Phytotax. Geobot. 7 : 78, May 1938 ; Ching in Fan. Mem. Inst. Biol. 8 : 194, September 1938. *Aspidium aridum* Don Prodr. Fl. Nepal 4 : 1825. *Nephrodium aridum* (Don) Hook et Bak. Syn. Fil. 291, 1874 ; Bedd. Handb. Ferns Brit. India 272, 1883.
Phuntsholing, Dec. 1963, *Subba Rao* 95.

Thelypteris aurita (Hook.) Ching in Bull. fan. Mem. Inst. Biol. 6 : 266, 1936. *Gymnogramma aurita* (Hook.) Ic. Pl. t. 974, 988, 1854. *Lepto-*

gramme aurita (Hook.) Bedd. Handb. Ferns Brit. India 377, t. 216, 1883.

Nyoth-Tashyangtzi track, Oct. 1965, *Balakrishnan* 44218, Nov. 1964, *Deb* 72.

Thelypteris multilineata (Wall. ex Hook.) Morton in Amer. Fern Jour. 49: 113, 1959. Iwatsuki in Hara Fl. East. Himal. 485, 1966. *Polypodium multilineatum* Wall. ex Hook. Sp. Fil. 5: 11, 1863 (non *Aspidium multilineatum* Wall. ex Mett. 1858). *Nephrodium moulmeinsis* Bedd. Handb. Ferns Brit. India 275, 1883 & Suppl. 73, 1892. *Abacopteris multilineata* (Wall. ex Hook.) Ching in fan Mem. Inst. Biol. 8: 253, 1938.
Phuntsholing, Sept. 1964, *Hajra* 343.

T. multilineata (Wall. ex Hook.) Morton var. ***bhutanica*** N. C. Nair in Bull. bot. Surv. India 11: 193, 1969.

This differs from the typical *multilineata* in (1) midrib, costa and veins glabrous on the lower surface (2) rachis and midrib of lamina hispid on the upper surface.

Hatipali, Nov. 1964, *Deb* 179.

ASPLENIACEAE

Asplenium nitidum Sw. Syn. Fil. 84, 280, 1806; Bedd. Handb. Ferns Brit. India 157, 1883.

Rani Camp, Nov. 1964, *Deb* 201; Hatipali, Nov. 1964, *Deb* 152.

A. griffithianum Hook. Ic. Pl. 87, t. 928, 1854; Bedd. Handb. Ferns Brit. India 142, 1883.

Dorokha, 1000 m, Nov. 1964, *Mukerjee* 6120.

A. paucivenosum (Ching) Bir in Bull. bot. Surv. India 4:3, 1962. *Ceterach paucivenosa* Ching in Bull. fan Mem. Inst. Biol. 2:210, t. 28, 1931. *Ceterachopsis paucivenosa* (Ching) Ching in Bull. Fan Mem. Inst. Biol. 10: 9, 1940.

On way to Laurijumpa from Tobrang, March 1965, *Balakrishnan* 41447.

This is often mistaken for *Asplenium dalhousianum* Hook. from which it can be distinguished by the wavy midrib and large sori with prominently thick indusia.

A. bullatum Wall. ex Mett. Aspl. 51, 1859. *A. bulbiferum* auct (non Forst.); Bedd. Handb. Ferns Brit. India 159, 1883.

On way to Gongga, 10 km from Yangtzi, March 1965, *Balakrishnan* s.n.

Asplenium indicum Sledge in Bull. Brit. Mus. Bot. 3 : 264, 1965. *A. planicaule* Wall. ex Mett. Aspl. 51 : 1859 (non Lowe 1858). *A. laciniatum* sensu Bedd. Handb. Ferns Brit. India 154, 1883 (non Don.).

This is often treated as a synonym of *A. laciniatum* Don. But it is different from the latter in having 1) sori elongated extending more or less up to the margin 2) membranous indusium 3) coarser texture of pinnule 4) pointed tips for lobes of pinnule and 5) scales uniformly thickened (Cf. Bir, 1962. Bull. bot. Surv. India 4 : 1).

Kamji, Dec. 1963, *Subba Rao* 169 ; Narfong, March 1965, *Balakrishnan* 41914.

A. laciniatum Don Prodr. Fl. Nepal 8, 1825 ; Bedd. Ferns South India t. 145, 1863 & Handb. Ferns Brit. India with Suppl. 154, 1892.

6 km N. E. Munger towards Tashigong, Nov. 1965, *Balakrishnan* 44665.

A. nidus Linn. Sp. Pl. 2 : 1079, 1753. *Thamnopteris nidus* (Linn.) Presl Epim. Bot. 68, 1849 ; Bedd. Handb. Ferns Brit. India 137, 1883.

Sureylakha, 1350-1400 m, Dec. 1963, *Sen Gupta* 982 ; Hatipali, Nov. 1964, *Deb* 143, 143a ; 1 km to Nangadzong, March 1965, *Balakrishnan* 41834 ; 1 km away towards Tashigong, March 1965, *Balakrishnan* 41801.

A. nidus var. **muscifolia** (J. Sm.) Bedd. Handb. Ferns Brit. India 139, 1883 ; Holttum Fl. Malay. II Ferns 419, 1954.

Changla Chungli Hill, 1300 m, Dec. 1963, *Thothathri* 10665.

A. tenuifolium Don Prodr. Fl. Nepal 8, 1825 ; Bedd. Handb. Ferns Brit. India with Suppl. 159, t. 78, 1892.

Tashiyangtsi to Tobrang, March 1965, *Balakrishnan* 41412.

A. unilaterale Lam. var. **unilaterale** Lamk. Encycl. 2 : 305, 1786 ; Bedd. Handb. Ferns Brit. India 152, 1883.

Tashiyangtsi to Tobrang, March 1965, *Balakrishnan* 41414.

A. ensiforme Wall. ex Hook. & Grev. Ic. Fil. t. 71, 1829 ; Bedd. Ferns South India t. 125, 1863 ; Handb. Ferns Brit. India with Suppl. 241, t. 71, 1892.

2 km away from Jobrang towards Laurijumpa, March 1965, *Balakrishnan* 41429 ; Beha on way to Lisipang, Oct. 1965, *Balakrishnan* 44372.

A. varians Wall. ex Hook. et Grev. Ic. Fil. t. 172, 1830 ; Bedd. Ferns South India t. 129, 1863.

Nangadzong, March 1965, *Balakrishnan* 41855; 5 km away from Lhunsi towards Bomthong, Nov. 1965, *Balakrishnan* 44561.

Asplenium cheilosorum Kunze ex Mett. *Aspid.* 133, t. 5, f. 12-13, 1859; Wu et al. *Polypod.* Yaoshan, 178, t. 80, 1932. *Asplenium heterocarpum* Wall. ex Clarke in *Trans. Linn. Soc. Lond.* 2, Bot. 1 : 481, 1880; *Bedd. Handb. Ferns Brit. India* 153, t. 77, 1883. Kamji, Dec. 1963, *Subba Rao* 198, 347.

A. finlaysonianum Wall. ex Hook. *lc. Pl.* t. 937, 1854. *Hemidictyum finlaysonianum* Moore *Ind. Fil.* 50, 1857; *Bedd. Handb. Ferns Brit. India* 195, t. 96, 1883. Dhoankhola (Samchi), Dec. 1963, *Thothathri* 10418.

BLECHNACEAE

Blechnum melanopus Hook. *Sp. Fil.* 3 : 64, t. 161, 1860; *Bedd. Ferns Brit. India with Suppl.* 133, 1892. Tobrang, March 1965, *Balakrishnan* 41431.

Woodwardia radicans (Linn.) Sm. in *Mem. Ac. Turin.* 5 : 412, 1793; *Bedd. Handb. Ferns Brit. India* 135, t. 68, 1892. *Blechnum radicans* Linn. *Mant.* 307, 1771. Tashigong to Yangtsi, March 1965, *Balakrishnan* 41354.

POLYPODIACEAE

Arthromeris himalayensis (Hook.) Ching in *Contrib. Inst. Bot. nat. Acad. Peiping* 2 : 99, 1933. *Polypodium himalayensis* Hook. *Sp. Fil.* 5 : 91, 1863. *Pleopeltis himalayensis* (Hook.) *Bedd. Handb. Ferns Brit. India* 370, t. 212, 1883. North of Wamrung, 2500 m, Oct. 1965, *Balakrishnan* 41148B; Lisipang, Oct. 1965, *Balakrishnan* 44412.

A. lehmannii (Mett.) Ching in *Contrib. Inst. Bot. nat. Acad. Peiping* 2 : 96, 1933. *Polypodium lehmannii* Mett. *Pol.* 117, 229, t. 3, fig. 35, 1857. *Pleopeltis lehmannii* (Mett.) *Bedd. Ferns Brit. India* t. 260, 1868 & *Handb. Ferns Brit. India with Suppl.* 370, t. 211, 1892. North of Wamrung, 2500 m, March 1965, *Balakrishnan* 4148A.

A. wallichiana (Spreng.) Ching in *Contrib. Inst. Bot. nat. Acad. Peiping* 2 : 92, 1933. *Polypodium wallichianum* Spreng. *Syst.* 4 : 53, 1827. *Pleopeltis juglandifolia* (Don) Moore *Ind. Fil.* 78, 1857; *Bedd. Handb. Ferns Brit. India with Suppl.* 368, 1892. Tashiyangtsi Forest, Oct. 1965, *Balakrishnan* 44306.

- Arthromeris wardii** (Clarke) Ching in Contrib. Inst. Bot. nat. Acad. Peiping 2 : 92, 1933. *Polypodium wardii* Clarke in Jour. Linn. Soc. 25:99, t. 43, 1865. *Pleopeltis wardii* (Clarke) Bedd. Handb. Ferns Brit. India Suppl. 98, 1892.
Tobrang, March 1965, *Balakrishnan* 41411; Bepa, Oct. 1965, *Balakrishnan* 44357.
- Belvisia spicata** (Linn. f.) Mirbel Hist. nat. des Plantes 4: 65, 1803. *Acrostichum spicatum* Linn. f. Suppl. 444, 1781. *Gymnopteris spicata* (Linn. f.) Presl Tent. Pterid. 244, t. 11, f. 7, 1836; Bedd. Handb. Ferns Brit. India 432, 1883 (*pro parte*).
Kamji, Dec. 1963, *Subba Rao* 240; Sureylakha, 1400-1700 m, Dec. 1963, *Sen Gupta* 964.
- Colysis elliptica** (Thbg.) Ching var. **pothifolia** (Don) Ching in Bull. Fan Mem. Inst. Biol. 4: 334, 1933. *Hemionitis pothifolia* Don Prodr. Fl. Nepal 13, 1825. *Selliguea elliptica* sensu Bedd. Handb. Ferns Brit. India 392, 1883 (*pro parte*).
Gonga, March 1965, *Balakrishnan* 41485; Kamji, Dec. 1963, *Subba Rao* 199.
- C. hemionitidea** (Presl) Presl, Epim. Bot. 147, 1849. *Selliguea hemionitidea* Presl Tent. Pterid. 216, t. 9, f. 17, 1836.
Kamji, Dec. 1963, *Subba Rao* 196.
- Crypsinus griffithianus** (Hook.) Copel. Gen. Fil. 206, 1947. *Polypodium griffithianum* Hook. Ic. Pl. t. 951, 1854 & Spec. Fil. 5: 62, 1863. *Pleopeltis griffithianus* (Hook.) Moore Ind. Fil. 78, 1857; Bedd. Handb. Ferns Brit. India with Suppl. 354, t. 199, 1892.
Tashigong, 2800 m, March & Oct. 1965, *Balakrishnan* 41159 & 43912.
- C. ebenipes** (Hook.) Copel. Gen. Fil. 206, 1947. *Polypodium ebenipes* Hook. Sp. Fil. 5: 88, 1863, *Pleopeltis ebenipes* (Hook.) Bedd. Ferns Brit. India t. 138, 1866; Handb. Ferns Brit. India with Suppl. 363, 1892.
Dochu La, 3100 m, Aug. 1963, *Sen Gupta* 1729; Sept. 1964, *Hajra* 412.
- Dipteris wallichii** (R. Br.) Moore Ind. Fil. 80, 1857; Bedd. Ferns Brit. India t. 80, 1866; Handb. Ferns Brit. India with Suppl. 334, 1892. *Polypodium wallichii* R. Br. in Hook. et Grev. Ic. Fil. tt. 168, 169, 1827.
Rani Camp to Trama, 1350-1650 m, Nov. 1964, *Deb* 242.

- Drymoglossum piloselloides** (Linn.) Presl, Tent. Pterid. 277, 1836. *Pteris piloselloides* Linn. Sp. Pl. ed. 2, 1530, 1763.
Gaylegphug, 270 m, Nov. 1964, *Deb* 177.
- Drynaria propinqua** J. Sm. in Jour. Bot. 4: 61, 1841; Handb. Ferns Brit. India with Suppl. 339, t. 189, 1883.
Sham Khara, 1500 m, Nov. 1964, *Deb* 13; Chaisilakha, Dec. 1963, *Subba Rao* 334, 334a; Nyoth, Nov. 1965, *Balakrishnan* 44150.
- D. mollis** Bedd. Ferns Brit. India t. 216, 1866; Handb. Ferns Brit. India with Suppl. 341, 1892.
Dochu La, 3250 m, Sept. 1964, *Hajra* 411, 411a, 2413.
- Lemmaphyllum carnosum** (J. Sm.) Presl, Epimat. Bot. 158, 1849. *Drymoglossum carnosum* J. Sm. in Hook. Gen. Fil. t. 78 A, 1841; Bedd. Handb. Ferns Brit. India with Suppl. 411, t. 243, 1892.
Hatipate, Nov. 1964, *Deb* 177, 177a; Kamji, Dec. 1963, *Subba Rao* 217.
- L. subrostratum** (C. Chr.) Ching in Bull. Fan Mem. Inst. Biol. 4: 97, 1933. *Polypodium subrostratum* C. Chr. Ind. Fil. 567, 1906. *Pleopeltis rostrata* sensu Bedd. Ferns. Brit. India t. 159, 1867 & Handb. Ferns Brit. India 345, 1883.
Chaisilakha, Dec. 1963, *Subba Rao* 292; Rani Camp, Nov. 1965, *Deb* 76.
- Loxogramme avenia** (Blume) Presl, Tent. Pterid. 215, 1836 (non sensu Bedd.). *Grammitis avenia* Blume Enum Pl. Jav. 117, 1828.
Samdrup Jhonkar, March 1965, *Balakrishnan* 41945.
- L. involuta** (Don) Presl, Tent. Pterid. 215, 1836; Bedd. Handb. Ferns Brit. India with Suppl. 393, t. 228, 1883. *Grammitis involuta* Don Prodr. Fl. Nepal 14, 1825.
Dorokha, 1000 m, Nov. 1964, *Mukerjee* 6120, Dec. 1963, *Thothathri* 10506; Phuntsholing, Dec. 1963, *Subba Rao* 144; Tashiyangtsi Forest, March 1965, *Balakrishnan* 41373.
- Microsorium cuspidatum** (Don) Tagawa in Hara Fl. East Himal. 495, 1966. *Polypodium cuspidatum* Don Prodr. Fl. Nepal 2, 1825. *Pleopeltis leiorrhiza* Moore Index Fil. 346, 1862; Bedd. Handb. Ferns Brit. India with Suppl. 372, 1892.
Betni, 1200-1500 m, Dec. 1963, *Sen Gupta* 1060; Dorokha, Dec. 1963, *Thothathri* 10515; Sangure, Nov. 1964, *Mukerjee* 6073; Tashigong, March 1965, *Balakrishnan* 41249; Munger, Nov. 1965, *Balakrishnan* 44564.

- Microsorium membranaceum** (D. Don) Ching in Bull. Fan Mem. Inst. Biol. 4: 309, 1933. *Polypodium membranaceum* Don Prodr. Fl. Nepal 2, 1825. *Pleopeltis membranacea* Bedd. Handb. Ferns Brit. India 355, 1883. Narfong, Aug. 1965, A. S. Rao 4326; Lhunsi, Oct. 1965, Balakrishnan 44536.
- M. superficiale** (Blume) Ching in Bull. Fan Mem. Inst. Biol. 4: 299, 1933. Tashigong to Yangtzi, March 1965, Balakrishnan 41363.
- M. zipellii** (Blume) Ching in Bull. Fan Mem. Inst. Biol. 4: 308, 1933. *Polypodium zipellii* Blume Fl. Jav. 172, t. 80, 1829. *Pleopeltis zipellii* Moore Ind. Fil. 348, 1862; Bedd. Handb. Ferns Brit. India with Suppl. 357, 1892. Kharchang, March 1965, Balakrishnan 41802.
- M. punctatum** (Linn.) Copel. in Univ. Calif. Publ. Bot. 16: 111, 1929. *Acrostichum punctatum* Linn. Sp. Pl. (ed. 2), 1524, 1763. *Pleopeltis punctata* (Linn.) Bedd. Suppl. Ferns. South India and Brit. India 22, 1786; Handb. Ferns Brit. India with Suppl. 357, 1892. Dochu La, Sept. 1964, Hajra s.n.; Phuntsholing, Sept. 1964, Hajra s.n.
- Neocheiropteris phyllomanes** (Christ) Ching in Bull. Fan Mem. Inst. Biol. 4: 110, 1933. *Polypodium phyllomanes* Christ in Bull. Acad. Geogr. Bot. Mans. 210, 1902. *Polypodium ovatum* Wall. ex Hook. et Grev. Ic. Fil. t. 41, 1827 (non Burm.). *Pleopeltis ovata* (Wall. ex Hook. et Grev.) Moore Ind. Fil. 78, 1857; Bedd. Handb. Ferns Brit. India with Suppl. 354, t. 200, 1892. Nyoth, March & Oct. 1965, Balakrishnan 41335, 44188.
- N. normalis** (D. Don) Tagawa in Jour. Jap. Bot. 27: 217, 1952. *Polypodium normale* D. Don Prodr. Fl. Nepal 1, 1825. *Pleopeltis normalis* Moore Ind. Fil. 347, 1862; Bedd. Handb. Ferns Brit. India 353, 1883. Narfong to Wamrung, March 1965, Balakrishnan 41905; Tashigong, Oct. 1965, Balakrishnan 43911.
- Paraleptochilus decurrens** (Blume) Copel. Gen. Fil. 198, 1947. *Leptochilus decurrens* Blume Enum. Pl. Jav. 2: 206, 1828. *Gymnopteris variabilis* (Hook.) Bedd. Ferns Brit. India t. 272, 1868 et Handb. Ferns Brit. India with Suppl. 429, 1892. Samdrup Jhonkar Forest, Nov. 1965, Balakrishnan 43830.
- Pleopeltis excavatus** (Bory ex Willd.) Sledge in Bull. Brit. Mus. nat. Hist. 2 (5): 138, 1960. *Polypodium excavatum* Bory ex Willd. Sp. Pl. 5: 158, 1810. *Pleopeltis simplex* Bedd. Handb. Ferns, Brit. India 347, 1883.

Dochu La, Aug. 1965, *Sen Gupta* 1736 ; Nov. 1964, *Hajra* 410 ; Betni, 1200-1500 m, Dec. 1963, *Sen Gupta* 1071 ; Kamji, Dec. 1963, *Subba Rao* 224 .

Pleopeltis loriformis (Wall. ex Mett.) Moore, Ind. Fil. 346, 1862, *Polypodium loriforme* Wall. ex Mett. *Uber Farngatt.* 1:92, 1857. *Pleopeltis linearis* sensu Bedd. *Handb. Ferns Brit. India* 346, 1883 (*pro parte*). Shemgang, 1950 m, Nov. 1964, *Deb* 408.

P. loriformis (Wall. ex Mett.) Moore var. **steniste** (Clarke) Panigr. & Patn. in *Proc. nat. Acad. Sci. India B* 34 : 481, 1964. *Polypodium lineare* var. *steniste* Clarke in *Trans. Linn. Soc. 2 Bot.* 1 : 559, 1880. *Pleopeltis linearis* var. *steniste* Bedd. *Handb. Ferns Brit. India* 347, 1883.

Lisipong, Oct. 1965, *Balakrishnan* 44409.

P. macrosphaera (Bak.) Panigr. et Patn. in *Proc. nat. Acad. Sci. India B* 34 : 481, 1964. *Polypodium macrosphaerum* Bak. in *Kew Bull.* 55, 1895.

Tashiyangtsi, March 1965, *Balakrishnan* 42379.

P. macrosphaera (Bak.) Panigr. et Patn. var. **asterolepis** (Bak.) Panigr. et Patn. in *Proc. nat. Acad. Sci. India* 34 : 482, 1964. *Polypodium asterolepis* Bak. in *Jour. Bot.* 230, 1888. *Lepisorus macrosphaerus* (Bak.) Ching var. *asterolepis* (Bak.) Ching *Bull. Fan Mem. Inst. Biol.* 4 : 74, 1933.

Gonga, March 1965, *Balakrishnan* 414, 489 ; Monger, Nov. 1965, *Balakrishnan* 44588.

P. pseudonuda (Ching) Panigr. et Patn. *Curr. Sci.* 34 : 127, 1965. *Lepisorus pseudonudus* Ching *Bull. Fan Mem. Inst. Biol.* 4 : 83, 1933.

Gomchu, March 1965, *Balakrishnan* 41163.

P. amarolepia Sledge in *Bull. Brit. Mus.* 2 : 136, 1960.

Sham Khara, Nov. 1964, *Deb* 29 ; Kamji, Dec. 1963, *Subba Rao* 224.

P. bicolor (Takeda) Sledge in *Bull. Brit. Mus.* 2 : 138, 1960.

Narfong, March 1965, *Balakrishnan* 41915.

P. nuda Hook. *Exot. Fil.* 1 : t. 63 fig. 1, 1823. *Pleopeltis linearis* sensu Bedd. *Handb. Ferns Brit. India* 346, 1883 (*pro parte*).

Chaisilakha, Dec. 1963, *Subba Rao* 281a, b ; Geylegphug, 270 m, Nov. 1964, *Sen Gupta* 904 ; Sham Khara, 1500 m, *Deb* 29.

- Polypodium amoenum** (J. Sm.) Mett. *Uber Farngatt.* 1: 80, 1857. *Goniophlebium amoenum* J. Sm. in Hook. *Gen. Fil.* t. 51, 1840; *Bedd. Handb. Ferns Brit. India with Suppl.* 317, 1892. Kamji, Dec. 1963, *Subba Rao* 203.
- P. argutum** (J. Sm.) Hook. *Sp. Fil.* 5: 32, 1863. *Goniophlebium argutum* J. Sm. in Hook. *Gen. ad. t.* 51, 1840; *Bedd. Ferns Brit. India t.* 6, 1865; *Handb. Ferns Brit. India with Suppl.* 323, 1892. Dorcha, *Mukerjee* s.n.; Dochu La. 3100 m, Aug. 1965, *Sen Gupta* 1689.
- Pyrrhosia stenophylla** (Bedd.) Ching in *Bull. Chinese Bot. Soc.* 1: 55, 1935. *Niphobolus fissus* var. *stenophylla* *Bedd. Handb. Ferns Brit. India Suppl.* 92, 1892. Tashiyangtsi to Tobrang, March 1965, *Balakrishnan* 41392; Shali, March 1965, *Balakrishnan* 41297; Nyoth, Oct. 1965, *Balakrishnan* 44141; Lhuntsi, Oct. 1965, *Balakrishnan* 44526.
- P. boothii** (Hook.) Ching in *Bull. Chinese Bot. Soc.* 1: 62, 1935. *Polypodium boothii* Hook. *Sp. Fil.* 5: 53, 1863. *Niphobolus boothii* (Hook.) *Bedd. Ferns Brit. India t.* 258, 1868. Tashigong to Yangtsi, March 1965, *Balakrishnan* 41319.
- P. adnascens** (Forst.) Ching in *Bull. Chinese Bot. Soc.* 1: 45, 1935. *Polypodium adnascens* Forst. *Prodr.* 81, 1786. *Niphobolus adnascens* (Forst.) *Bedd. Handb. Ferns Brit. India* 325, 1883 (*pro parte*, non Kaulf 1824). Kuruchu, Oct. 1965, *Balakrishnan* 44510; Lhuntsi-Monger tract, Oct. 1965, *Balakrishnan* 44606.
- P. flocculosa** (Don) Ching in *Bull. Chinese Bot. Soc.* 1: 66, 1935. *Polypodium flocculosum* Don *Prodr. Fl. Nepal* 1, 1825. *Niphobolus flocculosus* (Don) *Bedd. Ferns Brit. India t.* 162, 1866; *Bedd. Handb. Ferns Brit. India with Suppl.* 331, 1892. Phuntsholing, Dec. 1963, *Subba Rao* 73; between Deothong to Narfong, Aug. 1965, *A. S. Rao* 43174; Tashigong to Yangtsi, March 1965, *Balakrishnan* 41330.
- P. heteracta** (Mett. ex Kuhn) Ching in *Bull. Chinese Bot. Soc.* 1: 57, 1935. *Polypodium heteractis* Mett. ex Kuhn in *Linnaea* 36: 140, 1869. *Niphobolus heteractis* (Mett. ex Kuhn) J. Sm. *Ferns Brit. For.* (ed. 2) 296, 1877; *Bedd. Handb. Ferns Brit. India with Suppl.* 327, 1892. Sureylakha, 1400-1700 m, Dec. 1963, *Sen Gupta* 951; Kamji, Dec.

1963, *Subba Rao* 214 ; Deothong to Narfong, 1200 m, Aug. 1965, *A. S. Rao* 43175 ; Tashiyangtsi Forest, March 1965, *Balakrishnan* 41366.

Pyrrrosia mannii (Gies) Ching in Bull. Chinese Bot. Soc. 1 : 55, 1935. *Niphobolus mannii* Gies Farngett. *Niphobolus* 107, 1901. *Niphobolus fissus* auct. Pl. (*pro parte non* Blume).

Deothong, March 1965, *Balakrishnan* 41944 ; Chenari Village, Aug. 1965, *A. S. Rao* 43146.

P. numularifolia (Sw.) Ching in Bull. Chinese Bot. Soc. 1 : 47, 1935. *Acrostichum numularifolium* Sw. Syn. Fil. 191, 419, t. 2, fig. 1, 1806. *Niphobolus numularifolius* J. Sm. in Jour. Bot. 3 : 396, 1841 ; Bedd. Handb. Ferns Brit. India with Suppl. 334, 1892.

Dorokha, Dec. 1963, *Thothathri* 10486 ; Donger Village towards Monger, Oct. 1965, *Balakrishnan* 44600.

P. mollis (Kunze) Ching in Bull. Chinese Bot. Soc. 1 : 53, 1935. *Niphobolus mollis* Kunze Bot. Zeit. 121, 1848. *Niphobolus fissus* Bedd. Ferns Brit. India Correction 2, 1870 & Handb. Ferns Brit. India with Suppl. 330, t. 179, 1892 (*pro parte, non* Blume).

Lapchetar Hill (Samchi), Dec. 1963, *Thothathri* 10386 ; Phuntsholing, Sept. 1964, *Hajra* 314 ; Chaisilakha, Dec. 1963, *Subba Rao* 280 a, b ; Shali, March 1965, *Balakrishnan* 41298.

P. stigmosa (Sw.) Ching in Bull. Chinese Bot. Soc. 1 : 67, 1935. *Polypodium stigmatosum* Sw. Schrad. Jour. 1800 : 21, 1801. *Niphobolus stigmatosus* (Sw.) Bedd. Handb. Ferns Brit. India 329, t. 178, 1883 (*pro parte*).

Gaylegphug, 300 m, Dec. 1963, *Sen Gupta* 874 ; Phuntsholing, Dec. 1963, *Subba Rao* 122.

P. lanceolata (Linn.) Farwell in Amer. Midl. Natur. 12 : 245, 1931. *Achrostichum lanceolatum* Linn. Spec. Pl. 1067, 1753. *Niphobolus adnascens* Bedd. Handb. Ferns Brit. India 325, t. 176, 1883 (*pro parte, non* Kaulf.).

Gaylegphug, 300 m, Dec. 1963, *Sen Gupta* 873 ; Phuntsholing, Dec. 1963, *Subba Rao* 74 ; Samchi, Dec. 1963, *Thothathri* 10406.

DICOTYLEDONS

RANUNCULACEAE

S. K. MUKERJEE

- Aconitum atrox** (Bruhl) Mukerjee in Bull. Bot. Surv. Ind. 3 : 101, 1961.
A. balfourii Holmes ex Stapf in Ann. R. bot. Gdn. Cal. 10: 160, 1905.
 Erect herbs with tuberous roots on open ground. Scarce.
 Punakha. 1500 m, Aug. 1965, *Sen Gupta* 1562.
- A. palmatum** D. Don Prodr. Fl. Nepal 196, 1825 ; Fl. Brit. Ind. 1 : 281, 1882.
 Erect herbs on open ground. Scarce.
 Chai la Pass, 3700 m, Aug. 1963, *Sen Gupta* 730.
- A. spicatum** (Bruhl) Stapf in Ann. R. bot. Gdn. Cal. 10: 165, 1905.
 Erect herbs on open ground. Scarce.
 Chai la Pass, 3700 m, Aug. 1963, *Sen Gupta* 730.
- Anemone vitifolia** Buch.-Ham. ex DC. Syst. 1: 211, 1818 ; Fl. Brit. Ind. 1: 8, 1872.
 A herb with orbicular, cordate, radical leaves. Common on open slopes.
 Road to Tashigong, *Balakrishnan* 43886 ; Wamrung to Gomchu, 2500 m, *A. S. Rao* 43387 ; North of Narfong, *A. S. Rao* 43295.
- Cimicifuga foetida** Linn. Syst. ed. 12. 659, 1766 ; Fl. Brit. Ind. 1: 30, 1872.
 Shrubby plant with tender branches ; leaves close, ternately compound. Occasional on open slopes.
 Ha Valley, 3000 m, Aug. 1963, *Sen Gupta* 663.
- Clematis acuminata** DC. Syst. 1: 148, 1818 ; Fl. Brit. Ind. 1: 5, 1872.
 An extensive climber. Frequent on hill slopes.
 Changda chungli, on way to Dorokha, 1200 m, *Thothathri* 10561 ;
 Tobrang to Laurijumpa, *Balakrishnan* 41444.
- C. acutangula** Hook. f. & Thoms. Fl. Ind. 5, 1855 ; Fl. Brit. Ind. 1 : 3, 1872.
 Climbers in thickets on open slopes. Occasional.
 Paro, 2000-2500 m, Oct. 1963, *Mukerjee* 5822 ; Shali, Oct. 1965, *Balakrishnan* 44087 ; *Ibid.*, Oct. 1965, *Balakrishnan* 44106 ; from Trichu to Gomchu, Sept. 1965, *A. S. Rao* 43431.

- Clematis buchananiana** DC. Syst. 1 : 140, 1818 ; Fl. Brit. Ind. 1 : 6, 1872.
An extensive woody climber.
Nyoth, Oct. 65, *Balakrishnan* 44194 ; Kamji 1000 m, Jan. 1964, *Subba Rao* 250.
- C. cadmia** Wall. ex Hook. f. & Thoms. Fl. Ind. 5, 1855 ; Fl. Brit. Ind. 1 : 2, 1872.
Climber with ternately decompound leaves. Common at lower altitudes.
North of Narfong, Sept. 1965, *A. S. Rao* 44613.
- C. connata** DC. Prodr. 1 : 4, 1824 ; Fl. Brit. Ind. 1 : 6, 1872.
A climber of the open forest. Scarce.
Lumichawa, 2000 m, Aug. 1965, *Sen Gupta* 1543.
- C. gouriana** Roxb. ex DC. Syst. 1 : 139, 1818 ; Fl. Brit. Ind. 1 : 4, 1872.
A climber, common on the outskirts of the forests.
Way to Unoger, Nov. 1965, *Balakrishnan* 44613 ; Phuntsholing, 150 m, Dec. 1963, *Subba Rao* 155 ; Dorokha, 1000 m, Jan. 1964, *Thothathri* 10522 ; Paro, 2000 m, Aug. 1963, *Sen Gupta* 757.
- C. grewiflora** DC. Syst. 1 : 140, 1818 ; Fl. Brit. Ind. 1 : 6, 1872.
A climber of open forests. Occasional.
Dorokha, 1000 m, Jan. 1964, *Thothathri* 10518 ; near Narfong, Sept. 1965, *Balakrishnan* 41170 ; Shali, Oct. 1965, *Balakrishnan* 44104.
- C. loureiriana** DC. Syst. 1 : 144, 1818 ; *C. smilacifolia* Wall. As. Res. 14 : 402, 1820 ; Fl. Brit. Ind. 1 : 3, 1872.
Local name: Pinasi lahara.
An extensive climber with white flowers. On thickets in open situations on hill sides. The roots, ground to powder clear stuffy nose on inhaling.
Sureylakha, 1200-1500 m, *Sen Gupta* 940 ; 2 km to Lhutsi, Oct. 1965, *Balakrishnan* 44517.
- C. montana** Buch.-Ham. ex DC. Syst. 1 : 164, 1818 ; Fl. Brit. Ind. 1 : 2, 1872.
A climber frequent in open jungles.
Paro, 2500 m, Oct. 1963, *Mukerjee* 5925 ; Longchaphaka near Thimpu, May 1964, *Maheshwari* 5214 ; Honsu, 2000 m, Aug. 1965, *Sen Gupta* 1673.
- C. tortuosa** (Wall. ex Hook. f. & Thoms.) C.E.C.F. in Kew Bull. 1929 ; 4, 1929.

Local name: Pinasi lahara.

Much branched climber, common on the fringe of forests. Bruised stem relieves headache on inhaling.

Sham Khara, 1500 m, Nov. 1964, *Deb* 10.

Delphinium altissimum Wall. Pl. As. Rar. 2 : 25, 1831 ; Fl. Brit. Ind. 1 : 26, 1872.

Much branched herb with palmately lobed leaves. Rare.

Lumichawa 2500 m, Aug. 1965, *Sen Gupta* 1551.

D. denudatum Wall. ex Hook. f. & Thoms. Fl. Ind. 49, 1855 ; Fl. Brit. Ind. 1 : 25, 1872.

A herb on open ground ; flowers pale blue. Frequent.

Honsu, 2000 m, Aug. 1965, *Sen Gupta* 1571 ; Gomchu, 2300 m, Sept. 1965, *A. S. Rao* 43392.

D. vestitum Wall. ex Royle Ill. 55, 1839 ; Fl. Brit. Ind. 1 : 26, 1872.

Hispidly hairy herb ; flowers blue in long dense racemes.

Chai la pass, 3700 m, Aug. 1963, *Sen Gupta* 731.

Naravelia zeylanica DC. Syst. 1 : 167, 1818 ; Fl. Brit. Ind. 1 : 7, 1872.

A large climber in the outskirts of the forests. Fairly common at lower altitudes.

Gaylegphug, 270 m, Nov. 1964, *Deb* 194.

Ranunculus aquatilis Linn. Sp. Pl. 781, 1753.

A small herb in shallow water ; leaves with capillary segments ; flowers small, white.

Paro, 2500 m, Aug. 1963, *Sen Gupta* 777 ; Longchaphaka, Thimpu, April 1964, *Maheshwari* s.n.

R. contonensis DC. Prodr. 1 : 43, 1824. *R. pensylvanicus* Hook. f. & Th. Fl. Brit. Ind. 1 : 19, 1872 non Linn. f.

A small herb on damp open ground ; stem prostrate ; flowers yellow.

Gomchu, 2400 m, Sept. 1965, *A. S. Rao* 43437 ; Tashigong, Oct. 1965, *Balakrishnan* 43956 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5913 and 5952 ; Paro, 2200 m, Aug. 1963, *Sen Gupta* 763.

R. diffusus DC. Prodr. 1 : 38, 1824 ; Fl. Brit. Ind. 1 : 19, 1872.

A small herb near ditches ; stem prostrate ; flowers yellow.

Chima Kothi 2000 m, *Maheshwari* 5307 ; Shemgang, 1950 m, Nov. 1964, *Deb* 391 ; Lumichawa, 2500 m, Aug. 1965, *Sen Gupta* s.n. ; Chaisilakha 1500 m, April 1964, *Maheshwari* 5069 ; Thimpu, 2500 m, April 1964, *Maheshwari* 5170.

Thalictrum chelidonii DC. Prodr. 1: 11, 1824; Fl. Brit. Ind. 1: 11, 1872.

An erect much branched herb in shade of trees; leaves large with many, small, orbicular leaflets; flowers in terminal panicles, deflexed, lilac.

Dochu La, 3000 m, *Sen Gupta* 1831.

T. foliolosum DC. Syst. 1: 175, 1818; Fl. Brit. Ind. 1: 14, 1872.

Fruticose herb with large decomposed leaves; flowers dull greenish purple. Frequent under shade of trees.

North of Narfong, Sept. 1965, *A. S. Rao* 43274; Tashiyangtsi forest, Oct. 1965, *Balakrishnan* 44332; Lumichawa, 2000 m, *Sen Gupta* 1702.

T. javanicum Bl. Bijdr. 2: 1825; Fl. Brit. Ind. 1: 13, 1872.

Erect herb with ternately decomposed leaves; leaflets glaucous beneath; flowers white. Rare in shady place.

Dochu La, 3000 m, *Sen Gupta* 1776.

T. rostellatum Hook. f. & Th. Fl. Ind. 15, 1855; Fl. Brit. Ind. 1: 12, 1872.

A herb with slender branches; flowers white. Rather rare.

Honsu, 2500 m, *Sen Gupta* s.n.

DILLENIACEAE

S. K. MUKERJEE AND N. P. BALAKRISHNAN

Dillenia pentagyna Roxb. Pl. Corm. 1: 21, t. 20, 1795.

A small deciduous tree; leaves very large; flowers small, yellow in few flowered clusters on leafless branches.

Samdrup Jhonkar, March 1965, *Balakrishnan* 41958.

MAGNOLIACEAE

D. C. S. RAJU

Alcimandra cathcartii (Hook. f. & Thoms.) Dandy in Kew Bull. 1927: 30, 1927. *Michelia cathcartii* Hook. f. & Thoms. Fl. Ind. 79, 1855; Fl. Brit. Ind. 1: 42, 1872.

A tall tree frequent in temperate forests.

Chaisilakha, 1500 m, April 1964, *Maheshwari* 5110.

Magnolia globosa Hook. f. & Thoms. Fl. Ind. 77, 1855; Fl. Brit. Ind. 1: 41, 1872.

An occasional small tree.

Honsu, *Sen Gupta* s.n.

- Michelia doltsopa** Buch.-Ham. ex DC. Syst. 1 : 448, 1818. *M. excelsa* (Wall.) Bl. ex Wight. Ill. 1 : 14, 1838 ; Fl. Brit. Ind. 1 : 43, 1872.
Large tree, dominant in some evergreen forests in subtropical regions.
Rani Camp, 1650 m, Nov. 1964, *Deb* 210.
- M. punduana** Hook. f. & Thoms. Fl. Ind. 81, 1855 ; Fl. Brit. Ind. 1 : 43, 1872.
A tall tree met with only once in evergreen forest.
Sangura, 1300 m, Nov. 1964, *Mukerjee* 6063.
- Talauma hodgsoni** Hook. f. & Thoms. Fl. Ind. 1 : 75, 1855 ; Fl. Brit. Ind. 1 : 40, 1872.
Local name : Chiuri.
Tall tree : flowers pink ; scattered in tropical evergreen forests.
Gayleghpug, 270 m, April 1964, *Sen Gupta* 1381 ; *Ibid.* Nov. 1964, *Deb* 144.

SCHISANDRACEAE

D. C. S. RAJU

- Kadsura heteroclita** (Roxb.) Craib. Fl. Siam. Enum. 1 : 28, 1925. *K. roxburghiana* Arn. Mag. Zool. & Bot. 2 : 546, 1838 ; Fl. Brit. Ind. 1 : 45, 1872.
Climber. Frequent in evergreen forests at lower elevations.
Gayleghpug, 270 m, Nov. 1964, *Deb* 190.

ANNONACEAE

DEBKA DAS

- Desmos dumosus** (Roxb.) Safford in Bull. Torrey bot. Club 39 : 506, 1912. *Unona dumosa* Roxb. Fl. Ind. 2 : 670, 1832.
An extensive climber of the lower hill forests ; ripe carpel moniliform.
Gayleghpug, 270 m, Nov. 1964, *Deb* 187.
- D. chinensis** Lour. Fl. Coch. 1 L 352, 1790. *Unona discolor* Vahl Symb. bot. 2 : 63, 1791.
A scandent shrub.
Chourini hills, Samchi, 300 m, *Thothathri* 10374 ; Phuntsholing, *Subba Rao* 380.
- Fissistigma polyanthum** (Hk. f. & Thoms.) Merrill in Philipp. Journ. Sc. (Bot.) 15 : 135, 1919. *Melodorum polyanthum* Hk. f. & Thoms. Fl. Ind. 1 : 121, 1855.

Small tree ; flowers sweet, scented, orange-red.

On way from Tama to Birti, 1000 m, April 1964, *Sen Gupta* 1196.

Milusa macrocarpa Hk. f. & Thoms. Fl. Ind. 1: 150, 1855.

Middle sized tree ; flowers pale pink.

Batase, 1500-1650 m, Dec. 1963, *Sen Gupta* 1022 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 32.

M. roxburghiana Hk. f. & Thoms. Fl. Ind. 1: 150, 1855.

Shrub with rose coloured flowers.

Birti, 600-900 m, April 1964, *Sen Gupta* 1336 ; Tama, 1450 m, Nov. 1964, *Deb* 301.

MENISPERMACEAE

A. S. RAO AND S. K. MUKERJEE

Stephania glabra (Roxb.) Miers. Contrib. Bot. 3:217, 1871. *S. rotunda*

Hk. f. et Thoms. Fl. Ind. 197, 1855 non Lour.

Climbing shrub with peltate leaves in forest. Rare.

Gomchu, Sept. 1967, *A. S. Rao* 43411.

S. hernandifolia (Willd.) Walp. Repert. 1: 96, 1842.

Climbing shrub with subdeltoid leaves. Occasional in the fringe of the forest.

Northern slopes, Chinari village, Aug. 1965, *A. S. Rao* 43144 ; Samchi, 300 m, Dec. 1963, *Thothathri* 10302.

LARDIZABALACEAE

G. SEN GUPTA, N. P. BALAKRISHNAN AND A. S. RAO

Holboellia latifolia Wall. Tent. Fl. Nepal 24. t. 16, 1824 var. **latifolia**.

Spreading woody climber with greenish purple flowers. Frequent.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1272 ; Tashiyangtsi Forest, 1800 m, March 1965, *Balakrishnan* 41381.

var. **angustifolia** (Wall.) Hook. f. & Thoms. Fl. Brit. Ind. 1:108, 1872.

Flowers greenish yellow. Frequent.

From Gamdrithang towards Tobrang, March 1965, *Balakrishnan* 41410 ; from Wamrung to Gomchu, 2700 m, *A. S. Rao* 43371 ; Chima Kothi, 2000 m, *Maheshwari* 5290.

BERBERIDACEAE

S. K. MUKERJEE AND D. N. GUHA BAKSHI

Berberis aristata DC. Syst. 2 : 8, 1821.

Erect shrub with purple branches ; leaves spinulose serrate near the tip ; flowers yellow. Common on open slopes.

Ha Valley, 3000 m, Aug. 1963, *Sen Gupta* 695.

B. bhutanensis Arhrendt in Jour. Bot. (Suppl.) 79 : 17, 1841, *B. wallichiana* DC. var. *pallida* Hook. f. & Thoms. Fl. Ind. 228, 1855, non Boissier.

A large shrub with lanceolate leaves. Rare.

Thimpu, 2500 m, *Mahashwari* 5179.

B. edgeworthiana Schnied. in Bull. Herb. Boiss. 8 : 263, 1908.

A tall shrub with spinulose serrate leaves.

Ha Valley, 3000 m, *Sen Gupta* 656.

B. orthobotrys Bienert ex Ait. Journ. Linn. Soc. Bot. 19 : 150, 1882.

A bushy shrub with yellow flowers. Common in the open.

Dochu La, 3000 m, *Sen Gupta* s.n.

B. wallichiana DC. Prodr. 1 : 107, 1824.

A small shrub with whorls of lanceolate, spine-tipped leaves at each node. Common at temperate region.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5846 ; Chima Kothi, 2000 m, April 1964, *Maheshwari* 5264.

B. sublevis W.W. Sm. var. **microcarpa** (Hook. f. et Thoms.) Arhrendt. in Journ. Linn. Soc. 57 : 58, 1861. *B. wallichiana* DC. var. *microcarpa* Hook. f. & Thoms. Fl. Ind. 226, 1855.

Erect shrub with grooved branches and narrow lanceolate, entire leaves. Frequent in open situation.

Honsu, 2000 m, *Sen Gupta* s.n.

Mahonia acanthifolia G. Don Gen. Syst. 1 : 118, 1831.

A tall shrub with a few main branches from the basal part and pinnate leaves, whorled at the top of the branches ; leaflets coriaceous, bright green with stiff spinulose margin. Common in evergreen type of forests.

Chima Kothi, 2000 m, April 1964, *Maheshwari* 5293.

Mahonia napaulensis DC. Syst. 2: 21, 1821.

A rare shrub.

Paro, Jelela Hill, 3000 m, Aug. 1963, *Sen Gupta* 795.

Podophyllum emodi Wall. ex Royle Ill. 64 & 379, 1839; Fl. Brit. Ind. 1: 112, 1872.

Unbranched herb with a pair of deeply palmately lobed orbicular leaves near the top; fruit ellipsoid, orange-red. A rare herb growing in shady places.

Lapsakha to Sipkha, Ha Valley, 4500 m, 1963, *Sen Gupta* 668.

PAPAVERACEAE

S. K. MUKERJEE AND G. SEN GUPTA

Meconopsis napaulensis DC. Prodr. 1: 121, 1824.

Tall herb with a dense rosette of basal leaves which are about 40 cm long with petiole and shorter cauline leaves; flowers bluish purple, about 8 cm in diam. A rare plant.

Chai la Pass, 3000 m, *Sen Gupta* s.n.

FUMARIACEAE

S. K. MUKERJEE

Corydalis leptocarpa Hook. f. & Thoms. Fl. Ind. 260, 1855.

A weak spreading herb with decumbent branches; leaves biternately pinnatisect, leaflets deeply cut; flowers violet. Frequent on damp hill slopes.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1280; on road from Gomchu to Rongthang, 2500 m, Sept. 1965, *A. S. Rao* 43321; Chaisilakha, 1500 m, April 1964, *Maheshwari* 5085; Chima Kothi, 2000 m, April 1964, *Maheshwari* 5310.

C. prainiana Kanodia & Mukerjee nom. nov. *C. casimiriana* Duthie & Prain ex Prain in Journ. As. Soc. Beng. 65: 27, 1896, non Royle (1834).

A tender herb with prostrate or ascending branches; leaves small, trilobed, trifoliate; racemes slender, 10-20 cm long; flowers yellow with dark magenta spots at the tip, about 1 cm long.

Due to the existence of *C. cachemiriana* Royle a new name is given to the present species to avoid confusion.

Dochu La, 3000 m, Aug. 1965, *Sen Gupta* 1830.

Dactylicapnos scandens (D. Don) Hatch. in Kew Bull. 1921: 105, 1921.

D. thalictrifolia Hook. f. & Th. Fl. Ind. 273, 1855.

Slender climbing herbs with decom pound leaves : leaf-rachis ending in branched tendril ; flowers yellow in pendulous racemes.

Lumichawa, 2500 m, *Sen Gupta* 1523 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 16 ; 84 km point on road from Narfong to Wamrung, 1800 m, Sept. 1965, *A. S. Rao* 43321 ; G. E. Camp, 30 km from Samdrup, Sept. 1965, *A. S. Rao* 43572.

BRASSICACEAE

S. K. MUKERJEE

Brassica juncea (Linn.) Czern & Coss. in Czern Consp. Pl. Clark. 8, 1959.

The Rai or Indian mustard is cultivated at lower elevations. It is frequently found as an escape.

On way to Tashigong from Kharsong, March 1965, *Balakrishnan* 41811.

B. napus Linn. Sp. Pl. 666, 1753.

Erect herb with stout fusiform root : flowers yellow. Cultivated and growing as escape.

Phuntsholing, *Subba Rao* 157 ; Phuntsholing, May 1964, *Maheshwari* 5324.

Capsella bursa-pastoris (Linn.) Medik. Fl.-Gatt. 1 : 85, 1792.

A small herb with pinnatifid basal leaves and auricled cauline leaves ; flowers white on a long raceme ; fruit small, obcordate, 5 mm broad or less. Common at temperate region.

Paro, 2000 m, Oct. 1963, *Mukerjee* 5960 ; Thimpu, 2500 m, April 1964, *Maheshwari* 5234 ; Thali, 1900 m, March 1965, *Balakrishnan* 41313.

Cardamine circaeoides Hook. f. & Thoms. in Journ. Linn. Soc. 5: 144, 1861 ; Fl. Brit. Ind. 1: 137, 1872.

Slender herb with thin leaves ; flowers white, few on a short raceme. Frequent in damp places.

Narfong, 2 km north along the stream bank down the hill, 1900 m, Aug. 1965, *A. S. Rao* 43246 ; 2 km north of Narfong, 1900 m, Aug. 1965, *A. S. Rao* 43244 ; Gomchu, opposite to workshop, 2400 m, Sept. 1965, *A. S. Rao* 43398.

C. scutata Thunb. in Trans. Linn. Soc. 2: 339, 1794. *C. hirsuta* Linn. var. *sylvatica* Hook. f. & T. Anders. in Fl. Brit. Ind. 1: 138, 1872.

A small decumbent herb ; lower leaves pinnatifid, lobes orbicular ovate, upper leaves entire, narrow ; flowers white in terminal raceme. Common in damp situations.

Thimpu, 2500 m, April 1964, *Maheshwari* 5162 ; Tashigong, 1300 m, March 1965, *Balakrishnan* 41194 ; between Nyoth and Tashiyangtsi, Oct. 1965, *Balakrishnan* 44251.

Rorippa dubia (Pers.) Hara var. **benghalense** (DC.) Mukerjee, comb. nov.

Nasturtium indicum Hk. f. & T. Anders. var. *benghalense* (DC.)

Hook. f. & T. Anders in Fl. Brit. Ind. 1: 134, 1872 non DC.

Erect herb ; flowers yellow. Scattered near the foot of the hills.

Gaylegphug, 270 m, May 1964, *Sen Gupta* 1417 ; Phuntsholing, May 1965, *Maheshwari* 5324.

R. islandica Schinz & Thell in Viertylarhs. Nat. Ges. Zurich. 53: 538,

1908. *Nasturtium palustre* DC. Syst. 2:191, 1821 ; Fl. Brit. Ind.

1: 133, 1872.

Herb with weak ascending stem ; radical leaves many, pinnatifid, cauline leaves deeply toothed ; flowers yellow in lax raceme.

Chaisilakha, 1200 m, Jan. 1964, *Subba Rao* 415 ; Paro, 2500 m, Dec. 1963, *Mukerjee* 5910.

Thlaspi arvense Linn. Sp. Pl. 641, 1753.

Erect herb, 20 cm high ; much branched towards the top ; flowers white. Common at subtemperate region.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1274 ; Shemgang, 1950 m, Nov. 1964, *Deb* 395 ; Lumichawa 2500 m, *Sen Gupta* s.n.

CAPPARIDACEAE

S. K. MUKERJEE

Capparis acutifolia Sw. ssp. **bodinieri** (Lévl) Jacobs in *Blumea* 12 : 431, 1965.

A thorny shrub, about 4 m high ; flowers greenish. Rare plant in the open.

Tashigong hill behind hospital, 1300 m, March 1965, *Balakrishnan* 41258.

C. acutifolia Sw. ssp. **viminea** Jacobs in *Blumea* 12 : 429, 1965.

Woody climber, thorns almost absent ; flowers white with green striations and violet spots ; fruits laterally compressed. A rare plant in roadside thicket.

Sham Khara, 1350 m, Dec. 1963, *Sen Gupta* 1124.

Capparis multiflora Hook. f. & Thoms. Fl. Brit. Ind. 1 : 178, 1872.

Tall shrub with few branches, thorns slender ; flowers white, fragrant. Frequent at lower elevations.

Kamji, about 1000 m, Dec. 1963, *Subba Rao* 197 and 220 ; Phuntsholing, April 1964, *Maheshwari* 5060 ; Gaylegphug, 270 m, April 1964, *Sen Gupta* 1391.

C. olacifolia Hook. f. & Thoms. Fl. Brit. Ind. 1 : 178, 1872.

Tall shrub with spreading branches, thorns slender ; flowers white with purple spot on upper petal. Fairly common near the foot of the hills.

Phuntsholing, April 1964, *Maheshwari* 5047 ; Samchi, Dec. 1963, *Thothathri* 10607.

VIOLACEAE

G. SEN GUPTA AND K. C. MALICK

Viola arcuata Bl. Bijdr. 58, 1825. *V. distans* Wall. in Trans. Med. Phys. Soc. Cal. 7 : 227, 1834.

A small runner, leaves clustered at the nodes ; flowers blue. Common in shady moist crevices of rocks.

Sureylakha, 1200-1500 m, Dec. 1963, *Sen Gupta* 943 ; Sham Khara 1350 m, Dec. 1963, *Sen Gupta* 1110.

V. betonicifolia Sm. in Rees Cyclop. 37 : 7, 1817. ssp. **nepalensis** Backer in Beih. Bot. Centralbl. Abt. 36: 39, 1918.

A small herb on open situation.

Lumichawa 2500 m, Aug. 1965, *Sen Gupta* 1509.

V. diffusa Ging. in DC. Prodr. 1 : 298, 1924 ; Fl. Brit. Ind. 1 : 183, 1872.

Small stoloniferous herb ; leaves tufted, petioles winged ; flowers pale purple. Scattered on open hill sides.

Sham Khara, 1350 m, Dec. 1963, *Sen Gupta* 1112 ; on way from Rani Camp to Tama, 1500 m, Nov. 1964, *Deb* 286.

V. inconspicua Bl. Bijdr. 1 : 58, 1825. *V. patrinii* Hook. f. & Thoms. Fl. Brit. Ind. 1 : 183, 1872 non Ging.

Small herb ; flowers purple mauve. Common in open slopes.

Birti, 550 m, April 1964, *Sen Gupta* 1225 ; Thimpu, 2500 m, April 1964, *Maheshwari* 5181 ; Paro 2000 m, Aug. 1963, *Sen Gupta* 740 ; Chima Kothi, 2000 m, April 1964, *Maheshwari* 5254.

Viola serpens Wall. ex Roxb. Fl. Ind. 2 : 449, 1824 var. **serpens**.

A small runner, common in forest undergrowth.

Honshu, 2850 m, *Sen Gupta* 1622 ; Birti, 550 m, April 1964, *Sen Gupta* 1225 ; Thimpu, 2500 m, *Maheshwari* s.n. ; Chaisilakha, 1500 m, *Maheshwari* 5066 ; Chima Kothi, 2000 m, *Maheshwari* 5282.

var. **glabra** Hook. f. & Thoms. Fl. Brit. Ind. 1 : 184, 1872.

A small herb, stoloniferous. Fairly common.

Shemgang, 1950 m, Nov. 1964, *Deb* 404.

var. **canescens** Wall. ex Roxb. Fl. Ind. 2 : 450, 1824 ; Fl. Brit. Ind. 1 : 184, 1872.

Stemless, hoary herb. Common on grassy floor.

Kamji, 1500 m, Dec. 1963, *Subba Rao* 248.

FLACOURTIACEAE

S. K. MUKERJEE

Casearia glomerata Roxb. Fl. Ind. 2 : 419, 1832.

A tall shrub : flowers inconspicuous ; fruits yellow when ripe Common in temperate regions.

On way to Deothong, 6 km from S. Jonkar, Aug. 1965, *A. S. Rao* 43125.

C. vareca Roxb. Fl. Ind. 2 : 418, 1832.

A shrub with oblong leaves ; flowers dull-white ; fruits orange red. Common at low elevations in forest clearings.

Gaylegphug, 270 m, *Sen Gupta* 826 & 857 ; Gaylegphug, Nov. 1964, *Deb* 184 ; Rani Camp, 1650 m, Nov. 1964, *Deb* 199.

PITTOSPORACEAE

Pittosporum napaulensis (DC.) Rehder & Wilson var. **rawalpindiense** Gowda in Journ. Arn. Arb. 32 : 332, 1951.

Large tree ; leaves narrowly lanceolate, acuminate ; fruits yellow with 4 red seeds. Occasional in the area.

Sham Khara, 1500 m, Nov. 1964, *Deb* 38.

POLYGALACEAE

S. K. MUKERJEE

Polygala arillata Buch.-Ham. ex D. Don Prodr. Nepal. 199, 1825.

A shrub about 4 m high ; racemes pendulous, about 15 cm long ; flowers bright yellow. Scarce.

Lumichawa, 2500 m, *Sen Gupta* 1516.

Polygala hyalina Wall. ex Hassk. var. **pusilla** Mukerjee in Journ. Bombay nat. Hist. Soc. 51 : 524, 1953.

Small tender herb ; flowers yellow. A rare plant on open slope. Punakha 1500 m, *Sen Gupta* 1543.

P. persicariaefolia DC. Prodr. 1 : 326, 1824.

Erect herb with slender usually simple stem, flowers pale rose. Scattered in partial shade.

Lumichawa 2500 m, *Sen Gupta* s.n. ; Punakha, 1500 m, *Sen Gupta* 1531 ; Kheri 3 km to Tashigong, 1200 m, *A. S. Rao* 43481 ; on way to Shali from Gumkhara, Oct. 1965, *Balakrishnan* 44071.

P. sibirica Linn. Sp. Pl. 703. 1753.

A small herb with wiry stem, much branched from the base ; flowers purple-violet. In open pastures on hill side. Scarce.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1285 ; Thimpu, 2500 m, *Maheshwari* 5248.

P. tartarinowii Regel in Bull. Soc. Si. 34 : 523, 1861.

A small herb with pink flowers.

Punakha 1500 m, *Sen Gupta* 1525 ; on road to Rongthong, 5 km north of Gomchu, 1500 m, Sept. 1965, *A. S. Rao* 43422 ; 3 km north of Narfong, 2000 m, Sept. 1965, *A. S. Rao* 43273.

CARYOPHYLLACEAE

N. C. MAJUMDAR

Arenaria bhutanica Majumdar & Babu in J. Arnold Arb. 50:626. 1969.

Slender grass-like herb with solitary flowers.

Chila on way to Paro, 4000 m, *Sen Gupta* 721.

A. blinkworthii McNeill in Notes R.B.G. Edinb. 24:128, 1962.

A. benthami Edgew. Fl. Brit. Ind. 1:242, 1874 non Fenzl ex Torrey & Gray 1840.

Tall, slender, glandular pilose herb ; leaves sessile, ovate lanceolate, acute, hairy ; sepals oblong or linear lanceolate ; petals obovate spatulate, lacerate ; styles 2.

Chila, 4000 m. Aug. 1963, *Sen Gupta* 607.

Brachystemma calycinum D. Don, Prodr. Fl. Nepal 646, 1825.

A diffuse glabrous branching herb ; leaves lanceolate, petioled ; cymes terminating lateral branches or axillary ; sepals oblong-lanceolate, scarious.

Gayleghug, 300 m, Sarbhang Div., Dec. 1963, *Sen Gupta* 909 ; Gayleghug, 300 m, Sarbhang Div., April 1964, *Sen Gupta* 1376 ; Dhoankhola, Samchi 460 m, Dec. 1963, *Thothathri* 10413 ; Changdachungti hill, Samchi, 1525 m, Dec. 1963, *Thothathri* 10540.

Cerastium holosteoides Fr. subsp. **triviale** (Link) Moschl var. **hallaisanense** (Nakai) Mizushima in J. Jap. Bot. 38:149, 1963. *C. vulgatum* var. *triviale* (Link) Edgew. & Hook. f. Fl. Brit. Ind. 1 : 228, 1874.

Annual herbs, pubescent throughout ; cymes lax, glandular pubescent ; bracts herbaceous.

Shemgang, Sarbhang Division, May 1964, *Sen Gupta* 1248.

Cucubalus bacciferus Linn. Sp. Pl. 414, 1753 ; Fl. Brit. Ind. 1:222, 1874.

A pubescent rambling herb ; leaves membranous ; flowers drooping ; petals greenish white ; fruit pea-like.

Wamrung approach, 2130 m, Sept. 1965, *A. S. Rao* 43353 ; Paro, 2550 m, Aug. 1963, *Balakrishnan* 1255 ; Yosipong 2130-2430 m, Sept. 1964, *Hajra* 453.

Drymaria cordata subsp. **diandra** (Blume) J. Duke in Ann. Mo. bot. Gdn. 48:253, 1961. *Drymaria cordata* sensu Edgew. & Hook. f. Fl. Brit. Ind. 1: 244, 1874.

Glabrous herb with stipulate deltoid ovate or subreniform leaves ; stipules lacerate, segments filiform ; seeds 1-2, cochleate, densely tuberculate.

Changtar, Samchi, 300 m, Dec. 1963, *Thothathri* 10311 ; Dorokha, Nov. 1964, *Mukerjee* 6127 ; Hatipaley forest, Gayleghug, 300 m, Dec. 1963, *Sen Gupta* 887 ; Hatipaley near Gayleghug, Nov. 1964, *Deb* 164.

Sagina saginoides (L.) Karsten, Deutsche Fl. 539, 1882, *Sagina procumbens* sensu Edgew. & Hook. f. in Fl. Brit. Ind. 1 : 242, 1874 non L.

Small glabrous herb, leaves linear ; pedicels recurved in young fruit, then becoming strict ; flowers pentamerous, petals distinct.

Paro, 2500 m, Aug. 1963, *Balakrishnan* 1320 ; Dorokha Forest, 610 m, Dec. 1963, *Thothathri* 10536 ; Shemgang, Nov. 1964, *Deb* 393 ; Honshu, 2850 m, Aug. 1965, *Sen Gupta* 1808.

Silene nepalensis Majumdar in J. Ind. bot. Soc. 42: 649, 1963. *Lychnis multicaulis* Wall. ex Edgew. in Fl. Brit. Ind. 1: 224, 1874.

Stem 60-90 cm tall, strict, laxly pubescent above ; leaves linear-lanceolate ; elongate racemes bearing few flowers ; calyx oblong, campanulate ; petals short, limb minute toothed.

Thileygaon, 3040 m, Sept. 1964, *Hajra* 379 ; Geptem Hills, Paro Valley, 2500 m, Aug. 1963, *Balakrishnan* 1309.

Silene indica Roxb. ex Otth in DC. Prodr. 1 : 368, 1824. *Lychnis nutans* Royle ex Benth. in Royle, Illustr. Bot. Himal. 1 : 80, 1834 ; Fl. Brit. Ind. 1 : 225, 1874.

Stem dichotomously branched, finely pubescent ; leaves ovate or elliptic lanceolate or orbicular ; panicle lax, few flowered ; calyx globose, inflated ; petal limb short, purple, crenulate.

Honshu, 2850 m, Aug. 1965, *Sen Gupta* 1767 ; Dochu La, Aug. 1965, *Sen Gupta* 1674.

Spergula arvensis L. Sp. Pl. 440, 1753 ; Fl. Brit. Ind. 1 : 243, 1874.

Leaves whorled, with scarious stipules ; styles 5 ; seeds not winged. Lumichawa, 2000 m, Sept. 1965, *Sen Gupta* 1970.

Stellaria alsine Grimm. in Nov. Act. Phys. med. Acad. Leop. Carol. 3, App. 313, 1767. *S. uliginosa* Murr. Prod. Strip. Goet. 55 ; Fl. Brit. Ind. 1 : 233, 1874.

Glabrous herb with 4-angled stems ; leaves small ovate or oblong-lanceolate ; cymes axillary and terminal ; flowers white.

Shemgang, Sarbhong division, *Sen Gupta* 1236 ; Dorokha, 610 m, Dec. 1963, *Thothathri* 10496.

S. media (L.) Vill. Hist. Pl. Dauph. 3 : 615, 1789 ; Fl. Brit. Ind. 1 : 230, 1874.

Soft herbs, pubescent in 1 or 2 lines ; leaves petioled below becoming sessile above ; flowers in leafy dichasia ; sepals 3-5 mm long. Seeds tubercled with hemispherical processes.

Dorokha, 610 m, Dec. 1963, *Thothathri* 10478.

S. monosperma Buch.-Ham. ex D. Don, Prodr. Fl. Nepal 215, 1825.

S. crispata Wall. ex Edgew. & Hook. f. Fl. Brit. Ind. 1 : 229, 1874.

Tall herb ; leaves large, sessile, linear oblong, acuminate, edges crisped ; flowers small white.

Gomchu Hill, opposite workshop, 2270 m, Sept. 1965, *A. S. Rao* 43401.

S. sikkimensis Hook. f. Fl. Brit. Ind. 1 : 230, 1874.

Decumbent herb, often tufted ; stem shining below ; villous with spreading hairs ; leaves small ovate ; sepals lanceolate, acuminate, pilose, larger than petals.

Opposite workshop at Gomchu, 2270 m, Sept. 1965, *A. S. Rao* 43400 ; Sureylakha, 1500-2000 m, Dec. 1963, *Sen Gupta* 993 ; Dochu La, 3190 m, Sept. 1964, *Hajra* 446.

Stellaria vestita Kurz in J. Bot. Lond. 11: 194, 1873. *S. saxatilis* Hamilt. ex D. Don Prodr. Fl. Nep. 215, 1825; Fl. Brit. Ind. 1: 232, 1874.

Stem long, decumbent shining, upper parts densely woolly tomentose with closely set stellate hairs; cymes axillary on slender peduncles.

Nanga Valley, Paro, 2500 m, Aug. 1963, *Sen Gupta* 744; Thimpu, Aug. 1965, *Sen Gupta* 1625.

TAMARICACEAE

S. K. MUKERJEE AND G. SEN GUPTA

Myricaria germanica Desv. in Ann. Sc. Nat. 4: 349, 1825.

Tall shrub with very small sessile leaves. Common on gravelly beds of hill-streams.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5821.

Tamarix troupii R. S. Hole in Ind. For. 19: 248, 1919. *T. gallica* Thiselton-Dyer in Fl. Brit. Ind. 1: 249, 1872 non Linn.

Much branched bushy shrub with minute leaves. On sandy soil river bank.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 833.

HYPERICACEAE

S. N. BISWAS

Hypericum elodeoides Choisy in DC. Prodr. 1: 552, 1824; Fl. Brit. Ind. 1: 255, 1874.

Small stoloniferous shrub with simple stem; leaves leathery, stem clasping; flowers yellow, about 2 cm in diam. Rare; grow in rock-crevice.

North of Wamrung, 2500 m, Sept. 1965, *A. S. Rao* 43341.

H. lalandii Choisy in DC. Prodr. 1: 550, 1824; Fl. Brit. Ind. 1: 257, 1874.

Small shrub with tufted slender stems up to 45 cm high, unbranched; leaves close, thick, with a foetid odour; flowers yellow, few in dense cymes. Frequent in temperate regions.

Thimpu 2500 m, *Sen Gupta* 1307.

H. napaulense Choisy in DC. Prodr. 1: 552, 1824; Fl. Brit. Ind. 1: 256, 1874.

Small herb with slender much branched diffuse or prostrate stem; flowers few in a lax cyme, yellow, about 8 mm long.

Road to Tashigong, 17 km from Wamrung, Oct. 1965, *Balakrishnan* 43929.

Hypericum hookerianum W. & A. Prodr. 99, 1834; Fl. Brit. Ind. 1 : 254, 1874. *Norysca hookeriana* (W. & A.) Wight Ill. Ind. Bot. 1 : 113, 1840.

Tall shrub about 2.5 m high; flowers about 5 cm in diam., golden yellow; capsule pyramidal about 2 cm long. Common in cool temperate region.

Dochu La, 3250 m, *Sen Gupta* 1826; 84 km point on road from Narfong to Wamrung 2000 m, Sept. 1965, *A. S. Rao* 43324.

H. uralum Ham. ex Don in Bot. Mag. t. 2375, 1823; Fl. Brit. Ind. 1 : 254, 1874, *pro syn.*

Small shrub with distichous leaves; flowers yellow, 2.5 cm in diam. Common on hill slopes.

Tashiyangtsi Forest, 2000 m, Oct. 1965. *Balakrishnan* 44328; 5 km north of Narfong, 2000 m. Sept. 1965, *A. S. Rao* 43293; road to Tashigong, 36 km from Dewathiang, Oct. 1965, *Balakrishnan* 43885; Paro, 2500 m. Aug. 1963, *Balakrishnan* 1219; Paro, 2000 m, *Mukerjee* 5834.

H. japonicum Thunb. Fl. Jap. 295, t. 31, 1784; Fl. Brit. Ind. 1 : 256, 1874.

Small herb with diffuse tufted stem; cymes dichotomous, flowers yellow, 6-7 cm in diam. Common in damp places.

Dorokha, 1000 m, Dec. 1963, *Thothathri* 10476; Ha Valley 3000 m. *Sen Gupta* 645; on way to Shali from Gumkhara, Oct. 1965, *Balakrishnan* 44083; Tashigong, 1500 m, Oct. 1965, *Balakrishnan* 1221; Tama, 1050-1200 m, April 1964, *Sen Gupta* 1156; Shemgang, 2000 m, April 1964, *Sen Gupta* 1279.

THEACEAE

S. K. MUKERJEE.

Camellia kissi Wall. in As. Res. 13 : 429, 1820. *C. drupifera* Thiselton Dyer in Fl. Brit. Ind. 1 : 293, 1874 non Lour.

An arboreous shrub; leaves ovate, tomentose, serrate; flowers axillary, white. Common on the fringe of forests.

Dakpai, 1650 m, Nov. 1964, *Deb* 380.

Eurya acuminata DC. Mem. Ternstr. 26, 1822; Fl. Brit. Ind. 1 : 285, 1874.

A tall shrub; leaves up to 12 cm long, apex long acuminate; flowers small, in axillary fascicles, dioecious.

Rani Camp to Tama, 1350-1650 m, Nov. 1964, *Deb* 276 ; Dorokha, 700 m, Dec. 1963, *Thothathri* 10507.

Eurya cavinervis Vesque in Bull. Soc. Bot. Fr. 42: 158, 1895. *E. japonica* Thunb. var. *thunbergii* Thw. Enum. 41, 1864 ; Fl. Brit. Ind. 1 : 284, 1814.

Small shrub with small axillary dioecious flowers. Common on road side.

Way to Laurijumpa from Tobrang, March 1965, *Balakrishnan* 41470.

E. cerasifolia (D. Don) Kobuski in Ann. Miss. Bot. Gard. 25 : 326, 1938. *E. symplocina* Bl. Mur. Bot. Ludg. Bat. 2: 133, 1856 ; Fl. Brit. Ind. 1 : 284, 1874.

A tall shrub with slender branches ; silky tomentose. Common on road side.

7 km S.E. of Narfong towards Deothong, 1850 m, March 1965, *Balakrishnan* 41934 ; Chaisilakha, 1500 m, *Subba Rao* 394 ; Shemgang, 2000 m, April 1964, *Sen Gupta* 1247.

Schima khasiana Thiselton Dyer in Fl. Brit. Ind. 1 : 289, 1874.

Tall tree with ovate serrate leaves ; flowers white, 6 cm across, in the axils of fallen leaves. Frequent in evergreen forest at an altitude of 1000 m and above.

Lumichawa 2500 m, *Sen Gupta* 1518 ; way to Tobrang from Tashiyangtsi, March 1965, *Balakrishnan* 41399.

S. wallichii (DC.) Korthals in Temminck Verti., Nat. Ges. Bot. 143, 1839 ; Fl. Brit. Ind. 1 : 288, 1874.

Tall tree with lanceolate leaves, lateral nerves forked ; flowers white, fragrant, about 5 cm across, in short terminal racemes. Quite common in the lower hills.

Samchi 300 m, Dec. 1963, *Thothathri* 10405 ; Phuntsholing, 100 m, Dec. 1963, *Subba Rao* 140 ; Tama, 1200-1500 m, April 1964, *Sen Gupta* 1181 ; on way from Rani Camp to Tama, 1350-1650 m, Nov. 1964, *Deb* 238 ; Nangadzong, March 1965, *Balakrishnan* 41845.

SAURAUACEAE

S. K. MUKERJEE

Saurauia napaulensis DC. Mem. Ternstr. 29, 1822 ; Fl. Brit. Ind. 1 : 286, 1874.

Small tree ; leaves 25-30 cm long, secondary nerves prominent and parallel ; flowers pink, in axillary panicles. Common in subtropical forest.

Chaisilakha, 1500 m, *Subba Rao* 428 ; Chaisilakha, 1500 m, April 1964, *Maheshwari* 5150 ; near Betnikhola, 1350 m, Dec. 1963, *Sen Gupta* 1045 ; Dakpai, 1650 m, Nov. 1964, *Deb* 356 ; 2 km west of Nugang Dantak Camp, 1800 m, Aug. 1965, *A. S. Rao* 43264 ; road to Tashigong, near Nufong, 1700 m, March 1965, *Balakrishnan* 41134 ; Putlibher 2500 m, Sept. 1965, *Sen Gupta* 2110.

Saurauja punduana Wall. Pl. As. Rar. 2: 40: 1831 ; Fl. Brit. Ind. 1: 287, 1874.

Local name : Mang, Mang-Ma.

A bushy shrub ; leaves with prominent parallel veins ; flowers pink, 2 cm across, in trichotomous cymes in axils of fallen leaves. Scarce. Tama, 1050-1200 m, April 1964, *Sen Gupta* 1138.

S. roxburghii Wall. Pl. As. Rar. 2: 40, 1831 ; Fl. Brit. Ind. 1: 287, 1874.

Local name : Gogun.

A small tree ; leaves 20-30 cm with prominent parallel veins ; flowers small, white or pink ; cymes in axils of fallen leaves. Common in tropical and subtropical forests.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 911 ; Rani Camp, 1650 m, Nov. 1964, *Deb* 195.

ACTINIDIACEAE

S. K. MUKERJEE

Actinidia callosa Lindl. Nat. Syst. ed. 2. 439, 1836 ; Fl. Brit. Ind. 1: 286, 1874.

A scandent shrub ; flowers white in lax umbellate cymes. A rare plant.

Sham Khara, 1500 m, Nov. 1964, *Deb* 60.

STACHYURACEAE

S. K. MUKERJEE

Stachyurus himalaicus Hook. f. & Thoms. ex Bth. in Journ. Linn. Soc. 5: 55, 1861 ; Fl. Brit. Ind. 1: 288, 1874.

A small tree with straggling branches ; leaves membranous, strongly reticulate beneath ; flowers in hanging lateral spikes.

9 km on the road from Wamrung to Gomchu, 2700 m, Sept. 1965, *Balakrishnan* 44270 ; 4 km to Tashiyangtsi from Nyoth, April 1965, *Balakrishnan* 44270.

MALVACEAE

K. C. MALICK

Abutilon indicum (L.) Sweet Hort. Brit. 54, 1827 ; Fl. Brit. Ind. 1: 326, 1874.

Shrub or undershrub, younger parts and leaves covered with white down ; leaves broadly ovate, cordate, long petioled ; flowers yellow, solitary on long axillary peduncle ; calyx persistent ; fruit of 15-20 carpels, truncate or awned.

On roadside, 5 km north of Narfong, 2000 m, Sept. 1965, *A. S. Rao* 43275.

Hibiscus lobatus (Murray) O. Kt. Gen. Pl. 3 (2):19, 1898. *H. solandra* L'Herit Strip. 1: 103. t. 49, 1788 ; Fl. Brit. Ind. 1: 336, 1874.

Erect herbaceous annual ; leaves palmately lobed, lower often entire ; flowers in terminal racemes, yellow, about 2 cm across ; seeds black, tubercled.

Kheri, 3 km to Tashigong, 1000 m, Sept. 1965, *A. S. Rao* 43544.

H. pungens Roxb. Fl. Ind. 3: 213, 1832 ; Fl. Brit. Ind. 1: 341, 1874.

Erect annual shrubs, pubescent all over with bristly hairs and with scattered black dots ; leaves long petioled, lamina deeply lobed ; flowers about 10 cm in diam., yellow with purple centre. Common on rocks in subtropical regions.

Rani Camp to Tama, 1350-1650 m, Nov. 1964, *Deb* 250 ; Dakpai, 1650 m, Nov. 1964, *Deb* 344 ; 3 km north of Narfong along road, 1900 m, Sept. 1955, *A. S. Rao* 43275 ; Phuntsholing, Dec. 1962, *Subba Rao* 145.

H. surattensis Linn. Sp. Pl. 696, 1753 ; Fl. Brit. Ind. 1: 334, 1874.

A tender herb with long trailing or climbing branches, covered with soft hairs and scattered recurved prickles ; leaves deeply lobed ; stipules broad and oblique ; flowers yellow with a dark centre, axillary. A rare plant in the forest.

Local name: Kauscho.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 802 ; Samchi, Dec. 1963, *Thothathri* 10597.

Malva rotundifolia Linn. var. *reticulata* Mast. in Fl. Brit. Ind. 1: 320, 1874.

Much branched herb with trailing branches ; leaves suborbicular, long petioled ; flowers violet-purple, 2 cm across, axillary. Rare.

Paro, 2500 m, *Mukerjee* 5953.

Malva verticillata Linn. Sp. Pl. 689, 1753 ; Fl. Brit. Ind. 1 : 320, 1874.

Erect undershrub about 1 m high ; leaves suborbicular, long petioled ; flowers pink, small in dense axillary clusters. Occasional in the open area.

Paro, 2200 m, *Sen Gupta* 786 ; Ha Valley, 3000 m, *Sen Gupta* 629 ; Honshu 2500 m, *Sen Gupta* 1657 ; Thimpu 2500 m, April 1964, *Maheshwari* 5190.

Sida acuta Burm. f. Fl. Ind. 147, 1768. *S. carpinifolia* Linn. Suppl. Pl. 307, 1781.

An undershrub with glabrous, linear lanceolate leaves ; flowers yellow, axillary. Abundant in forest clearings.

Gayleghphug, 270 m, Dec. 1963, *Sen Gupta* 846 ; Birti, 550 m, April 1964, *Sen Gupta* 1224 ; Phuntsholing, *Subba Rao* 20 ; Kheri, 3 km to Tashigong, 1000 m, Sept. 1965, *A. S. Rao* 43545 ; Samchi, *Thothathri* 10342.

S. cordifolia Linn. Sp. Pl. 2 : 684, 1753.

Small undershrub with leaves and younger parts covered with a greyish down ; flowers yellow, axillary. Rare.

Phuntsholing, Jan. 1964, *Subba Rao* 371.

S. glutinosa Cav. Diss. 1 : 16. t. 2. f. 8, 1787. *S. mysorensis* W. & A. Prodr. 59, 1834 ; Fl. Brit. Ind. 1 : 322, 1874.

Undershrub, up to 30 cm high, covered with glutinous hairs all over ; leaves cordate-ovate ; flowers yellow, axillary. Occasional in shaded places.

Kheri, 3 km to Tashigong, 1200 m, Sept. 1965, *A. S. Rao* 43519 ; Samchi, 7000 m, Dec. 1963, *Thothathri* 10433.

S. rhombifolia Linn. Sp. Pl. 2 : 684, 1853 ; Fl. Brit. Ind. 1 : 323, 1874.

Tall shrub, much branched ; leaves rhomboid ovate, hoary beneath ; flowers yellow, solitary and axillary or clustered at the end of branches.

Tama, 1450 m, Nov. 1964, *Deb* 298 ; Kheri camp, 3 km to Tashigong, 1200 m, Sept. 1965, *A. S. Rao* 43543.

var. retusa (L.) Masters in Fl. Brit. Ind. 1 : 324, 1874.

Leaves obovate, retuse. Rare.

Punakha, 1350 m, Sept. 1965, *Sen Gupta* 2033.

Urena lobata Linn. Sp. Pl. 2: 692, 1753; Fl. Brit. Ind. 1: 329, 1874.

Local name: Kurey pat.

Shrubby annual; leaves orbicular in outline, lower with angular margin, upper deeply lobed; flowers pink, few in each axillary clusters; ripe carpels covered with hooked bristles, separating from the axis.

Phuntsholing, *Sen Gupta* 2652; Batase, 1500-1650 m, Dec. 1963, *Sen Gupta* 1008; Kheri, 3 km from Tashigong, Dec. 1963, *Subba Rao* 12; Samchi, Dec. 1963, *Thothathri* 10326.

STERCULIACEAE

G. SEN GUPTA AND K. C. MALICK

Abroma angusta Linn. Suppl. Pl. 341, 1781; Fl. Brit. Ind. 1: 375, 1874.

A tall shrub with few branches; leaves orbicular with angular margin; flowers axillary, drooping; fruit truncate, erect, 5 angled. Rare.

On the way to Deothong, 5 miles from Samdrup Jankar, Aug. 1965, *A. S. Rao* 43122.

Pterospermum acerifolium Willd. Sp. Pl. 3: 729, 1797; Fl. Brit. Ind. 1: 368, 1874.

Tall tree; leaves orbicular oblong with irregular or shallowly lobed margin, often peltate; flowers 1-3 in axillary or terminal clusters, 14-18 cm long; sepals linear oblong, mostly tomentose outside; petals white, shorter than sepals; capsule woody 10-15 cm long; seeds numerous with a membranous wing. Occasional.

Phuntsholing, Jan. 1964, *Subba Rao* 389.

Sterculia indica Merr. in Journ. Arn. Arb. 32: 246, 1952. *S. coccinea* Roxb. Fl. Ind. 3: 151, 1832; Fl. Brit. Ind. 1: 357, 1874.

Small tree; leaves lanceolate, acuminate; flowers greenish yellow, in axillary drooping panicle; follicles 10-12 cm long, crimson on both surfaces. Scattered all over in evergreen forests at lower elevations.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1362; Gaylegphug, Nov. 1964, *Deb* 167; Samchi, 200 m, Dec. 1963, *Thothathri* 10600.

S. villosa Roxb. Fl. Ind. 3: 153, 1832; Fl. Brit. Ind. 1: 355, 1874.

Tall or medium sized tree with white bark; leaves 5-7 lobed, orbicular in outline, 30-45 cm in diam; flowers small, unisexual, many in pendulous panicles; follicles rusty villous, about 5 cm long, spreading. Common at the foot hills.

Phuntsholing, Jan. 1964, *Subba Rao* 367.

TILIACEAE

G. SEN GUPTA AND K. C. MALICK

Corchorus aestuans Linn Syst. Nat. 2: 1079, 1759. *C. acutangulus* Lamk. Encycl. Meth. 2: 104, 1811; Fl. Brit. Ind. 1: 398, 1874.

Small herb; leaves ovate or oblong, with two small tail like appendages near the base; flowers small, yellow 2-3 together, opposite the leaves; fruit a 6-angled capsule, angles alternately winged. Rare.

Punakha, Sept. 1965, *Sen Gupta* 1538.

Grewia glabra Bl. Bijdr. 115, 1825. *G. laevigata* Masters in Fl. Brit. Ind. 1: 389, 1874 non Vahl.

Small tree; leaves lanceolate, narrowed at both ends, 3 nerved; flowers yellow, few on axillary peduncles, peduncles often 2-3 together; fruit 4 lobed, black when ripe.

Local name: Chiuri.

Gayleghug, 270 m, Dec. 1963, *Sen Gupta* 810; Samchi, 100 m, Dec. 1963, *Thothathri* 10434.

G. multiflora Juss. in Ann. Mus. 4: 89, t. 47. f. 1, 1804; Fl. Brit. Ind. 1: 388, 1874.

A short tree with slender branches; leaves distichous, usually lanceolate with 3 basal nerves; flowers yellow, usually 3 on an axillary peduncle; fruit 2-lobed.

On way to Deothong, 7 km from S. Jankar, Aug. 1965, *A. S. Rao*, 43119.

G. sapida Roxb. Fl. Ind. 2: 590, 1832; Fl. Brit. Ind. 1: 387, 1874.

An undershrub with a woody subterranean rootstock and ascending branches; flowers orange-yellow, few on axillary peduncles which are often 2-3 together; fruit obscurely 4-lobed. Scattered in open slopes of forest clearings.

Tama, 600 m, April 1964, *Sen Gupta* 1191.

Triumfetta annua Linn. Man. Pl. 1: 73, 1767; Fl. Brit. Ind. 1: 396, 1874.

Small annuals; leaves ovate, long peduncled; flowers 3 together on extra axillary peduncles, petals orange; fruit globose, covered with hooked spines. Frequent on open ground.

Lumichawa, Aug. 1965, *Sen Gupta* 1889; Punakha, 1500 m, Sept. 1965, *Sen Gupta* 2088.

T. cana Bl. Bijdr. 1: 116, 1825; Fl. Brit. Ind. 1: 396, 1874.

Local name: Prumdai.

Undershrub with ovate oblong to lanceolate leaves, pubescent with stellate hairs; flowers small, yellow in extra axillary cymes; fruits covered with hispid prickles. Occasional in jungle thickets.

Birti, 650-850 m, April, 1964, *Sen Gupta* 1312.

Triumfetta bartramia Linn. Syst. Nat. Ed. 10, 2 : 1044, 1759. *T. rhomboides* Jacq. Enum. Pl. Carib. 22, 1760; Fl. Brit. Ind. 1 : 395, 1874.

Undershrub; leaves rhomboid, 3-7 nerved, often 3 lobed; flowers yellow in dense extra-axillary cymes; fruits pubescent and with hooked spines. Frequent along forest tracks.

Gaylegphug, 270 m, May 1964, *Sen Gupta* 1427; Rani Camp to Tama, 1350-1650 m, Nov. 1964, *Deb* 268; Gaylegphug, Nov. 1964, *Deb* 111; Changtai, Samchi, 400 m, Dec. 1963, *Thothathri* 10444.

Triumfetta pilosa Roth Nov. Sp. 223, 1821; Fl. Brit. Ind. 1 : 394, 1874.

Local name: Pata Kuro, Babrumdai.

Undershrub with bulbous based bristles; lower bases lobed, upper ovate; flowers yellow in axillary cymes; fruits tomentose, and with hooked spines. Wide spread in the forests.

Maorey forest, 1500-1650 m, Dec. 1963, *Sen Gupta* 1095; Tama, 1500 m, April 1964, *Sen Gupta* 1167; Rani Camp to Tama 1350-1650 m, Nov. 1964, *Deb* 267; Samchi, Dec. 1963, *Thothathri* 10398.

ELAEOCARPACEAE

S. K. MUKERJEE

Elaeocarpus lanceaefolius Roxb. Fl. Ind. 2 : 598, 1832; Fl. Brit. Ind. 1 : 402, 1874.

Short tree with ovate-lanceolate, serrulate leaves; flowers white in axillary racemes; drupe oblong-ovoid, 1-seeded. Rare.

Chaisilakha, 1500 m, Jan. 1964, *Subba Rao* 397.

E. tectorius (Lour.) Poir in Lamk. Encyl. Meth. Suppl. 2 : 704, 1812.

E. robustus Roxb. Fl. Ind. 2 : 597, 1832; Fl. Brit. Ind. 1 : 402, 1874.

A short tree; leaves ovate oblong; flowers in axillary racemes; fruits 2-3 cm long, ovoid, with a hard rind and furrowed and pitted stone. Common in evergreen forests.

Gaylegphug, 270 m, Nov. 1964, *Deb* 191.

LINACEAE

S. K. MUKERJEE

Anisadenia pubescens Griff. Notul. 4 : 535, 1854; Fl. Brit. Ind. 1 : 413, 1874.

Herb with slender prostrate leafy stem ; leaves villous beneath with white silky hairs ; flowers in terminal racemes, white.

On road to Rongthong near Gumpa, 5 km north of Gomchu, 2500 m, Sept. 1965, *A. S. Rao* 43417 ; 1 km north of Wamrung, 2500 m, Sept. 1965, *A. S. Rao* 43332.

MALPIGHIACEAE

S. K. MUKERJEE

Aspidopteris glabriscula A. Juss. in *Ann. Sc. Nat. Ser. 2.* 13: 267, 1840.

A. roxburghiana A. Juss var. 2 Hook. f. *Fl. Brit. Ind.* 1: 420, 1874.

Local name: Shati lahara.

A climber with slender branches ; flowers in axillary or terminal panicles ; fruits with linear oblong wing. Frequent, overhanging hill slopes.

Sham Khara and Maorey forests, 1500-1650 m, Dec. 1963, *Sen Gupta* 1088 ; Monger-Tashigong Track, Nov. 1965, *Balakrishnan* 44673.

Hiptage benghalensis (L.) Kurz in *Journ. As. Soc. Beng.* 43 : 136, 1874.

H. madablota Gaertn. *Fruct.* 2: 169. t. 116, 1790 ; *Fl. Brit. Ind.* 1 : 418, 1874.

An extensive climber ; leaves coriaceous ; flowers white with one petal yellow at base, fragrant, petals fimbriate ; fruit with 3 wings. Rare. Tashigong to Yangtsi, March 1965, *Balakrishnan* 41287.

GERANIACEAE

S. K. MUKERJEE AND G. SEN GUPTA

Erodium malacoides Willd. *Phyt.* 1: 10. 1794 ; *Fl. Brit. Ind.* 1: 435, 1874.

Annual herbs ; leaves opposite, 3-fid, with large coriaceous stipules ; flowers pink, in few flowered axillary umbels, sepals awned ; fruits trigonous, carpels beaked, separating from the axis on maturity. Abundant on forest floor.

Shemgang, 1900-2100 m, Nov. 1964, *Deb* 396.

Geranium grevilleanum Wall. *Pl. As. Rar.* 3: t. 209, 1832 ; *Fl. Brit. Ind.* 1: 430, 1874.

Tall much branched herb with 5-7 oval leaves and bifid stipules ; flowers 1 or 2 on slender axillary peduncles, about 3 cm in diam., petals pale pink with purplish eye. Scarce in open situation.

Dochu La, 3000 m, Aug. 1965, *Sen Gupta* s.n.

G. nepalense Sweet *Geran.* 1 : t. 12, 1820 ; *Fl. Brit. Ind.* 1: 430, 1874.

Much branched diffuse herb with lobed 5-gonal leaves and subulate-

lanceolate stipules ; flowers 1-2 on slender axillary peduncles, about 2 cm in diam., petals purplish ; ripe carpels separating septifragally from the axis with beaks coiling elastically from base to apex. Quite common in the open.

Shemgang, 1900-2100 m, Nov. 1964, *Deb* 403 ; Chaisilakha, 1800 m, Jan. 1964, *Subba Rao* 414 ; Chaisilakha 1500 m, *Maheshwari* 5122 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5936 ; Honshu, 2500 m, Aug. 1965, *Sen Gupta* 1605 ; Ha Valley, 3000 m, Aug. 1963, *Sen Gupta* 699 ; North of Narfong, 900 m, Sept. 1965, *A. S. Rao* 43283.

Geranium wallichianum D. Don et Sweet *Geran.* 1: t. 90, 1820 ; *Fl. Brit. Ind.* 1: 430, 1874.

Robust much branched herb, villous all over ; leaves 5-gonal, 8-10 cm across, stipules large ; flowers on long axillary peduncles, 4-5 cm across purplish ; beaks of ripe carpels coiling elastically towards apex. Rare in damp open place.

19 km from Gomchu to Rongthong, 2600 m, Sept. 1965, *A. S. Rao* 43463.

OXALIDACEAE

S. K. MUKERJEE

Oxalis corniculata Linn. *Sp. Pl.* 435, 1753 ; *Fl. Brit. Ind.* 1: 437, 1874.

A diffuse herb with prostrate stem and branches ; leaves orbicular in outline, 3-foliolate ; leaflets obovate ; flowers small, yellow, subumbellate on axillary peduncles. Wide spread on grassy lawns.

Tama, 1050-1200 m, April 1964, *Sen Gupta* 1155 ; Dakpai, 1650 m, Sept. 1964, *Deb* 450 ; Paro, 3500 m, *Sen Gupta* 716 ; Paro, 2500 m, *Mukerjee* 5940 ; Punakha, 1500 m, Aug. 1965, *Sen Gupta* 1526 ; Thimpu, 3000 m, April 1964, *Maheshwari* 5199 ; Chaisilakha, 1500 m, Jan. 1964, *Subba Rao* 418 ; Dorokha, 600 m, Jan. 1964, *Thothathri* 10525.

BALSAMINACEAE

G. SEN GUPTA AND K. C. MALICK

Impatiens capillipes Hook. f. & Thoms. in *Journ. Linn. Soc.* 4: 135, 1869 ; *Fl. Brit. Ind.* 1: 456, 1874.

Annual herb with very slender stem and branches ; leaves narrowly lanceolate ; flowers small, axillary on very slender pedicels ; posterior sepal produced to a short spur ; 5 valves of ripe fruit elastically spring away from the axis. A rare herb in damp situation.

Phuntsholing, May 1964, *Maheshwari* 5359.

Impatiens cathcartii Hook. f. Fl. Brit. Ind. 1: 473, 1875.

Tall herb, much branched; leaves 10-15 cm, long, elliptic, crenate; peduncles axillary, stout, as long as 17 cm; flowers in lax racemes, orange red with a long spur, rose coloured.

Rani Camp, 1650 m, Nov. 1964, *Deb* 218 m; Kamji, 1000 m, Aug. 1963, *Sen Gupta* 107.

I. cristata Wall. in Roxb. Fl. Ind. 2: 456, 1832; *I. scabrida* Hook. f. Fl. Brit. Ind. 1: 472, 1875 non DC.

Tall and robust much branched herb; leaves sessile or subsessile, lanceolate; flowers yellow in axillary panicles, spur incurved.

Thimpu, 2500 m, Aug. 1965, *Sen Gupta* 1473.

I. angustiflora Hook. f. Fl. Brit. Ind. 1: 480, 1875.

A slender herb with a simple or branched stem; leaves lanceolate; flowers yellow, in subterminal clusters on slender peduncles. Lip oblique and horned at the tip, narrowed to a long slender spur. Rather rare.

Krishnagiri Saddle, on road to Wamrung from Narfong, 2500 m, Sept. 1965, *A. S. Rao* 43312.

I. drepanophora Hook. f. Rec. Bot. Surv. Ind. 4: 22, 1905.

A slender herb with alternate leaves; flowers in axillary, lax racemes, yellow; sepals long-awned. A rare plant in damp situation.

Krishnagiri Saddle, on road to Wamrung from Narfong, 2500 m, Sept. 1965, *A. S. Rao* 43309.

I. gigantea Edgw. in Trans. Linn. Soc. 20: 38, 1851. *I. sulcata* Wall. ex Hook. f. & Thoms. in Journ. Linn. Soc. 4: 129, 1860; Fl. Brit. Ind. 1: 469, 1875.

Tall robust herb about 2.5 m high; stem furrowed, fistular; leaves lanceolate, opposite or whorled, 5-12 cm long; flowers rose purple, in racemes or umbels on long, erect peduncles in the axil of upper leaves; seeds rugose, 7-8 mm in diam., edible. Scarce in partial shade.

Dochu La, 3200 m, Aug. 1965, *Sen Gupta* s.n.

I. laevigata Wall. ex Hook. f. in Journ. Linn. Soc. 4: 146, 1860; Fl. Brit. Ind. 1: 473, 1875.

An undershrub with erect stem, woody below; leaves oblanceolate; flowers pale yellow streaked with pink, axillary, solitary or in dense or few flowered racemes. More or less common in damp situation in subtemperate regions.

On road to Gomchu, 4 km from Wamrung, 2000 m, Sept. 1965, *A. S. Rao* 43367.

Impatiens paludosa Hook. f. Fl. Brit. Ind. 1: 480, 1875.

A small herb with rigid stem; leaves thick, distant, lanceolate; flowers yellow in lax terminal or extra-axillary racemes; spur long, slender, uncurved, clubbed at the tip.

Krishnagiri Saddle on road to Wamrung from Narfong, 2000 m, Sept. 1965, *A. S. Rao* 43308.

I. racemosa DC. Prodr. 1: 688, 1824. *I. laxiflora* var. *khasiana* Hook. f. Fl. Brit. Ind. 1: 480, 1875.

Tall slender herb with membranous leaves; flowers pale yellow in subterminal peduncles. Rather rare.

Lumichawa, 1500 m, *Sen Gupta* 1556.

I. radiata Hook. f. Fl. Brit. Ind. 1: 476, 1875.

A tall much branched leafy herb; flowers many, purplish yellow, corymbose on long stiff peduncles which are fascicled at ends of the branches; spur short, straight.

Dochu La, 3000 m, Aug. 1965, *Sen Gupta* 1809; Honsu, 2800 m, *Sen Gupta* 1621; Gomchu opposite workshop, 2500 m, Sept. 1965, *A. S. Rao* 43406.

I. spirifer Hook. f. et Thoms. in Journ. Linn. Soc. 4: 135, 1860; Fl. Brit. Ind. 1: 471, 1875.

Small herb with slender stem; leaves membranous, long petioled, narrowly ovate; flowers solitary on long, axillary, slender peduncles, pale rose-coloured, streaked with purple. Very rare.

Dochu La, 3200 m, *Sen Gupta* 1819.

I. tripetala Roxb. Fl. Ind. 2: 453, 1632; Hook. f. Fl. Brit. Ind. 1: 470, 1875.

A succulent annual, swollen at the nodes; leaves membranous, opposite, alternate or whorled; flowers deep mauve, solitary or fascicled, pedicels slender axillary. Common at lower altitudes.

On way to Deothong, 7 km from Jankar, Aug. 1965, *A. S. Rao* 43116; from Deothong to Narfong, 1200 m, Aug. 1965, *A. S. Rao* 43165; Gaylegphug, 270 m, April 1964, *Sen Gupta* 1414; Phuntsholing, 200 m, *Sen Gupta* 222; Samchi, *Thothathri* 10412.

RUTACEAE

S. K. MUKERJEE AND K. C. MALICK

Boeninghausenia albiflora (Hook.) Meisner, Pl. Vasc. Gen. 2: 44, 1836; Fl. Brit. Ind. 1: 486, 1875.

Erect much branched herb with slender stiff stem; leaves 2-3 pinnate, leaflets obovate or obcordate, 1-2 cm, glaucous beneath; flowers many in a terminal much branched panicle, white or reddish; fruit of 6-8 free carpels, dehiscing ventrally. Common in subtemperate regions.

On way from Rani Camp to Tama, 1350-1650 m, Nov. 1964, *Deb* 240; and 257; Paro, 2500 m, *Mukerjee* 5828; Kamji, 1500 m, *Subba Rao* 372; Thimpu, 2500 m, *Sen Gupta* 1451; on road to Rongthong, 19 km from Gomchu, 2700 m, Sept. 1965, *A. S. Rao* 43464; Rongthong, Sept. 1965, *A. S. Rao* 43548; Garrison Engineers' Camp, 1900 m, Sept. 1965, *A. S. Rao* 43585.

Citrus medica Linn. Sp. Pl. 2:782, 1753.

Local name: Samphor.

An arboreous shrub with short straggling thorny branches; leaves elliptic, leathery, with numerous oil ducts; flowers fragrant, white with purplish tinge, in few flowered axillary or terminal cymes; fruit 5-7 cm long, ovoid with an apiculate tip, rind rough, yellow when ripe. Occasional in the outskirts of the forest and widely cultivated.

Tama, 1050-1200 m, April 1964, *Sen Gupta* 1130; Shemgang, 1950 m, Nov. 1964, *Deb* 434; Phuntsholing, May 1964, *Maheshwari* 5349; Samchi, *Thothathri* 10572; Sangurei, *Mukerjee* 5617.

C. reticulata Blanco Fl. Filip. 610, 1837.

Local Name: Suntala; the orange.

A short bushy tree with short thorns; leaves 5-7 cm rhomboid ovate, dark green; flowers white, fragrant, few in axillary cymes; fruits \pm spherical, depressed at the apex, rind \pm rough.

This is cultivated at lower elevations; occasionally planted near monasteries at Paro, Thimpu and elsewhere.

Evodia fraxinifolia (D. Don) Hook. f. Fl. Brit. Ind. 1: 490, 1875.

Local Name: Khanak Pa.

Small tree with stout branches, densely leafy; leaves pinnate, leaflets 3-5 pairs, oblong, about 20 cm long; flowers unisexual, yellow in axillary or terminal cymes; fruit red, edible. A common tree in subtropical forests.

Batase, 1500-1650 m, Dec. 1963, *Sen Gupta* 1024; Sham Khara 1500 m, Nov. 1964, *Deb* 3.

E. meliaefolia Benth. Fl. Hongk. 58, 1861; Fl. Brit. Ind. 1: 490, 1875.

Small tree with slender stem and branches; flowers unisexual in lax cymes.

Kamji, 1500 m, *Subba Rao* 221,

Glycosmis arborea (Roxb.) DC. Prodr. 1: 538, 1824. *C. pentaphylla* Hook. f. Fl. Brit. Ind. 1: 499, 1875, p.p. non Corr.

A small shrub with pinnate leaves; flowers white, small in axillary or terminal racemes; berries white, globose. Common.

Tama, 1450 m, Nov. 1964, *Deb* 309; Phuntsholing, *Subba Rao* 104; Samchi, 100 m. *Thothathri* 10257.

Micromelum integerrimum (Roxb.) Wt. & Arn. ex M. Roem. in Fam. Nat. Reg. Veg. 1: 47, 1846. *M. pubescens* Hook. f. Fl. Brit. Ind. 1: 501, 1875. p.p. non Bl.

A small tree with imparipinnate leaves; flowers small, fragrant many in large, terminal, corymbose panicles; berries orange, acid to taste. Scattered in tropical forests.

Gaylegphug, 270 m. *Sen Gupta* 805 and 1355; Near Betni Bridge, 1050 m, *Sen Gupta* 1055; Phuntsholing, May 1964, *Maheshwari* 5357; Samchi, 400 m, Dec. 1963, *Thothathri* 10400.

Murraya koenigii Spreng. Syst. Veg. 2: 315, 1825; Fl. Brit. Ind. 1: 503, 1875.

A small tree with imparipinnate leaves; flowers dirty white, many in terminal, corymbose cymes; berries black when ripe. A rare tree in open forest.

Phuntsholing, May 1964, *Maheshwari* 5320; Birti, 550 m, April 1964, *Sen Gupta* 1202.

M. exotica Linn. Mant. 563, 1771; Fl. Brit. Ind. 1: 502, 1875.

A small evergreen tree with imparipinnate leaves; leaflets small, shining; flowers white, fragrant, in short corymbs, axillary or terminal; berries ovoid, red. Frequent in lower hill forests.

Phuntsholing, *Subba Rao* 105.

Skimmia melanocarpa Rehd. et Wils. in Pl. Wilson. 2: 138, 1914. *S. laureola* Hook. f. Fl. Brit. Ind. 1: 499, 1875.

A small shrub often with procumbent branches, strongly aromatic; flowers white, polygamous, in dense terminal panicles.

Ha Valley, 3500 m, *Sen Gupta* 658; Honshu, 2000 m, *Sen Gupta* 1641; Chima Kothi, 2500 m, April 1964, *Maheshwari* 5314; 1 km north of Wamrung, 2500 m, Sept. 1965, *A. S. Rao* 43346.

Toddalia asiatica (Linn.) Lamk. Tab. Encycl. 2: 116, 1797. *T. aculeata* Pers. Syn. Pl. 1: 249, 1805; Fl. Brit. Ind. 1: 497, 1875.

A prickly rambling shrub; leaves 1-3-foliolate, leaflets sessile; flowers white in axillary cymes; fruit 3-5 grooved, orange-coloured when ripe. Common in subtropical forests,

Chaisilakha, 1500 m, *Subba Rao* 447; Phuntsholing, May 1964, *Maheshwari* 5348; Tama, 1450 m, Nov. 1964, *Deb* 313.

Zanthoxylum acanthopodium DC. Prodr. 2: 727, 1824; Fl. Brit. Ind. 1: 493, 1875.

A tall shrub with few long branches armed-with compressed, large prickles; leaves with 2-6 pairs of leaflets, petiole and rachis usually winged; flowers apetalous, dense-cyme clusters in axils of fallen leaves; fruit of 1-seeded globose carpel, dehiscent ventrally; seed black and shining. Occasional above 1000 m.

Kamji, 1500 m, *Subba Rao* 255.

Z. armatum DC. Prodr. 1: 727, 1824. *Z. alatum* Roxb. Fl. Ind. 3: 768, 1832; Fl. Brit. Ind. 1: 493, 1875.

Tall shrub; leaves with broad, winged rachis and petiole; flowers in loose panicles. In temperate regions in outskirts of forests.

Paro, 2500 m, *Mukerjee* 5887; Punakha, 1500 m, *Sen Gupta* 1520.

Z. oxyphyllum Edgew. in Trans. Linn. Soc. 20:42, 1851; Fl. Brit. Ind. 1: 494, 1875. *Fagara oxyphylla* Eng. Pflanzeng. 3: 4: 118, 1896.

Shrub with hooked prickles; cymes many flowered, terminal and axillary; petals 4, white. A rare plant.

Chima Kothi, 2500 m, April 1964, *Maheshwari* 5279 & 5302.

Z. tomentellum Hook. f. Fl. Brit. Ind. 1: 493, 1875.

A small tree, velvety tomentose on younger parts and on lower surface of leaves; cymes axillary; flowers polygamous; petals 4. A rare tree.

Lumichawa, 2500 m, *Sen Gupta* 1539.

SIMRAUBACEAE

S. K. MUKERJEE

Brucea mollis Wall. ex Kurz in Journ. As. Soc. Beng. 42: 64, 1873; Fl. Brit. Ind. 1: 521, 1875.

A shrub with large pinnate leaves containing a bitter principle; flowers small, in dense axillary panicles, tetramerous; fruits of 4 or less one seeded drupes from each flower, brown when ripe. Common along the forest roads.

Phuntsholing, *Subba Rao* 9; *Ibid.* *Sen Gupta* 307; *Ibid.* April 1964, *Maheshwari* 5703.

MELIACEAE

G. SEN GUPTA AND K. C. MALICK

Aphanamixis decandra (Roxb.) Kosterm. in *Reinwardtia* 7(3): 262, 1875.

A large or middle sized tree; leaves pinnate, about 30 cm long, leaflets about 20 cm long, oblong; flowers unisexual, fragrant, in axillary panicles; capsules with 5 red, arillate seeds. Fairly common at subtropical forests.

Dakpai, 1650 m, Nov. 1964, *Deb* 349.

A. polystachya (Wail.) Parker in *Ind. For.* 57: 486, 1931.

Amoora rohituka W. & A. *Prodr.* 1: 119, 1834; *Fl. Brit. Ind.* 1: 559, 1875.

Local name: Bandre, Lali.

A middle sized evergreen tree with a compact crown; leaves about 1 m long, leaflets elliptic, 12-15, about 20 cm long; flowers white, unisexual in axillary panicles; fruit capsular with a coriaceous rind; seeds with red aril. A common tree in tropical forests.

On way to Samdrup Jhonkar from Deothong, March 1965, *Balakrishnan* 41954; Phuntsholing, Dec. 1963, *Subba Rao* 54; Samchi, Jan. 1964, *Thothathri* 10600; Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 806.

Chisocheton paniculatus (Roxb.) Hiern in *Fl. Brit. Ind.* 1: 552, 1875.

A medium sized tree with pinnate leaves as long as 1 m or more; flowers small, polygamous, in large, laxly branched panicles; fruit capsular, globose-pyriform, 5-6 cm in diam. Frequent in tropical forests.

On way to Samdrup Jhonkar from Deothong, March 1965, *Balakrishnan* 41948; Phuntsholing, *Subba Rao* 150; Gaylegphug, 270 m, *Sen Gupta* 870 & 1409; Gaylegphug, Nov. 1964, *Deb* 181.

Dysoxylum binectariferum (Roxb.) Hook. f. ex Bedd. in *Trans. Linn. Soc.* 25: 212, 1866; *Fl. Brit. Ind.* 1: 546, 1875.

A tree of medium height; leaves pinnate, about 50 cm long, leaflets 5-9, about 18 cm long; flowers small, 4-merous, in axillary panicles; capsule 5-7 cm in diam., reddish, with 4 purple seeds. Occasional.

Phuntsholing, *Subba Rao* 149.

D. dobara (Buch.-Ham.) Merrill in *Journ. Arn. Arb.* 23: 173, 1942.

D. procerum Hiern in *Fl. Brit. Ind.* 1: 547, 1875.

A large tree; leaves pinnate, up to 90 cm long, leaflets 7-10, up to 35 cm long; flowers small, numerous in spreading axillary panicles; fruit

a pyriform-globose capsule, 3-4 cm in diam. with 3-4 arillate seeds. Occasional.

Phuntsholing, *Subba Rao* 131.

Melia azedarach Linn. Sp. Pl. 384, 1753 ; Fl. Brit. Ind. 1: 544, 1875.

A short tree with a spreading crown ; leaves bipinnate or tripinnate, leaflets many ; flowers lilac in axillary panicles ; drupe subglobose, 2 cm in diam. Occasionally planted.

Punakha 1500 m, Aug. 1965, *Sen Gupta* 1838.

ICACINACEAE

Natsiatum herpeticum Buch.-Ham. ex R. Br. in Benn. Pl. Jav. Rar. 245, 1838 ; Fl. Brit. Ind. 1: 595, 1875.

A climber with distant, membranous leaves ; flowers minute, unisexual, many in extra axillary pendulous racemes ; fruit is an oblique compressed drupe. Fairly common in tropical forests.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 819 ; Tashigong, above Mithidanga River, Oct. 1965, *Balakrishnan* 44006 ; Phuntsholing, *Subba Rao* 388 ; Samchi, Dec. 1963, *Thothathri* 10330, 10345.

AQUIFOLIACEAE

S. K. MUKERJEE

Ilex dipyrrena Wall. ex Roxb. Fl. Ind. 1:473, 1824 ; Fl. Brit. Ind. 1: 599, 1875.

A middle sized evergreen tree ; leaves with spiny margin, spines almost absent in older leaves ; flowers unisexual, in subglobose axillary clusters, white ; fruit globose, 12-15 mm, scarlet. Scattered in open forest.

Lumichawa, 2500 m, *Sen Gupta* 1523 ; Chima Kothi, 1700 m, April 1964, *Maheshwari* 5217.

I. fragilis Hook. f. Fl. Brit. Ind. 1: 602, 1875.

A small tree with membranous glossy green leaves, reticulation of nerves prominent beneath ; flowers unisexual in axillary clusters, 5-merous ; drupe globose, red. Rare.

Chima Kothi, 2500 m, April 1964, *Maheshwari* 5315.

I. insignis Hook. f. Fl. Brit. Ind. 1: 599, 1875.

An evergreen tree ; leaves thick and coriaceous, spinous toothed when young ; flowers unisexual, in axillary clusters ; drupes 15-20 mm in diam. Rare.

Chaisilakha, 1200 m, April 1964, *Maheshwari* 5120.

CELASTRACEAE

K. RAMAMURTHY

Celasitus monosperma Roxb. Fl. Ind. 1:625, 1820 ; Fl. Brit. Ind. 1:618, 1875.

Climbing shrubs ; leaves elliptic, serrulate, black above when dry, reddish brown beneath ; flowers small, in low, axillary or terminal branched racemes ; petals oblong ; capsule obovoid with 1 seed, enveloped in orange aril. Fairly common at subtropical regions.

Kamji, 1000 m, *Subba Rao* 237 & 406.

C. paniculatus Willd. ssp. **multiflorus** (Roxb.) Ding Hou in Ann. Miss. Bot. Gard. 42: 231, 1955.

An extensive climber ; leaves elliptic to elliptic oblong, chartaceous, 5-6 cm long ; flowers small, in terminal racemes ; capsule ovoid, less than 1 cm in diam., 1-3 celled, 3-6 seeded ; seed with orange aril. Occasional.

Samchi, 300 m, Dec. 1963, *Thothathri* 10422.

C. stylosa Wall. in Roxb. Fl. Ind. 2: 401, 1824 ; Fl. Brit. Ind. 1: 618, 1875.

Scandent shrub ; leaves elliptic, serrate ; flowers small, in short axillary or terminal branched racemes ; capsule yellow, 3-6 seeded, seeds with orange aril. Occasional.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1256.

Euonymus grandiflorus Wall. in Roxb. Fl. Ind. 2: 404, 1824 ; Fl. Brit. Ind. 1: 608, 1875.

Arboreous shrub ; leaves obovate or obovate-oblong, shining and dark green above, pale beneath, serrate near the apex ; cymes axillary, 3-flowered ; flowers white, 2 cm across ; capsule quadrangular, yellow ; seeds enveloped in scarlet aril.

Paro, 2500 m, *Mukerjee* 5818.

E. theaeifolius Wall. ex Lawson in Fl. Brit. Ind. 1: 612, 1875.

A small shrub with ovate, coriaceous leaves ; flowers few in dichotomous, axillary cymes, red ; capsule obscurely 4-angled, 1-seeded ; aril scarlet. Scarce in subtropical and temperate forests.

Gomchu, opposite workshop, 2500 m, Sept. 1965, *A. S. Rao* 43409 ; Sangra, 1000 m, Dec. 1963, *Thothathri* 10573.

E. vagans Wall. in Roxb. Fl. Ind. 2: 412, 1824 ; Fl. Brit. Ind. 1: 611, 1875.

Climbing shrub ; leaves ovate lanceolate, up to 6 cm long, serrate, dark green above, pale beneath ; flowers in trichotomous cymes ; fruit minutely tubercled. Rare.

Dakpai, 1650 m, Nov. 1964, *Deb* 387.

Euonymus viburnoides Prain in Journ. As. Soc. Beng. 73: 184, 1905.

A shrub, young branches faintly quadrangular below the nodes ; leaves thick, serrate ; flowers minute, in dichotomously spreading cymose panicles, axillary near the apex of the branches ; fruit faintly 4-ridged. Rare.

Chaisilakha, 1300 m, April 1964, *Maheshwari* 5131.

Gymnosporia acuminata Hook. f. ex Lawson in Fl. Brit. Ind. 1: 619, 1875.

A shrub with slender branches and membranous leaves ; flowers small, in axillary dichotomous cymes, pedicels and peduncles slender ; capsule obovoid or globose, somewhat compressed ; seeds black. Scarce.

Tama, 1100 m, April 1964, *Sen Gupta* 1150.

G. thomsoni Kurz in Journ. As. Soc. 44: 2: 202, 1875.

A bushy prickly shrub ; flowers small, in few flowered axillary or supra axillary cymes ; peduncles and pedicels slender ; capsules red, 1-2 seeded. Common in subtropical forests.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1277 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 27 ; Sangura, 1000 m, Dec. 1963, *Thothathri* 10474.

Microtropis discolor (Wall.) Wall. ex Arn. in Ann. Nat Hist. 3: 152, 1839 ; Fl. Brit. Ind. 1: 614, 1875.

A small tree with membranous leaves ; flowers pale yellow, in compact cymes ; capsules obovoid. Scarce ; branches emit a sweet fragrance when broken.

Sureylakha, 1300 m, Dec. 1963, *Sen Gupta* 959 ; Dorokha, Dec. 1963, 1500 m, *Thothathri* 10466.

HIPPOCRATEACEAE

S. K. MUKERJEE

Reissantia arborea (Roxb.) Hara in Journ. Jap. Bot. 40: 237, 1965 ; *Hippocratea arborea* Roxb. Pl. Corom. 3:3, t. 205, 1819 ; Fl. Brit. Ind. 1:625, 1875.

A small tree with climbing branches ; leaves membranous, up to

20 cm long, elliptic, serrate ; flowers yellowish, many in axillary much branched cymes ; fruit obovoid, about 8 cm long. Rare.

Birti, 600-750 m, April 1964, *Sen Gupta* 1325.

RHAMNACEAE

S. K. MUKERJEE

Berchemia floribunda (Wall.) Broming in Ann. Sc. Nat. 10: 357, 1826 ; Fl. Brit. Ind. 1: 637, 1875.

Local name: Kala laharey, Gaiyo.

A climber with branches armed with prickles ; leaves ovate, up to 10 cm long ; flowers small, in large terminal panicles ; fruit oblong, red, about 2 cm long. Scarce in tropical forests.

Sham Khara, Moorey forest, 1600 m, Dec. 1963, *Sen Gupta* 1094.

B. lineata DC. Prodr. 2: 23, 1825 ; Fl. Brit. Ind. 1: 638, 1875.

Thimpu, 2500 m, April 1964, *Maheshwari* 5244.

Gouania leptostachya DC. Prodr. 2: 40, 1825 ; Fl. Brit. Ind. 1: 643, 1875.

A shrub with scandent branches ; leaves ovate, 8-10 cm long ; flowers small, in axillary or terminal spikes, bracts conspicuous ; fruit 3-winged ; crowned by persistent calyx. Rare in forest clearings.

Sham Khara, Nov. 1964, *Deb* 51.

G. nepalensis Wall. ex Roxb. Fl. Ind. 2: 417, 1824 ; Fl. Brit. Ind. 1: 644, 1875.

Large climber with ovate, alternate leaves ; flowers in axillary and terminal racemes, bracts and bracteoles conspicuous ; fruit 3-winged.

On way to Deothong, 7 km from S. Jankar ; Aug. 1965, *A. S. Rao* 43120 ; Sangura, 1500 m, *Thothathri* 10541.

Rhamnus nipalensis Wall. ex Roxb. Fl. Ind. 2: 375, 1824 ; Fl. Brit. Ind. 1: 640, 1875.

A rambling shrub ; leaves thin, up to 15 cm long, dark green and shining above ; flowers very small, in axillary panicles or fascicles ; fruit obovate, less than 1 cm, enclosed at base by persistent calyx. Common at the fringe of the forest.

Changda chungli 1500 m, *Thothathri* 10588 ; Dhamdum Hill, Samchi, 500 m, *Thothathri* 10588.

Ventilago calyculata Tulasne in Ann. Sc. Nat. Ser. 4: 124, 1826 ; Fl. Brit. Ind. 1: 631, 1875.

A scandent shrub ; leaves with 6 pairs of costal nerves ; flowers small, in densely pubescent, terminal, paniculate spikes ; fruit samaroid, nut girt at the middle by the adhering calyx-tube, prolonged into a linear, oblong, coriaceous wing which is about 3 cm long. Occasional in tropical forests.

Phuntsholing, *Subba Rao* 390.

Zizyphus mauritiana Lamk. *Encycl. Meth.* 3: 319, 1789. *Z. jujuba* Laws. in *Fl. Brit. Ind.* 1: 632, 1875 non Lamk.

Short tree, branches armed with prickles ; leaves sub-orbicular, densely pale tomentose beneath, main nerves 3 ; flowers small, in axillary clusters ; fruit a drupe, reddish brown and shining, stone rugose. Common in waste places and open forests.

Phuntsholing, *Subba Rao* 23 ; Tashigong, Sept. 1965, *A. S. Rao* 43490.

VITACEAE

S. K. MUKERJEE

Ampelocissus divaricata (Wall.) Pl. in DC. *Mongr. Phan.* 5: 378, 1887.

Vitis divaricata Wall. ex Laws. in *Fl. Brit. Ind.* 1: 657, 1875.

A large climber ; leaves digitately 3-5 foliolate, leaflets ovate, 15-20 cm long ; flowers small, reddish brown, in small compact umbels, peduncles woolly ending in forked tendrils ; fruit globose, about 2 cm, black, 3-4 seeded. A rare plant.

Punakha, 1500 m, *Sen Gupta* 1547.

Cissus assamica (Laws.) Craib in *Kew Bull.* 1911. 31, 1911. *Vitis assamica*

Laws. in *Fl. Brit. Ind.* 1: 648, 1875.

A climber with harsh, subcoriaceous, suborbicular leaves, leaf margin bristly-serrate, recurved, nerves prominent beneath ; flowers small, in leaf opposed cymes ; fruit 6-8 mm, turbinate, black, 1-seeded. Scarce in tropical forest.

Phuntsholing, *Sen Gupta* s.n.

C. elongata Roxb. *Fl. Ind.* 1: 411, 1824. *Vitis elongata* (Roxb.)

Wall. ex Laws. in *Fl. Brit. Ind.* 1: 658, 1875.

An extensive climber with glossy succulent flattened branches ; leaves digitately 5-foliolate ; flowers small, in leaf opposed di-or trichotomous cymes ; fruit 2.5 cm elliptic, smooth, black, 1-seeded. Rare in tropical forest.

Samchi, *Thothathri* 10452.

Cissus repens Lamk. Dict. 1: 31, 1789. *Vitis repens* Wt. & Arn. Prodr. 125, 1834; Fl. Brit. Ind. 1: 646, 1875.

A trailing or climbing plant with weak stem, branches fleshy; leaves cordate-ovate, pale green, membranous, with distant sharp spinous teeth on the margin; flowers small in leaf-opposed compound umbels; fruit dry, 1.5 cm in diam.

Samchi, *Thothathri* 10521; Kheri, 3 km to Tashigong, 1000 m, Sept. 1965. *A. S. Rao* 43522.

C. repanda Vahl Symb. 3: 18, 1794. *Vitis repanda* Wt. & Arn. Prodr. 125, 1834; Fl. Brit. Ind. 1: 648, 1875.

A trailing or creeping plant; stem and leaves with adpressed woolly tomentum; flowers small in corymbose cymes, whole inflorescence crimson; fruit pyriform, 2 cm. In open jungles, frequent.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1358.

Leea aequata Linn. Mant. 1: 24, 1767. *L. hirta* Roxb. Fl. Ind. 1: 655, 1820; Fl. Brit. Ind. 1: 668, 1875.

Shrubs with large pinnate leaves; leaflets up to 30 cm long, with arched veins; flowers in short compact cymes; fruit black, 1.5 cm. Common in shade of tall trees.

Phuntsholing, May 1964, *Maheshwari* 5358.

L. acuminata Wall. ex Clarke in Journ. Bot. 19: 102, 1881. *L. sambucina* Laws. in Fl. Brit. Ind. 1: 666, 1875 p.p. non Willd.

A shrub, nearly 2 m tall, stem and branches stout and succulent; leaves large, bipinnate, leaflets thin and flaccid; flowers small in a crimson coloured compact cyme; fruit 2 cm in diam. Scattered in damp shady places of the forest.

Gaylegphug, 270 m, May 1964, *Sen Gupta* 1420.

L. trifoliata Laws. in Fl. Brit. Ind. 1: 666, 1875.

A small shrub, less than 1 m high; leaves 3-foliolate, leaflets thin and membranous, up to 20 cm long; cymes few flowered; fruit black, 1.5 cm in diam. Scarce in the fringe of forests.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 835.

Tetrastigma bracteolatum (Wall.) Pl. in DC. Monogr. Phan. 5: 428, 1887. *Vitis bracteolata* Wall. in Roxb. Fl. Ind. 2: 483, 1824; Fl. Brit. Ind. 1: 654, 1875.

Local name: Korkoriya.

A climber with slender stem and branches; leaves 3-foliolate; flowers minute, numerous, peduncles and pedicels filiform, cymes divaricate; fruit about 1 cm, black, 2-3 seeded. Widespread in forests at low

elevations.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 822 ; Rani Camp, 1650 m, Nov. 1964, *Deb* 198 ; Birti, 700 m, April 1964, *Sen Gupta* 1334 ; Phuntsholing, *Subba Rao* 92 ; Samchi, 300 m, Dec. 1963, *Thothathri* 10539 ; Chenari village, Aug. 1965, *A. S. Rao* 43155 ; Gaylegphug, 270 m, Nov. 1964, *Deb* 175.

Tetrastigma lanceolarium Pl. in DC. Monogr. Phan. 5: 423, 1887. *Vitis lanceolaria* Roxb. Fl. Ind. 1: 412, 1820 ; Fl. Brit. Ind. 1: 660, 1875.

A large climber, branches woody, covered with corky tubercles ; leaves 5-foliolate ; flowers unisexual in short compact axillary cymes ; fruit subglobose, 2 cm. Frequent in subtropical forests.

Narfong, 2 km west of Dentak Camp, 1800 m, Aug. 1965. *A. S. Rao* 43134.

T. serrulatum (Roxb.) Pl. in DC. Monogr. Phan. 5: 432, 1887. *Vitis capriolata* D. Don Fl. Nepal. 188, 1825 ; Fl. Brit. Ind. 1: 659, 1875.

Climber with slender wiry stem ; leaves 5-foliolate, leaflets lanceolate, bristly serrate ; flowers in axillary branched cymes, peduncle with conspicuous bracts, cymes often terminating lateral branches ; fruit black, globose, 1-5 cm in diam., 2-4 seeded. Widespread at lower elevations.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 884 and Nov. 1964, *Deb* 129 ; Shemgang, 1950 m, Nov. 1964, *Deb* 422 ; Gomchu hill, opposite workshop, 2400 m, Sept. 1965, *A. S. Rao* 40402.

ACERACEAE

S. K. MUKERJEE

Acer campbellii Hook. f. et Thoms. ex Hiern. in Fl. Brit. Ind. 1: 696, 1875.

A tall tree ; leaves 5-7 lobed, 10-18 cm across ; pendulous cymes 5-15 cm long, axillary ; fruit a double samara, wings widened above, back slightly curved, about 2.5 cm long. Scattered in subtemperate forests.

Chima Kothi, 2000 m, April 1964, *Maheshwari* 5274.

A. sikkimense Miq. in Arch. Neerl. Sci. Nat. 2: 471, 1852 ; Fl. Brit. Ind. 1: 694, 1875.

A large tree ; leaves simple with 5-basal nerves, 7-15 cm long ; flowers polygamous, in axillary racemes ; fruit a double samara with divergent wings. Common in temperate regions.

Lougchaphaka, Thimpu, 1500 m, April 1964, *Maheshwari* 5215.

SAPINDACEAE

G. SEN GUPTA

Allophyllus zeylanicus Linn. var. **grandifolia** Hiern. in Fl. Brit. Ind. 1: 673, 1875.

Local name: Sheti gach.

A tall shrub with unifoliolate leaves; flowers small in axillary raceme; fruit globose, red. Occasional.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 859.

Aphania rubra (Roxb.) Radlk. Sap. Holl. Ind. 21: 69, 1878.

Sapindus attenuatus Wall. ex Hiern. in Fl. Brit. Ind. 1: 684, 1875.

A small tree; leaves pinnate rarely unifoliolate, leaflets up to 50 cm long; flowers small, red, many in axillary or terminal racemes; fruit 1-2 lobed, 2 cm long, dark purple, seed arillate. Frequent in forests at lower elevations. The aril is eaten.

Phuntsholing, Dec. 1963, *Subba Rao* 148; Birti, 900 m, April 1964, *Sen Gupta* 333.

Dobinea vulgaris Ham. ex D. Don Prodr. Fl. Nepal. 249, 1825; Fl. Brit. Ind. 1: 696, 1875.

A tall much branched shrub; leaves aromatic, flowers small, unisexual, in terminal pyramidal panicles, bracts pink, prominent; fruit a compressed drupe, 1-5 cm in diam. Common at lower altitudes.

On way to Nyoth from Shali, Tashiyangtsi track, Oct. 1965, *Balakrishnan* 44129; on way to Bomthang, 2 km from Lhuntsi, Oct. 1965, *Balakrishnan* 44542.

SABIACEAE

G. SEN GUPTA

Meliosma simplicifolia (Roxb.) Walp. Rep. 1: 423, 1842. *Millingtonia simplicifolia* Roxb. Fl. Ind. 1: 103, 1820; Fl. Brit. Ind. 2: 5, 1876.

A large tree; leaves membranous, ob-lanceolate, up to 40 cm long; flowers small, red, sessile in usually terminal panicles; drupes 5 mm. Occasional.

Tama, 1200 m, April 1964, *Sen Gupta* 1186; on way to Monger from Lhuntsi, Nov. 1965, *Balakrishnan* 44619.

Sabia lanceolata Colebr. in Trans. Linn. Soc. 12: 355, 1819; Fl. Brit. Ind. 2: 2, 1876.

A scandent shrub, flowers small, fragrant, many in axillary corymbose cymes; drupe 1.5-2 cm, slightly oblique, blue when ripe. Frequent in dense tropical forest.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 899.

Sabia leptandra Hook. f. & Th. Fl. Ind. 1: 209, 1855; Fl. Brit. Ind. 2: 2, 1876.

Local name: Kali lahara.

A shrub with scandent branches; flowers solitary, axillary, greenish purple, campanulate, about 2 cm in diam.; drupe orbicular-compressed, 3-4 cm in diam., pale blue. Fairly common at lower altitude.

Sham Khara, 1500 m, Nov. 1964, *Deb* 22.

S. parviflora Wall. ex Roxb. Fl. Ind. 2: 310, 1824; Fl. Brit. Ind. 2: 2, 1876.

Scandent shrub with slender branches; flowers small, few in axillary dichotomous cymes; fruits oblong, about 1 cm. Scattered in subtropical forests.

Tama, 1100 m, April, 1964, *Sen Gupta* 1146; Gaylegphug, 270 m, Nov. 1964, *Deb* 158.

ANACARDIACEAE

Rhus insignis Hook. f. Fl. Brit. Ind. 2: 11, 1876.

A small tree with large pinnate leaves; leaflets 3-4 pairs, coriaceous, elliptic, glabrous and shining above, rusty tomentose beneath; nerves many, parallel; flowers small in axillary panicles; fruit drupaceous, globose, 1.2 cm in diam. epicarp bursting irregularly. Rare.

Lumichawa, 2500 m, Aug. 1965, *Sen Gupta* 1537; Punakha, 1500 m, Aug. 1965, *Sen Gupta* 1518.

R. javanica Linn. Sp. Pl. 1: 265, 1753. *R. semialata* Murray in Com. Soc. Sci. Goett. 6: 27. t. 3, 1784; Fl. Brit. Ind. 2: 10, 1876.

A small tree, densely softly pubescent all over; leaflets 4-6 pairs, nerves many, parallel, petiole winged above; flowers small in axillary panicles; drupes compressed, orbicular, 1 cm in diam., red and shining; fruits acid and edible. Common in sub-temperate regions.

Lumichawa 2500 m, Aug. 1965, *Sen Gupta* 1491; Shali, Tashiyangtshi track, Oct. 1965, *Balakrishnan* 44112.

Tapiria hirsuta (Roxb.) Hook. f. ex Benth. & Hook. f. Gen. Pl. 1: 423, 1862; Fl. Brit. Ind. 1: 28, 1876.

A small tree, branches scandent, softly villous in younger parts ; leaves odd-pinnate, leaflets membranous ; flowers small in axillary or terminal panicles, sweet scented ; drupe 2 cm in diam., purplish black.

Gaylegphug, 270 m, May 1964, *Sen Gupta* 1430.

CORIARIACEAE

N. P. BALAKRISHNAN

Coriaria nepalensis Wall. Pl. As. Rar. 3 : 67, t. 289, 1832 ; Fl. Brit. Ind. 2 : 44, 1876.

A shrub with quadrangular, arched branches ; leaves opposite, 3-7 nerved ; flowers small red, in axillary, solitary or clustered racemes ; nuts enveloped by fleshy persistent petals. Common in the jungles in hill slopes.

Shali, between Tashigong and Yangtsi, 1900 m, March 1965, *Balakrishnan* 41309 ; 1 km from Yangtsi, March 1965, *Balakrishnan* 41476.

MORINGACEAE

K. C. MALICK

Moringa oleifera Lamk. Encycl. 1 : 398, 1785 ; *M. pterygosperma* Gaertn. Fruct. 2 : 314, 1791 ; Fl. Brit. Ind. 2 : 45, 1876.

A short, soft wooded, deciduous tree, bark grey, spongy pungent ; leaves large, usually thrice pinnate ; flowers irregular, in spreading terminal and axillary panicles ; capsule 9-ribbed, 15-30 cm long. Cultivated in villages.

Phuntsholing, Dec. 1963, *Subba Rao* 373.

CONNARACEAE

G. SEN GUPTA

Connarus paniculatus Roxb. Fl. Ind. 3 : 139, 1832 ; Fl. Brit. Ind. 2 : 52 1876.

An extensive climber ; leaves odd pinnate, leaflets 3-7, elliptic, up to 20 cm long ; flowers in much branched, axillary or terminal panicles ; capsule shining, deeply striate, 3 cm long, compressed. Common at lower altitudes.

Gaylegphug, 270 m, Nov. 1964, *Sen Gupta* 1310.

FABACEAE*

K. THOTHATHIRI

Abrus pulchellus Wall. ex Thw. Enum. Pl. Zeyl. 2 : 91, 1859 ; Fl. Brit. Ind. 2 : 175, 1876.

A wiry climber ; leaflets ligulate-oblong, glabrous above, thinly silky below ; flowers light orange in colour, arranged in many flowered, long peduncled raceme which is 17 cm long ; pod linear-oblong, flat, 6-8 cm long, incurved ; seeds compressed, black. A common plant, mostly in fruits.

*This is the 7th paper in the series "Studies in FABACEAE" by the author.

Dhamdhum, 800 m, Nov. 1964 (in fr.), *Mukerjee* 6153 ; Gaylegphug, 270 m, Dec. 1963 (in fr.), *Sen Gupta* 906 ; Phuntsholing, *Subba Rao* 19 ; Deothong Hill, Chinari village, Aug. 1965, *A. S. Rao* 43131 ; Gaylegphug, Nov. 1964 (in fl.), *Deb* 104.

Abrus precatorius Linn. Syst. Nat. 2 (ed. 2) : 472, 1767 ; Fl. Brit. Ind. 2 : 175, 1876.

A much branched climber ; leaflets oblong, smaller than the previous species ; flowers pink, arranged in crowded racemes ; pod turgid, oblong, shorter than the previous species, seeds scarlet with a black spot.

Tashigong to Yangtshi, Shergaon, 1250 m, March 1965, *Balakrishnan* 41282.

Aeschynomene indica Linn. Sp. Pl. 2 (ed. 1) : 713, 1753 ; Fl. Brit. Ind. 2 : 151, 1876.

An undershrub ; leaflets numerous ; stipule lanceolate, auricled at base ; flowers yellow, 1-4 in axillary viscid raceme ; pod a long stipitate lomentum, upper suture straight, lower one more or less indented.

19 km from Samdrup Jhonkar to Deothong, Aug. 1965, *A. S. Rao* 43130.

Astragalus stipulatus D. Don ex Sims in Bot. Mag. (n.s) 8 : t. 2380, 1823 ; Fl. Brit. Ind. 2 : 131, 1876.

An undershrub, 1-2 m high ; leaflets oblong, glabrescent above, glaucous and slightly adpressed hairy below ; stipule very prominent, leaf-opposed, amplexicaul ; raceme long peduncled, dense, up to 15 cm long ; flowers yellow ; pod hay-yellow, turgid, slightly recurved, narrowed above into a long beak. A most common plant at altitudes between 2500-4500 m.

Paro, 4200 m, Aug. 1963 (in fl. & fr.), *Balakrishnan* and *Sen Gupta* 652, 752 ; Dochu La, 3200 m, Sept. 1964 (in fr.), *Hajra* 366 ; Paro, 2500 m, Oct. 1963 (in fr.), *Mukerjee* 5967.

Atylosia scarabaeoides (Linn.) Benth. in Miq. Pl. Jungh. 1 : 242, 1852 ; Fl. Brit. Ind. 2 : 215, 1876. *Dolichos scarabaeoides* Linn. Sp. Pl. 1 (ed. 1) : 726, 1873.

An undershrub with slender, trailing, grey-downy branches ; leaf trifoliolate, thinly pubescent above, reticulate and grey-canescens beneath ; flowers yellow ; pod oblong, up to 2 cm long, straight, apiculate, clothed with brown silky hairs. The plant is very common on roadsides.

Gumkhara, Oct. 1965, *Balakrishnan* 44044 ; Dakpai, 1650 mm, Nov. 1964 (in fl. & fr.), *Deb* 447.

Butea parviflora Roxb. (Hort. Beng. 53, 1814, nomen) Fl. Ind. 3 : 248, 1832. *Spatholobus roxburghii* Benth. in Miq. Pl. Jungh. 1 : 238, 1852 ; Fl. Brit. Ind. 2 : 193, 1876.

A large woody climber with grey downy branches ; leaves trifoliate, the terminal one being the largest (30 × 20 cm) ; pod oblong, 9-13 cm long, stalked, one seeded, velvety just above the seed and silky for the remaining part. A very common climber, often found in open forest.

Samchi, 400 m, Dec. 1963 (in fr.), *Thothathri* 10421 ; Dakpai, 1650 m, Nov. 1964 (in fr.), *Deb* 448.

Butea minor Buch.-Ham. ex Baker in Hook. f. Fl. Brit. Ind. 2 : 195, 1876.

Branches clothed with grey silky hairs ; leaflets silky pubescent beneath ; flowers red in colour, calyx and corolla densely velvety ; pod more or less sessile, cuneate below, rusty tomentose.

Pam Camp, 15 km from Rongthong, Sept. 1965 (in fl.), *A. S. Rao* 43476.

Cajanus cajan (Linn.) Millsp. in Field Columb. Mus. Bot. 2 : 53, 1900. *Cytisus cajan* Linn. Sp. Pl. (ed. 1) 1 : 739, 1753. *Cajanus indicus* Spreng. Syst. Veg. 3 : 248, 1826 ; Fl. Brit. Ind. 2 : 217, 1876.

An erect shrub with grey silky branchlets ; leaf trifoliate, leaflets lanceolate, grey-canescens below ; flowers in axillary and terminal corymbs ; vexillum red ; keel and wings yellow ; pod linear, finely hairy. A cultivated plant for the pulses.

Gayleghug, 270 m, Nov. 1964 (in fl. & fr.), *Deb* 101.

Campylotropis eriocarpa (Royle ex Maxim.) Schindl. in Fedde, Rep. 11 : 347, 1912. *Lespedeza eriocarpa* Royle ex Maxim. in Act. Hort. Petrop. 2 : 350, 1873 ; Fl. Brit. Ind. 2 : 144, 1876.

A much branched erect shrub ; leaves stalked, trifoliate ; leaflets grey canescent below ; stipule subulate ; racemes many flowered, flowers deep red in colour ; pod adpressed silky, with the persistent style, 1-2 seeded. Fairly common between 1500-2500 m in the hills.

Thimpu, Sept. 1864 (in fl.), *Abraham* 2356 ; Paro, 2500 m, Oct. 1963 (in fl. & fr.), *Mukerjee* 5892.

Crotalaria alata Buch.-Ham. ex D. Don, Prodr. Fl. Nepal. 241, 1825 ; Fl. Brit. Ind. 2 : 69, 1876.

An undershrub with densely hairy branches ; leaves simple, subsessile ; raceme short, 1-3 flowered ; flowers yellow.

Kheri camp, Sept. 1965, *A. S. Rao* 43495.

C. bhutanica Thoth. in Journ. Bombay nat. Hist. Soc. 66 : 70, 1969.

The species is related to *C. capitata* Benth. but differs in leaves being oblong, brown pubescent below and not finely silky as in the latter, raceme being 5-6 flowered and inflorescence, calyx, pedicel and bracts brown pubescent and not ferruginous silky pubescent as in the latter.

A low undershrub, 25-30 cm high, branches tufted from the root stock, grey pubescent ; leaves simple, alternate, lower leaves smaller, obovate and more or less sessile while upper leaves larger, oblong and petiolate ; inflorescence a terminal, congested racemose head of 5-6 flowers ; flowers violet, 1.5 cm long, pedicellate ; bract linear, 3-4 mm long, pubescent ; bracteoles 2, linear, 3-5 mm long, one at the base of the calyx cup and another at the middle of the pedicel, pubescent ; calyx pubescent without, glabrous within, tube short, bilipped, 2 lobes of the upper lip oblong, 3 lobes of the lower lip lanceolate ; corolla vexillum ovate, orbicular, clawed, blade with 2 callosities at its base just above the claw ; wings oblong, clawed, glabrous ; keels connate except below, incurved ; stamens 10, monadelphous, anthers dimorphous ; ovary 1.2 cm long, sessile, glabrous, style slender, incurved at base, bearded, stigma minute, hairy, ovules many ; pod not known.

On way to Tabachettu, Thimpu, Sept. 1964, *Abraham* 2382.

This new species was recently described from Bhutan.

Crotalaria calycina Schrank, Pl. Rar. Hort. Monac. t. 12, 1819 ; Fl. Brit. Ind. 2 : 72, 1876.

A small annual, branches silky hairy ; leaves simple, lanceolate ; flowers in terminal racemes, pale yellow in colour. A common plant.

Kheri, Sept., *A. S. Rao* 43483.

C. ferruginea Grah. ex Benth. in Hook. Lond. J. Bot. 2 : 476, 1843 ; Fl. Brit. Ind. 2 : 68, 1876.

A herb with silky branches ; leaves simple, obovate-oblong ; stipule foliaceous, decurrent ; flowers in leaf-opposed racemes ; calyx densely ferruginous ; corolla yellow in colour. A fairly common plant.

Rani Camp to Tama, 1350-1650 m, Nov. 1964 (in fl.), *Deb* 258.

C. humifusa Grah. ex Benth. in Hook. Lond. J. Bot. 2 : 476, 1843 ; Fl. Brit. Ind. 2 : 67, 1876.

A branched, slender herb, clothed with brown silky hairs ; leaves simple, ovate, sessile, glaucous beneath ; flowers in leaf-opposed racemes ; corolla yellow ; pod shortly oblong, 6-10 cm long, glabrous 4-5 seeded.

On the way from Rani Camp to Tama, 1350-1650 m, Nov. 1964 (in fl. & fr.), *Deb* 285.

C. mucronata Desv. in J. de. Bot. 3 : 76, 1814. *C. striata* DC. Prodr. 2 : 131, 1825 ; Fl. Brit. Ind. 2 : 84, 1876.

An undershrub, 1 m high ; leaves trifoliate, leaflets obovato-oblong ; raceme many flowered, up to 22 cm long ; flowers yellow in colour. A fairly common species.

Samchi, 400 m, Dec. 1963 (in fl.), *Thothathri* 10432 ; Gaylegphug, 270 m, Nov. 1964 (in fl.), *Deb* 103 ; Phuntsholing, *Subba Rao* 361 ; *Ibid* May 1964 (in fl.), *Maheshwari* 5352.

Crotalaria occulta Grah. ex Benth. in Hook. Lond. J. Bot. 2 : 565, 1843 ; Fl. Brit. Ind. 2 : 72, 1876.

A suffruticose undershrub ; leaves simple, grey silky below ; raceme terminal, flowers violet blue, scented.

Wamrung approach, 2335 m, Sept. 1965, *A. S. Rao* 43356.

C. sessiliflora Linn. Sp. Pl. (ed. 1) 2 : 1004, 1763 ; Fl. Brit. Ind. 2 : 73, 1876.

An undershrub, branches ascending, brown silky ; leaves simple, linear, 6-7 × 0.5-0.6 cm, glabrous above, densely silky below ; infructescence 6-15 cm long ; calyx lobes densely silky ; pod oblong, glabrous, 1-1.2 cm long, sessile, many seeded. A fairly common plant.

Tama, 1450 m, Nov. 1964 (in fr.), *Deb* 324.

C. tetragona Andr. Bot. Rep. 9. t. 593. 1810 ; Fl. Brit. Ind. 2 : 78, 1876.

A shrub up to 2 m high ; branches tetragonous, thinly silky ; leaves linear to lanceolate, up to 24 cm long ; stipule lanceolate, up to 1 cm long ; inflorescence a raceme, 12 cm long ; calyx densely brown velvety ; corolla yellow, glabrous. A common plant along the roads.

Dakpai, 1650 m, Nov. 1964 (in fl.), *Deb* 443.

C. trifoliatum Willd. Sp. Pl. 3 : 983, 1802 ; Fl. Brit. Ind. 2 : 82, 1876.

An erect herbaceous perennial ; branches downy ; leaflets obovato-oblong, glabrous above, silky beneath ; raceme terminal and axillary ; flowers yellow.

Wamrung approach, 2333 m, Sept. 1965, *A. S. Rao* 43355.

Dalbergia assamica Benth. in Miq. Pl. Jungh. 256, 1852 ; Fl. Brit. Ind. 2 : 235, 1876.

The specimen *Subba Rao* 77 could not be examined by me as it was not present in the Calcutta herbarium. Hence the enumeration of this species is provisional.

Phuntsholing, *Subba Rao* 77.

D. sericea G. Don. Gen. Syst. 2 : 375, 1832. *D. hircina* Wall. ex Benth. in Miq. Pl. Jungh. 256, 1852 ; Fl. Brit. Ind. 2 : 236, 1876.

A large spreading tree ; young shoots silky tomentose ; leaf imparipinnate, up to 24 cm long, leaflets 13, ovato-oblong ; inflorescence a short axillary panicle, densely silky pubescent ; flowers purple. A rare plant.

Birti, 530 m, April 1964 (in fl.), *Sen Gupta* 1207,

Dalbergia sissoo Roxb. ex DC. Prodr. 2 : 416, 1825 ; Fl. Brit. Ind. 2 : 231, 1876.

The specimen *Subba Rao* 44 could not be examined by the author as it was not present in Calcutta herbarium. Hence its inclusion in the flora is provisional.

Phuntsholing, *Subba Rao* 44.

D. stipulacea Roxb. Fl. Ind. 3 : 233, 1832 ; Fl. Brit. Ind. 2 : 237, 1876.

An erect tree with spreading branches, 10 m high ; leaf imparipinnate, 10-15 cm long, stipulate ; leaflets 11-21, elliptic-oblong, alternate ; pod oblong, 8-9 cm long, flat, coriaceous, much thickened opposite the seed.

Thoribadi, Samchi, 350 m, Jan. 1964 (in fr.), *Thothathri* 10631.

The occurrence of this species in Samchi constitutes a new record for Bhutan. The plant is not common as there was only one tree found in the above place.

Derris polystachya Benth. in J. Linn. Soc. 4 (Suppl.) : 114, 1860 ; Fl. Brit. Ind. 2 : 247, 1878.

An extensive climber ; branches glabrous ; leaf imparipinnate, alternate ; leaflets 5-7, oblong, acuminate ; flowers arranged in axillary and terminal panicles, pinkish white in colour ; pod oblong, flat, 4.5-6.0 cm long, glabrous, reticulately veined, distinctly winged on both the sutures, 1-seeded.

Chamarchi forest, Samchi, 200 m, Dec. 1963, *Thothathri* 10603.

One of the rare plants, collected from Bhutan.

Desmodium caudatum (Thunb.) DC. Prodr. 2 : 337, 1825. *Hedysarum caudatum* Thunb. Fl. Jap. 286, 1784. *Desmodium laburnifolium* (Poir.) DC. Prodr. 2 : 337, 1825 ; Fl. Brit. Ind. 2 : 163, 1876.

An undershrub ; leaves trifoliolate ; leaflets oblong, stipellate, 8-10 cm long ; infructescence axillary, 9-18 cm long ; pods linear, 7-9 cm long, jointed, joints beset with minute hooks. A common plant.

Gaylegphug, 270 m, Nov. 1964 (in fr.), *Deb* 161.

D. confertum DC. in Ann. Sci. Nat. (Ser. 1) 4 : 101, 1825 ; Fl. Brit. Ind. 2 : 167, 1876. *D. dioicum* DC. Prodr. 2 : 338, 1825.

A shrub up to 1 m high ; branches grey downy ; leaf trifoliolate, 12-14 cm long ; leaflets ovato-oblong, glaucous beneath ; inflorescence a dense axillary and terminal racemes, 12-15 cm long ; flowers purple, distinctly pedicellate ; calycup turbinate. A common shrub on river banks.

Dhamdhum, 800 m, Nov. 1964 (in fl.), *Mukerjee* 6159 ; Tashigong Hill, 1500 m, March 1965, *Balakrishnan* 41252 ; way to Shali from Gumkhara, Oct. 1965, *Balakrishnan* 44070 ; Bomthang, Nov. 1965, *Balakrishnan* 44548.

D. floribundum (D. Don) G. Don, Gen. Syst. 2 : 297, 1832 ; Fl. Brit. Ind. 2 : 167, 1876. *Hedysarum floribundum* D. Don, Prodr. Fl. Nepal. 244, 1825.

An undershrub ; branches pubescent ; leaflets ovate, stipellate, clothed with adpressed hairs below ; racemes axillary and terminal ; flowers purple ; pod linear, jointed, clothed with adpressed, brown, silky hairs.

A common plant.

Thimpu, Sept. 1964 (in fl.), *Abraham* 2341 ; Krishnagiri saddle, Narfong to Wamrung 1334 m, Sept. 1965, *A. S. Rao* 43310 ; Tama, 1450 m, Nov. 1964, *Deb* 315.

Desmodium gangeticum DC. Prodr. 2 : 327, 1825 ; Fl. Brit. Ind. 2 : 168, 1876. *Hedysarum gangeticum* Linn. Sp. Pl. (ed. 1) 2 : 746, 1753.

A herbaceous undershrub ; branches slender, sparsely downy ; leaves unifoliate, stipulate, ovate with cordate base, minutely adpressed hairy below ; pod falcate, 1.5-1.8 cm long, jointed, clothed with short, minute hairs.

Tama to Birti, 1000 m, April 1964, *Sen Gupta* 1198.

D. heterocarpon (Linn.) DC. Prodr. 2 : 337, 1825. *Hedysarum heterocarpon* Linn. Sp. Pl. (ed. 1) 2 : 747, 1753. *Desmodium polycarpum* DC. Prodr. 2 : 334, 1825 ; Fl. Brit. Ind. 2 : 171, 1876.

An erect shrub with slender branches ; leaves trifoliate ; leaflets oblong, glabrous above, clothed with short, adpressed hairs below ; inflorescence a terminal and axillary raceme ; flowers violet in colour ; pod linear, 3-3.5 cm long, faintly jointed, clothed with brown hairs.

Tama, Nov. 1964 (in fl. & fr.), *Deb* 288.

D. khasianum Prain in J. Asiat. Soc. Beng. 66(2) : 395, 1897 ; Hiroyoshi Ohasi in Hara, Fl. Eastern Himal. 151, 1966.

A herb with suffruticose base ; branches glabrous ; leaf trifoliate, alternate, 6-9 cm long ; leaflets ovato-oblong 3.5-5.0 × 1.5-2.0 cm, glabrous above, glaucous and minutely adpressed hairy below ; stipule subulate, up to 4 mm long ; pod linear, 3-5 cm long and 3-5 mm wide, long pedicelled, glabrous 4-7 jointed, joints reticulately veined ; pedicels up to 1.5 cm long.

On the way from Rani Camp to Tama, 1350-1650 m, Nov. 1964 (in fr.), *Deb* 241.

This is one of the rare species of *Desmodium*. This species has so far been known from Khasia and Jaintia Hills, Assam as well as from Eastern Nepal. Hence its occurrence in Tama, Bhutan constitutes a new record for this species.

D. laxum DC. in Ann. Sc. Nat. Paris 4 : 102, 1825. *D. podocarpum* DC. var. *laxum* Baker in Hook. f. Fl. Brit. Ind. 2 : 165, 1876.

An undershrub ; leaf trifoliate, long petioled, 25-27 cm long ; leaflets large, terminal ovate, lateral ones unequal sided, glabrous, finely

reticulately veined ; inflorescence 15-18 cm long ; pod 2-3 jointed, joints half-rhomboidal, clothed with minute, hooked hairs.

Gaylegphug, 270 m, Nov. 1964 (in fr.), *Deb* 166.

Desmodium microphyllum (Thunb.) DC. Prodr. 2 : 337, 1825. *Hedysarum microphyllum* Thunb. Fl. Jap. 284, 1784. *D. parvifolium* DC. in Ann. Sci. Nat. Paris 4 : 100, 1825 ; Fl. Brit. Ind. 2 : 174, 1876.

A prostrate herb with trailing branches ; leaf trifoliate, leaflets small, elliptic, minutely adpressed hairy below ; inflorescence short, few flowered ; flowers pink, distinctly pedicelled ; calyx pubescent. A common plant.

Birti, 600-750 m, April 1964 (in fl.), *Sen Gupta* 1317 ; Thimpu, Sept. 1964 (in fl.), *Abraham* 2331.

D. motorium (Houtt.) Merr. var. *roylei* (Wt. & Arn.) Deb et al. in Bull. bot. Soc. Beng. 22 ; 184, 1968. *D. roylei* Wt. & Arn. Prodr. Fl. Pen. Ind. Or. 227, 1834. *D. gyrans* DC. var. *roylei* (Wt. & Arn.) Baker in Hook. Fl. Brit. Ind. 2 : 175, 1876.

An undershrub ; branches glabrous. Leaf unifoliate ; leaflet oblong, twice longer than broad, stipulate ; inflorescence an axillary and terminal raceme ; pod linear, slightly falcate, 8-10 jointed, glabrous. A common plant.

On way from Rani Camp to Tama, 1350-1650 m, Nov. 1964 (in fr.), *Deb* 284.

D. oblongum Wall. ex Benth. in Miq. Fl. Jungh 1 : 224, 1852 ; Fl. Brit. Ind. 2 : 166, 1876.

An undershrub ; leaflets oblong, 6-10 cm long, subcoriaceous glabrous, thinly silky below ; inflorescence an axillary and terminal panicle, profusely branched ; flowers distinctly pedicelled, blue ; pedicels up to 1 cm long. A rare plant.

Tashigong, Oct. 1965, *Balakrishnan* 44011.

This species, originally described from Ava, Upper Burma has so far been reported from Assam and Manipur in India. Its present occurrence in Tashigong therefore constitutes a new record for the Bhutan Himalayas.

D. sequax Wall. Pl. Asiat. Rar. 2 : 46. t. 157, 1831 ; Fl. Brit. Ind. 2 : 170, 1876.

A shrub up to 1 m high ; branches softly grey tomentose ; leaflets ovato-oblong, acute, subcoriaceous, densely hairy beneath ; inflorescence an axillary and terminal raceme ; pod linear, 6-8 jointed, densely clothed with short, hooked hairs.

Kamji, *Subba Rao* 259.

D. triflorum (Linn.) DC. Prodr. 2 : 334, 1825 ; Fl. Brit. Ind. 2 : 173, 1876.

A perennial herb ; branches slender, trailing ; leaflets 3, obovate, retuse, sparsely hairy below ; stipule lanceolate up to 3 mm long ; flowers 1-4, axillary, purple ; pod linear, 3-4 jointed, glabrous to sparsely hairy. A very common plant.

Way to Shali from Gumkhara, Oct. 1965, *Balakrishnan* 44087 ; Dakpai, 1650 m, Nov. 1964 (in fr.), *Deb* 452.

Desmodium triquetrum (Linn.) DC. subsp. **pseudotriquetrum** (DC.) Prain in *J. Asiat. Soc. Beng.* 66(2) : 390, 1897. *D. pseudotriquetrum* DC. in *Ann. Sci. Nat. Paris* 4 : 100, 1825 ; *Fl. Brit. Ind.* 2 : 163, 1876.

An undershrub ; branches glabrous ; leaves unifoliate, oblong-lanceolate, 5-6 × 1.5-2 cm, glabrous ; petiole winged on both sides ; infructescence a terminal, raceme ; pod narrowly oblong, 6-9 jointed, 2-2.5 cm long, glabrous, sutures ciliate.

Birti, 600-900 m, April 1964, *Sen Gupta* 1340 ; Tama, 1450 m, Nov. 1964 (in fr.), *Deb* 318.

D. velutinum (Willd.) DC. *Prodr.* 2 : 328, 1825. *Hedysarum velutinum* Willd. *Sp. Pl.* 3 : 1174, 1803. *Desmodium latifolium* DC. *Prodr.* 2 : 328, 1825 ; *Fl. Brit. Ind.* 2 : 168, 1876.

An erect shrub ; branches densely clothed with short brown hairs ; leaves unifoliate ; leaflet ovate with cordate base, 7-8 × 5-6 cm, coriaceous, adpressed hairy above, densely soft tomentose beneath ; pods many in axillary and terminal, congested infructescence, 4-6 jointed, densely clothed with minute hooked hairs.

Gaylegphug, 270 m, Dec. 1963 (in fr.), *Sen Gupta* 922.

Dolichos biflorus Linn. *Sp. Pl.* (ed. 1) 2 : 727, 1753 ; *Fl. Brit. Ind.* 2 : 210, 1876.

An annual ; leaflet ovate, membranous ; stipule basifixed ; flowers 1-2 in the axil of leaf, yellow in colour.

Kheri, Sept. 1965, *A. S. Rao* 43520.

D. lablab Linn. *Sp. Pl.* (ed. 1) 2 : 725, 1753 ; *Fl. Brit. Ind.* 2 : 209, 1876.

An annual ; leaves trifoliate, stipulate ; leaflets ovate, acuminate, stipellate ; pod linear-oblong, glabrous, apex terminated by the hooked, persistent base of the style.

Dorokha, 1000 m, Nov. 1964 (in fr.), *Mukerjee* 6139.

A cultivated plant whose fruits are used as vegetable.

Dumasia villosa DC. in *Ann. Sci. Nat.* (ser. 1) 4 : 96, t. 44, 1825 ; *Fl. Brit. Ind.* 2 : 183, 1876.

A climber ; branches densely brown hairy ; leaf trifoliate ; leaflets ovate, stipellate, sparsely hairy above, densely pubescent below ; flowers in congested racemes, pinkish in colour.

Batase, 1500 m, Nov. 1964 (in fl.), *Deb* 37 ; Wamrung, Sept. 1965, *A. S. Rao* 43564.

Erythrina arborescens Roxb. (Hort. Beng. 53, 1814, nomen) Fl. Ind. 3 : 156, 1832 ; Fl. Brit. Ind. 2 : 190, 1876.

A small tree ; bark whitish with prickles ; leaf trifoliolate, 40 cm long ; leaflets broadly ovate, glabrous, membranous ; pod linear-oblong, 20 cm long, slightly curved, minutely velvety when young ; seeds black.

Sham Khara and Maorey forests, 1500-1650 m, Dec. 1963 (in fr.), *Sen Gupta* 1091 ; Shemgang, 1950 m, Nov. 1964, *Deb* 428 ; Chaisilakha, *Subba Rao* 424.

E. stricta Roxb. (Hort. Beng. 53, 1814, nomen) Fl. Ind. 3 : 251, 1832 ; Fl. Brit. Ind. 2 : 189, 1876.

A middle-sized tree ; branches studded with prickles ; leaflets 3, terminal rhomboid-orbicular, lateral ones oblique at base, membranous, glabrous ; pod 10-12 cm long, torulose, glabrous ; seeds red in colour.

Terichu, Sept. 1965, *A. S. Rao* 43433.

Glycine max (Linn.) Merr. Interpr. Herb. Amboin. 247, 1917. *Phaseolus max* Linn. Sp. Pl. (ed. 1) 2 : 725, 1753. *Glycine soja* Baker in Fl. Brit. Ind. 2 : 184, 1876 non Sieb. et Zucc. 1845.

A herb, up to 0.75 m high ; branches hispid ; leaf trifoliolate, up to 20 cm long, leaflets ovato-oblong, membranous, sparsely hispid ; pod oblong, hispid, 2-3 seeded.

Shemgang, 1950 m, Nov. 1964 (in fr.), *Deb* 427.

A cultivated plant whose seeds are used as pulses.

Guelldenstaedtia santapau Thoth. in Bull. bot. Surv. India 10 (3 & 4) : 391, 1969.

G. santapau Thoth. is related to *G. himalaica* Baker but can easily be distinguished by the stem, upper surface of leaflets and stipules all being glabrous, inflorescence being one flowered and calyx-teeth either equal or longer than the tube as well as the teeth of the upper lip of the calyx being connate.

A slender, much branched prostrate herb ; stem quadrangular, pinkish, alternately branched, leaf imparipinnate, alternate, stipulate, 4.5-6.5 cm long ; leaflets 11-13, obcordate, 3-6 × 2.5-5 cm, cuneate, emarginate, glabrous above and sparsely pilose below ; stipule ovate to cordate, amplexicaul 3.5 mm, long ; inflorescence one flowered peduncle, 5-6 mm long ; bract linear, pilose ; flowers pedicellate ; calyx 6 mm long, pubescent without bilipped, upper lip emarginate, teeth of lower lip linear ; corolla vexillum ovate, 9 × 4 mm, clawed, retuse at apex, keels much smaller than wings ;

stamens diadelphous, (9+1), sheath 3 mm long ; ovary 6 mm long, pubescent, style short, stigma capitate ; legume linear-oblong, dehiscent.

Chai la Pass, Paro, 4200 m, Aug. 1963, *Balakrishnan & Sen Gupta* 619.

A rare and interesting new species, recently described from Bhutan.

Indigofera atro-purpurea Buch.-Ham. ex Horn. Hort. Reg. Bot. Hafn. Suppl. 152, 1819 ; Fl. Brit. Ind. 2 : 101, 1876.

A shrub with woody branches ; leaf 12-15 cm long ; leaflets up to 17, oblong, sparsely hairy ; inflorescence a raceme, 15-25 cm long ; pod linear, cylindrical, 6-19-seeded, glabrescent. A common plant.

Dakpai, 1650 m, Nov. 1964 (in fr.), *Deb* 367.

I. dosua Buch.-Ham. ex D. Don, Prodr. Fl. Nepal. 244, 1825 ; Fl. Brit. Ind. 2 : 102, 1876.

A low woody shrub ; branches densely grey pubescent ; leaves imparipinnate, leaflets up to 29, linear-oblong, opposite, glaucous above, pubescent below ; inflorescence a dense raceme of bright red flowers ; bract lanceolate, cuspidate, brown silky.

Paro Valley, 2550 m, Aug. 1963 (in fl.), *Balakrishnan & Sen Gupta* 1236 ; Wamrung, Sept. 1965, *A. S. Rao* 43555.

I. dosua Buch.-Ham. ex D. Don var. **tomentosa** Baker in Hook. f. Fl. Brit. Ind. 2 : 102, 1876. *Indigofera tomentosa* Grah. in Wall. Cat. 5487, 1831-32, nomen.

A large shrub with younger branches silky pubescent ; leaves imparipinnate, 14-18 cm long, leaflets 31-41, linear-oblong, shortly petiolulate, adpressed hairy above and densely adpressed hairy below ; inflorescence an axillary raceme ; flowers red ; bracts lanceolate, prominent, cuspidate, pubescent ; pod linear, 2.5-3.5 cm long, cylindrical, pointed downwards, silky pubescent. A most common shrub in the forest, at times growing into a small tree.

Sham Khara and Maorey forests, 1500-1650 m, Dec. 1963 (in fr.), *Sen Gupta* 1081 ; Tama, 1050-1200 m, April 1964 (in fr.), *Sen Gupta* 1137 ; Birti, 600-750 m, April 1964 (in fl.), *Sen Gupta* 1313 ; on way from Rani Camp to Tama, 1350-1650 m, Nov. 1964 (in fr.), *Deb* 281 ; Chaisilakha, April 1964, *Maheshwari* 5105 ; Ibid, Dec. 1963, *Subba Rao* 321.

I. heterantha Wall. ex Brandis, For. Fl. N. West & Centr. India, 135, 1874. *I. gerardiana* Wall. ex Baker in Hook. f. Fl. Brit. Ind. 2 : 100, 1876.

A low shrub, profusely branched ; branchlets white canescent ; leaflets obovate, mucronate, adpressed white hairy ; flowers purple red ; pod linear, cylindrical, glabrous to minutely hairy.

Gomchu, Sept. 1965, *A. S. Rao* 43452.

Indigofera heterantha Wall. ex Brandis var. **longipedicellata** Thoth. in Indian For. 96 : 13, 1970.

This variety differs from the typical one in having distinctly longer pedicels and glabrous, slightly compressed pods.

Thinlegaon, 3330 m, Sept. 1964 (in fr.), *Hajra* 389.

This new variety was recently described from Bhutan.

I. trifoliata Linn. Cent. Pl. 2 : 29, 1756 ; Fl. Brit. Ind. 2 : 96, 1876.

A perennial with trailing branches ; leaflets oblanceolate, green above and glaucous below ; flowers in axillary, short racemes, red in colour ; pod linear-oblong, straight, glabrescent, 6-8 seeded.

Kheri, 1200 m, Sept. 1965, *A. S. Rao* 43508.

Lespedeza gerardiana Grah. ex Baker in Hook. f. Fl. Brit. Ind. 2 : 142, 1876.

An undershrub ; leaf trifoliate, 1.5-2.5 cm long ; leaflets oblanceolate, mucronulate, glabrescent above, densely adpressed, white hairy below ; inflorescence short, axillary umbels, 4-6 flowered ; flowers white ; calyx teeth prominent, densely silky pubescent.

Thimpu, Sept. 1964 (in fl.), *Abraham* 2339, 2358.

L. sericea (Thunb.) Miq. in Ann. Mus. Lug. Bat. 3 : 49, 1867 ; Fl. Brit. Ind. 2 : 142, 1876. *Hedysarum sericeum* Thunb. Fl. Jap. 289, 1784.

An erect undershrub up to 1 m high ; branches slender ; leaves crowded on the stem, trifoliate ; leaflets 3, narrowly oblanceolate, coriaceous, clothed with adpressed white silky hairs below ; flowers 2-3 in axil of leaves ; corolla white tinged with purple ; calyx teeth white canescent ; pod small, sessile, glabrous to thinly silky. This is one of the most common undershrubs in the forest.

Paro, 2550 m, Aug. 1963 (in fl.), *Balakrishnan & Sen Gupta* 762 & 1211 ; Chima Kothi, Sept. 1964 (in fr.), *Abraham* 2325 ; Kheri, 1200 m, Sept. 1965, *A. S. Rao* 43482 ; Tashigong, Oct. 1965, *Balakrishnan* 43961 ; Paro, 2500 m, Oct. 1963, *Mukerjee* s.n.

Millettia auriculata Baker ex Brandis, For. Fl. N. West & Centr. India 138, 1874 ; Fl. Brit. Ind. 2 : 108, 1876.

An extensive woody climber ; leaves imparipinnate, alternate, up to 40 cm long ; leaflets 9, ovato-oblong, terminal one always larger and obovate-oblong, coriaceous, glabrous above, puberulous below ; pod linear-oblong, woody and hard, up to 14 cm long, sutures thickened, velvety.

Malbashi Hill, Samchi, 600 m, Dec. 1963 (in fr.), *Thothathri* 10392 ; Phuntsholing, *Subba Rao* 139.

Millettia cinerea Benth. in Miq. Pl. Jungh. 1 : 249, 1852 ; Fl. Brit. Ind. 2 : 106, 1852. *Pongamia cinerea* Grah. in Wall. Cat. 5904, 1831-32, nomen.

A woody climber ; leaves imparipinnate ; leaflets 5, oblong, coriaceous, glabrous ; pod very turgid, 4.0×2.5 cm, minutely velvety, 4-seeded.

Changtar, Samchi, 200 m, Dec. 1963 (in fr.), *Thothathri* 10446 ; Kheri, 1200 m, Sept. 1965, *A. S. Rao* 43507.

M. pachycarpa Benth. in Miq. Pl. Jungh. 1 : 250, 1852 ; Fl. Brit. Ind. 2 : 106, 1876.

A large climber ; branches pubescent ; leaflets 13, oblong, subcoriaceous, glabrous above, brown pubescent below ; inflorescence a panicle, flowers 2-3 on a short peduncle in each node ; calyx cup densely pubescent ; corolla pink.

Birti, 650-850 m, April, *Sen Gupta* 1300.

Moghania fruticulosa (Wall. ex Benth.) Mukerjee in Bull. Bot. Soc. Beng. 6(1) : 12, 1952. *Flemingia fruticulosa* Wall. (Cat. 5754, 1831-32, nomen) ex Benth. in Miq. Pl. Jungh. 1 : 245, 1852. *Flemingia strobilifera* R. Br. var. *fruticulosa* (Wall. ex Benth.) Baker in Hook f. Fl. Brit. Ind. 2 : 227, 1876.

A low undershrub ; leaves simple, ovate, $3.5-4.5 \times 2.5-3.5$ cm, stipulate, coriaceous, glabrous above, hairy especially on the nerves below ; racemes terminal, 5-7 cm long, rachis zigzag ; bracts reniform, distichously arranged strongly nerved, folded and emarginate, enclosing a cluster of flowers ; corolla white.

Chima Kothi, Sept. 1964 (in fl.), *Abraham* 2326.

This is for the first time that this species is reported from the Eastern Himalayas as its previous occurrence has been N. W. Himalayas, Hazra to Nepal. It is one of the rare plants in Bhutan.

M. macrophylla (Willd.) O. Kuntze, Rev. Gen. Pl. 1 : 199, 1891. *Crotalaria macrophylla* Willd. Sp. Pl. 3 : 982, 1803. *Flemingia congesta* Roxb. ex Aiton, Hort. Kew (ed. 2) 4 : 349, 1812 ; Fl. Brit. Ind. 2 : 228, 1876.

An erect woody shrub ; leaves trifoliolate, 8-10 cm long ; leaflets 3, terminal ovato-oblong, laterals oblong, oblique at base, glabrous above and below except the hairy nerves ; common petiole slightly winged ; racemes axillary and terminal, densely crowded with flowers ; pod oblong, 1-1.5 cm long, obscurely downy ; seeds 1-2, black. A common shrub in the forest.

Dhoankhola, Samchi, 400 m, Dec. 1963 (in fr.), *Thothathri* 10438 ; Gaylegphug, 270 m, Dec. 1963 (in fr.), *Sen Gupta* 913.

Moghania semialata (Roxb.) Mukerjee in Bull. Bot. Soc. Bəng. 6(1) : 16, 1952. *Flemingia semialata* Roxb. (Hort. Bəng. 56, 1814, nomen) Fl. Ind. 3 : 340, 1832. *Flemingia congesta* Roxb. var. *semialata* (Roxb.) Baker in Hook.f. Fl. Brit. Ind. 2 : 229, 1876 (in part).

An erect shrub ; leaves trifoliolate, 20 cm long ; leaflets 3, oblong-lanceolate, lateral ones obliquely based, puberulous above, hairy on the nerves below, coriaceous, common petiole winged ; inflorescence axillary racemes, up to 12 cm long, longer than the petiole ; pod oblong, puberulous ; seeds black.

Tama, 1450 m, Nov. 1964 (in fr.), *Deb* 316.

Mucuna nigricans (Lour.) Steud. Nom. (ed. 2) 2 : 163, 1843. *Citta nigricans* Lour. Fl. Cochinch. 456, 1790. *Mucuna imbricata* DC. Prodr. 2 : 406, 1825 ; Fl. Brit. Ind. 2 : 185, 1876.

A woody climber ; leaves trifoliolate, the end one oblong-cuspidate, glabrous above, thinly hairy below ; racemes few flowered on drooping peduncles ; calyx 5 toothed with a few irritating bristles ; pod oblong, winged on both the sutures, obliquely plaited, clothed with irritating, ferruginous bristles.

Phuntsholing, *Subba Rao* 119.

M. macrocarpa Wall. ex Baker in Hook. f. Fl. Brit. Ind. 2 : 186, 1876.

A large woody climber ; leaf 22-25 cm long, leaflets 3, terminal one ovato-oblong, the laterals with oblique base, coriaceous, glabrescent, lateral nerves up to 6 pairs ; pod linear-oblong, 22 × 5 cm, the sutures indurated, puberulous with brown hairs, up to 8-seeded. A common climber in the forest.

Chaisilakha, 2000 m, Dec. 1963 (in fr.), *Subba Rao* 287 ; *Ibid*, April 1964 (in fl.), *Maheshwari* 5078, 5129.

M. prurita Hooker, Bot. Misc. 2 : 348, 1831. *M. pruriens* Baker in Hook.f. Fl. Brit. Ind. 2 : 187, 1876, non DC. 1825.

A twining climber ; leaflets 3, terminal one ovate, the lateral ones rhomboid, coriaceous, adpressed hairy on both surfaces ; racemes 8-10 flowered, axillary ; corolla dark purple to violet ; pods linear-oblong, 8-10 cm long, ribbed longitudinally, clothed with ferruginous, irritating bristles. A common climber.

Gaylegphug, 270 m, Dec. 1963 (in fr.), *Sen Gupta* 813 ; Samchi, 440 m, Nov. 1963 (in fl.), *Mukerjee* 6037.

Pachyrhizus angulatus Rich. ex DC. Prodr. 2 : 402, 1825 ; Fl. Brit. Ind. 2 : 207, 1876.

A twiner ; leaf trifoliolate, leaflets lobed, stipellate, membranous, glabrous ; flowers red. A cultivated plant for the large tuberous roots which are edible both when raw and boiled.

Chaisilakha, *Subba Rao* 439.

Parochetus communis Buch.-Ham. ex D. Don, Prodr. Fl. Nepal. 240, 1825 ; Fl. Brit. Ind. 2 : 86, 1876.

A slender creeper with tufted runners ; leaves digitately trifoliolate, petiole filiform, 8-10 cm long ; leaflets sub-sessile, obcordate, glabrous above, grey silky beneath ; flowers 1-2 on a long peduncle from the axil of the leaf, purple in colour ; pod linear-oblong, 2-2.5 cm long, dehiscent, glabrous. A very common plant on roadsides and forest paths.

Chima Kothi, 215 m, Aug. 1963 (in fl.), *Balakrishnan & Sen Gupta* 1173 ; Thimpu, Sept. 1964 (in fr.), *Abraham* 2360 ; Narfong to Wamrung, Sept. 1965, *A. S. Rao* 43325 ; Rongthong, Sept. 1965, *A. S. Rao* 43418 ; Thimpu, April 1964 (in fl.), *Maheshwari* 5167.

Phaseolus radiatus Linn. Sp. Pl. (ed. 1) 2 : 725, 1753 ; Fl. Brit. Ind. 2 : 203, 1876.

An economically important plant, cultivated as a crop for its seeds.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5904, 5968.

P. trilobus Ait. Hort. Kew. 3 : 30, 1789 ; Fl. Brit. Ind. 2 : 201, 1876. *Dolichos trilobus* Linn. Sp. Pl. (ed. 1) 2 : 726, 1753.

A twining herb ; leaves trifoliolate, alternate, stipulate, 10-14cm long ; leaflets ovate, shallowly trilobed, stipellate, glabrous above and sparsely adpressed hairy beneath ; raceme axillary with flowers crowded at top ; flowers yellow in colour. A common herb growing on the edges of paddy fields.

Paro, 2550 m, Aug. 1963 (in fl.), *Balakrishnan & Sen Gupta* 1219 & 1254.

Piptanthus nepalensis (Hooker) D. Don in Sw. Brit. Fl. Card. 3 : t. 64, 1824 ; Fl. Brit. Ind. 2 : 62, 1876.

A shrub up to 2 m high ; leaves digitately trifoliolate, alternate, 8-10 cm long ; leaflets oblong to lanceolate, glabrous above, puberulous below ; racemes axillary, dense ; flowers yellow in colour ; petals long clawed ; pod linear, flat, 12-13 cm long, apex incurved, finely puberulous, 6-7 seeded.

Chai la Pass, 4300 m, Aug. 1963 (in fr.), *Balakrishnan & Sen Gupta* 1293 ; Wamrung, Sept. 1965, *A. S. Rao* 43568 ; Thimpu, April 1964 (in fl.), *Maheshwari* 5213.

Pisum sativum Linn. var. *arvense* Poir. in Lamk. Encycl. Meth. Bot. 5 : 456 1804 ; *P. arvense* Linn. Sp. Pl. (ed. 1) 2 : 727, 1753 ; Fl. Brit. Ind. 2 : 181, 1876.

A widely cultivated plant whose fruits are used as vegetable.
From Kharsong to Tashigong, March 1965, *Balakrishnan* 41817.

Priotropis cytisoides (Roxb.) Wt. & Arn. Prodr. Fl. Pen. Ind. Or. 180, 1834 ; Fl. Brit. Ind. 2 : 65, 1876.

A tall shrub ; branches glabrous ; leaves digitately trifoliate, alternate, exstipulate, 6-11 cm long ; leaflets ovato-oblong to oblong, membranous, glabrous ; racemes leaf-opposed ; pods oblong, 3-4 cm long, flattened, stipitate, 5-6 seeded, glabrous, apiculate by the remnant style. A very common shrub, usually found along river banks ; a good fodder plant.

Dhamdhum, 800 m, Nov. 1964 (in fl.), *Mukerjee* 6160 ; Sham Khara and Maorey forests, 1500-1650 m. Dec. 1963 (in fr.), *Sen Gupta* 1093 ; Dakpai, 1650 m, Nov. 1964 (in fr.), *Deb* 366 ; Phuntsholing, Dec. 1963 (in fr.), *Subba Rao* 153, Chaisilakha, Dec. 1963 (in fr.), *Subba Rao* 331 ; Chinari village, Aug. 1965, *A. S. Rao* 43161.

Pueraria peduncularis Grah. ex Benth. in J. Linn. Soc. 9 : 124, 1865 ; Fl. Brit. Ind. 2 : 197, 1876.

A twining herb ; leaves trifoliate, alternate, stipulate ; leaflets ovato-rhomboid, membranous, glabrous above, grey downy beneath ; racemes axillary, dense ; calyx grey silky ; corolla reddish, keel with a deep purple tip.

Krishnagiri Saddle, on road from Narfong to Wamrung, 2300 m, Sept. 1965, *A. S. Rao* 43307.

P. phaseoloides (Roxb.) Benth. in J. Linn. Soc. 9 : 125, 1865 ; Fl. Brit. Ind. 2 : 199, 1876. *Dolichos phaseoloides* Roxb. Fl. Ind. 3 : 316, 1832.

A twiner ; leaves trifoliate, alternate, stipulate ; leaflets 3, terminal wide-ovate, laterals obliquely based, adpressed hairy ; racemes axillary, long peduncled ; flowers bracteate and bracteolate ; corolla reddish in colour, vexillum spurred.

Kheri, Sept. 1965, *A. S. Rao* 43487.

P. phaseoloides (Roxb.) Benth. var. **javanicus** (Benth.) Baker in Hook.f. Fl. Brit. Ind. 2 : 199, 1876. *Neustanthus javanicus* Benth. in Miq. Pl. Jungh. 1 : 135, 1852.

This plant is provisionally included in this flora as the author could not see the specimen '*Subba Rao* 369'.

Phuntsholing, *Subba Rao* 369.

P. subspicata Benth. in J. Linn. Soc. 9 : 125, 1865. *Neustanthus subspicatus* Benth. in Miq. Pl. Jungh. 1 : 234, 1852.

A twining climber ; stem hirsute ; leaf trifoliate, stipulate, 15-20 cm long ; leaflets 3, terminal obovate to ovato-rhomboid, lateral ones oblique

at base, stipellate, clothed with adpressed hairs above and below, subcoriaceous ; infructescence 25-35 cm long ; pod linear, subcylindrical, 8-9 cm long, apiculate, brown hairy, 10-20 seeded.

Gayleghphug, 270 m, Dec. 1963 (in fr.), *Sen Gupta* 816.

Shuteria vestita Wt. & Arn. Prodr. Fl. Pen. Ind. Or. 207, 1834 ; Fl. Brit. Ind. 2 : 181, 1876. *Glycine vestita* Grah. in Wall. Cat. 5512, 1831-32, nomen.

A pubescent climber ; leaves trifoliate, stipulate, 6-10 cm long ; leaflets ovate to ovato-elliptic, stipellate, membranous, glabrescent ; stipule lanceolate, striate ; raceme axillary, copious, 3-5 cm long ; flowers pinkish, pedicellate, bracts and bracteoles present ; calyx densely hairy ; pods linear, flat, 2.5-3.0 cm long, pubescent. A very common plant in the forest.

Lapchetar Hill, Samchi, 500 m, Dec. 1963 (in fl.), *Thothathri* 10397 ; Gayleghphug, 270 m, Dec. 1963 (in fl.), *Sen Gupta* 919 ; Betni, 1400 m, Dec. 1963 (in fr.), *Sen Gupta* 1050 ; Kamji, *Subba Rao* 267.

Smithia ciliata Royle, Illust. Bot. Himal. 201. t. 35, f.2, 1839 ; Fl. Brit. Ind. 2 : 150, 1876.

An annual ; leaf imparipinnate ; leaflets 7-11, linear-oblong, glabrous, bristly on the midrib below and edges ; flowers secund on short, dense racemes ; bracts leafy, ciliate ; calyx cup bristly, ciliate ; corolla yellow in colour. A common weed.

Thimpu, Sept. 1964 (in fl.), *Abraham* 2364 ; Paro, 2500 m, Oct. 1963 (in fl.), *Mukerjee* 5922.

S. sensitiva Ait. Hort. Kew 3 : 496, 1789 ; Fl. Brit. Ind. 2 : 148, 1876.

An annual ; stem slender, much branched ; leaves imparipinnate, leaflets 5-15, small, bristly on the midrib below ; flowers yellow, 2-5 in axillary, short-peduncled raceme ; calyx bilipped, lips scarcely bristly ; pod a lomentum of one seeded, orbicular joints, folded together inside the calyx.

Phuntsholing, Dec. 1963 (in fl. & fr.), *Subba Rao* 376B.

Tephrosia candida DC. Prodr. 2 : 249, 1825 ; Fl. Brit. Ind. 2 : 111, 1876.

Robinia candida Roxb. (Hort. Beng. 56, 1814, nomen) Fl. Ind. 3 : 327, 1832.

A shrub ; branches angled, clothed with velvety pubescence ; leaves imparipinnate, 10-25 cm long, stipulate ; leaflets 15-21, narrowly oblong, glabrous above, thinly silky beneath ; raceme axillary and terminal ; flowers creamy white ; calyx and corolla densely silky outside ; pod linear, slightly curved, 8-9 cm long, densely adpressed silky, 12 seeded.

Tama, 1050-1200 m, April 1964 (in fr.), *Sen Gupta* 1133 ; Rani Camp to Tama, 1350-1650 m, April 1964, *Deb* 271.

Teramnus flexilis Benth. in J. Linn. Soc. 8 : 265, 1865 ; Fl. Brit. Ind. 2 : 185, 1876. *Glycine flexilis* Grah. in Wall. Cat. 5521, 1831-32, nomen.

A twining herb ; leaves pinnately trifoliolate, alternate, stipulate ; leaflets ovato-oblong, acuminate, adpressed hairy below ; racemes axillary, flowers crowded at the extremity ; flowers reddish, pedicellate.

Wamrung approach, 2333 m, Sept. 1965, *A. S. Rao* 43354.

Uraria lagopus DC. Prodr. 2 : 324, 1825 ; Fl. Brit. Ind. 2 : 156, 1876.

An erect undershrub ; branches woody, pubescent ; leaflets large, oblong, glabrous above, finely reticulate and downy below ; raceme axillary and terminal ; flowers purple in colour.

Nyoth, Oct. 1965, *Balakrishnan* 44229.

Vicia hirsuta (Linn.) Gray, Nat. Arr. Brit. Pl. 2 : 614, 1821 ; Fl. Brit. Ind. 2 : 177, 1876. *Ervum hirsutum* Linn. Sp. Pl. (ed. 1) 2 : 738, 1753.

A slender twining herb ; leaves paripinnate, end leaflets modified into tendrils, 3-6 cm long ; leaflets 4-8 pairs, linear ; inflorescence axillary, 2-3 flowered ; flowers white ; pod trapezoid-oblong, 7-10 cm long, hairy. An escape from cultivation.

Shemgang, 1950 m, Nov. 1964 (in fl. & fr.), *Deb* 394 ; on the way to Tashigong from Kharsong, March 1965, *Balakrishnan* 41814 ; Thimpu, April 1964, *Maheshwari* 5171 & 5237.

V. sativa Linn. Sp. Pl. (ed. 1) 2 : 736, 1753 ; Fl. Brit. Ind. 2 : 178, 1876.

An annual herb ; leaves paripinnately compound, end ones modified into tendrils, 4-8 cm long ; leaflets 8-12, linear, glabrous above, minutely hairy below ; raceme axillary, 1-flowered ; flowers dark purple ; pod linear, flat, 4 cm long, 8-seeded, glabrescent. A weed in paddy fields.

Shemgang, 1950 m, Nov. 1964 (in fl. & fr.), *Deb* 414 ; Thimpu, April 1964 (in fl.), *Maheshwari* 5236.

Vigna pilosa Baker in Hook.f. Fl. Brit. Ind. 2 : 205, 1876. *Dolichos pilosus* Roxb. (Hort. Beng. 55, 1814, nomen) Fl. Ind. 2 : 312, 1832.

A climber ; leaves trifoliolate, 10-16 cm long, alternate, stipulate, leaflets 3, terminal ovato-oblong, laterals oblique at base, puberulous on both sides ; pod linear, 10-12 cm long, clothed with short, brown hairs, 8-12 seeded.

Gayleghphug, 270 m, Nov. 1964 (in fr.), *Deb* 172.

V. vexillata (Linn.) Benth. in Mart. Fl. Bras. 15 : 195. t. 50. f. 1. 1859 ; Fl. Brit. Ind. 2 : 206, 1876. *Phaseolus vexillatus* Linn. Sp. Pl. (ed. 1) 2 : 724, 1753.

A twiner ; leaves trifoliolate, alternate ; stipulate ; leaflets ovate, acute, clothed with adpressed hairs below ; flowers 2-3 on a long peduncle from

the axil of the leaf ; corolla purple, prominent.

Gomchu, 2400 m, Sept. 1965, *A. S. Rao* 43453.

Zornia gibbosa Span. in *Linnaea* 15 : 192, 1841. *Z. diphylla* Baker in *Fl. Brit. Ind.* 2 : 147, 1876 non Pers.

A deep rooted herb, up to 35 cm high ; leaf digitately 2-foliolate, 4 cm long ; leaflets lanceolate, acuminate, glabrous, dotted with black glands ; bracts foliaceous, geminate, prominent ; pod a lomentum, joints of the lomentum covered with glochidiate prickles.

Kheri Camp, 3 km from Tashigong, 1300 m, Sept. 1965 (in fr.), *A. S. Rao* 43492.

CAESALPINIACEAE

K. THOTHATHRI

Bauhinia purpurea Linn. *Sp. Pl.* (ed. 1) 1 : 375, 1753 ; *Fl. Brit. Ind.* 2 : 284, 1878.

A tree, 10 m high ; branches glabrous ; leaves shallowly cordate, 10-16 × 8-14 cm, cleft third to half from apex, glabrous, 10 nerved ; flowers arranged in terminal corymbs ; calyx tomentose ; corolla white ; fertile stamens 3, staminodes unequal ; pod linear-oblong, falcate, stipitate, glabrous. A common tree, from plains up to 1500 m, in hills.

Changtar, Samchi, 300 m, Dec. 1963 (in fr.), *Thothathri* 10354 ; Phuntsholing, *Subba Rao* 116 ; Tashigong Hill, 1500 m, March 1965, *Balakrishnan* 41242 ; Gaylegphug, 270 m, Nov. 1964 (in fl.), *Deb* 185.

B. variegata Linn. *Sp. Pl.* (ed. 1) 1 : 375, 1753 ; *Fl. Brit. Ind.* 2 : 284, 1878.

A moderate sized tree ; leaves broader than longer, cordate, coriaceous, glabrous, cleft about third to half from apex ; flowers in corymbs ; corolla white, variegated with red and yellow.

Tashigong to Yangtzi, 1200 m, March 1965, *Balakrishnan* 41286.

Cassia fistula Linn. *Sp. Pl.* (ed. 1) 1 : 377, 1753 ; *Fl. Brit. Ind.* 2 : 261, 1878.

A small tree ; leaf paripinnate ; leaflets 4-7 pairs, opposite, ovate to elliptic, silvery pubescent below ; flowers yellow, in drooping racemes.

Tashigong, 1200 m, March 1965, *Balakrishnan* 41260.

C. grandis Linn. *f. Suppl.* 230, 1781.

A handsome tree with red flowers, cultivated as an ornamental plant.

Phuntsholing, April 1964 (in fl.), *Maheshwari* 5055.

C. occidentalis Linn. *Sp. Pl.* (ed. 1) 1 : 377, 1753 ; *Fl. Brit. Ind.* 2 : 262, 1878.

An undershrub up to 2 m high ; leaflets 4-5 pairs, oblong to oblong-lanceolate ; flowers in corymbs, yellow in colour.

Phuntsholing, *Subba Rao* 106 ; *Ibid.* May 1964, *Maheshwari* 5331.

Cassia mimosoides Linn. Sp. Pl. (ed. 1) 1 : 379, 1753 ; Fl. Brit. Ind. 2 : 266, 1878.

A diffuse, perennial undershrub ; leaf paripinnate, 2-5 cm long, stipulate ; leaflets linear, many, small ; rachis hairy ; flowers solitary, axillary, yellow ; pod linear-oblong, 3-3.5 cm long, strap-shaped, hairy especially on the sutures.

Paro, 2500-4000 m, Aug. 1963 (in fl.), *Balakrishnan & Sen Gupta* 749 & 1263 ; Thimpu, Sept. 1964 (in fr.), *Abraham* 2355 ; Kheri Camp, Tashigong, 3500 m, Sept. 1965, *A. S. Rao* 43523.

C. tora Linn. Sp. Pl. (ed. 1) 1 : 376, 1753 ; Fl. Brit. Ind. 2 : 263, 1878.

An undershrub up to 1.5 m high ; leaves paripinnate, petiolate, stipulate ; leaflets 3 pairs, obovate to obovato-oblong, upper ones larger than the lower ones, membranous, glabrous ; flowers yellow, in pairs in the axil of the leaf.

Phuntsholing, *Subba Rao* 156 ; *Ibid.* May 1964, *Maheshwari* 5363.

Delonix regia (Boj.) Raf. Fl. Tellur. 2 : 92, 1836. *Poinciana regia* Boj. in Hook. Bot. Mag. 56, t. 2884, 1829 ; Fl. Brit. Ind. 2 : 260, 1878.

A handsome tree ; leaves large, feathery, bipinnate, stipulate ; flowers in beautiful crimson and orange colour ; petals orbicular, distinctly clawed ; pod 30-45 cm long, flat, dehiscent. A cultivated tree.

Phuntsholing, *Subba Rao* 67.

Mezoneurum cucullatum (Roxb.) Wt. & Arn. Prodr. Fl. Pen. Ind. Or. 283, 1834 ; Fl. Brit. Ind. 2 : 258, 1878. *Caesalpinia cucullata* Roxb. (Hort. Beng. 32, 1814, nomen) Fl. Ind. 2 : 358, 1832.

A tall spreading shrub with pendent, prickly branches ; leaves bipinnate, alternate, up to 20 cm long ; leaflets 10, ovate to ovato-elliptic, opposite, acute, glabrous ; racemes axillary and terminal ; corolla bright yellow, streaked with red, petals cucullate ; pod brownish-red, narrowly oblong, flat, shortly stipitate, 1-seeded, winged on the upper suture. A common, prickly shrub in the forest.

Lapchetar Hill, Samchi, 400 m, Dec. 1963 (in fl. & fr.), *Thothathri* 10389 ; Gayleghpug, 270 m, Dec. 1963, *Sen Gupta* 825.

Tamarindus indica Linn. Sp. Pl. (ed. 1) 1 : 34, 1753 ; Fl. Brit. Ind. 2 : 273, 1878.

A large spreading tree ; leaves abruptly pinnate, stipulate ; leaflets 20-30, elliptic-oblong, glabrous ; flowers in lax racemes at the end of

branchlets, creamy yellow in colour. A cultivated tree.

Phuntsholing, *Subba Rao* 162.

MIMOSACEAE

K. THOTHATHRI

Acacia caesia (Linn.) Willd. Sp. Pl. 4 : 1090, 1805. *Mimosa caesia* Linn. Sp. Pl. (ed. 1) 1 : 522, 1753. *Acacia intisia* Willd. Sp. Pl. 4 : 1091, 1805 ; Fl. Brit. Ind. 2 : 297, 1878.

A prickly climber ; leaves bipinnate, pinnae 12-14, sessile gland present in between the first 2 pairs of pinnae ; leaflets small, oblong, 15-16 pairs, glaucous below, glabrous ; pod oblong, flat, 14-17 cm long, glabrous, dehiscent, 6-8-seeded.

Gayleghug, 270 m, Dec. 1963, *Sen Gupta* 861.

A. catechu (Linn. f.) Willd. Sp. Pl. 4 : 1079, 1806 ; Fl. Brit. Ind. 2 : 295, 1878. *Mimosa catechu* Linn. f. Suppl. Pl. 439, 1781.

A tree, 10 m high ; leaves bipinnate, up to 20 cm long with a large basal gland on the rachis ; pinnae numerous with smaller glands in between ; leaflets numerous, small, glabrous ; pod narrowly oblong, 8-10 cm long, strap-shaped, glabrous, 10-seeded.

Samchi, 400 m, Dec. 1963 (in fr.), *Thothathri* 10436 ; Phuntsholing, *Subba Rao* 3 ; *Ibid.* May 1964 (in fl.), *Maheshwari* 5343.

A. farnesiana (Linn.) Willd. Sp. Pl. 4 : 1083, 1805 ; Fl. Brit. Ind. 2 : 292, 1878. *Mimosa farnesiana* Linn. Sp. Pl. (ed. 1) 1 : 521, 1753.

A shrub, up to 3 m high ; branches zigzag ; leaves bipinnate, 7-10 cm long, pinnae 10-14 ; stipules spiny ; leaflets small, ligulate, 20-30 ; flowers crowded in axillary heads, bright yellow in colour.

Dorokha, 700 m, Dec. 1963 (in fl.), *Thothathri* 10485.

Albizia chinensis (Osbeck) Merr. in Amer. J. Bot. 3 : 575, 1916. *Mimosa chinensis* Osbeck, Dagbok Ostind Resa 233, 1757. *Albizia stipulata* Boivin in Encycl. Meth. 19(2) : 33, 1838 ; Fl. Brit. Ind. 2 : 300, 1878.

A medium-sized tree ; branches grey downy ; leaves bipinnate, pinnae 15-18 ; leaflets 40-50, sessile, oblique at base, puberulous, rachis grey downy ; pod oblong, flat, 8-10 cm long, 6-8-seeded.

Near Betnikhola, 1400 m, Dec. 1963 (in fr.), *Sen Gupta* 1051 ; Phuntsholing, *Subba Rao* 113.

A. lucida (Roxb.) Benth. in Hooker, Lond. J. Bot. 3 : 86, 1844 ; Fl. Brit. Ind. 2 : 299, 1878. *Mimosa lucida* Roxb. (Hort. Beng. 40, 1814, nomen) Fl. Ind. 2 : 544, 1832 non Vahl, 1807.

A tree, 15 m high ; leaves bipinnate with a large basal gland on the

rachis, 20-25 cm long ; leaflets 8, oblong with a smaller gland in between the leaflets, glabrous ; pod oblong, flat, 25 cm long, 6-8-seeded.

Dwarapani, Samchi, 300 m, Dec. 1963 (in fr.), *Thothathri* 10627.

Albizia procera (Roxb.) Benth. in Hook. Lond. J. Bot. 3 : 89, 1844 ; Fl. Brit. Ind. 2 : 299, 1878. *Mimosa procera* Roxb. Corom. Pl. 2 : 12. t. 121, 1798.

A tree with spreading branches, 16 m high ; leaves bipinnate, 30 cm long, pinnae 8 ; leaflets 14-18, elliptic oblong, puberulous above and glaucous below ; pod narrowly, oblong, 16-18 cm long, glabrous, 6-10-seeded. A common tree in hills.

Karpaga Hill, Samchi, 400 m, Dec. 1963 (in fr.), *Thothathri* 10351.

Mimosa himalayana Gamble in Kew Bull. 1920 : 4, 1920. *M. rubicaulis* Baker in Hook. f. Fl. Brit. Ind. 2 : 291, 1878 (in part) non Lamk.

A scandent shrubby tree ; branches slender, armed with copious, small, scattered prickles ; leaves bipinnate, up to 15 cm long, pinnae 10-15 ; leaflets 20-24, small ; rachis, pinnae and leaflets puberulous ; pod falcately oblong, flat, 8-10 cm long, glabrous, 6-8-seeded. A very common plant.

Kharpaga Hill, Samchi, 400 m, Dec. 1963 (in fr.), *Thothathri* 10353 ; Gaylegphug, 270 m, Dec. 1963 (in fr.), *Sen Gupta* 912 & 1423 ; Phuntsholing, May 1964, *Maheshwari* 5371.

M. pudica Linn. Sp. Pl. (ed. 1) 1 : 518, 1753 ; Fl. Brit. Ind. 2 : 291, 1878.

A woody herb ; branches armed with recurved prickles ; leaves bipinnate, 5-8 cm long, pinnae 4, all crowded at the top of the peduncle ; leaflets numerous, ligulate, bristly at margin ; flowers in axillary, peduncled heads ; corolla pink in colour ; pod linear-oblong, 1.2-1.5 cm long, sutures densely armed with bristles, 3-4-seeded. A very common plant, found everywhere.

Samchi, 350 m, Dec. 1963 (in fr.), *Thothathri* 10360 ; Phuntsholing, Sept. 1964 (in fr.), *Hajra* 324 ; *Ibid.*, *Subba Rao* 11.

ROSACEAE

S. K. MUKERJEE

Agrimonia pilosa Ledeb. var. *nepalensis* (D. Don) Nakai in Bot. Mag. Tokyo 47 : 247, 1933. *A. eupatorium* Hook. f. Fl. Brit. Ind. 2 : 361, 1878 non Linn.

Slender erect herb with a woody perennial rootstock and wiry unbranched stem ; leaves pinnate, stipules foliaceous, half-lunulate ; flowers small, yellow, in spicate terminal raceme. Scattered on open ground.

Chima Kothi, 2000 m, Aug. 1963, *Sen Gupta* s.n.

Cotoneaster bacillaris Wall. ex Lindl. Bot. Reg. 15 : t. 1229, 1829 ; Fl. Brit. Ind. 2 : 384, 1878.

A bushy deciduous shrub ; leaves coriaceous, oblong, more or less woolly beneath ; flowers white, in short axillary cymes ; fruit drupe-like, globose, 1 cm in diam. or less, dark brown. Common on open hill slopes.

Thimpu, 2800 m, April 1964, *Maheshwari* 5239 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5239.

C. microphylla Wall. ex Lindl. in Bot. Reg. 13 : t. 1114, 1827 ; Fl. Brit. Ind. 2 : 387, 1878.

A low much branched shrub ; leaves persistent, margin recurved, glossy above, tomentose beneath ; flowers white, usually solitary, axillary, 1.3-1.5 cm in diam. ; fruit globose, scarlet. Common on exposed rocks.

Chai la Pass, 4050 m, Aug. 1963, *Sen Gupta* 710 ; Thimpu, 2700 m, April 1964, *Maheshwari* 5198 ; Long Chaphaca near Thimpu, 2900 m, April 1964, *Maheshwari* 5211 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5845.

Docynia indica Dene. in Nouv. Arch. Mus. Paris 10 : 131. t. 14, 1874 ; Fl. Brit. Ind. 2 : 369, 1878.

Short tree, densely woolly tomentose on younger parts, branches spinescent ; leaves oblong-lanceolate, with prominent arched nerves beneath ; flowers white, 2-3 cm across, axillary, solitary or in fascicles ; fruit globose or somewhat pyriform 2.5 to 3.5 cm. Frequent in temperate forests. The fruits are eaten either raw or cooked.

Shemgang, 1950 m, Nov. 1964, *Deb* 421 ; Tashiyangtshi forest, 1800 m, March 1965, *Balakrishnan* 41368 ; Shali, March 1965, *Balakrishnan* 41003.

Duchesnea indica (Andr.) Focke in Engl. Pflanz. 3(3) : 33, 1888. *Fragaria indica* Andr. Bot. Repos. 7 : t. 479, 1807 ; Fl. Brit. Ind. 2 : 343, 1878.

Local name : Pomrim.

Small herb with creeping stolons ; leaves 3-rarely 5-foliolate, silky hairy ; flowers yellow, solitary, axillary, 2-2.5 cm across, bracts obovate, 3-5 fid ; fruit spherical or oblong, bright red, spongy, 2-3 cm in diam. Common on hill slopes. The fruits are edible.

Sureylakha 1400 m, Dec. 1963, *Sen Gupta* 968 ; Tama, 1300 m, April 1964, *Sen Gupta* 1164 ; Shemgang, 2000 m, April 1964, *Sen Gupta* 1281 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 45 ; Chaisilakha, 1200 m, April 1964, *Maheshwari* s.n.

Fragaria nubicola Lindl. ex Lacai Ta in Journ. Linn. Soc. 43 : 467, 1916. *F. vesca* Linn. var. *nubicola* Hook.f. Fl. Brit. Ind. 2 : 344, 1878.

Small herb with filiform runners ; leaflets 3-5 ; flowers white, few in axillary clusters ; fruit subglobose. Scattered on open ground.

Shemgang 2000 m, April 1964, *Sen Gupta* 1237 ; Thimpu 2500 m, April 1964, *Maheshwari* s.n.

Geum urbanum Linn. Sp. Pl. 501, 1753 ; Fl. Brit. Ind. 2 : 342, 1878.

Erect herb with a perennial woody rootstock ; leaves radical and cauline, pinnate ; flowers yellow, solitary or corymbose ; fruit a cluster of achenes with hooked awns. Rare in open jungle.

Gomchu, 2400 m, Sept. 1965, *A. S. Rao* 43397.

Neillia thyrsoiflora D. Don, Prodr. Fl. Nepal. 228, 1825.

Shrub with drooping branches ; leaves 3-lobed, doubly inciso-serrate, membranous ; flowers small, in terminal panicles and in racemes in the axils of upper leaves ; follicle almost enclosed by persistent calyx. Common in rock crevices.

Gomchu road 9 km from Wamrung, 2700 m, Sept. 1965, *A. S. Rao* 43384 ; Kamji, 1200 m, Dec. 1963, *Subba Rao* 273 ; Sham Khara, 1350 m, Dec. 1963, *Sen Gupta* 1122 ; Samchi Hill, 1000 m, Dec. 1963, *Thothathri* 10503.

Photinia integrifolia Lindl. in Trans. Linn. Soc. 13 : 103, 1821 ; Fl. Brit. Ind. 2 : 381, 1878.

A small tree with oblanceolate coriaceous leaves which are up to 15 cm long with a short petiole ; flowers small, white, in axillary spreading corymbs ; fruits drupaceous, blue, glaucous, 7-8 cm in diam. A rare tree in the temperate forests.

On the way to Wamrung from Ronglong, 2360 m, Nov. 1965, *Balakrishnan* 44690.

Potentilla fulgens Wall. ex Lehm. Rev. Potent. 54, 1856 ; Fl. Brit. Ind. 2 : 349, 1878.

Small herb with stout, perennial rootstock ; leaves pinnate, softly silky ; flowers yellow in terminal panicle ; fruit a cluster of achenes. Common on open ground.

On the road to Gomchu, 9 km from Wamrung, 2700 m, Sept. 1965, *A. S. Rao* 43378 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5905.

P. kleiniana Wt. & Arn. Prodr. 300, 1834 ; Fl. Brit. Ind. 2 : 359, 1878.

Annual herb with many prostrate or ascending stems ; leaves digitately 3-5 foliolate ; flowers yellow in terminal paniced cymes ; fruit a cluster of achenes on a globose head. Rare on open slopes.

Chima Kothi, 2000 m, April 1964, *Maheshwari* s.n.

P. monantha Lindl. var. *sibthorpioides* Hook. f. Fl. Brit. Ind. 2 : 358, 1878.

Small herb with a perennial rootstock and filiform prostrate stems ;

leaves digitately 3-foliolate ; flowers yellow, axillary and solitary or sub-terminal ; fruit a cluster of very small achenes on a globose, villous receptacle.

Thimpu, 2500 m, April 1964, *Maheshwari* s.n.

Prinsepia utilis Royle Ill. 206, t. 38.f.1, 1839 ; Fl. Brit. Ind 2 : 323, 1878.

A middle sized tree ; leaves linear-oblong, up to 18 cm long ; flowers pink, in short, dense, axillary racemes ; drupe about 2 cm in diam., ovoid, rugose, with a ridge on one side. Common between 1500 to 2000 m.

Rani Camp, 1650 m, Nov. 1964, *Deb* 230.

Prunus persica Stokes Bot. Mat. Med. 3 : 100, 1812.

Small tree, deciduous with lanceolate leaves ; flowers white, solitary, sessile ; drupe 3-4 cm in diam., grooved on one side, tomentose, yellowish green in colour, often with pinkish tinge. Commonly cultivated at temperate regions.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5895.

P. rufa Wall. ex Hook. f. Fl. Brit. Ind. 2 : 314, 1878.

A small tree, young branchlets densely tomentose ; leaves lanceolate up to 10 cm long, flowers pink, solitary or fascicled, axillary, 2 cm across ; drupe ellipsoid, red, stalk lengthening as fruit matures. Rare in exposed situation.

Chaisilakha, 1500 m, Dec. 1963, *Subha Rao* 436.

Pyrus communis Linn. Sp. Pl. 1 : 479, 1753 ; Fl. Brit. Ind. 2 : 374, 1878.

Short tree, deciduous ; leaves oblong-ovate, rarely lobed ; flowers in short, terminal corymbs, white, 3.5 cm across ; fruit pyriform, about 5 cm long. Commonly cultivated.

Thimpu, 2700 m, April 1964, *Maheshwari* s.n.

Rosa sericea Lindl. Ros. Monogr. 105. t. 12, 1820 ; Fl. Brit. Ind. 2 : 367, 1879.

Low subscentent shrub of bushy habit, branches prickly or unarmed ; leaflets 7-9, stipules membranous ; flowers white, 5-7 cm across, terminating short lateral shoots ; fruit pyriform.

Thimpu, 2700 m, April 1964, *Maheshwari* s.n.

R. indica Linn. Sp. Pl. 1 : 492, 1753 ; Fl. Brit. Ind. 2 : 364, 1878.

Common garden rose with more than one row of petals.

Paro, 2500 m, Aug. 1963, *Sen Gupta* s.n.

Rubus acuminatus Sm. in Rees Cyclop. 30 : 32, 1819 ; Fl. Brit. Ind. 2 : 327, 1878.

Local name : Biraley Kara.

Scandent shrub, branches arched, prickles few, scattered, very small ; leaves thin, oblong, 8-14 cm long ; flowers white, in axillary or terminal corymbose panicle ; fruit globose, scarlet, spongy. Common in open jungles ; fruits edible.

On road to Narfong 16 km from Deothong, 1500 m, Aug. 1965, *A. S. Rao* 43210 ; Sham Khara and Maorey forests, 1550 m, Dec. 1963, *Sen Gupta* 1104 ; Dakpai, 1650 m, Nov. 1964, *Deb* 375.

Rubus biflorus Sm. in Rees Cyclop. 30 : 9, 1819 ; Fl. Brit. Ind. 2 : 383, 1878.

A rambling shrub ; stem and branches glaucous, armed with hooked prickles ; leaves 3 or 5 foliolate, leaflets ovate, lobulate, white beneath ; flowers white, axillary, solitary or 2-3 together ; fruit golden yellow, succulent, globose, 1.5-1.8 cm in diam. Occasional in open hill jungle.

Thimpu, 2500 m, April 1964, *Maheshwari* s.n.

R. ellipticus Sm. in Rees Cyclop. 30 : 16, 1819 ; Fl. Brit. Ind. 2 : 336, 1878.

Local name : Aishelu ; Niam rib.

A gregarious bushy shrub with spreading recurved branches, armed with scattered, hooked prickles ; leaflets 3, orbicular, obovate or elliptic ; flowers white, in short dense axillary or terminal panicles ; fruit globose, golden yellow, succulent. A common shrub in open situation, fruits edible.

Sureylakha, 1400 m, Dec. 1963, *Sen Gupta* 945 ; Tama, 1100 m, April 1964, *Sen Gupta* 1129 ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 174 ; Dorokha, 1200 m, Dec. 1963, *Thothathri* 10523 ; Tashigong, 1400 m, March 1965, *Balakrishnan* 41182 ; Chaisilakha, 1300 m, April 1964, *Maheshwari* s.n.

R. ferox Wall. ex Kurz For. Fl. Brit. Burm. 1 : 437, 1877 ; Fl. Brit. Ind. 2 : 329, 1878.

Local name : Pan-kara.

Bushy shrub, stem and branches stout, densely prickly with numerous short prickles ; leaves simple, lower 5-7 lobed, upper ovato-lanceolate, nerves palmately spreading ; flowers white, 2 cm across, in lax terminal or axillary panicles ; fruit red, globose, spongy. Frequent in open forest ; fruits edible.

Sureylakha, 1600 m, Dec. 1963, *Sen Gupta* 989.

R. gracilis Roxb. var. *hypargyrus* (Edgw.) Mukerjee comb. nov. *R. niveus* Wall. ex Hook. f. var. *hypargyrus* (Edgw.) Hook. f. Fl. Brit. Ind. 2 : 335, 1878.

Low bushy shrub armed with recurved prickles ; leaves pinnate, 3-5 foliolate, leaflets membranous, hoary beneath ; flowers in axillary or terminal cymes, pink ; fruits orange. On grassy slopes, rare ; fruits edible.

Chima Kothi, 2500 m, *Maheshwari* s.n.

Rubus hamiltoni Hook. f. Fl. Brit. Ind. 2 : 328, 1878.

Scandent shrub with stout stem and branches armed with recurved prickles ; leaves simple, oblong ; flowers in terminal, spreading panicles, white ; bracts covering the buds ; fruits black-purple. Occasional.

Gaylephug, 270 m, Dec. 1963, *Sen Gupta* 862.

R. lineatus Reinw. ex Bl. Bijdr. 1108. 1826.

An undershrub, unarmed or almost so ; leaves 3 or 5 foliolate, lanceolate, under surface silky, silvery tomentose, nerves 20-30 on either side of the midrib, straight ; flowers white, in short axillary clusters or elongated terminal panicles ; fruits red, spongy, 2 cm long. Frequent on the fringe of the forest.

90 km Pointon road from Narfong to Wamrung, Sept. 1965, *A. S. Rao* 43326 ; road side between Wamrung and Narfong, March 1965, *Balakrishnan* 41911.

R. macientus Camb. in Jacq. Voy. Bot. 49. t. 60, 1944 ; Fl. Brit. Ind. 2 : 336, 1878.

A bushy shrub with trailing or ascending stem and branches armed with flattened prickles ; leaves pinnately 3-foliolate, leaflets 3-5 cm long ; flowers small, white, axillary, solitary, or 2-3 together ; fruit globose, enclosed in the calyx, orange coloured. A rare plant.

Chima Kothi, 2000 m, April 1963, *Maheshwari* s.n.

R. moluccanus Linn. Sp. Pl. 2 : 1179, 1753 ; Fl. Brit. Ind. 2 : 330, 1872.

A robust, scandent shrub with spreading branches, armed with hooked prickles ; leaves simple, palmately 5-7 lobed, 10-25 cm in diam., smooth or covered with tubercles above, villous beneath ; flowers white, 2 cm across, in axillary capitate clusters or terminal panicles ; fruit globose, succulent, orange coloured. Common on open forests ; fruits edible.

Shemgang, 1900 m, Nov. 1964, *Deb* 399 ; on the road to Narfong, 10 km north from Deothong, 1400 m, Aug. 1965, *A. S. Rao* 43180.

R. niveus Thunb. var. *rosaefolius* (Hook.f.) Hara Fl. East. Him. 130, 1966.

R. lasiocarpus Sm. var. *rosaefolius* Hook.f. Fl. Brit. Ind. 2 : 339, 1872.

Local name : Kooamrib.

A large rambling shrub, branches armed with compressed prickles ; leaves pinnately 5-9 foliolate, leaflets 2.5-3.5 cm long ; flowers deep pink, small, in axillary corymbs ; fruit globose, about 1.2 cm in diam., orange red. Frequent on open slopes ; fruits edible.

Tama, 1100 m, April 1964, *Sen Gupta* 1147 ; Chima Kothi, 1200 m, April 1964, *Maheshwari* s.n.

Rubus paniculatus Sm. in Rees Cyclop. 30 : 41, 1819 ; Fl. Brit. Ind. 2 : 329, 1878.

A scrambling shrub with simple leaves, branches and leaves beneath covered with cottony tomentum ; prickles very few, minute ; flowers white, about 2.5 cm across, in lax spreading terminal panicle ; fruit globose, black.

Rare.

1 km north of Wamrung, 2200 m, Sept. 1965, *A. S. Rao* 43344.

R. rosaeifolius Sm. Pl. Icon. Ined. 3 : t. 160, 1791 ; Fl. Brit. Ind. 2 : 341, 1878.

Suberect bushy shrub ; branches slender, prickly ; leaves pinnately 5-7 foliolate, petioles usually prickly ; flowers white, solitary or in loose panicles, leaf opposed or terminal ; fruit globose, orange-red. Rare on fringe of forests.

Thimpu, 3000 m, April 1964, *Maheshwari* s.n.

Spiraea bella Sims in Bot. Mag. t. 2426, 1823 ; Fl. Brit. Ind. 2 : 324, 1878.

Shrubs with stiff branches ; leaves simple, 2-5 cm, ovate ; flowers pink, in compact few-flowered cymes terminating the branches ; fruit a cluster of short, few seeded follicles. Rare in exposed situation.

Krishnagiri saddle, on road to Wamrung from Narfong, 2050 m. Sept. 1965, *A. S. Rao* 43311.

S. micrantha Hook.f. Fl. Brit. Ind. 2 : 325, 1878.

Shrubs with stout branches ; leaves simple, up to 18 cm long, ovato-lanceolate ; flowers in short, terminal, open cymes ; fruit a cluster of short villous follicles. Rare on rocky ground.

Thimpu, 2500 m, April 1964, *Maheshwari* s.n.

SAXIFRAGACEAE

G. SEN GUPTA, A. S. RAO AND N. P. BALAKRISHNAN

Astilbe rivularis Buch.-Ham. ex D. Don, Prodr. Fl. Nep. 211, 1825 ; Fl. Brit. Ind. 2 : 389, 1878.

Erect herb with a perennial rootstock ; leaves large, twice or thrice ternate, leaflets 3-10 cm, ovate, veins prominent, stipules large, sheathing ; flowers small, many in terminal panicle ; capsule 7-9 mm long, dehiscing ventrally. Common on exposed hill slopes.

Nyoth-Tashiyangtsi track, Oct. 1965, *Balakrishnan* 44200 ; Narfong, 2 km north along the stream 1850 m, Aug. 1965, *A. S. Rao* 43259.

Chrysosplenium nepalense D. Don, Prodr. Fl. Nep. 210, 1825 ; Fl. Brit. Ind. 2 : 400, 1878.

A slender herb with ovate leaves and minute, axillary or terminal flowers ; fruit a small capsule with smooth seeds. A weed in damp places. Shemgang, 2000 m, April 1964, *Sen Gupta* 1288.

Tiarella polyphylla D. Don Prodr. Fl. Nep. 210, 1825 ; Fl. Brit. Ind. 2 : 399, 1878.

Erect herb with perennial root ; radical leaves with long petiole and large adnate stipules, cauline leaves with short petioles and smaller stipules ; flowers small, in terminal raceme ; capsule unequal, 7-9 mm long. A rare plant.

On way to Laurijumpa from Tobrang, March 1965, *Balakrishnan* 41450.

ESCALLONIACEAE

K. THOTHATHRI

Itca macrophylla Wall. in Roxb. Fl. Ind. 2 : 419, 1824 ; Fl. Brit. Ind. 2 : 408, 1878.

A small tree ; leaves wide ovate, up to 15 cm long, glandular denticulate ; flowers small, in axillary and terminal racemes ; capsule about 1 cm long. Rare.

Samchi, 400 m, Dec. 1964, *Thothathri* 10416.

PHILADELPHACEAE

A. S. RAO AND N. P. BALAKRISHNAN

Dichroa febrifuga Lour. Fl. Cochin. 1 : 301, 1790 ; Fl. Brit. Ind. 2 : 406, 1878.

A shrub with dark purplish stem ; leaves lanceolate, up to 20 cm long ; flowers small in terminal panicle ; berry ovoid, 5 mm in diam., deep blue. Abundant between 1500-2000 m, in partial shade ; all parts medicinal in cold and fever.

Sureylakha, 1500 m, Dec. 1963, *Sen Gupta* 936 ; Dhumkhara, 1500 m, Nov. 1964, *Deb* 7 ; 2 km west of Dentak Camp, 1800 m, Aug. 1965, *A. S. Rao* 43224 ; 11 km from Gomchu to Rongthong, 2200 m, *A. S. Rao* 43224 ; Dorokha hill 1000 m, *Thothathri* 10475.

Philadelphus tomentosus Wall. ex G. Don Gen. Hist. 2 : 807, 1832. *P. coronarius* Linn. var. *tomentosus* Clarke in Fl. Brit. Ind. 2 : 407, 1878.

Shrubs with opposite branches ; leaves deciduous, opposite, ovato-lanceolate, 6-9 cm long ; flowers white, 2 cm across, in short, terminal cymes ; capsule 1.2 cm long, seeds many. Rare.

On way to Bomthong from Lhuntsi, Nov. 1965, *Balakrishnan* 44544.

HYDRANGEACEAE

S. K. MUKERJEE AND G. SEN GUPTA

Hydrangea anomala D. Don Prodr. Fl. Nep. 211, 1825. *H. altissima* Wall. Tent. Fl. Nep. t. 50, 1826 ; Fl. Brit. Ind. 2 : 404, 1878.

A large shrub, 3-4 m high ; leaves ovato-lanceolate, up to 15 cm long ; flowers small, in terminal corymbs, outer flowers sterile with enlarged petaloid sepals ; capsule small, compressed. Rare.

Chima Kothi, 1800 m, April 1964, *Maheshwari* s. n. ; on road to Gomchu, 10 km from Wamrung, Sept. 1965, *A. S. Rao* 43386.

H. robusta Hook.f. & Thoms. in Journ. Linn. Soc. 2 : 76, 1858 ; Fl. Brit. Ind. 2 : 404, 1878.

A tall shrub, up to 5 m high ; leaves ovate, up to 22 cm long ; flowers in terminal corymbs with outer flowers sterile with petaloid sepals ; capsule subhemispheric, compressed. Common in lower temperate forests.

Nyoth forest towards Tashiyangtsi, Oct. 1965, *Balakrishnan* 44184 ; on way to Gongga from Yangtsi, *Balakrishnan* 41483 ; on road to Narfong, 10 km from Deothong, 1400 m, *A. S. Rao* 43186 ; near Betni bridge. 1050 m, Dec. 1963, *Sen Gupta* 1062 ; Dorokha, 1000 m, Dec. 1963, *Thothathri* 10495.

var. griffithii Clarke in Fl. Brit. Ind. 2 : 404, 1878.

A tree, up to 10 m high ; leaves narrowed into the petiole. Rare.

Rani Camp, 1650 m, Nov. 1964, *Deb* 221.

CRASSULACEAE

S. K. MUKERJEE AND G. SEN GUPTA

Sedum elongatum Wäll. ex Hook. f. & Thoms. in Journ. Linn. Soc. 2 : 98, 1858 ; Fl. Brit. Ind. 2 : 419, 1878.

Succulent herbs, stems up to 50 cm high, leafy ; leaves oblong or elliptic, sessile or almost so ; flowers in terminal loose cymes ; petals lanceolate, black-purple ; fruit a cluster of small follicles. Frequent on the rock crevices.

Paro, 2500 m, *Mukerjee* 5893.

S. multicaule Wall. ex Lindl. Bot. Reg. (Misc.) 58, 1840 ; Fl. Brit. Ind. 2 : 422, 1878.

Small succulent herb, about 20 cm high, stem much branched from base ; flowers in terminal cymes, yellow ; cyme branches elongate and divaricate in fruit. Common on the rocks.

Ha Valley, 3200 m, *Sen Gupta* 677 ; Thimpu, 2500 m, April 1964, *Maheshwari* s.n. ; Paro, 2500 m, *Mukerjee* 5860 ; Chima Kothi, 2000 m, *Sen Gupta* 1591.

S. triactina Hook.f. & Thoms. in Engl. Pflanzenf. cd. 2, 18a : 460, 1930.
Triactina verticillata Hook.f. & Thoms. in Journ. Linn. Soc. 2 : 103, 1858 ; Fl. Brit. Ind. 2 : 423, 1878.

A weak succulent herb on rock crevices ; flowers yellow. Rare.
Dochu La, Aug. 1965, *Sen Gupta* s.n.

HAMAMELIDACEAE

S. K. MUKERJEE, A. S. RAO AND N. P. BALAKRISHNAN

Altingia excelsa Noronha in Varh. Bat. Genoot. 5 : 41, 1827 ; Fl. Brit. Ind. 2 : 429, 1878.

A large tree ; leaves elliptic-lanceolate, up to 12 cm long, stipulate ; flowers unisexual, in separate heads, the male heads in racemes, the female heads solitary ; fruit-heads globose. A rare tree.

3 km from Kharsang towards Tashigong, March 1965, *Balakrishnan* 41804.

Corylopsis himalayana Griff. in Journ. As. Soc. Beng. 23 : 642, 1854 ; Fl. Brit. Ind. 2 : 427, 1878.

Shrub with deciduous leaves and stipules ; leaves ovate, plicate, nerves prominent, parallel ; flowers pale yellow, in pendulous racemes, bracts large, sheathing ; capsule woody. Occasional.

Chima Kothi, 2000 m, April 1964, *Maheshwari* s.n. ; Wamrung, 2000 m, March 1965, *Balakrishnan* 41146 ; in the valley from Jerichu to Gomchu, Sept. 1965, *A. S. Rao* 43432.

Exbucklandia populnea (R. Br. ex Griff.) R. W. Br. in Journ. Wash. Acad. Sci. 36 : 348, 1946. *Bucklandia populnea* R. Br. ex Griff. in Asiat. Res. 19 : 95. t. 13-14, 1836 ; Fl. Brit. Ind. 2 : 429, 1878.

A tall tree ; leaves broadly ovato-cordate, chartaceous, margin cartilaginous ; flowers small, in heads, peduncles axillary, 2-5 together ; capsule woody. Dominant tree in forests between 1300-2400 m.

Rani Camp, Gulibrous forest, 1650 m, Nov. 1964, *Deb* 234 ; Narfong, 1850 m, March 1965, *Balakrishnan* 41916.

COMBRETACEAE

G. SEN GUPTA AND K. C. MALICK

Combretum flagrocarpum Clarke in Fl. Brit. Ind. 2 : 455, 1878.

Local name : Debre lahara ; Sheti lahara.

An extensive climber ; leaves opposite, elliptic up to 15 cm long, glandular punctate beneath ; flowers small, in axillary racemes ; fruit red or dark brown, about 3 cm long and broad with 4 papery wings. Scattered in subtropical forests.

Betni, 1400 m, Dec. 1863, *Sen Gupta* 1047 ; Gaylegphug, 270 m, Nov. 1964, *Deb* 183 ; Samchi, 200 m, *Thothathri* 10546 ; Phuntsholing, *Subba Rao* 103.

Terminalia bellerica Roxb. Pl. Corm. 2 : 54. t. 198, 1789 ; Fl. Brit. Ind. 2 : 445, 1878.

Tall deciduous tree with elliptic leaves, clustered towards the ends of branches ; leaves up to 15 cm long, petiole half as long as blade ; flowers small, in axillary spikes ; fruit globose, about 2 cm in diam., narrowed to a short stalk, fulvous tomentose. Rare.

Samdrup Jhonkar, Nov. 1965, *Balakrishnan* 44699.

T. citrina Roxb. ex Flem. in As. Res. 11 : 183, 1810 ; Fl. Brit. Ind. 2 : 446, 1878.

A tall tree ; leaves subopposite, elliptic, up to 15 cm long ; flowers small, in lateral and terminal spikes ; fruits oblong or ovoid. Scattered at the edge of the forests ; decoction of fruits taken in cough and cold.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 885.

T. myriocarpa Heurck et Muell.-Arg. Obs. Bot. 215, 1871 ; Fl. Brit. Ind. 2 : 448, 1878.

A large tree ; leaves elliptic or oblong, up to 20 cm long, nerves many, parallel ; flowers in dense axillary spikes ; fruits orange, with 2 broad and 1 narrow wings. Scattered in subtropical forests.

Dakpai, 1650 m, Nov. 1964, *Deb* 437 ; Samchi 250 m, *Thothathri* 10568 ; Phuntsholing, *Subba Rao* 385 ; 4 km to Monger Dzong, Nov. 1965, *Balakrishnan* 44630.

MYRTACEAE

G. SEN GUPTA

Eugenia kurzii Duthie ex Kurz in Journ. As. Soc. Beng. 46(2) : 68, 1877 ; Fl. Brit. Ind. 2 : 478, 1878.

A large tree ; branches white, subtetragonous ; leaves coriaceous, lanceolate, up to 18 cm long ; flowers small, white, in axillary racemes, often racemes in axils of fallen leaves ; stamens many, filaments slender ; berries small, globose.

Sham Khara, 1500 m, Nov. 1964, *Deb* 36 ; Kamji, 1000 m, *Subba Rao* 343.

Syzygium oblatum (Roxb.) Wall. ex Cowan et Cowan, Tr. N. Bengal 67, 1929. *Eugenia oblata* Roxb. Fl. Ind. 2 : 493, 1824 ; Fl. Brit. Ind. 2 : 492, 1878.

A small tree with broadly lanceolate leaves ; flowers 2-3 cm in diam. pink, in trichotomous paniculate cymes ; stamens many, filaments long ; berries spherical, about 3 cm in diam. Scarce in dense tropical forests.

Gayleghug, 270 m, Dec. 1963, *Sen Gupta* 898.

S. claviflorum Wall. ex Cowan et Cowan, l.c. 68, 1929. *Eugenia claviflora* Roxb. Fl. Ind. 2 : 488, 1824 ; Fl. Brit. Ind. 2 : 484, 1878.

A small tree ; leaves lanceolate, up to 15 cm long, nerves close ; flowers in lateral corymbs, berries oblong, 2-3 cm long.

LECYTHIDACEAE

S. K. MUKERJEE

Careya arborea Roxb. Pl. Corom. 3 : 14. t. 218, 1819 ; Fl. Brit. Ind. 2 : 511, 1879.

Medium sized tree, deciduous for a short period ; leaves obovate or oblong, short petioled, up to 30 cm long, green turning to red-purple in drying ; flowers large, usually 3 in axillary spikes ; petals 3 cm long, white, caducous ; stamens many, in three or more whorls, filaments red, connate at base ; fruit a globose, fibrous berry, 5-8 cm in diam. Occasional in open forests.

Phuntsholing, April 1964, *Maheshwari* s.n.

MELASTOMATACEAE

M. P. NAVAR

Medinilla rubicunda (Jack) Bl. in Flora 14 : 512, 1831 ; Fl. Brit. Ind. 2 : 547, 1879.

Local name : Bogitenga.

An erect shrub ; leaves sessile or shortly petiolate, elliptic or oblong-elliptic, glabrous, young leaves pinkish, 3-5 nerved, cross-venules absent ; inflorescence in short few flowered axillary cymes ; flowers 4-merous ; calyx tube campanulate, teeth not prominent ; petals rose coloured ; stamens 8, connective shortly produced at the base, dorsally ending in a spur ; fruit a berry.

G. E. Camp 1900 m, Sept. 1965, *A. S. Rao* 43578.

Melastoma malabathricum Linn. Sp. Pl. 1 : 390, 1753 ; Fl. Brit. Ind. 2 : 523, 1879.

Local name : Phutuka, Phutki.

A bushy shrub ; leaves elliptic or oblong-lanceolate, upper surface scabrous, under surface scaly and strigose, 5-7 nerved ; inflorescence terminal, in clusters of 3-5 flowers ; calyx tube densely covered with scales, lobes lanceolate, hairy outside, glabrous within ; petals usually 5 ; stamens 10, alternating stamens have long produced connective, connective not produced in the remaining ones ; fruit coriaceous or fleshy berry, dehiscent irregularly.

Tama, 500 m, April 1964, *Sen Gupta* 1131.

Osbeckia crinita Benth. (in Wall. Cat. No. 4066) in Ann. Sc. Nat. ser. III, 14 : 72, 1850 ; Fl. Brit. Ind. 2 : 517, 1879.

Local name : Ja-lang-Ktthem.

Shrub, densely hairy ; leaves oblong-lanceolate or ovate-lanceolate, 5-7 nerved, cross-venules distinct, hairy ; inflorescence in crowded corymbs ; flowers 4 or 5-merous ; calyx tube with stellate hairs, lobes subulate and setose ; petals 4 or 5 ; stamens 8 or 10, rostrate ; apex of the ovary plurisetose ; fruit a capsule.

Chenari village, Aug. 1965, *A. S. Rao* 43157 ; Tama, 500-550 m, April 1964, *Sen Gupta* 1174 ; Rani Camp, Nov. 1964, *Deb* 196.

O. nepalensis Hook.f. Fl. Exot. t. 31, 1822 ; Fl. Brit. Ind. 2 : 521, 1879.

A shrub with angulate branches and adpressed stiff hairs ; leaves lanceolate or oblong-lanceolate, 5-nerved, strigose on both surfaces ; petiole very short ; inflorescence in corymbose cymes ; bract ovate with hairs in the centre and base, ciliate along the margins ; calyx with ciliate fringed scales, lobes lanceolate, glabrous, ciliate along the margins ; petals 5 ; stamens 10. anthers attenuate but not rostrate ; apex of the ovary strigose with a ring of bristles ; fruit a capsule.

Rani Camp to Tama, Nov. 1964, *Deb* 275.

O. nutans Wall. ex Triana in Trans. Linn. Soc. 28 : 54, 1871 ; Fl. Brit. Ind. 2 : 521, 1879.

A small wiry much branched shrub with adpressed strigose pubescence ; leaves narrowly lanceolate, lineolate and glabrous on the upper surface, when dry under surface of leaf yellowish, 3-nerved, nerves strigose on the under surface ; flowers in short axillary or terminal peduncles with 1-3 flowers, usually 5-merous ; calyx tube widely campanulate, glabrous or with ciliate fringed scales, lobes lanceolate, ciliate ; petals 5, pale purple ; stamens twice as many as petals, anthers attenuate ; apex of the ovary setose ; fruit a capsule.

Samchi, Dhoankhola, 500 m, Dec. 1963, *Thothathri* 10387.

O. stellata Wall. ex D. Don Prodr. Fl. Nep. 221, 1825-in part ; Fl. Brit. Ind. 2 : 517, 1879.

A shrub with densely adpressed hairs ; leaves lanceolate with short hairs on both surfaces, glabrescent, 5-7-nerved ; inflorescence in close corymbs ; flowers 4-merous, large ; calyx campanulate, densely covered with stellate hairs, calyx teeth subulate and stellate hairy ; petals 4, large ; stamens 8, long rostrate ; apex of the ovary pluri-setose ; fruit a capsule.

Kanglung, Sept. 1965, *A. S. Rao* 43551 ; near Wamrung, Sept. 1965, *A. S. Rao* 43567 ; Sangura, 1200 m, Nov. 1964, *Mukerjee* 6065 ; Kamji, 1333 m, Oct. 1963, *Mukerjee* 5982.

Oxyspora paniculata DC. Prodr. 3 : 123, 1828 ; Fl. Brit. Ind. 2 : 525, 1879.

Local name : Lang-tang.

A bushy shrub with quadrangular branches, stellate-furfuraceous with spreading bristles ; leaves ovate-oblong or elliptic, upper surface stellate-puberulous when young, glabrescent later on, under surface stellate pubescent along the nerves, 7-9 nerved, cross-venules distinct and prominent on both surfaces, petiole long and stellate furfuraceous ; inflorescence terminal, paniculate ; flowers 4-merous ; calyx tube cylindrical with 4 obtuse lobes, stellate-furfuraceous ; petals 4, ovate-oblong ; stamens 8, very unequal and anthers dissimilar, larger anther linear subulate, curved, base prominently two lobed, smaller stamen linear-oblong, bilobed at the base, connective dorsally ending in a spur ; ovary concrescent with the calyx tube by 8 septa ; fruit a capsule.

18 km down from Garrison Engineer's Camp to Deothong on road, Sept. 1965, *A. S. Rao* 43594 ; Samchi, Chourini Hill, 500 m, Dec. 1963, *Thothathri* 10366 ; Kamji, 1333 m, Oct. 1963, *Mukerjee* 5981.

Pseudodissochaeta assamica (C. B. Clarke) Nayar in Journ. Bombay nat. Hist. Soc. 65 : 559, 1969. *Anplectrum assamicum* C. B. Clarke in Hook.f., Fl. Brit. Ind. 2 : 546, 1879.

Local name : Lotaphutkola.

Shrub with quadrangular branches, sparsely setose ; leaves elliptic-lanceolate or oblong-lanceolate, upper surface glabrous, nerves on the under surface covered with bristles, in between the nerves glabrous, 5-7 nerved, cross-venules distinct and prominent, petiole short ; inflorescence paniculate, terminal ; flowers 4-merous ; calyx tube campanulate, 8-ribbed, 4-lobed, lobes not prominent ; petals ovate, pale mauve ; stamens 8 equal or subequal, connective not produced, dorsally ending in a ovate-triangular appendage and ventrally ending in two auricles ; ovary concrescent with the calyx tube by 8 septa ; fruit a berry.

Sine loc. *Griffith* 2018.

Sarcopyramis nepalensis Wall. Tent. Flor. Nap. 32, t. 23, 1824 ; Fl. Brit. Ind. 2 : 541, 1879.

An erect, few-branched, more or less fleshy, glabrous herb ; leaves opposite, often unequal in size, ovate or ovate-oblong, 3-5 nerved, transparent when dry, petiole long ; inflorescence in terminal or axillary heads of few flowers, bracts large, foliaceous and envelops the flower buds ; calyx tube triangular-campanulate, glabrous, 4-lobed with pinnatifid teeth ; petals 4. Stamens 8, anther oblong, base rounded and apex obtusely two-lobed, connective dorsally ending in a short spur ; ovary totally adnate to the calyx tube ; fruit a capsule.

1 km north of Wamrung, 2500 m, Sept. 1965. *A. S. Rao* 43333.

SONNERATIACEAE

S. K. MUKERJEE

Duabanga grandiflora (Roxb.) Walp. Rep. 2 : 114, 1843. *D. sonneratioides* Buch.-Ham. in Trans. Linn. Soc. 17 : 178, 1835 ; Fl. Brit. Ind. 2 : 579, 1879.

Large trees with pendent branches ; leaves opposite and distichous, oblong, up to 25 cm long, glossy green above, pale beneath, nerves prominent, parallel ; flowers in terminal few flowered panicles ; calyx thick with 4-7 lobes, 2.5 to 3 cm wide at base ; petals white ; stamens many ; capsule globose, adnate to the spreading calyx. Scattered in tropical forests.

Gaylegphug, 270 m Dec. 1963, *Sen Gupta* 907 ; Birti, 550 m, April 1964, *Sen Gupta* 1204 ; Phuntsholing, *Subha Rao* 59.

LYTHRACEAE

G. SEN GUPTA AND K. C. MALICK

Lagerstroemia parviflora Roxb. Pl. Corm. 1 : 47. t. 66, 1795. Fl. Brit. Ind. 2 : 575, 1879.

A small tree with buff coloured bark, exfoliating in thin flaks ; leaves oblong, up to 8 cm long, whitish beneath ; flowers white, about 2 cm in diam., in axillary or terminal panicles ; capsule oblong, up to 2.5 cm long, adnate to the calyx ; seeds winged. Common in tropical forests.

Birti, 550 m, April 1964, *Sen Gupta* 1218 ; Shemgang, 1950 m, Nov. 1964, *Deb* 412 ; Phuntsholing, April 1964, *Maheshwari* s.n.

Rotala indica (Willd.) Koehne in Eng. Bot. Jahrb. 1 : 172, 1880. *Ammania peploides* Spr. Syst. Veg. 1 : 444, 1824 ; Fl. Brit. Ind. 2 : 566, 1879.

Small annual herb with soft decumbent stems ; leaves elliptic, 1.5-2 cm long ; flowers pink, very small, in dense axillary spikes or often solitary ; capsule very small ; seeds many, pink. Common in damp places in the plains as well as in the lower hills.

Phuntsholing, Dec. 1963, *Subba Rao* 363 ; Samchi, 500 m, Dec. 1963, *Thothathri* 10361.

Woodfordia fruticosa (L.) Kurz in Journ. As. Soc. Beng. 40(2) : 56, 1871.

W. floribunda Salisb. Parad. Lond. t. 42, 1806 ; Fl. Brit. Ind. 2 : 572, 1879.

Large shrub with spreading and somewhat drooping branches ; leaves lanceolate, grey pubescent beneath with black dots ; flowers tubular, about 2 cm long, scarlet, in few flowered axillary cymes ; capsule ellipsoid, included in calyx. Common in lower elevations.

Birti, 600 m, April 1964, *Sen Gupta* 1192.

ONAGRACEAE

S. K. MUKERJEE AND G. SEN GUPTA

Circaea alpina Linn. Sp. Pl. 1 : 9, 1753 ; Fl. Brit. Ind. 2 : 589, 1879.

Small erect herb with broadly ovate, pellucid, leaves ; flowers white, small, in terminal racemes ; fruit about 3 mm obovoid, indehiscent. Common in the open in temperate regions.

Dochu La, 3000 m, *Sen Gupta* s.n. ; Honshu 2850 m, *Sen Gupta* 1780.

C. repens Wall. ex Asch. et Mag. in Bot. Zeit. 28 : 761, 1870. *C. lutetiana*

Clarke in Fl. Brit. Ind. 2 : 589, 1879 non Linn. *C. alpina* Linn. var. *himalaica* Clarke Ibid. 2 : 589, 1879.

Herbs up to 60 cm high, erect or often decumbent ; leaves ovato-lanceolate, up to 5 cm long ; flowers small, white or pinkish, in terminal racemes ; fruit obovoid, about 3 mm long, covered with long, yellow hooked hairs. Occasional at higher level.

Lumichawa, 2800 m, Sept. 1965, *Sen Gupta* s.n.

Epilobium cylindricum D. Don, Prodr. Fl. Nep. 222, 1825. *E. roseum*

Schreb. var. *cylindricum* (D. Don) Clarke in Fl. Brit. Ind. 2 : 585, 1879.

Erect herbs, 30-45 cm high ; leaves linear-lanceolate, 3-5 cm long ; flowers rose coloured, axillary or in terminal raceme ; capsule dehiscent from the apex ; seeds obovoid, minutely papillose. Common on road side.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5843.

Ludwigia octovalvis (Jacq) Raven ssp. *sessiflora* (Mich.) Raven in Rein-

wardtia 6 : 362, 1963. *Jussiaea suffruticosa* Linn. Sp. Pl. 1 : 388, 1753 ; Fl. Brit. Ind. 2 : 587, 1879.

An erect undershrub, up to 150 cm tall ; leaves lanceolate, up to 8 cm long, sessile or so ; flowers yellow, axillary, solitary ; capsule linear, 8-ribbed, 3-5 cm long. Common in swampy areas.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 845 ; Gaylegphug, 270 m, Nov. 1964, *Deb* 110.

Ludwigia perennis Linn. Sp. Pl. 1 : 119, 1753. *L. parviflora* Roxb. Fl. Ind. 1 : 419, 1820 ; Fl. Brit. Ind. 2 : 588, 1879.

Undershrub, up to 75 cm high ; leaves lanceolate, 5-8 cm long ; flowers yellow, solitary, axillary ; fruit linear-oblong, smooth and inflated, about 1 cm long. Occasional in damp situations.

Phuntsholing, Dec. 1963, *Subba Rao* 43.

L. prostrata Roxb. Fl. Ind. 1 : 441, 1820 ; Fl. Brit. Ind. 2 : 588, 1879.

Herb with ascending stem and branches ; leaves lanceolate, up to 8 cm long ; flowers solitary, axillary, yellow ; fruit linear up to 2 cm long, not inflated. Occasional on rocky soil in river bank.

Gaylegphug, 170 m, Dec. 1963, *Sen Gupta* 854.

CUCURBITACEAE

G. SEN GUPTA AND K. C. MALICK

Cucumis sativus Linn. Sp. Pl. 2 : 1012, 1753 ; Fl. Brit. Ind. 2 : 620, 1879.

An annual, climbing by means of tendrils, hirsute all over ; leaves broadly ovate cordate, 12-18 cm wide, palmately 3-5 lobed ; flowers unisexual, yellow, axillary, males in fascicles, females solitary or fasciculate ; fruit fleshy and indehiscent 8-16 cm long, oblong ; seeds white, elliptic, compressed, 8-12 mm long. Cultivated at lower levels.

Dakpai, 1650 m, Nov. 1964, *Deb* 338 (an escape from cultivation).

Diplocyclos palmatus (Linn.) C. Jeffrey in Kew Bull. 15 : 352, 1962. *Bryonia laciniosa* Linn. Sp. Pl. 1 : 1013, 1753 ; Fl. Brit. Ind. 2 : 622, 1879.

Local name : Bon kakra.

Scandent or trailing annual ; leaves deeply palmately 5-lobed, ovate-cordate, 8-12 cm wide, tendril bifid ; flowers small, greenish yellow, in axillary fascicles ; fruit globose, about 1.5 cm in diam., fleshy and indehiscent, yellowish green, narrowly six-stripped ; margins of seed thick. Scattered on waste grounds.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 916 ; Phuntsholing, *Subba Rao* 374.

Edgaria darjeelingensis Clarke in Journ. Linn. Soc. 15 : 113, 1876 ; Fl. Brit. Ind. 2 : 632, 1879.

Trailing herbs, climbing by bifid tendrils ; leaves ovate-cordate, acute or acuminate, 8-12 cm long, margin entire ; flowers unisexual, yellow, in axillary fascicles ; fruit fusiform, trigonous, trilocular, dry and fibrous ;

seeds compressed, subtrilobed and slightly corrugated near the base. Very common in open areas and along roads.

Rani Camp, 165 m, Nov. 1964, *Deb* 226.

Gymnopetalum cochinchinense (Lour.) Kurz in Journ. As. Soc. Beng. 40 : 57, 1871 ; Fl. Brit. Ind. 2 : 611, 1879.

Climbing herbs, tendrils bifid ; leaf membranous, ovate, angular or shortly-lobed, 4-6 cm long ; flowers unisexual, white, axillary, males solitary or in racemes, females solitary ; fruit baccate, ovoid-oblong, shortly villous, sharply 10 ribbed, ± 5 cm long, red when ripe ; seeds dusky, compressed, 7-8 mm long. Occasional in open jungles.

Samdrup Jhonkar, Sept. 1965, *A. S. Rao* 43600.

Gymnostemma pentaphyllum (Thunb.) Makino in Bot. Mag. Tokyo 16 : 179, 1902 ; Bl. Bijdr. 23. 1825 ; Fl. Brit. Ind. 2 : 633, 1879.

Scandent or climbing herbs, tendril simple or bifid ; leaves pedately 3-7 foliolate, membranous, middle leaflet 8-14 cm long, lateral leaflets shorter ; flowers unisexual, small, white, in axillary or rarely terminal panicles ; fruit fleshy and indehiscent, globose, dull green, 7-9 mm in diam. 1-3 seeded. Common in temperate region.

On road to Narfong, 10 km north of Deothong, 1400 m, *A. S. Rao* 43195 ; Wamrung, 2400 m, Sept. 1966, *A. S. Rao* 43339 ; Gomchu, 2450 m, Sept. 1965, *A. S. Rao* 43396.

Hodgsonia macrocarpa (Bl.) Cogn. in DC. Monogr. Phan. 3 : 349, 1881.

H. heteroclita (Roxb.) Hook.f. & Thoms. in Proc. Linn. Soc. 2 : 257, 1854 ; Fl. Brit. Ind. 2 : 606, 1879.

Large climber with bifid tendrils ; leaves orbicular to reniform in outline, 3-5 lobed, 15-20 cm across ; flowers unisexual, yellow outside, white within, male flowers in axillary racemes, females solitary, axillary ; calyx 8-10 cm long, tubular ; corolla fimbriate, fringes up to 15 cm long ; fruit depressed ovoid, 12-grooved, 10-16 cm wide tomentose ; seeds ellipsoid, flat, 3-7 cm long. Occasional ; woody fruits persist up to the following year.

Local name : Kanan champa lahara.

Gayleghphug, 270 m, Dec. 1963, *Sen Gupta* 867 ; Gayleghphug, Nov. 1964, *Deb* 131.

Indofevillea khasiana Chatterji in Kew Bull. 1947 : 119, 1947.

A stout climber, woody below ; leaves broadly ovato-cordate, up to 27 cm long ; tendril up to 30 cm long, bifid ; flowers unisexual, corymbose, axillary ; fruit fusiform, up to 30 cm long, seeds ovoid, compressed up to 4 cm long. Rare in open forest.

Gayleghphug, 270 m, May, 1964, *Sen Gupta* 1431.

Luffa cylindrica (Linn.) Roem. Syn. Mon. 2 : 63, 1846. *L. aegyptiaca* Mill. ex Hook.f. in Fl. Trop. Afr. 2 : 530; Fl. Brit. Ind. 2 : 614, 1879.

Local name : Ghiroula.

An extensive climber ; leaves palmately 5-lobed or angular, up to 25 cm across ; tendril bi- or trifid ; flowers yellow, unisexual, male flowers in axillary racemes, females solitary ; fruit up to 20 cm long, fusiform or cylindric, fibrous inside ; seeds black, ovate, compressed, 12-14 mm long. Cultivated and found wild in lower levels.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 917 ; Phuntsholing, Dec. 1963, *Subba Rao* 69.

Melothria indica Lour. Fl. Cochinch. 35. 1790 ; Fl. Brit. Ind. 2 : 626, 1879.

A trailing herb, stem slender, much branched ; lamina membranous, deltoid-ovate or cordate-ovate, often trilobed, up to 6 cm across ; tendril filiform, simple ; flowers unisexual, white, small, in axillary fascicles or racemes, often solitary ; fruit oblong, up to 1.5 cm long, white ; seeds obovate, 5-6 mm long, greyish. Common in lower elevations in the open.

Local name : Bin lahara.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 842 ; near Betni Khola, 1350 m, Dec. 1963, *Sen Gupta* 1031 ; on road to Deothong 15 km down from Garrison Engineer's Camp, Sept. 1965, *A. S. Rao* 43593.

M. maderaspatana (Linn.) Cogn. in DC. Monogr. Phan. 3 : 623, 1881.

Mukia scabrella Arn. in Hook. Journ. Bot. 3 : 276, 1840 ; Fl. Brit. Ind. 2 : 623, 1879.

Prostrate or trailing annual, stem and branches slender ; leaves ovate or sub-deltoid angular or 3-5 lobed up to 15 cm long ; tendril slender, simple ; flowers small, yellow, unisexual, males in axillary fascicles or in spikes, females solitary or fasciculate ; fruit globose, brownish yellow, 7-12 mm across ; seeds grey, 4 mm long or shorter. Common at lower levels.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 811 ; Tama, 1450 m, Nov. 1964, *Deb* 304 ; Phuntsholing, Dec. 1963, *Subba Rao* 111.

Momordica charantia Linn. Sp. Pl. 2 : 1009, 1753.

Slender, trailing or climbing herb ; leaves pedately 5-7 lobed, membranous, suborbicular in outline, up to 12 cm across ; flowers unisexual, small, yellow, axillary, solitary ; fruit fusiform, tuberculate, up to 20 cm long, trivalved, dehiscing from the apex ; seed embeded in red pulp, compressed, 12-16 mm long, oblong, sculptured. Cultivated and found as escape at lower levels ; used as a vegetable and medicine.

Gaylegphug, 270 m, Nov. 1964, *Deb* 105 ; Phuntsholing, *Subba Rao* 154 ; Phuntsholing, April 1964, *Maheshwari* s.n.

Thladiantha calcarata Cong. in DC. Monogr. Phan. 3 : 423, 1881. *T. dubia* Bunge sensu Hook.f. in Bot. Mag. t. 5469, 1864 ; Fl. Brit. Ind. 2 : 631, 1879.

A large climber, tendril simple, stout ; leaves ovate cordate, up to 14 cm long ; flowers yellow, males in axillary racemes, females solitary ; fruit oblong, 3-4 cm long, longitudinally 12-15 nerved ; seeds rugose.

Shemgang, 1950 m, Nov. 1964, *Deb* 432 ; on road to Narfong, 16 km north from Deothong, 1500 m, Aug. 1965, *A. S. Rao* 43208.

Trichosanthes wallichiana (Ser.) Wt. in Ann. Mag. Nat. Hist. 8 : 270, 1842.

T. multiloba Miq. sensu Hook.f. Fl. Brit. Ind. 2 : 607, 1879.

Extensive climber, much branched, tendril 2-3 fid ; leaves suborbicular, deeply palmately 3-9 lobed, 10-20 cm across ; flowers unisexual, white, male in long axillary racemes, females solitary ; fruit ovoid, acute at apex, up to 8 cm long, fleshy and indehiscent, bright red with orange streaks. Rare.

Gomchu, 2400 m, Sept. 1965, *A. S. Rao* 43444.

Zanonia indica Linn. Sp. Pl. 2 : 1457. 1763 (ed. 2) ; Fl. Brit. Ind. 2 : 633, 1879.

Extensive climber with a robust stem, woody below ; tendril simple ; leaves coriaceous, trinerved, ovato-oblong, up to 20 cm long ; flowers unisexual, small, buff-coloured, in axillary panicles or racemes ; fruits obconic, truncate and 3-valved at apex, up to 10 cm long ; seeds compressed, surrounded by a large membranous wing. Frequent.

On road to Rongthong, 25 km from Gomchu, Sept. 1965, *A. S. Rao* 43470 ; 1 km north of Wamrung, 2300 m, Sept. 1965, *A. S. Rao* 43337.

BEGONIACEAE

A. S. RAO AND G. SEN GUPTA

Begonia nepalensis (A.DC.) Warburg in Engl. Pfl. fam. 3 : 142, 1894. *B. gigantea* Wall. ex Clarke in Fl. Brit. Ind. 2 : 643, 1879.

Erect herb, up to 100 cm high, with a thick woody rootstock ; leaves large, unequal sided, caudate-acuminate, 20-32 cm long ; flowers small, white, in axillary, long peduncled, dichotomous cymes, unisexual ; fruit capsular, 2.5 mm across, triquetrous with one broad and 2 narrow papery wings. In moist shady place inside the forests.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 840 ; Samchi, 500 m, Dec. 1963, *Thothathri* 10410.

B. rubro-venia Hook. f. in Bot. Mag. t. 4689, 1853 ; Fl. Brit. Ind. 2 : 645, 1879.

Small herb, up to 40 cm high, stem soft with thick rootstock ; leaves oblique, elliptic or lanceolate, up to 15 cm long, margin often angular ; flower unisexual, in axillary, long peduncled cymes ; perianth segments white, outer with rose-red veins ; capsules 2.5-3 cm wide, with one broad and 2 narrow wings. Fairly common in shaded forests below temperate regions.

Batase, 1650 m, Dec. 1963, *Sen Gupta* 1015 ; Dakpai, 1650 m, Nov. 1964, *Deb* 353 ; Garrisson Engineer's Camp, Sept. 1965 *A. S. Rao* 43573 & 43576.

UMBELLIFERAE

P. K. MUKHERJEE

Bupleurum candolii DC. Prodr. 4 : 131, 1830 ; Fl. Brit. Ind. 2 : 674, 1879.

Perennial herb, stem fistular ; leaves 1.5-10 cm long and 0.8-2.5 cm broad, lanceolate elliptic, sessile or sub-sessile, amplexicaul, thin, acute, margin white ; involucre bracts 1-3, ovate, foliaceous ; rays 5-8, slender, up to 4 cm long, unequal, bractlets 5, ovate, equal to umbells ; fruit elliptic curved, ribs prominent, unwinged.

Thinbygaon, 3300 m, Sept. 1964, *Hajra* 393 ; near Ha Valley, 3300 m, Aug. 1963, *Sen Gupta* 649.

B. falcatum Linn. Sp. Pl. 1 : 237, 1753 ; Fl. Brit. Ind. 2 : 676, 1879.

Perennial herb, shrubby ; lower leaves linear-lanceolate, falcate, up to 10 cm long, margin white ; involucre bracts 2-5, minute ; rays 7-10, up to 3 cm long, unequal ; flowers about 10.

Confluence (Thimpu chu and Parochu), 2400 m, Aug. 1963, *Balakrishnan* 1193.

Centella asiatica (Linn.) Urb. in Martius, Fl. Bras. 11 : 287, 1879. *Hydrocotyle asiatica* Linn. Sp. Pl. 1 : 234, 1753 ; Fl. Brit. Ind. 2 : 669, 1879.

Stems creeping, glabrate ; leaves orbicular, ovate-cordate, 1-3 cm long and 1.5-4 cm broad ; umbells 2-4 flowered ; peduncles 1-2 cm to obsolete ; involucre bracts ovate, scarious ; fruit ellipsoid, 2 mm in diameter, pale red.

Tama, 1200-1500 m, Dec. 1963, *Sen Gupta* 1162 ; Jalela hills, Paro valley, 2500 m, Aug. 1963, *Balakrishnan* 1332 ; Sham Khara, 1500 m, Dec. 1964, *Sen Gupta* 1110.

Chaerophyllum reflexum Lindl. in Royle III. Bot. Himal. 232, 1835 ; Fl. Brit. Ind. 2 : 691, 1876.

Glabrescent herb ; leaves bipinnate, finely divided ; fruit oblong, 0.25-0.5 cm beaked, ridges prominent.

Wamrung, Sept. 1965, *A. S. Rao* 43338.

Foeniculum vulgare Miller, Gard. Dict. ed. 8 : Foeniculum, no. i. 1768.
F. vulgare Gaertn. Fruct. 1 : 105, t. 23, 1788 ; Fl. Brit. Ind. 2 : 695, 1879.

Glabrous tall herb ; leaves several pinnate, ultimate segments linear ; bracts and bracteoles 0 ; fruit not compressed, ellipsoid, ribs prominent, unequal.

Jhorsingong, Sept. 1965, *A. S. Rao* 43501.

Heracleum obtusifolium DC. Prodr. 4 ; 191, 1830 ; Fl. Brit. Ind. 2 : 714, 1879.

Plant 1-1.5 m tall ; leaves 3-5 partite, white below up to 15 cm long and 14 cm broad, round crenate ; bracts 2 to 5 ; rays up to 30, 10 cm long ; bractlets 4-8, linear, 0.8 cm long ; pedicels 15-20, 1-1.5 cm ; fruit obovate.

Chila, 4300 m, Aug. 1964, *Sen Gupta* 1287.

Hydrocotyle javanica Thunb. Diss. Hydrocot. 17 : 2, 1798 ; Fl. Brit. Ind. 2 : 667, 1879 (p.p.)

Prostrate, pubescent herb ; leaves 2-4 cm long and 2.7 cm broad, orbicular reniform, 7 lobed, lobes rounded or acute ; petiole 1-1.2 cm, hirsute ; umbels simple, about 30 flowered, globose, compact ; pedicels 0.5-1 mm ; flowers white ; fruit sub-orbicular, broader than long, purple mottled.

Tama, 1200-1500 m, April 1964, *Sen Gupta* 1160 ; on the way to Chima Kothi, 2400 m, Sept. 1964, *Abraham* E2319.

H. javanica Thunb. var. **podantha** (Molk.) Clarke in Fl. Brit. Ind. 2 : 668, 1879.

Pubescent creeping herb ; leaves 8-3 cm long and 1.5-3.5 cm broad, orbicular reniform, crenately lobed, petiole 1-6 cm long, hirsute, peduncles leaf opposed, 0.4-6 cm long, hirsute ; umbels simple, 35 flowered, globose, pedicels up to 3.5 cm ; flowers white ; fruit sub-orbicular, yellowish-gray, broader than long.

Chima Kothi, Sept. 1964, *Abraham* E 2312 ; Dorokha, 700 m, Dec. 1963, *Thothathri* 10500 ; Changdachungli hills, 1300 m, Dec. 1963, *Thothathri* 10566 ; Phuntsholing, Dec. 1963, *Subha Rao* 91 or 16 ; 35 km north on road from Deothong to Narfong, 1740 m, Aug. 1965, *A. S. Rao* 43221.

H. sibthorpioides Lam. Encl. Meth. 3 : 153, 1789. *Hydrocotyle rotundifolia* Roxb. ex DC. Prodr. 4 : 64, 1830 ; Fl. Brit. Ind. 2 : 668, 1879.

Creeping, filiform, glabrous herb ; leaves 0.5-1 cm in diameter, sub-orbicular, shallowly 5-7 lobed, pubescent, lobes crenate, petioles filiform, 0.5-2.5 cm long ; umbels 5-8 flowered, sessile to sub-sessile ; pedicels 0.5 mm ; flowers white ; fruit sub-orbicular.

Sham Khara, 1500 m, Dec. 1964, *Sen Gupta* 1108.

Oenanthe hookeri Clarke in Fl. Brit. Ind. 2 : 697, 1879.

Erect spreading herb ; stem hollow ; leaves reduced to fistular rachis with a remote linear pinna ; bract 1, linear ; rays 4-8, 1-4.5 cm long ; bracteoles linear ; flower purple.

Ha, 3000 m, Aug. 1963, *Sen Gupta* 679 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5875.

O. javanica (Bl.) DC. Prodr. 4 : 138, 1830. *Oenanthe stolonifera* Roxb. ex DC. 4 : 138, 1830 ; Fl. Brit. Ind. 2 : 696, 1879.

Herb, stoloniferous ; leaves pinnately compound, leaflets 2-4.5 cm by 1-2 cm, lanceolate, serrate ; rays 6-30, 0.5-5 cm long ; fruit subquadrate ellipsoid, ridges distinct.

5 km north of Narfong, along the road, 2000 m, Sept. 1965, *A. S. Rao* 43299.

Physespermopsis obtusiuscula (DC.) Norman in Journ. Bot. 76 : 231, 1938.

Trachydium obtusiusculum (DC.) Clarke in Fl. Brit. Ind. 2 : 673, 1879.

Erect herb ; leaves rosette, glabrous, pinnate, 3-7 cm long ; bracts foliaceous ; bracteoles similar, pinnatifid ; rays 12-18, 3-5 cm long ; fruit elongated, ovoid, 2.5-3 mm, slightly constricted at the commissure, ridges 5, distinct, simple, inflated.

Chila on way to Paro, 3650-4150 m. Aug. 1963, *Sen Gupta* 712.

Pimpinella diversifolia DC. Prodr. 4 : 122, 1830. Fl. Brit. Ind. 2 : 688, 1879.

Glabrescent herb ; cauline leaves with 3-5 leaflets or sub-bi-pinnate, leaflets 2-4 cm by 1.5-2 cm, ovate, acute, cordate or rounded at base, serrate to crenate dentate ; bracts and bracteoles 0 ; rays 6-8. Fruit 2 mm, laterally compressed, ridges not prominent.

Tabachettu, Thimpu, Sept. 1964, *Abraham* E2340 ; Dochu La, 3470 m, Sept. 1964, *Hajra* 439.

Sanicula elata Buch.-Ham. ex D. Don, Prodr. Fl. Nepal. 183, 1825.

S. europea Linn. sensu Clarke in Fl. Brit. Ind. 2 : 670, 1879.

Herb ; leaves glabrous, serrate ; petiole up to 15 cm tall ; umbel 2-3 ; rays divaricate, dichotomous ; umbellules few flowered.

14 km from Wamrung on road from Gomchu, 2400 m, April 1965, *A. S. Rao* 43389.

Selinum candolii DC. Prodr. 4 : 165, 1830 ; Fl. Brit. Ind. 7 : 700, 1879.

S. tenuifolium Clarke in Fl. Brit. Ind. 2 : 700, 1879.

Stem pinkish, \pm 1 m tall ; leaves pinnate, ultimate segments narrow, lanceolate, acute ; flowers white ; fruits greenish ; rays 30, up to 6.5 cm long.

Chi La, 4300 m, Aug. 1964, *Sen Gupta* 1286 ; Wamrung approach, 2300 m, April 1965, *A. S. Rao* 43362.

Selinium striatum (DC.) Clarke in Fl. Brit. Ind. 2 : 699, 1879.

Glabrous herb, 60 cm tall, with many withered fibres at the base ; leaves 20 cm long, pinnate ; sheath continuous along the petiole ; bracts 4-6, linear, up to 1.5 cm ; bracteoles 0.5 cm, 4-8, lanceolate, white marginal, serrate ; rays pubescent, 18-25, up to 4.5 cm ; flowers white ; fruit somewhat dorsally compressed, 1.5-2 cm.

Dochu La, 3450 m, Sept. 1964, *Hajra* 406.

Torilis japonica (Houtt.) DC. Prodr. 4 : 219, 1830. *Caucalis anthriscus* Huds Fl. Angl. 99, 1762 ; Fl. Brit. Ind. 2 : 718, 1879.

Stout hispid herb ; leaves bi-pinnate, leaflets ovate-oblong, pinnately lobed ; involucre of 4-8 linear bracts, longer than pedicel ; flowers white ; fruit ovate-oblong, densely covered with incurved ascending uncinate bristles.

Gomchu hill, 2400 m, Sept. 1965, *A. S. Rao* 43403.

Vicatia conifolia DC. Prodr. 4 : 243, 1830 ; Fl. Brit. Ind. 2 : 671, 1879.

Glabrous herbs ; leaves pinnately compound, ultimate segments of leaves linear ; umbels compound, peduncle 3-9 cm long ; primary rays 5-6, 2-4 cm long, secondary rays 5-10, 1.5 cm long ; fruit ovoid, not compressed, constricted at the commissure, sub-pentagonal, 2 cm long and 1 cm broad.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5878.

V. millefolia (Kl.) Clarke, in Fl. Brit. Ind. 2 : 671, 1879.

Glabrous herb ; leaves pinnately compound, ultimate segments of the leaves setaceous, leaf sheath broadened, spathe-like ; umbels compound ; primary rays 6-8, 1-3.5 cm long, secondary rays 8 ; flowers white.

Chi La on way to Paro, 3650-4140 m, Aug. 1963, *Sen Gupta* 713.

ARALIACEAE

R. N. BANERJEE

Acanthopanax leucorrhizus (Oliv.) Harms in Nat. Pflanzenfam. 3(8) : 49, 1894.

Glabrous shrubs, prickly at the nodes or 1-2 at the internodes having terminal or axillary peduncles ; fruits blackish with persistent connate styles.

Yosipong, 2135-2440 m, fruiting Sept. 1964, *Hajra* 467(CAL). This species, a native of China is a new record for the Himalayan Flora.

Aralia foliolosa (Wall.) Seem. ex Clarke in Fl. Brit. Ind. 2 : 723, 1879.

Medium sized prickly shrubs or trees, glabrous or nearly so with large, 2 or 3-pinnate leaves and large inflorescences.

Betni, near khola, 500 m, flowering Dec. 1963, *Sen Gupta* 1056(CAL).

Brassaiopsis aculeata (Buch.-Ham. ex D. Don) Seem. in Journ. Bot. 2 : 293, 1864 ; Fl. Brit. Ind. 2 : 738, 1879.

Small prickly trees with soft rusty stellate tomentose leaves, having large, compound, pubescent panicles.

Chaisilakha, flowering Dec. 1963, *Subba Rao* 325(CAL).

B. hainla (Buch.-Ham. ex D. Don) Seem. in Journ. Bot. 2 : 291, 1864 ; Clarke in Fl. Brit. Ind. 2 : 735, 1879.

Small trees of about 7 m tall ; cream yellow flowers on large terminal, glandular, hairy rachis.

Snam Khara 1350 m, flowering Dec. 1963, *Sen Gupta* 1127 (CAL) ; Shemgang 1950 m, flowering Nov. 1964, *Deb* 429 (CAL) ; Shali, 1900 m, Tashigong to Yangtisi Tract, along the slopes of the hills, on rocky loam, faintly moist soil, frequent, flowering March 1965, *Balakrishnan* 41308 (ASSAM) ; Chaisilakha, 1525 m, fruiting April 1964, *Maheshwari* 5142 (CAL), *Subba Rao* 437 (CAL).

B. hispida Seem. in Journ. Bot. 292, 1864 ; Clarke in Fl. Brit. Ind. 2 : 736, 1879.

Small, erect, thorny trees or shrubs with palmatifid leaves ; greenish flowers on terminal, spinescent, rusty brown, hairy inflorescences.

Sham Khara, 1500 m, flowering Nov. 1964, *Deb* 77 (CAL) ; scarce, Tashiyangtisi forest, in shady places of the hill slopes, rocky loam with moisture, flowering Oct. 1965, *Balakrishnan* 44307 (ASSAM) ; Tashiyangtisi forest, 1800 m, along the bank of the river Dondichu in rocky situation, flowering March 1965, *Balakrishnan* 41386 (ASSAM).

Hedera nepalensis K. Koch Hort Dendrol. No. 5284, 1853. *H. helix* (auct. non Linn.) Wall. ex Roxb. Fl. Ind. 2 : 515, 1824 ; Fl. Brit. Ind. 2 : 739, 1879.

Scandent shrubs with tuberous rootstock, climbing by means of aerial roots ; leaves exstipulate, petiolate ; inflorescences short, terminal or axillary.

Chaisilakha, flowering Dec. 1963, *Subba Rao* 315 (CAL) ; Yosipong, 2136-2440 m, flowering Sept. 1964, *Hajra* 452 (CAL) ; Tashigong to Yangtisi, 1900 m, climbing on Mossyclad *Quercus* sp. fruiting March, 1963, *Balakrishnan* 41311 (ASSAM) ; Shemgang, 2000 m, fruiting April 1964, *Sen Gupta* 1260 (CAL).

Heteropanax fragrans (Roxb.) Seem. Fl. Vit. 114, 1865 ; Fl. Brit. Ind. 2 : 734, 1879.

Trees with pinnately decompound leaves and creamy yellow flowers.

Phuntsholing, flowering Dec. 1963, *Subba Rao* 85 ; Dorokha forest, 457 m, flowering Dec. 1963, *Thothathri* 10533.

Macropanax dispermus (Bl.) O. Ktze. Rev. Gen Pl. 1 : 271, 1891. *Macropanax oreophilus* Miq. Fl. Ind. Bat. 1(1) : 764, 1855 ; Fl. Brit. Ind. 2 : 738, 1879.

Tall trees with denticulate-serrate leaflets ; inflorescence terminal, spreading, ferruginous-stellate-tomentose.

Phuntsholing, flowering Dec. 1963, *Subba Rao* 393.

M. undulatus (Wall. ex G. Don) Seem. Journ. Bot. 2 : 294, 1864 ; Fl. Brit. Ind. 2 : 738, 1879.

Middle-sized spreading trees ; leaflets glabrous, entire ; inflorescences glabrous and erect.

Scarce, Shemgang, 1900 m, flowering Nov. 1964, *Deb* 431.

Panax pseudo-ginseng Wall. in Trans. Med. Phys. Soc. Calcutta 4 : 117, 1829 ; Harms in Nat. Pflanzenfam. 3(8) : 60, 1894. *Aralia pseudo-ginseng* Benth. ex Clarke in Fl. Brit. Ind. 2 : 721, 1879.

Herbs ; leaves 5-foliolate ; fruits red ; rhizome fusiform, fascicled.

Sham Khara, 1500 m, flowering Nov. 1964, *Deb* 48.

Panax sikkimensis Ban. in Bull. bot. Surv. India 10 : 21, 1968.

Small herb ; stem dark brown ; leaves whorled, digitate, 5-7-foliolate, leaflets oblong-lanceolate ; inflorescence terminal ; flowers 3-4 mm long ; fruit a berry. Rare.

Gomchu, 2226 m, Sept. 1965, *A. S. Rao* 43445.

Pentapanax leschenaultii (DC.) Seem. in Journ. Bot. 2 : 296, 1864 ; Fl. Brit. Ind. 2 : 724, 1879.

Tall shrubs to trees ; leaves pinnately compound, 3-5-foliolate ; inflorescences terminal, corymbose.

Shemgang, 2500 m, flowering April 1964, *Sen Gupta* 1251.

P. leschenaultii (DC.) Seem. var. **umbellatus** (Seem.) Clarke in Fl. Brit. Ind. 2 : 725, 1879.

Erect shrubs to small trees about 3 m tall ; stem unbranched with a crown of large compound leaves at the top ; inflorescence prickly.

Near Garrison Engineers' Camp, on hill slope, 1738, frequent flowering Sept. 1965, *A. S. Rao* 43583.

Pentapanax racemosus Seem. in Journ. Bot. 2 : 295, 1864 ; Fl. Brit. Ind. 2 : 724, 1879.

Straggling climbers or shrubs with dirty brown stem and 3-7-foliolate imparipinnate, membranaceous, leaves ; greenish yellow flowers, arranged on horizontal, lateral branches of the primary rachis.

Nyoth, Tashiyangtsi tract, in crevices of rock boulders of the shady forests ; associated with *Rhus* sp. ; flowering Oct. 1965, *Balakrishnan* 44213.

Schefflera bengalensis Gamble in Kew Bull. 1919 : 229, 1919. *Heptapleurum venulosum* Seem. in Journ. Bot. 3 : 80, 1865 ; Fl. Brit. Ind. 2 : 729, 1879, excl. syn. p.p.

Straggling shrubs with 3-5 foliate leaves ; flowers in umbels, racemosely arranged on the compound panicles.

Changda chungli hill, 1525 m, flowering Dec. 1963, *Thothathri* 10547 ; common, Tashigong, 1200 m, on the slope of a hill in crevices of rocky boulders and on rocky soil, flowering March 1965, *Balakrishnan* 41205 ; Nangadzong, on the slope of the hill in rocky places, scarce, flowering March 1963, *Balakrishnan* 41853.

S. clarkeana Craib, Fl. Siam. Enum. 1 : 797, 1931. *Heptapleurum venulosum* Seem. var. *macrophyllum* Clarke in Fl. Brit. Ind. 2 : 730, 1879.

Dhamdum, 1000 m, flowering Nov. 1964, *Mukerjee* 1163.

CORNACEAE

S. K. MUKERJEE

Dendrobenthamia capitata (Wall. ex Roxb.) Hutchinson in Ann. Bot. 4 : 92, 1942. *Cornus capitata* Wall. in Roxb. Fl. Ind. 1 : 434, 1820 ; Fl. Brit. Ind. 2 : 745, 1879.

A small tree, younger parts densely covered with minute hairs ; leaves lanceolate, up to 9 cm long ; flowers connate, in dense terminal heads, subtended by 4 large white bracts ; fruiting heads succulent, about 2.5 cm wide. Occasional.

Thimpu, 2500 m, *Maheshwari* 5250 ; Kanglung, Sept. 1965, *A. S. Rao* 43467.

Helwingia himalaica Hook.f. et Thoms. ex Clarke in Fl. Brit. Ind. 2 : 726, 1879.

Shrubs ; leaves lanceolate, bristle-serrate, up to 8 cm long ; flowers very small, unisexual, in separate umbels on leaf surface or phyllodes ; fruit drupaceous, 6-8 mm long, red when ripe.

Chima Kothi, 2500 m, *Maheshwari* 5316.

Toricellia tiliaefolia DC. Prodr. 4 : 237, 1830 ; Fl. Brit. Ind. 2 : 748, 1879.

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A small deciduous tree with stout branches ; leaves broadly ovate cordate, 10-15 cm wide, petiole up to 10 cm long, sheathing at base ; flowers unisexual, small, white, in pendulous panicles, male peduncles dense flowered, about 30 cm long, females lax, shorter ; fruit small, purple, obliquely ovoid, 1-seeded. Rare.

Nangadzong, March, 1965, *Balakrishnan* 41838B.

ALANGIACEAE

S. K. MUKERJEE

Alangium chinense (Lour.) Harms in Ber. Deuts. Bot. Ges. 15 : 24, 1897
Marlea begoniaefolia Roxb. Corom. Pl. t. 283, 1820 ; Fl. Brit. Ind. 2 : 743, 1879.

Small tree with horizontal branches ; leaves wide-oblong, angular, base unequal ; flowers elongate, dull-white, in few-flowered, axillary, dichotomous cymes ; berry 5-6 mm long, black, obscurely ribbed. Rare.

Gaylephug, 270 m, April 1964, *Sen Gupta* 1397.

NYSSACEAE

S. K. MUKERJEE

Nyssa javanica Weng. in Engl. Pflanzenr. Nyssac. 15, 1910. *N. sessiliflora* Hook. f. Fl. Brit. Ind. 2 : 747, 1879.

A large tree ; leaves oblong, acuminate, up to 15 cm long, punctate on both surfaces ; flowers unisexual, small, aggregated in an axillary capitate inflorescence ; berries ovoid, 7-8 mm long tapering near apex, red when ripe.

Rani Camp, 1650 m, Nov. 1964, *Deb* 212.

CAPRIFOLIACEAE

S. K. MUKERJEE AND K. THOTHATHRI

Leycesteria formosa Wall. in Roxb. Fl. Ind. 2 : 181, 1824 ; Fl. Brit. Ind. 3 : 16, 1880.

Shrubs with stout fistular stem and branches ; leaves distichous, ovate, membranous, white below, up to 14 cm long ; spikes terminal, bracts foliaceous, purplish ; flowers 2.5 cm across, pink ; berry red.

On road to Gomch, 9 km from Wamrung, 2700 m, Sept. 1965, *A. S. Rao* 43380 ; Honshu 3000 m, Sept. 1965, *Sen Gupta* s.n.

L. glaucophylla Hook. f. ex Clarke in Fl. Brit. Ind. 3 : 16, 1880 p.p.

An undershrub of temperate forests.

Putlibhir, Sept. 1965 ; *Sen Gupta* s.n.

Lonicera asperifolia (Dcne.) Hk. f. & T. in Journ. Linn. Soc. 2 : 166, 1858 ;
Fl. Brit. Ind. 3 : 11, 1880.

Erect shrub ; leaves ovato-oblong, 2.5-4 cm long, shining above ;
flowers tubular, paired on axillary peduncles, 1.5 cm long ; drupe oblong,
8 mm long. Rare.

Thimpu, 2700 m, *Maheshwari* 5230.

L. macrantha DC. Prodr. 4 : 333, 1830 ; Fl. Brit. Ind. 3 : 10, 1880.

Scandent shrub. Scarce.

One km north of Wamrung, 2500 m, Sept. 1965, *A. S. Rao* 43347.

Viburnum colebrookianum Wall. ex Clarke in Fl. Brit. Ind. 3 : 5, 1880.

Small tree. Common in subtropical forest.

Gaylegphug, 270 m, May 1964, *Sen Gupta* 1421.

V. coriaceum Bl. Bijdr. 656, 1826 ; Fl. Brit. Ind. 3 : 5, 1880.

A small tree of the temperate regions.

Wamrung, 2500 m, Sept. 1965, *A. S. Rao* 43563.

V. corylifolium Hook. f. & Thoms. in Journ. Linn. Soc. 2 : 174, 1858 ; Fl.
Brit. Ind. 3 : 3, 1880.

A rare shrub.

Gomchu hills opposite to workshop, 2500 m, Sept., 1965, *A. S. Rao*
43412.

V. cotinifolium Don Prodr. Fl. Nepal. 141, 1824 ; Fl. Brit. Ind. 3 : 3, 1880.

A tall spreading shrub, frequently found in temperate forests.

Thimpu, 2500 m, May 1964, *Maheshwari* 5217.

V. foetidum Wall. Pl. As. Rar. 1 : 49. t. 61. 1830 ; Fl. Brit. Ind. 3 : 4, 1880.

An occasional shrub of temperate forests.

Lumichawa 3000 m, Aug. 1965, *Sen Gupta* s.n.

V. erubescens Wall. ex DC. Prodr. 4 : 329, 1830 ; Fl. Brit. Ind. 3 : 7, 1880.

An arboreous shrub. Common in temperate forests.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1240 ; Chima Kothi, 2000 m,
May 1964, *Maheshwari* 5292.

V. mullaha Buch.-Ham. ex D. Don Prodr. Fl. Nepal. 141, 1825. *V. stellulatum*
Wall. ex DC. Prodr. 4 : 327, 1830 ; Fl. Brit. Ind. 3 : 4, 1880.

A large shrub. Occasional in temperate forests.

Lumichawa, 2800 m, Sept. 1965, *Sen Gupta* s.n.

- Viburnum sambucinum** Reinw. ex Bl. Bijdr. 656, 1826 ; Fl. Brit. Ind. 3 : 5, 1880. A large spreading shrub. Rare.
One km north of Wamrung, 2500 m, Sept. 1964, *A. S. Rao* 43345.

RUBIACEAE

- Anthocephalus cadamba** Miq. Fl. Ind. Bat. 2 : 135, 1856 ; Fl. Brit. Ind. 3 : 23, 1880.

A common tree of the tropical evergreen forests.

Phuntsholing, Dec. 1963, *Subba Rao* 68.

- Borreria articularis** (Linn.) K. Schum. in Pfam. 4 : 144, 1891. *Spermacoce hispida* Linn. Sp. Pl. 1 : 102, 1753 ; Fl. Brit. Ind. 3 : 200, 1881.

Prostrate herb. Scattered on roadside.

- Phuntsholing, 100 m, Dec. 1963, *Subba Rao* 136 ; Samchi 300 m, Dec. 1963, *Thothathri* 10323 ; Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 863.

- B. ocymoides** DC. Prodr. 4 : 544, 1830. *Spermacoce ocymoides* Burm. f. Fl. Ind. 34, 1768 ; Fl. Brit. Ind. 3 : 200, 1801.

A trailing herb of the grasslands.

Samchi, 200 m, Dec. 1963, *Thothathri* 10454.

- B. stricta** (Linn.f.) K. Schum. in Pfam. 4 : 143, 1881. *Spermacoce stricta* Linn. f. Suppl. Sp. Pl. 120, 1781 ; Fl. Brit. Ind. 3 : 200, 1881.

- Kheri, 3 km to Tashigong, 1200 m, Sept. 1965, *A. S. Rao* 43504 ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 400.

- Carlemannia griffithii** Benth. in Kew Journ. 5 : 308, 1853 ; Fl. Brit. Ind. 3 : 85, 1880.

An undershrub ; leaves obliquely elliptic, up to 12 cm long, membranous ; flowers small, yellow, in terminal cymes or corymbs ; capsule 4-lobed, 4 mm long with many seeds. Rare, growing on hill-slopes.

- Sureylakha, 1400 m, Dec. 1963, *Sen Gupta* 932 ; Dorokha, 1000 m Jan. 1964, *Thothathri* 10578 ; on road to Narfong, 5 km north of Deothong. Sept. 1965, *A. S. Rao* 43171.

- Chasalia curviflora** Thw. Enum. 150, 1864 ; Fl. Brit. Ind. 3 : 176, 1880.

A shrub. Scarce in the area.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1400.

- Coffea bengalensis** Roxb. Fl. Ind. 1 : 540, 1832 ; Fl. Brit. Ind. 3 : 153, 1880.

Local name : Kangsengmo.

Scattered in forest clearings and in outskirts.

- Phuntsholing, April 1964, *Maheshwari* s.n. ; *Ibid.*, Dec. 1963, *Subba Rao* 6 ; Samchi in the plains, Dec. 1963, *Thothathri* 10356.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 814 ; on way from Tama to Birti, 600 m, April 1964, *Sen Gupta* 1188 ; Gaylegphug, 270 m, Nov. 1964, *Deb* 120.

Coffea khasiana Hook.f. Fl. Brit. Ind. 3 : 154, 1880.

A shrub. Rare in the area.

North slope of the hill beyond the Chenari village near Deothong, 1000 m, Sept. 1965, *A. S. Rao* 43149.

Galium aparine Linn. Sp. Pl. 108, 1753 ; Fl. Brit. Ind. 3 : 205, 1881.

Small succulent herb. Scattered on open ground.

Shemgang, 2000 m, April 1964. *Sen Gupta* 1253 ; Ha Valley, 3000 m, Aug. 1963, *Sen Gupta* 674.

G. asperifolium Wall. in Roxb. Fl. Ind. 1 : 381, 1820. *G. mollugo* Hook.f. Fl. Brit. Ind. 3 : 207, 1881, non Linn.

Prostrate herb. Common on road side near thickets.

Krishnagiri saddle on road to Wamrung from Narfong, 2300 m, Sept. 1965, *A. S. Rao* 43313 and 43314 ; Shemgang, 2000 m, April 1964, *Sen Gupta* 1235 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 68.

G. elegans Wall. in Roxb. Fl. Ind. 1 : 382, 1820. *G. rotundifolium* Hook.f. Fl. Brit. Ind. 3 : 204, 1881, non Linn.

A herb on road side. Rare.

Narfong, 2 km north along stream bank, 1900 m, Aug. 1965, *A. S. Rao* 43247 ; 3 km north of Narfong along road, 1950 m, Sept. 1965, *A. S. Rao* 43247 ; Dakpai, 1650 m, Nov. 1964, *Deb* 357 ; Lumichawa 2800 m, Sept. 1965, *Sen Gupta* s.n.

G. pauciflorum Bunge Enum. Pl. Chin. 35. Fl. Brit. Ind. 3 : 205, 1881.

Slender herb in open jungle. Scarce.

Honshu, 2500 m, Sept. 1965, *Sen Gupta* s.n.

Hedyotis corymbosa (Linn.) Lam. Encycl. Meth. 1 : 272, 1791. *Oldenlandia corymbosa* Linn. Fl. Brit. Ind. 3 : 64, 1880.

A small weed on exposed ground.

Phuntsholing, Dec. 1963, *Subba Rao* 381.

H. diffusa Willd. Sp. Pl. 1 : 566, 1797. *Oldenlandia diffusa* Roxb. Fl. Ind. 1 : 423, 1820 ; Fl. Brit. Ind. 3 : 65, 1880.

A diffuse annual on open ground. Rare.

Punakha, 1500 m, Sept. 1965, *Sen Gupta* s.n.

H. pinifolia Wall. ex G. Don Syst. 3 : 525, 1834 ; Fl. Brit. Ind. 3 : 60, 1880.

A slender much branched herb of the open jungles.

On road to Rongthong, 5 km north of Gomchu, 2500 m, Sept. 1965,
A. S. Rao 43424.

Hymenopogon parasiticus Wall. in Roxb. Fl. Ind. 2 : 157, 1824 ; Fl. Brit. Ind. 3 : 34, 1880.

An epiphytic shrub, frequent in the area.

Tashiyangtsi, Oct. 1965, *Balakrishnan* 44286.

Hyptianthera stricta Wt. & A1n. Prodr. 399, 1834. Fl. Brit. Ind. 3 : 121, 1880.

A tall shrub in forest-borders.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1366; *Ibid.*, Nov. 1964, *Deb* 159 ; Birti, 600-900 m, April 1964, *Sen Gupta* 1337 & 1339 ; Samchi, 800 m, Dec. 1963, *Thothathri* 10594.

Knoxia sumatrensis (Retz.) DC. Prodr. 4 : 569, 1830. *K. corymbosa* Willd. Sp. Pl. 1 : 582, 1797 ; Fl. Brit. Ind. 3 : 128, 1880.

A herb of the grasslands and along forest tracts.

Tama, 1450 m, Nov. 1964, *Deb* 312.

Leptodermis griffithii Hook.f. Fl. Brit. Ind. 3 : 198, 1881.

A bushy plant of open jungles.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5819 ; *Ibid.*, *Sen Gupta* 781.

L. lanceolata Wall. in Roxb. Fl. Ind. 2 : 191, 1824 ; Fl. Brit. Ind. 3 : 198, 1881.

A shrub growing scattered as an undergrowth in forests.

On way to Tama from Rani Camp, 1500 m, Nov. 1964, *Deb* 247.

Morinda angustifolia Roxb. Pl. Corom. 3 : 32, 1815 ; Fl. Brit. Ind. 3 : 156, 1880.

A tall branched shrub growing as an undergrowth in forests.

Decoction of leaves rubbed on forehead or taken orally to cure giddiness.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 355 ; *Ibid.*, April 1964, *Sen Gupta* 1393 ; *Ibid.*, Nov. 1964, *Deb* 1874.

Mussaenda frondosa Linn. Sp. Pl. 1 : 177, 1753 ; Fl. Brit. Ind. 3 : 89, 1880.

A shrub in forest exposures. Fairly common.

Sham Khara, 1500 m, Nov. 1964, *Deb* 58.

M. glabra Vahl Symb. 3 : 38, 1790 ; Fl. Brit. Ind. 3 : 90, 1880.

Tall shrub on edges of forests. Scarce.

Birti, 750 m, April 1964, *Sen Gupta* 1297.

- Mussaenda macrophylla** Wall. in Roxb. Fl. Ind. 2 : 228, 1824 ; Fl. Brit. Ind. 3 : 89, 1880.
A rare shrub in dense forest.
Kamji, 1200 m, Dec. 1963, *Subba Rao* 209.
- M. roxburghii** Hook.f. Fl. Brit. Ind. 3 : 87, 1880.
Tall branched shrub, forming groves in dense forests. Quite common.
Phuntsholing, 120 m, May 1964, *Maheshwari* 5354 ; *Ibid.*, Dec. 1963, *Subba Rao* 91 ; Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 339 & 379 ; *Ibid.*, April 1964, *Sen Gupta* 1387.
- Mycetia longifolia** (Wall.) O. Ktz. Rev. Gen. 1 : 289, 1891. *Adenosacme longifolia* Wall. ex Kurz, For. Fl. 2 : 160, 1877 ; Fl. Brit. Ind. 3 : 95, 1880.
Epiphytic herb. Scarce.
Sureylakha, 1350 m, Dec. 1963, *Sen Gupta* 963 ; Kamji 1000 m, Dec. 1963, *Subba Rao* 266.
- Myrioneuron nutans** Wall. ex Kurz, For. Fl. 2 : 55, 1877 ; Fl. Brit. Ind. 3 : 96, 1880.
Local name : Gujguj lahara.
An undershrub in outskirts of forests and on road side. Frequent at lower altitudes.
Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 860 ; *Ibid.*, Nov. 1964, *Deb* 176.
- Neanotis calycina** (Wall. ex Hook.f.) W. H. Lewis in Ann. Miss. Bot. Gard. 53 : 37, 1960. *Anotis calycina* Wall. ex Hook.f. Fl. Brit. Ind. 3 : 73, 1880.
A small herb. Frequent along forest path.
Garrison Engineers' Camp, 1900 m, Sept. 1965, *A. S. Rao* 43586.
- N. ingrata** (Wall. ex Hook. f.) W. H. Lewis in Ann. Miss. Bot. Gard. 53:39, 1960. *Anotis ingrata* Wall. ex Hook. f. Fl. Brit. Ind. 3 : 71, 1880.
A straggling herb of moist places.
Lumichawa, 2500 m, Sept. 1965, *Sen Gupta* s.n.
- N. wightiana** (Wall. ex Hook.f.) W. H. Lewis in Ann. Miss. Bot. Gard. 53 : 40, 1960. *Anotis wightiana* Wall. ex Hook.f. Fl. Brit. Ind. 3 : 75, 1880.
Common herb in exposed pastures.
Rani Camp, 1650 m, Nov. 1964, *Deb* 200.
- Ophiorrhiza calcarata** Hook.f. Fl. Brit. Ind. 3 : 84, 1880.

Slender herb with flexuous stem.

Chenari village near Deothong, Aug. 1965, *A. S. Rao* 43141.

Ophiorrhiza succirubra King ex Hook.f. Fl. Brit. Ind. 3 : 82, 1880.

An undershrub in damp situation in the forest.

On road to Gomchu, 6 km from Wamrung, 2400 m, Sept. 1965, *A. S. Rao* 43370.

O. ochroleuca Hook.f. Fl. Brit. Ind. 3 : 78, 1880.

Occasional shrub on the road side.

Kamji, 1200 m, Dec. 1963, *Subba Rao* 351.

Paederia foetida Linn. Mant. Pl. 1 : 52, 1767 ; Hook.f. Fl. Brit. Ind. 3 : 195, 1881.

Local name : Biri.

A common climber in the outskirts of forests.

Fruits are used to blacken the teeth and are believed to make them strong. Leaves have carminative properties.

Gayleghug, 270 m, Dec. 1963, *Sen Gupta* 803 ; Tama, 1450 m, Nov. 1964, *Deb* 311 ; Phuntsholing, 100 m, Dec. 1963, *Subba Rao* 10 ; Samchi, 100 m, Dec. 1963, *Thothathri* 10305.

P. scandens (Lour.) Merr. in Contr. Arn. Arb. 8 : 163, 1904. *P. tomentosa* Bl. Bijdr. 968, 1826 ; Fl. Brit. Ind. 3 : 197, 1881.

A scandent shrub.

Samchi hill, 1200 m, Dec. 1963, *Thothathri* 10629.

Pavetta indica Linn. Sp. Pl. 1 : 110, 1753 ; Hook.f. Fl. Brit. Ind. 3 : 150, 1880.

Erect shrub in the fringe of forests. Scattered.

Gayleghug, 270 m, April 1964, *Sen Gupta* 1351 ; Phuntsholing, April 1964, *Maheshwari* s.n.

Psychotria calocarpa Kurz in Journ. As. Soc. 41 : 315, 1872 ; Hook.f. Fl. Brit. Ind. 3 : 173, 1880.

Local name : Damey gach.

A shrub, scattered in forest clearings.

Gayleghug, 270 m, Dec. 1963, *Sen Gupta* 897 ; Betni bridge, 1350 m, Dec. 1963, *Sen Gupta* 1052 ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 270.

P. denticulata Wall. in Roxb. Fl. Ind. 2 : 166, 1824 ; Fl. Brit. Ind. 3 : 173, 1880.

Local name : Bon gokul.

Undershrub, scattered in the forests.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 872 ; *Ibid.*, April 1964, *Sen Gupta* 1402.

Psychotria erratica Hook.f. Fl. Brit. Ind. 3 : 168, 1880.

A common shrub growing as an undergrowth in the forest.

Rani Camp, 1650 m, Nov. 1964, *Deb* 216 ; Kamji 1200 m, Dec. 1963, *Subba Rao* 271.

P. fulva Buch.-Ham. ex Hook.f. Fl. Brit. Ind. 3 : 169, 1880.

An undershrub. Fairly common as an undergrowth in forests.

Gaylegphug, 270 m, Nov. 1964, *Deb* 162.

Randia fasciculata DC. Prodr. 4 : 386, 1830 ; Fl. Brit. Ind. 3 : 109, 1880.

Local name : Chootamaidalu.

Tall prickly shrub. Common in tropical forests.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 320 ; *Ibid.*, April 1964, *Sen Gupta* 1384 ; Samchi, 300 m, Dec. 1963, *Thothathri* 10303.

Rubia cordifolia Hook.f. Fl. Brit. Ind. 3 : 202, 1881.

Local name : Majito.

Trailing and climbing herb in shrubberies. Scattered and fairly common.

Yields a red dye.

Sureylakha, 1350 m, Dec. 1963, *Sen Gupta* 929 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 2 ; Dochu La, Aug. 1965, *Sen Gupta* s.n. ; Chima Kothi, 2500 m, Aug. 1963, *Sen Gupta* s.n. ; Dorokha, 1000 m, Jan. 1964, *Thothathri*, 10477 ; Krishnagiri saddle on road from Narfong to Wamrung, 2300 m, Sept. 1965, *A. S. Rao* 43315 ; a long road north of Narfong, 2000 m, Sept. 1965, *A. S. Rao* 43298 ; Narfong, 1850 m, Oct. 1965, *Balakrishnan* 43889.

f. strigosa Deb et Malick in Journ. Bomb. nat. Hist. Soc. 63 : 782, 1967.

Rare than the typical form.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5929.

R. sikkimensis Kurz in Journ. As. Soc. 43 : 188, 1874 ; Fl. Brit. Ind. 3 : 203, 1881.

A climber on the outskirts of forests.

Dorokha, 1000 m, Jan. 1964, *Thothathri* s.n. ; Dakpai, 1650 m, Nov. 1964, *Deb* 348 ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 226.

Spermadietyon suaveolens Roxb. Pl. Corom. 3 : 32. t. 236, 1815. *Hamiltonia suaveolens* Roxb. Fl. Ind. 2 : 223, 1824 ; Fl. Brit. Ind. 3 : 197, 1880.

An erect herb on slopes in forests.

Dakpai, 1650 m, 1964, *Deb* 446 ; hill near Samchi, 500 m, 1963, *Thothathri* s.n.

Spiradiclis cylindrica Wall. ex Hook. f. Fl. Brit. Ind. 3 : 76, 1880.

Small herb on rocky hill slopes.

Sham Khara & Maorey forests, 1500-1650 m, Dec. 1963, *Sen Gupta* 1106.

Uncaria sessilifructus Roxb. Fl. Ind. 1 : 520, 1832 ; Fl. Brit. Ind. 3 : 30, 1880.

A common climber in evergreen forests at lower elevations.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1401; *Ibid.*, Nov. 1964, *Deb* 132.

Wendlandia pendula DC. Prodr. 4 : 412, 1880 ; Fl. Brit. Ind. 3 : 41, 1880.

A common shrub near streams.

Phuntsholing, Dec. 1963, *Subba Rao* 60 ; Samchi, 900 m, Dec. 1963, *Thothathri* 10584.

W. speciosa Cowan in Notes R. Bot. Gard. Edin. 16 : 274, 1912.

A rare shrub.

Kamji, 1000 m, Dec. 1963, *Subba Rao* 260.

VALERIANACEAE

K. THOTHATHRI

Valeriana hardwickii Wall. in Roxb. Fl. Ind. 1. 166, 1820 ; Fl. Brit. Ind. 3 : 213, 1881.

A common herb in partial shade.

Narfong, 2 km north along stream bank down the hill, 1900 m, Aug. 1965, *A. S. Rao* 43248 ; Chai la Pass, Aug. 1963, *Sen Gupta* 612.

V. jatamansi Jones in Asiat. Res. 2 : 416, 1790. *V. wallichii* DC. Prodr. 4 : 640, 1830 ; Fl. Brit. Ind. 3 : 213, 1880.

An occasional shrub on fringe of forest.

Thimpu, 2500 m, May 1964, *Maheshwari* s.n.

DIPSACEAE

S. K. MUKERJEE, A. S. RAO AND N. P. BALAKRISHNAN

Dipsacus asper Wall. ex DC. Prodr. 4 : 646, 1830 ; Fl. Brit. Ind. 3 : 218, 1881.

A tall herb on meadows. Frequent.

On road to Gomchu, 21 km from Wamrung, 2450 m, Sept. 1965, *A. S. Rao*, 43390 ; road to Tashigong, 14 km from Gomchu, Oct. 1963, *Balakrishnan* 43951 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5839 ; Dochu La, 2800 m, Sept. 1965, *Sen Gupta* s.n.

Triplostegia glandulifera Wall. ex Benth. in DC. Prodr. 4 : 642, 1830 ; Fl. Brit. Ind. 3 : 215, 1881.

Small slender herb on open ground, scattered.

On road to Gomchu, 9 km from Wamrung, 2700 m, Sept. 1965, *A. S. Rao* 43377 ; on road to Rongthong near Gumpa, 5 km north of Gomchu, 2500 m, Sept. 1965, *A. S. Rao* 43419 ; Dochu La, 3000 m, Sept. 1965, *Sen Gupta* s.n.

ASTERACEAE

S. K. MUKERJEE

Adenostemma lavenia (Linn.) O. Ktze. var. *elata* (D. Don) Kitamura in Hara Fl. East. Him. 329, 1966. *A. viscosum* Forst. var. *typica* et var. *elata* (D. Don) Hook.f. Fl. Brit. Ind. 3 : 242, 1881.

A common roadside herb.

Batase, 1500-1650 m, Dec. 1963, *Sen Gupta* 1021 ; Gaylegphug, 207 m, Nov. 1964, *Deb* 124 ; Narfong, 1900 m, Aug. 1965, *A. S. Rao* 43260.

Ageratum conyzoides Linn. Sp. Pl. 839, 1753 ; Fl. Brit. Ind. 3 : 243, 1881.

A tender herb fairly common on road side, hedges and abandoned fields.

Sureylakha, 1350 m, Dec. 1963, *Sen Gupta* 976 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 62 ; Phuntsholing, April 1964, *Maheshwari* s.n. ; *Ibid.*, Dec. 1963, *Subba Rao* 7 ; Samchi, Dec. 1963, *Thothathri* 10615.

Ainsliaea latifolia (D. Don) Schulz.-Bip. in Pollichia 18-19 : 169, 1861.

A. pteropoda DC. Prodr. 7 : 14, 1838 ; Fl. Brit. Ind. 3 : 388, 1881.

A small herb scattered in forest clearings.

Sham Khara & Maorey forests, 1650 m, Dec. 1963, *Sen Gupta* 1097 ; Tama, 1800 m, April 1964, *Sen Gupta* 1176 ; Rani Camp, 1650 m, Nov. 1964, *Deb* 231.

Anaphalis busua (Buch.-Ham.) Hand.-Mazz. Symb. Sin. 7 : 1104, 1936.

A. araneosa DC. Prodr. 6 : 109, 1838 ; Fl. Brit. Ind. 3 : 283, 1881.

Small suffrutescent herb scattered along road side.

Rani Camp, 1650 m, Nov. 1964, *Deb* 79 ; Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n. ; Kamji, 1000 m, Jan. 1964, *Subba Rao* 257 ; road to Tashigong, Oct. 1965, *Balakrishnan* 43890.

A. contorta (D. Don) Hook.f. Fl. Brit. Ind. 3 : 284, 1881.

Small herb common on road side or in open places.

On road from Narfong to Wamrung, 2300 m, Sept. 1965, *A. S. Rao* 43319 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5816 ; Sangura, 1200 m, Dec. 1963, *Thothathri* 10469 ; Thimpu, 2500 m, Aug. 1965, *Sen Gupta* s.n.

Anaphalis margaritacea (L.) Benth. & Hook.f. Gen. Pl. 2 : 303, 1873. *A. cinnamomea* Clarke Comp. Ind. 104, 1876; Fl. Brit. Ind. 3 : 281, 1881. Small erect herb along road cuttings and rock crevices.

Dakpai, 1650 m, Nov. 1964, *Deb* 373 & 385 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5958 ; Dochu La, Aug. 1965, *Sen Gupta* s.n.

Artemisia nilagirica (Clarke) Pamp. in Nov. Giorn. Bot. Ital. 33 : 452, 1926. *A. vulgaris* auct. non Linn. Fl. Brit. Ind. 3 : 325, 1881.

Local name : Titey pati.

A tall aromatic herb, common in open places, often gregarious. Decoction of dried leaves taken in stomach disorders.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 834 ; Batase, 1575 m, Dec. 1963, *Sen Gupta* 1011 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 5 ; road to Tashigong, Oct. 1965, *Balakrishnan* 43934 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5831 ; Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n. ; Samchi, 300 m, Dec. 1963, *Thoihathri* 10316 ; Kamji, 100 m, Dec. 1963, *Subba Rao* 187 ; Tashigong hill, March 1965, *Balakrishnan* 41234.

A. vestita Wall. ex DC. Prodr. 6 : 106. 1838 ; Fl. Brit. Ind. 3 : 326, 1881.

Tall hoary herb of open situation. Rare.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5934.

Aster tricephalus Clarke Comp. Ind. 43, 1876 ; Fl. Brit. Ind. 3 : 250, 1881.

A common herb of the meadows.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5949D.

A. trinervius Roxb. Fl. Ind. 3 : 433, 1832 ; Fl. Brit. Ind. 3 : 253, 1881.

Common road side herb.

Paro, 2000 m, Oct. 1963, *Mukerjee* 5949C.

Bidens biternata (Lour.) Merr. & Sherff. in Bot. Gaz. 88 : 293, 1929. *B. pilosa* auct. non Linn. Fl. Brit. Ind. 3 : 309, 1881.

A common herb of open ground.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 844 ; Batase 1575 m, Dec. 1963, *Sen Gupta* 1007 & 1023 ; Tama, 1050-1200 m, April 1964, *Sen Gupta* 1134 ; Birti 700 m, April 1964, *Sen Gupta* 1315 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 6 ; Tashigong, 1200 m, March 1965, *Balakrishnan* 41176 ; Phuntsholing, April 1964, *Maheshwari* s.n. ; Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n. ; Samchi, 300 m, Dec. 1963, *Thoihathri* 10309 ; Phuntsholing, Dec. 1963, *Subba Rao* 24.

B. tripartita Linn. Sp. Pl. 831, 1753 ; Fl. Brit. Ind. 3 : 309, 1881.

A stout annual of the open jungle.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5883.

Blumea aromatica Wall. ex DC. Prodr. 5 : 88, 1836 ; Fl. Brit. Ind. 3 : 270, 1881.

A very aromatic shrubby herb inside forest. Rare.

B. chinensis (Linn.) DC. Prodr. 5 : 444, 1836 ; Fl. Brit. Ind. 3 : 268, 1881.

Scandent shrub scattered in forest clearings.

Tama, 1125 m, April 1964, *Sen Gupta* 1157.

B. balsamifera (Linn.) DC. Prodr. 5 : 466, 1836 ; Fl. Brit. Ind. 3 : 270, 1881.

Local name : Putheli.

Arboreous shrub smelling of camphor. Widespread in forest clearings, forming small societies.

Tama, 1100 m, April 1964, *Sen Gupta* 1152 ; Rani Camp to Tama, 1350-1650 m, Nov. 1964, *Deb* 239.

B. lacera (Burm.f.) DC. in Wight Contrib. 14, 1834; Fl. Brit. Ind. 3 : 263, 1881.

Herbs with densely leafy branches, smelling of turpentine. Wide spread in the foot hills.

Phuntsholing, April 1964, *Maheshwari* s.n.

B. laciniata (Roxb.) DC. Prodr. 5 : 436, 1836 ; Fl. Brit. Ind. 3 : 264, 1881.

Erect herb in rock crevices usually in damp situation.

Birti, 550 m, April 1964, *Sen Gupta* 1211 ; Phuntsholing, Jan. 1964, *Subba Rao* 359.

B. lanceolaria (Roxb.) Dunc. Rep. Bot. Exch. Club. Brit. Isles. 4 : 609, 1907. *B. myriocephala* DC. Prodr. 5 : 445, 1836 ; Fl. Brit. Ind. 3 : 269, 1881.

Suffruticose herb with stout branches ; scarce among forest undergrowth.

Sham Khara, 1500 m, Nov. 1964, *Deb* 39; Sangura, 1500 m, Dec. 1963, *Thothathri* 10548.

Blumeopsis falcata (D. Don) Merrill in Journ. Arn. Arb. 19 : 70, 1938. *Laggera flava* Benth. in Gen. Pl. 2 : 290, 1873 ; Fl. Brit. Ind. 3 : 270, 1881.

A herb on roadside. Occasional.

5 km east of Mongerdzong, Nov. 1965, *Balakrishnan* 44657.

- Cacalia quinquelobus** (DC.) Kitamura in Kihara Fl. Nep. Him. 249, 1955.
Senecio quinquelobus Hook.f. & Thoms. ex Clarke Comp. Ind. 209, 1876 ; Fl. Brit. Ind. 3 : 353, 1881.
 Slender herb, frequent in open situation.
 Chai la Pass, 3000 m, Aug. 1963, *Sen Gupta* s.n.
- Carpesium nepalense** Less. in Linnaea 6 : 234, 1832. *C. cernuum* var. *typica* Hook.f. et var. *glandulosa* Hook.f. Fl. Brit. Ind. 3 : 301, 1881.
 An erect herb on the roadside.
 From Narfong to Wamrung, Sept. 1965, *A. S. Rao* 43331.
- Cicerbita macrantha** (Clarke) Beauv. in Bull. Soc. Bot. Genev. 2 : 130 et 132, 1910. *Lactuca macrantha* Clarke Comp. Ind. 267, 1876 ; Fl. Brit. Ind. 3 : 409, 1881.
 Herb with a very stout stem. Scattered on open ground.
 Paro, 2500 m, Oct. 1963, *Mukerjee* 5865.
- C. cyanea** (D. Don) Beauv. in Bull. Soc. Bot. Genev. 2 : 132, 1910. *Lactuca hastata* DC. Prodr. 7 : 139, 1838 ; Fl. Brit. Ind. 3 : 407, 1881.
 A robust herb in shrubberies. Occasional.
 Paro, 2500 m, Oct. 1963, *Mukerjee* 5924.
- Cirsium argyranthum** DC. Prodr. 6 : 640, 1838. *Cnicus argyranthus* DC. ex Hook.f. Fl. Brit. Ind. 3 : 362, 1881.
 Thistle like herb with cottony stem on open hill slopes. Frequent.
 Paro, 2500 m, Oct. 1963, *Mukerjee* 5969 ; Kanglung, Sept. 1965, *A. S. Rao* 43468.
- C. lipskyi** Petrak in Fedde Repert. 9 : 197, 1911. *Cnicus griffithii* Hook.f. Fl. Brit. Ind. 3 : 363, 1881.
 Tall shrub floccosely woolly. Frequent and gregarious in open places.
 Shemgang, 1950 m, Nov. 1964, *Deb* 420.
- Conyza japonica** Less. Syn. Compos. 204, 1832 ; Fl. Brit. Ind. 3 : 258, 1881.
 Small herb under canopy of trees in hills.
 Tama, 1350 m, April 1964, *Sen Gupta* 1183 ; Paro, 2000 m, Oct. 1963, *Mukerjee* 5868 ; Thimpu, 2500 m, May 1964, *Maheshwari* s.n.
- C. stricta** Willd. Sp. Pl. 3 : 1922, 1803 ; Fl. Brit. Ind. 3 : 258, 1881.
 Common undershrub of forest clearings.
 Tama, 1450 m, Nov. 1964, *Deb* 320 ; on way to Tashiyangtsi, Oct. 1965, *Balakrishnan* 44037 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5917.
- Crassocephalum crepidoides** (Benth.) S. Moor. in Journ. Bot. 50: 211, 1912.

Tall herb with drooping heads on long peduncles. Frequent in thickets. Phuntsholing, April 1964, *Maheshwari* s.n. ; *Ibid.*, Dec. 1963, *Subba Rao* 81 ; Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n.

Dichrocephala chrysanthemifolia DC. in Wight Contrib. 11, 1834 ; Fl. Brit. Ind. 3 : 245, 1881.

A rigid herb with stiff branches. Frequent on open ground. Paro 2500 m, Oct. 1963, *Mukerjee* 5815.

D. integrifolia (Linn.f.) O. Ktze. Rev. Gen. Pl. 1 : 333, 1891. *D. latifolia* DC. in Wight Contrib. 11, 1834 ; Fl. Brit. Ind. 3 : 345, 1881.

Small herb common in grassy fields or in forest clearings.

Berti, 1350 m, Dec. 1963, *Sen Gupta* 1037 ; Birti, 650 m, April 1964, *Sen Gupta* 1320 ; Gaylegphug 270 m, April 1964, *Sen Gupta* 1394 ; Chaisilakha, 1500 m, April 1964 ; *Maheshwari* s.n. ; Chima Kothi, 1800 m, April 1964, *Maheshwari* s.n. ; Kamji, 1000 m, Jan. 1964, *Subba Rao* 247 ; Paro, 2500 m, Aug. 1963, *Sen Gupta* 670.

Eclipta prostrata (Linn.) Linn. Mant. Pl. 2 : 286, 1771. *E. alba* Hassk. Pl. Jav. Rar. 528, 1848 ; Fl. Brit. Ind. 3 : 304, 1881.

Erect or sometimes diffuse herb. Occasional.

Birti, 700 m, April 1964, *Sen Gupta* 1219 ; Samchi, Dec. 1963, *Thothathri* 10620 ; Tashigong, 1200 m, March 1965, *Balakrishnan* 41270.

Elephantopus scaber Linn. Sp. Pl. 814, 1753 ; Fl. Brit. Ind. 3 : 242, 1881.

Rigid dichotomously branched herb of open grassland, scattered.

Samchi, Dec. 1963, *Thothathri* 10375.

Emilia sonchifolia (Linn.) DC. in Wight Contrib. 24, 1834 ; Fl. Brit. Ind. 3 : 336, 1881.

A herbaceous weed of open places.

Dorokha, 1000 m, Jan. 1964, *Thothathri* 10513.

Erigeron bellidioides Benth. in Gen. Pl. 2 : 280, 1873 ; Fl. Brit. Ind. 3 : 256, 1881.

Slender herb on roadside. Rare.

From Wamrung to Gomchu, Sept. 1965, *A. S. Rao* 43376.

E. sumatrensis Retz. Obs. Bot. 5 : 28, 1787. *E. limifolius* auct. non Willd. Fl. Brit. Ind. 3 : 254, 1881.

A stout herb with close-set leaves, scattered on open ground.

Birti, 600-750 m, April 1965, *Sen Gupta* 1219 ; Thimpu, 2500 m, May 1944, *Maheshwari* s.n. ; Lumichawa, Sept. 1965, *Sen Gupta* s.n.

- Erigeron multiradiatus** Benth. in Gen. Pl. 2 : 280, 1873 ; Fl. Brit. Ind. 3 : 256, 1881.
Erect herb of open places. Scarce.
Dochu La, Aug. 1965, *Sen Gupta* s.n.
- Eupatorium cannabinum** Linn. Sp. Pl. 838, 1753 ; Fl. Brit. Ind. 1 : 243, 1881.
Common shrub on the fringe of forests and in open jungles.
Paro, 2500 m, Oct. 1963, *Mukerjee* 5915 & 5946 ; *Ibid.*, Aug. 1963, *Sen Gupta* s.n.
- E. odoratum** Linn. Syst. Nat. (ed. 10) 1205, 1759 ; Fl. Brit. Ind. 3 : 244, 1881.
Tall shrub with tender branches, gregarious on open ground and roadside.
Samchi, 300 m, Dec. 1963, *Thothathri* 10308.
- Galinsoga parviflora** Cav. Icon. 3 : 41, t. 281, 1794 ; Fl. Brit. Ind. 3 : 311, 1881.
An erect tender herb growing as weed in waste places and cultivated fields.
Tashigong, March 1965, *Balakrishnan* 41174 ; Paro, 2000 m, Oct. 1963, *Mukerjee* 5870 & 5873 ; Dorokha, 1000 m, Jan. 1964, *Thothathri* 10489 ; Chaisilakha, 1500 m, Jan. 1964, *Subba Rao* 417.
- Gerbera maxima** (D. Don) Beauv. in Bull. Soc. Bot. Geneve 2 : 44, 1910.
G. macrophylla Benth. in Gen. Pl. 2 : 497, 1873 ; Fl. Brit. Ind. 3 : 391, 1881.
A scapigerous herb on the outskirts of forests. Scarce.
Dakpai, Nov. 1964, *Deb* 372.
- G. piloselloides** (Linn.) Cass. in Dict. Sc. Nat. 18 : 461, 1825 ; Fl. Brit. Ind. 3 : 389, 1881.
Local name : Pangmento.
Small scapigerous herb. Occasional on meadow lands.
Birti, 600 m, April 1964, *Sen Gupta* 1197 ; Paro, 2000 m, Aug. 1963, *Sen Gupta* s.n.
- Gnaphalium affine** D. Don Prodr. Fl. Nepal. 173, 1825 ; *G. luteo-album* var. *multiceps* (Wall. ex DC.) Hook.f. Fl. Brit. Ind. 3 : 288, 1881.
A small herb common by the road side.
Batase, 1500-1650 m, Dec. 1963, *Sen Gupta* 1006.
Local name : Hooki phul.
Tama, 1050-1200 m, April 1964, *Sen Gupta* 1144 ; Birti, 550 m, April 1964, *Sen Gupta* 1214 ; Shemgang, 2000 m, April 1964, *Sen Gupta* 1255.

Gnaphalium hypoleucum DC. in Wight Contrib. 21, 1834 ; Fl. Brit. Ind. 3 : 288, 1881.

Herbs with cottony stem. Occasional on open ground.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5817.

G. luteo-album Linn. Sp. Pl. 851, 1753 ; Fl. Brit. Ind. 3 : 288, 1881.

Herbs with cottony stem, common on road side and on forest-fringes.

Paro, 2500 m, Aug. 1963, *Sen Gupta* s.n. ; Thimpu, 2500 m, May 1964, *Maheshwari* s.n. ; Chima Kothi, 2000 m, May 1964, *Maheshwari* s.n. ; 7 km to Deothong from Narfong, 1850 m, March 1965, *Balakrishnan* 41926 ; above Deothong, 1100 m, March 1965, *Balakrishnan* 41121 ; Wamrung, Sept. 1965, *A. S. Rao* 43556.

G. purpureum Linn. Sp. Pl. 854, 1753 ; Fl. Brit. Ind. 3 : 289, 1881.

An erect cottony herb on open ground. Rare.

Nangadzong, March 1965, *Balakrishnan* 41864.

Guizotia abyssinica Cass in Dist. Sc. Nat. 59 : 248, 182.

A stout erect herb, cultivated and found as an escape. Seed yield edible oil.

Samchi, 300 m, Dec. 1963, *Thothathri* 10318.

Gynura cusimbua (D. Don) S. Moor. in Journ. Bot. 1 : 212, 1912. *G. angulosa* DC. Prodr. 6 : 298, 1836 ; Fl. Brit. Ind. 3 : 334, 1881.

Local name : Dhungri phul.

A tall herb with large basal leaves. Wide spread on waste places.

Batase, 1500-1650 m, Dec. 1963, *Sen Gupta* 1027 ; Shemgang, 2000 m, Nov. 1964, *Deb* 400 ; Paro, 2000 m, Oct. 1963, *Mukerjee* 5850 ; Samchi hill, 1000 m, Dec. 1963, *Thothathri* 10337 ; Sangura, 1500 m, Dec. 1963, *Thothathri* 10337 ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 398.

G. mitida DC. in Wight Contrib. 24, 1834 ; Fl. Brit. Ind. 3 : 333, 1881.

Erect herb in forest clearings. Scarce.

Rani Camp, 1650 m, Nov. 1964, *Deb* 81.

Inula cappa DC. Prodr. 5 : 469, 1836 ; Fl. Brit. Ind. 3 : 295, 1881.

Local name : Taimakhu.

Erect herb, common in the open as well as in shade.

Tama, 1200-1500 m, April 1964, *Sen Gupta* 1175 ; Tashigong hill, March 1965, *Balakrishnan* 31224 ; way to Shalli from Kharia, Oct. 1965, *Balakrishnan* 44072.

Lactuca dissecta D. Don Prodr. Fl. Nepal. 164, 1825 ; Fl. Brit. Ind. 3 : 405, 1881.

A small herb. Rare in the area.

Tashigong, March 1965, *Balakrishnan* 41175.

Lactuca hastata DC. Prodr. 7 : 139, 183 ; Fl. Brit. Ind. 3 : 407, 1881.

Tall robust herb in open situation. Rare.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5924.

L. macrantha Clarke Comp. Ind. 270, 1876 ; Fl. Brit. Ind. 3 : 409, 1881.

A stout herb. Rare on hill slope.

Paro, 2500 m, Oct. 1965, *Mukerjee* 5865.

Laggera alata (D. Don) Schultz-Bip. ex Oliver in Trans. Linn. Soc. 39 : 94, 1873 ; Fl. Brit. Ind. 3 : 271, 1881.

Erect shrub in forest clearings. Scarce.

Dakpai, 1650 m, Nov. 1964, *Deb* 445.

L. pterodonta Benth. Gen. Pl. 2 : 290, 1873 ; Fl. Brit. Ind. 3 : 271, 1881.

Slender much branched herb with winged stem. Occasional on road side.

Tama, 1050-1200 m, April 1964, *Sen Gupta* 1142.

Mikania cordata (Burm.f.) R. L. Robinson var. **indica** Kitamura in Hara Fl. East. Him. 341, 1966. *M. scandens* auct. non Willd. Fl. Brit. Ind. 3 : 244, 1881.

Climber with tender branches, common in lower altitudes.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 889 ; Samchi, 300 m, Dec. 1963, *Thothathri* 10319 ; Phuntsholing, Dec. 1963, *Subba Rao* 4.

Myriactis nepalensis Less. in Linnaea 6 : 128, t. 2. 1831 ; Fl. Brit. Ind. 3 : 247, 1881.

An erect herb, growing as weed in waste places.

Road to Tashigong, Oct. 1965, *Balakrishnan* 43946 ; from Narfong to Wamrung, Sept. 1965, *A. S. Rao* 43330 ; Paro, 2000 m, Oct. 1963, *Mukerjee* 5972.

M. wightii DC. in Wight Contrib. 10, 1834 ; Fl. Brit. Ind. 3 : 247, 1881.

A rigid herb, scattered along foot-tracks.

Rani Camp, 1650 m, Nov. 1944, *Deb* 93.

Prenanthes hookeri Clarke ex Hook. f. Fl. Brit. Ind. 3 : 412, 1881.

Tall herb, cottony on undersurface of leaves. Common on the ridges.

Chai la Pass, 300 m, Aug. 1963, *Sen Gupta* s.n.

Senecio araneosus DC. Prodr. 6 : 364, 1838 ; Fl. Brit. Ind. 3 : 351, 1881.

A much branched twiner common in roadside thickets and forest fringes.

Dakpai, 1650 m, Nov. 1964, *Deb* 384 ; road to Tashigong Oct. 1965, *Balakrishnan* 43323 ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 215.

- Senecio lamprocarpa** Hemsl. ex Forb. & Hemsl. in Journ. Linn. Soc. 23 : 465, 1888.
An erect herb of the roadside jungle.
Chaisilakha, 1500 m. Jan. 1964, *Subba Rao* 413.
- S. bhot** Clarke Comp. Ind. 187, 1876 ; Fl. Brit. Ind. 3 : 355, 1881.
A rare shrub in the open.
On way to Tama from Rani Camp, 1350-1650 m, Nov. 1964, *Deb* 266.
- S. chrysanthemioides** DC. var. **spectabilis** DC. Prodr. 6 : 365, 1838 ; Fl. Brit. Ind. 3 : 339, 1881.
A rare shrub in open jungle.
Paro, 2500 m, Oct. 1963, *Mukerjee* 5937.
- S. densiflorus** Wall. ex DC. Prodr. 6 : 369, 1838.
Stout shrub on fringe of forests. Frequent.
Road to Tashigong, Oct. 1963, *Thothathri* 43910 ; Sangura, 1500 m, Dec. 1963, *Thothathri* 10473 ; Chaisilakha, 1500 m, Jan. 1964, *Subba Rao* 425.
- S. himalaensis** Mukerjee nom. nov. *S. quinquelobus* Hook.f. & Thoms. ex C.B.Cl. Comp. Ind. 209, 1876 ; Fl. Brit. Ind. 3 : 353, 1881. *Prenanthes quinqueloba* DC. Prodr. 7 : 195, 1838.
Slender herb. Frequent in open situation.
Chai la Pass, 3000 m, Atug. 1963, *Sen Gupta* s.n.
A new name is here proposed for the existence of *S. quinquelobus* DC. Prodr. 6 : 404, 1838 which is an African species.
- S. scandens** D. Don Prodr. Fl. Nepal. 178, 1825 ; Fl. Brit. Ind. 3 : 352, 1881.
A climbing shrub with zigzag branches. Common on road side shrubberies.
Chaisilakha, 1500 m, Jan. 1964, *Subba Rao* 425 ; Sangura, 1500 m, Dec. 1963, *Thothathri* 10472 ; Tashigong hill, March 1965, *Balakrishnan* 41244 ; road to Tashigong, Oct. 1965, *Balakrishnan* 43901 ; above Deothong, 1100 m, March 1965, *Balakrishnan* 41122.
- S. triligulatus** Buch.-Ham. ex D. Don Prodr. Fl. Nepal. 178, 1825 ; Fl. Brit. Ind. 3 : 356, 1881.
A slender herb in damp shady place.
On way to Nyoth from Shali, Oct. 1965, *Balakrishnan* 44134.
- S. wallichii** DC. Prodr. 6 : 364, 1838 ; Fl. Brit. Ind. 3 : 353, 1881.
Bipa, Oct. 1965, *Balakrishnan* 44365.

Siegesbeckia orientalis Linn. Sp. Pl. 100, 1753 ; Fl. Brit. Ind. 3 : 304, 1881.

Tall herb with glutinous glands. Common on open slopes.

Sureylakha, 1200-1500 m, Dec. 1963, *Sen Gupta* 970 ; Betni, 1050-1200 m, Dec. 1963, *Sen Gupta* 1079 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 43 ; Tashigong, March 1965, *Balakrishnan* 41177 ; Samchi hill, 300 m, Dec. 1963, *Thothathri* 10322 ; Phuntsholing, Dec. 1963, *Subba Rao* 80.

Sonchus arvensis Linn. Sp. Pl. 793, 1753 ; Fl. Brit. Ind. 3 : 414, 1881.

Tall herb with a creeping rootstock. Frequent on open ground.

Thimpu, 2500 m, April 1964, *Maheshwari* s.n. ; 5 km north of Deothong, March 1965, *Balakrishnan* 41119 ; on the way to Tashigong from Kharsong, March 1965, *Balakrishnan* 41807.

S. asper Hill. Herb. Brit. 1 : 47, 1769 ; Fl. Brit. Ind. 3 : 414, 1881.

An annual herb of open ground. Rare.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5864.

S. oleracepes Linn. Sp. Pl. 174, 1753.

Annual herb. Frequent on open ground.

Tashigong, March 1965, *Balakrishnan* 41177.

Sphaeranthus indicus Linn. Sp. Pl. 927, 1753 ; Fl. Brit. Ind. 3 : 275, 1881.

Low annual herb with ascending villous branches on damp soil. Occasional.

Phuntsholing, Jan. 1964, *Subba Rao* 360 ; Samchi, *Thothathri* 10624.

Spilanthus acmella (Linn.) Murr. Syst. (ed. 13) 610, 1774 ; Fl. Brit. Ind. 3 : 307, 1881.

An annual herb with ascending stem. Common on open ground.

Tashigong to Yangtshi, March 1965, *Balakrishnan* 41276.

Synedrella nodiflora Gaertn. Fruct. et Sem. 2 : 456 t. 171, f.7. 1791 ; Fl. Brit. Ind. 3 : 308, 1881.

A dichotomously branched herb. Common on open ground at lower elevations.

Phuntsholing, Dec. 1963, *Subba Rao* 15 ; Samchi, Dec. 1963, *Thothathri* 10363.

Tagetes erecta Linn. Sp. Pl. 887, 1753.

Local name : Bhabya shaey patri phul.

A common garden annual growing also as an escape.

Betni, 1200 m, Dec. 1963, *Sen Gupta* 1059.

Taraxacum officinale Wigg. Hook.f. Fl. Brit. Ind. 3 : 401, 1881,

A stemless herb with a rosette of leaves, scattered on grasslands.
Thimpu, 2500 m, April 1964, *Maheshwari* s.n.

Tithonia rotundifolia (Mill.) Blake in Contr. Gray Herb. 52 : 41, 1917.

Tall herb cultivated.

Samchi, 300 m, Dec. 1963, *Thothathri* 10301.

Tridax procumbens Linn. Sp. Pl. 900, 1753 ; Fl. Brit. Ind. 3 : 311, 1881.

Small trailing herb with thick leaves. Rare in open rocky soil.

Tashigong, 1200 m, March 1965, *Balakrishnan* 41259.

Vernonia anthelmintica (L.) Willd. Sp. Pl. 3 : 1634, 1804 ; Fl. Brit. Ind. 3 : 237, 1881.

A robust leafy annual. Rare in the area.

Kheri, 1000 m, Sept. 1965, *A. S. Rao* 43517.

V. cineria (Linn.) Less. in Linnaea 4 : 291, 1829 ; Fl. Brit. Ind. 3 : 233, 1881.

A common annual on roadside and on waste places.

On road between Tashigong to Yangtse, March 1965, *Balakrishnan* 41269 ; Phuntsholing, April 1964, *Maheshwari* s.n. ; Birti, 550 m, April 1964, *Sen Gupta* 1210.

V. saligna DC. Prodr. 5 : 38, 1836 ; Fl. Brit. Ind. 3 : 233, 1881.

A much branched suffruticose herb. Fairly common.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 926 ; Tashigong, Oct. 1965, *Balakrishnan* 44023 ; Poan, Nov. 1965, *Balakrishnan* 44603 ; Dorokha, 600 m, Dec. 1963, *Thothathri* 10488.

V. talaumifolia Hook. f. & Thoms. ex Clarke Comp. Ind. 25, 1876 ; Fl. Brit. Ind. 2 : 240, 1881.

A tall shrub, rare in the forest.

Monger-Tashigong Tract, Nov. 1965, *Balakrishnan* 44677.

V. volkameriaefolia DC. Prodr. 5 : 132, 1836 ; Fl. Brit. Ind. 3 : 240, 1881.

A small tree occasional on hill slopes.

On way from Sham Khara to Batase, 1600 m, Dec. 1963, *Sen Gupta* 1004 ; Chaisilakha, 1500 m, Jan. 1964, *Subba Rao* 425 ; Sangura, 800 m, Dec. 1964, *Thothathri* 10582.

Wedelia biflora (Linn.) DC. in Wight Contrib. 18, 1834 ; Fl. Brit. Ind. 3 : 306, 1881.

A slender herb, scattered along roads.

Rani Camp, 1650 m, Nov. 1964, *Deb* 228.

- Xanthium strumarium** Linn. Sp. Pl. 987, 1753 ; Fl. Brit. Ind. 3 : 303, 1881.
Erect herb. Common on open ground.
Paro, 2500 m, Aug. 1963, *Sen Gupta* s.n. ; *Ibid.*, Oct. 1963, *Mukerjee* 5879.
- Youngia japonica** (Linn.) DC. Prodr. 7 : 194, 1834. *Crepis japonica* Benth.
Fl. Hongk. 194, 1861 ; Fl. Brit. Ind. 3 : 395, 1881.
A common annual of the grassland.
Tama, 1150 m, April 1964, *Sen Gupta* 1163 ; *Ibid.*, 1450 m, Nov. 1944, *Deb* 299 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5929.

CAMPANULACEAE

A. S. RAO AND N. P. BALAKRISHNAN

- Campanula colorata** Wall. in Roxb. Fl. Ind. 2 : 101, 1824 ; Fl. Brit. Ind. 3 : 440, 1881.
Small herb, frequent on forest floor and on shaded hill slopes.
Dakpai, 1650 m, Nov. 1964, *Deb* 378 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5830 ; on road to Tashigong, Oct. 1965, *Balakrishnan* 43919 ; 3 km north of Narfong, 1900 m, Sept. 1965, *A. S. Rao* 43272.
- C. khasiana** Hook. f. & Thoms. in Journ. Linn. Soc. 2 : 25, 1835 ; Fl. Brit. Ind. 3 : 439, 1881.
A small herb occasionally met with on forest floor.
Road to Tashigong, Oct. 1965, *Balakrishnan* 43932 ; Wamrung hill, 2400 m, Sept. 1965, *A. S. Rao* 43363.
- C. sylvatica** Wall. in Roxb. Fl. Ind. 2 : 97, 1824 ; Fl. Brit. Ind. 3 : 439, 1881.
A rare herb in damp shady place.
Between Shali & Nyoth, 1800 m, March 1965, *Balakrishnan* 41319.
- Campanumaea parviflora** (Hook. f. & Thoms.) Benth. Gen. Pl. 2 : 558, 1858 ; Fl. Brit. Ind. 3 : 436, 1881.
Erect herb about 1 m tall. Frequent in side shrubberies.
From Deothong to Narfong, 1400 m, Aug. 1965, *A. S. Rao* 43183 ; from Samdrup Jhonkar to Deothong, Aug. 1965, *A. S. Rao* 43127.
- Codonopsis griffithii** Clarke in Fl. Brit. Ind. 3 : 431, 1881.
A twiner on roadside shrubberies. Rare.
From Deothong to Narfong, 1700 m, Aug. 1965, *A. S. Rao* 43217.
- C. viridis** Wall. in Roxb. Fl. Ind. 2 : 103, 1824 ; Fl. Brit. Ind. 3 : 431, 1881.

An occasional twiner in the forest clearings.

Sureylakha, 1800 m, Dec. 1963, *Sen Gupta* 997 ; Sham Khara, 1500 m. Nov. 1964, *Deb* 18.

Leptocodon gracilis (Hook. f. & Thoms.) Lemaire in Ill. Hort. 3: Misc. 49. 1856 ; Fl. Brit. Ind. 3 : 430, 1881.

A twining herb of higher altitudes. Occasional.

Gomchu hill, 2450 m, Sept. 1965, *A. S. Rao* 43393.

Lightfootia hirsuta (Edgew.) Wimm. ex Hepper in Kew Bull. 15 : 61, 1961. *Cephalostigma hirsutum* Edgew. in Trans. Linn. Soc. 20 : 81, 1851 ; Fl. Brit. Ind. 3 : 429, 1881.

Small erect herb in open forest. Rare.

Gomkhar to Shali, Oct. 1965, *Balakrishnan* 44076.

LOBELIACEAE

G. SEN GUPTA AND K. C. MALICK

Lobelia angulata Forst. Fl. Ind. Austr. Prodr. 58. n. 309, 1786 ; *Pratia begonifolia* (Wall.) Lindl. Bot. Reg. t. 1373, 1830 ; Fl. Brit. Ind. 3 : 422, 1881.

Sureylakha, 1200 m, Dec. 1963, *Sen Gupta* 931 ; *Ibid.*, 1600 m, Dec. 1963, *Sen Gupta* 999 ; Birti, 600 m, April 1964, *Sen Gupta* 1344 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 46 ; Gomchu, 2400 m, Sept. 1965, *A. S. Rao* 43451 ; Nangadzong, March 1965, *Balakrishnan* 41854 ; Nyoth, Oct. 1965, *Balakrishnan* 44238.

L. colorata Wall. Pl. As. Rar. 2 : 42, 1831 ; Fl. Brit. Ind. 3 : 426, 1881.

Erect herb in open jungle, scattered.

Road to Tashigong, Oct. 1965, *Balakrishnan* 43884 ; Bepa, Dongla-Luntsi Tract, Oct. 1965, *Balakrishnan* 44339.

L. pyramidalis Wall. in Asiat. Res. 13 : 376, 1820 ; Fl. Brit. Ind. 3 : 426, 1881.

Tall erect undershrub. Common in moist shady places.

Betni khola, 1350 m, Dec. 1963, *Sen Gupta* 1036 ; Sham Khara & Maorey forests, 1600 m, Dec. 1963, *Sen Gupta* 1086 ; Shemgang, 2000 m, April 1964, *Sen Gupta* 1250 ; Dakpai, 1650 m, Nov. 1964, *Deb* 361 ; Dorokha, 2000 m, Dec. 1963, *Thothathri* 10539 ; Kamji 1000 m, Dec. 1963, *Subba Rao* 246 ; Krishnagiri saddle, on road from Narfong to Wamrung, 2300 m, Sept. 1965, *A. S. Rao* 43306 ; Deothong, 1000 m, March 1965, *Balakrishnan* 41113 ; Wamrung, March 1965, *Balakrishnan* 41912 ; Tama, 1050 m, April 1964, *Sen Gupta* 1154.

- Lobelia rosea** Wall. Pl. As. Rar. 2: 42, t. 152, 1831; Fl. Brit. Ind. 3: 427, 1881.
Large shrub, erect or suberect, on road side. Scarce.
Near Deothong, 1000 m, March 1965, *Balakrishnan* 41116.
- L. zeylanica** Linn. Sp. Pl. 932, 1753; Fl. Brit. Ind. 3: 425, 1881. *L. affinis*
Wall. ex C. B. Cl. in Fl. Brit. Ind. 3: 424, 1881.
Much branched prostrate herb of shady place. Rare.
Samchi, 300 m, Dec. 1963, *Thothathri* 10368.
- L. montana** Reinw. ex Bl. Bijdr. 728, 1826. *Pratia montana* Hassk. in Flora
25: 23, 1842; Fl. Brit. Ind. 3: 423, 1881.
A rambling herb on hill slopes. Frequent.
From Deothong to Narfong, 1700 m, Aug. 1965, *A. S. Rao* 43213;
north of Deothong, 1000 m, March 1965, *A. S. Rao* 41120.

VACCINIACEAE

G. SEN GUPTA

- Agapetes auriculata** Hook. f. in Gen. Pl. 2: 571, 1876; Fl. Brit. Ind. 3: 444,
1881.
Epiphytic shrub of the rain forests at lower altitudes.
Kamji, 1000 m, Dec. 1963, *Subba Rao* 170; from Samdrup to Jhonkar,
March 1965, *Balakrishnan* 41939; Mongerdzong, Nov. 1965, *Balakrishnan*
44649; between Sangura and Dorokha, 1500 m, *Thothathri* 10464;
Sureylakha 1350 m, Dec. 1963, *Sen Gupta* 952.
- A. bhutanica** Balak. et Chowdhury in Reinwardtia 763: 287, 1966.
Deothong, 500 m, Mar. 1965, *Balakrishnan* 41943.
- A. saligna** (Hook. f.) Hook. f. in Gen. Pl. 2: 571, 1876; Fl. Brit. Ind. 3: 444,
1881.
Local name: Chhotey qujur ganta.
Epiphytic shrub with pendent branches. Scarce.
Betni bridge, 1050 m, Dec. 1963, *Sen Gupta* 1065.
- A. serpens** (Wt.) Sleumer in Engl. Bot. Jarble. 70: 105, 1939. *Pentapterygium*
serpens (Wt.) Klotz in Linnaea 24: 47, 1851; Fl. Brit. Ind. 3: 449,
1882.
Common epiphytic shrub with tuberous base.
Narfong, March 1965, *Balakrishnan* 41140; Chaisilakha, 1500 m,
April 1964, *Maheshwari* s.n.; Chima Kothi, 1800 m, April 1964, *Mahesh-*
wari s.n.; Sureylakha, 1350 m, Dec. 1963, *Sen Gupta* 962; Tama, 1350 m,
April 1964, *Sen Gupta* 1177.

- Agapetes smithiana** Sleumer var. **major** Airy Shaw in Kew Bull. 1958 : 489, 1959.
A rare epiphytic shrub.
Near Wamrung, 2500 m, March 1965, *Balakrishnan* 41150.
- A. variegata** (Roxb.) D. Don ex G. Don var. **elegans** Airy Shaw in Kew Bull. 1948 : 89, 1948.
A rare epiphyte.
Dakpai, 1650 m, Nov. 1964, *Deb* 347.
- Vaccinium dunalianum** Wight in Cal. Journ. Nat. Hist. 8 : 175, 1847 ; Fl. Brit. Ind. 3 : 453, 1882.
A large shrub with leafy branches. Occasional in forest fringes.
Between Peme and Luntsi, Oct. 1965, *Balakrishnan* 44473.
- V. nummularia** Hook. f. et Thoms. ex C. B. Cl. in Fl. Brit. Ind. 3 : 451, 1882.
A small epiphytic shrub. Common.
Dongala, between 3600-3700 m, Oct. 1965, *Balakrishnan* 44442.
- V. vacciniaceum** (Roxb.) Sleum. in Engl. Bot. Jahrb. 71 : 479, 1941.
V. serratum (G. Don) Wt. Icon. 4 : t. 1184, 1848 ; Fl. Brit. Ind. 3 : 452, 1882.
Bulbous rooted epiphytic shrub. Frequent.
Tashiyangtsi to Tobrang, 1600 m, March 1965, *Balakrishnan* 41396.

ERICACEAE

G. SEN GUPTA AND K. C. MALICK

- Enpianthus deflexus** (Griff.) Schn. Ill. Handle. Laubh. 2 : 521, 1911. *E. himalaiens* Hook. f. & Thoms. in Hook. Journ. Bot. 7 : 125, t. 3, 1855; Fl. Brit. Ind. 3 : 461, 1882.
A small tree. Common at higher elevations.
Dochu La, 3000 m, *Sen Gupta* s.n.
- Gaultheria fragrantissima** Wall. in Asiat. Res. 13. 397, 1820 ; Fl. Brit. Ind. 3 : 457, 1882.
Small tree. Common on roadside and in open forests in temperate region.
Shemgang, 2000 m, April 1964, *Sen Gupta* 1246 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5931 ; Honshu, Aug. 1965, *Sen Gupta* s.n. ; Wamrung to Gomchu, 2700 m, Sept. 1965, *A.S. Rao* 43381 ; on road to Rongthong from Gomchu, 2650 m, Sept. 1965, *A. S. Rao* 43565 ; from Tashigong to Yangtsi, 1900 m, March 1965, *Balakrishnan* 41322.

Gaultheria griffithiana Wt. in Cal. Journ. Nat. Hist. 8 : 176, 1847 ; Fl. Brit. Ind. 3 : 458, 1882.

A shrub on rocky soil at higher elevations. Scarce.

Dongala-Lhunsi Tract, Oct. 1965, *Balakrishnan* 44466.

G. nummularioides D. Don, Prodr. Fl. Nepal. 150, 1825 ; Fl. Brit. Ind. 3 : 457, 1882.

A shrub with prostrate branches on rocks. Common at higher elevations.

Between Nyoth to Tashiyangtsi, Oct. 1965, *Balakrishnan* 44262 ; Tashiyangtsi forest, 1800 m, March 1965, *Balakrishnan* 41377 ; Chima Kothi, 1800 m, April 1964, *Maheshwari* s.n.

Leucothoe griffithiana Clarke in Fl. Brit. Ind. 3 : 460, 1882.

A shrub with pendent branches. Occasional in the forest.

Bepa, on way to Lisipang, Dongla-Lhunsi Tract, Oct. 1965, *Balakrishnan* 44369.

Lyonia ovalifolia (Wall.) Drude in Engl. Pflanzenf. 4 : 1 : 44, 1889. *Pieris ovalifolia* (Wall.) D. Don in Edinb. New Philo. Journ. 17 : 159, 1834 ; Fl. Brit. Ind. 3 : 236, 1882.

var. **ovalifolia**

Small tree common in warm temperate region ; usually associated with *Rhododendron arboreum* and *Schima wallichii*.

Rani Camp to Tama, 1350-1650 m, Nov. 1964, *Deb*. 277 ; Nyoth, Oct. 1965, *Balakrishnan* 44220 ; Chaisilakha, 1500 m, Dec. 1963, *Subba Rao* 438 ; *Ibid.*, April 1964, *Maheshwari* s.n. ; Chima Kothi 2000 m, April 1964, *Maheshwari* s.n.

var. **lanceolata** Deb, Sen Gupta et Malick in Bull. bot. Soc. Beng. 22 : 192, 1968. *Andromeda lanceolata* Wall. in As. Res. 13 : 390, 1820. *Pieris ovalifolia* (Wall.) D. Don var. *lanceolata* (Wall.) Clarke in Fl. Brit. Ind. 3 : 461, 1882.

Local name : Bumseng.

A small tree. Occasional.

Tama, 1350 m, April 1964, *Sen Gupta* 1179.

Pieris formosa (Wall.) D. Don in Edinb. New Philo. Journ. 17 : 159, 1834 ; Fl. Brit. Ind. 3 : 461, 1882.

A small evergreen tree. Frequent on hill slopes.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5931.

Rhododendron arboreum Sm. Exot. Bot. 1 : 9. t. 6, 1805 ; Fl. Brit. Ind. 3 : 465, 1882.

Small or medium sized tree, common at warm temperate forests and forming consociation.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1241 ; Rani Camp to Tama, 1450 m, Nov. 1964, *Deb* 263 ; Longchaphaka, Thimpu, 2500 m, April 1964, *Maheshwari* s.n. ; Chima Kothi, 2000 m, April 1964, *Maheshwari* s.n. ; Gomchu 2400 m, Sept. 1965, *A. S. Rao* 4344 ; near Narfong, March 1965, *Balakrishnan* 41138.

Rhododendron dalhousiae Hook.f. *Rhod. Sikkim Himal.* t. 1 & 2. 1849 ; *Fl. Brit. Ind.* 3 : 469, 1882.

Small tree. Fairly common.

Dakpai, 1650 m, Nov. 1964, *Deb* 379 ; Chima Kothi, 1800 m, April 1964, *Maheshwari* s.n.

R. fulgens Hook.f. *Rhod. Sikkim Himal.* t. 25. 1851 ; *Fl. Brit. Ind.* 3 : 466, 1882.

A rare shrub of cooler temperate regions.

Dongala-Lhunsi Tract, 3200 m, Oct. 1965, *Balakrishnan* 44436.

R. grande Wt. in *Cal. Journ. Nat. Hist.* 8 : 176, 1847 ; *Fl. Brit. Ind.* 3 : 464, 1882.

A small tree fairly common in temperate forests.

Jurfong to Wamrung, 2200 m, Sept. 1965, *A. S. Rao* 43323 ; near Narfong, 2300 m, March 1965, *Balakrishnan* 41141 ; road to Tashigong, Oct. 1965, *Balakrishnan* 43898.

R. hodgsoni Hook.f. *Rhod. Sikkim Himal.* t 15, 1851 ; *Fl. Brit. Ind.* 3 : 464, 1881.

An arboreous shrub in coniferous forests and open places in cool temperate region.

On way to Dongala from Lisipang \pm 3100 m, Oct. 1965, *Balakrishnan* 44424.

R. kendrickii Nutt. in *Mag. Nat. Hist.* 2 : 12 : 10, 1853 ; *Fl. Brit. Ind.* 3 : 466, 1881.

A large shrub. Frequent in the forests.

Near Tobrang, 3000 m, March 1965, *Balakrishnan* 41473.

R. lepidotum Wall. ex G. Don, *Gen. Hist.* 3 : 845, 1834 ; *Fl. Brit. Ind.* 3 : 471, 1881.

A small shrub, abundant and widespread in the open subalpine and cool temperate regions.

Dongala, 3200 m, Oct. 1965, *Balakrishnan* 44437.

Rhododendron virgatum Hook.f. *Rhod. Sikkim Himal.* t. 26, 1851 ; *Fl. Brit. Ind.* 3 : 474, 1881.

A shrub. Frequent in the forest of temperate region.
Thimpu, 2500 m, April 1964, *Maheshwari* s.n.

PYROLACEAE

A. S. RAO

Pyrola rotundifolia Linn. var. **asarifolia** (Mich) Clarke in *Fl. Brit. Ind.* 3 : 475, 1881.

A rare herb in open jungle.
Gomchu, 2400 m, Sept. 1965, *A. S. Rao* 43447.

PLUMBAGINACEAE

G. SEN GUPTA

Ceratostigma griffithi C.B.Cl. in *Fl. Brit. Ind.* 3 : 481, 1881.

Small much branched shrub. Common in open places.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5820 ; near confluence on Thimpu road, 2000 m, Aug. 1965, *Sen Gupta* 1650.

PRIMULACEAE

A. S. RAO AND N. P. BALAKRISHNAN

Primula denticulata Sm. *Exot. Bot.* 2 : 109, t. 114. 1805 ; *Fl. Brit. Ind.* 3 : 485, 1881.

Scapigerous herb with a rosette of leaves. Common on forest floor.

Thimpu, 2500 m, April 1964, *Maheshwari* s.n. ; Longchaphaka, Thimpu, April 1964, *Maheshwari* s.n. ; Chima Kothi 2000 m, April 1964, *Maheshwari* s.n. ; near Tashiyangtsi, March 1965, *Balakrishnan* s.n.

P. filipes Watt ex Hook.f. *Fl. Brit. Ind.* 3 : 485, 1881.

Small herb with a woody rootstock and flesh coloured flower. Rare on rocks.

Tashigong to Yangtsi-Nyoth, March 1965, *Balakrishnan* 41351.

Lysimachia evalvis Wall. in *Roxb. Fl. Ind.* 2 : 27, 1824 ; *Fl. Brit. Ind.* 3 : 504, 1881.

Small herb with flexuous ascending stem ; flowers yellow. Scattered along forest path.

Narfong, 1900 m, Aug. 1965, *A. S. Rao* 43258.

Lysimachia ramosa Wall. ex Duby in DC. Prodr. 8 : 65, 1844 ; Fl. Brit. Ind. 3 : 503, 1882.

Herb with long slender erecto-patent branches. Rare near ditches. North of Narfong, 1900 m, Aug. 1965, *A. S. Rao* 43243.

MYRSINACEAE

S. K. MUKERJEE AND K. C. MALICK

Ardisia floribunda Wall. in Roxb. Fl. Ind. 2 : 272, 1824. *A. nerifolia* Wall. ex A. DC. in Trans. Linn. Soc. 17 : 118, 1837; Fl. Brit. Ind. 3 : 522, 1882.

A large shrub along streams. Samchi, Dec. 1964, *Thothathri* 10447.

A. macrocarpa Wall. in Roxb. Fl. Ind. 2 : 277, 1824 ; Fl. Brit. Ind. 3 : 524, 1882.

A small shrub with bright red berries, growing as an undergrowth in subtropical forests.

Shemgang to Birti, 1000 m, April 1964, *Sen Gupta* 1291 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 57 ; Sangura, 1500 m, Dec. 1963, *Thothathri* 10564 ; Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n. ; Kamji, 1000 m, Dec. 1964, *Subba Rao* 182.

A. solanacea (Poir) Roxb. Corm. Pl. 1 : 27, 1795. *A. humilis* Clarke in Fl. Brit. Ind. 3 : 529, 1882, non Vahl

An erect bushy shrub, scattered as undergrowth in forests. Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 895; *Ibid.*, Nov. 1964, *Deb* 149.

Embelia floribunda Wall. in Roxb. Fl. Ind. 2 : 291, 1824 ; Fl. Brit. Ind. 3 : 514, 1882.

Local name : Chiuri amla lahara.

An occasional climber in the subtropical forests. The red berries are edible.

Betni, 1500 m, Dec. 1963, *Sen Gupta* 1032 ; Dakpai, 1650 m, Nov. 1964, *Deb* 370 ; Sangura, 1500 m, Dec. 1963, *Thothathri* 10563.

Maesa chisia Buch.-Ham. ex D. Don Prodr. Fl. Nepal. 148, 1825; Fl. Brit. Ind. 3 : 509, 1882.

A tall shrub common as an undergrowth in subtropical and warm temperate forests.

Sureylakha, 1350 m, Dec. 1963, *Sen Gupta* 950 ; Tama, 1050 m, April 1964, *Sen Gupta* 1135 ; Shemgang, 2000 m, April 1964, *Sen Gupta* 1268 ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 183.

Maesa indica (Roxb.) DC. Trans. Linn. Soc. 17 : 134, 1834 ; Fl. Brit. Ind. 3 : 509, 1882.

Local name : Bilauni, Kanchirna, Phiksangme.

Tall shrub, frequent in and outside the forests in subtropical regions. Small white berries are edible.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 880 & 882 ; *Ibid.*, April 1964, *Sen Gupta* 1373 ; *Ibid.*, Nov. 1964, *Deb* 154 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 28 ; Tama, 1100 m, April 1964, *Sen Gupta* 1136 ; Phuntsholing, April 1964, *Maheshwari* s.n. ; *Ibid.*, Dec. 1963, *Subba Rao* 97 ; Samchi, Dec. 1963, *Thothathri* 10372.

var. **angustifolia** Hook.f. et Thoms. ex C.B.Cl. in Fl. Brit. Ind. 3 : 509, 1882.

Leaves narrowly lanceolate. A rare shrub.

Phuntsholing, Aug. 1965, *Sen Gupta* 1663.

var. **maxima** C.B.Cl. in Fl. Brit. Ind. 3 : 509, 1882.

Local name : Bilauni.

Leaves orbicular. A rare shrub.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1370.

M. macrophylla (Wall.) DC. in Trans. Linn. Soc. 17 : 134, 1834 ; Fl. Brit. Ind. 3 : 510, 1882.

A large shrub ; leaves elliptic or orbicular. Rare.

Phuntsholing, Dec. 1963, *Subba Rao* 96.

M. montana DC. Prod. 8 : 79, 1844. *M. indica* C.B.Cl. in Fl. Brit. Ind. 3 : 509, 1882 p.p. non DC.

A tall shrub with slender branches. Rare in subtropical forests.

Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n.

M. rugosa C.B.Cl. in Fl. Brit. Ind. 3 : 508, 1882.

A small tree of the warm temperate forests.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1239.

Myrsine semiserrata Wall. in Roxb. Fl. Ind. 2 : 293, 1824 ; Fl. Brit. Ind. 3 : 511, 1882.

A tall shrub with sub-spinescent leaves. Rare on roadside.

Near confluence on Thimpu-road ; 2000 m, Aug. 1965, *Sen Gupta* s.n.

Rapanea capitellata (Wall.) Mez. in Pflanzenr. 4 : 236 : 9 : 356, 1902
Myrsine capitellata Wall. in Roxb. Fl. Ind. 2 : 295, 1824 ; Fl. Brit. Ind. 3 : 512, 1882.

Local name : Kalachamp.

A rare tree of the subtropical forests.

Sham Khara and Maorey forests, 1500 m, Dec. 1963, *Sen Gupta* 1099.

SAPOTACEAE

A. S. RAO

Aesandra butyracea (Roxb.) Backni in Boissiera 11 : 29, 1965. *Bassia butyracea* Roxb. in As. Research 8 : 499, 1808 ; Fl. Brit. Ind. 3 : 546, 1882.

Medium sized tree of the tropical forests ; fruits edible. Vegetable fat is obtained from the seeds.

Birti, 700 m, April 1964, *Sen Gupta* 1303 ; Kheri, Sept. 1965, *A. S. Rao* 43488.

EBENACEAE

S. K. MUKERJEE

Diospyros lotus Linn. Sp. Pl. 1057, 1753 ; Fl. Brit. Ind. 1 : 555, 1888.

Short sized tree. Frequent in warm temperate region. Fruits are eaten by hill people.

Paro, 2000 m, Oct. 1963, *Mukerjee* 5896.

SYMPLIOCACEAE

Simplocos chinensis (Lour.) Druce in Rep. Bot. Exch. Cl. Brit. Isls. 1916 : 65, 1917. *S. crataegoides* Buch.-Ham. ex D. Don, Prodr. Fl. Nepal. 145, 1825 ; Fl. Brit. Ind. 3 : 573, 1882.

A short tree. Occasional in temperate regions.

Chima Kothi, 2000 m, April 1964, *Maheshwari* s.n.

S. racemosus Roxb. Fl. Ind. 2 : 539, 1824 ; Fl. Brit. Ind. 3 : 577, 1882.

A small tree with glossy coriaceous leaves. Common in subtropical forests.

Kamji, 1000 m, Dec. 1963, *Subba Rao* 269 ; Sham Khara 1500 m, Nov. 1964, *Deb* 34.

S. glomerata King ex C.B.Cl. in Fl. Brit. Ind. 3 : 577, 1882.

A small tree with cream coloured flowers. Scattered in subtropical forests.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1242 ; Rani Camp, 1650 m, Nov. 1964, *Deb* 94 ; Dakpai, 1650 m, Nov. 1964, *Deb* 376.

S. pyrifolia Wall. ex G. Don, Gen. Hist. 4 : 3, 1837 ; Fl. Brit. Ind. 3 : 579, 1882.

A tall shrub. Rare in the area.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1243.

Simplocos theaeifolia Buch.-Ham. ex D. Don, Prodr. Fl. Nepal. 145, 1825; Fl. Brit. Ind. 3 : 575, 1882.

Local name : Kharney gach.

A middle sized tree. Common in the forests of warm temperate regions.

Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n. ; *Ibid.*, Dec. 1963, *Subba Rao* 411 ; Rani Camp, 1650 m, Nov. 1964, *Deb* 224 & 460 ; Sangura, 1500 m, Dec. 1963, *Thothathri* 10560.

STYRCACEAE

G. SEN GUPTA

Styrax serrulatus Roxb. Fl. Ind. ed. 2, 2 : 415, 1832 ; Fl. Brit. Ind. 3 : 588, 1882.

var. **serrulatus**

Small tree with white flowers. Scattered in subtropical forests.

On way to Birti from Shemgang, 1000 m, April 1964, *Sen Gupta* 1290 ; Gaylegphug, 270 m, April 1964, *Sen Gupta* 1375.

var. **agrestis** Clarke

A large tree. Rare.

Rani Camp, 1650 m, Nov. 1964, *Deb* 221.

OLEACEAE

K. THOTHATHRI

Jasminum amplexicaule Buch.-Ham. ex G. Don Gen. Hist. 4: 60, 1837.

J. undulatum Auct. non Willd., Fl. Brit. Ind. 3 : 592, 1882.

Scandent shrub ; flowers white, slightly fragrant.

Deothong, Aug. 1965, *A. S. Rao* 43132 ; Samchi, Dec. 1963, *Sen Gupta* 908 ; *Ibid.*, April 1964, *Sen Gupta* 1371.

J. dispersum Wall. in Roxb. Fl. Ind. 1 : 99, 1820 ; Fl. Brit. Ind. 3 : 602, 1882.

Scandent shrub ; flowers white in many flowered terminal panicles and few flowered axillary cymes. Common.

Tashigong to Yangtsi, 2000 m, March 1965, *Balakrishnan* 41339 ; Tashiyangtsi forest, Oct. 1965, *Balakrishnan* 44271 ; Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n. ; Sangura, 1500 m, Dec. 1963, *Thothathri* 10555 ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 234.

J. caudatum Wall. ex Lindl. Bot. Reg. 1842. t. 26, 1842 ; Fl. Brit. Ind. 3 : 601, 1882.

Scandent shrub ; leaves usually 3-floiate ; flowers large, white, corolla tube 3 cm long. Rare at foot hills.

Samchi, Dec. 1963, *Thothathri* 10596 ; Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 815.

Jasminum grandiflorum Linn. Sp. Pl. 9. 1762 (ed. 2); Fl. Brit. Ind. 3:608, 1882.

Scandent or bushy ; leaflets rhomboid to oblong ; flowers white, fragrant.

Kheri, Sept. 1965, *A. S. Rao* 43500 ; Punakha, *Sen Gupta* s.n.

J. anastomosans Wall. ex DC. Prodr. 8: 305, 1844; Fl. Brit. Ind. 3:596, 1882.

Scandent shrub ; leaves simple, elliptic to lanceolate, acuminate, imperfectly 3-nerved. Occasional on the fringe of the forest.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1377.

J. humile Linn. var. **revolutum** (Sims) Stokes, Bot. Comm. 1 : 18, 1830.

J. humile Clarke in Fl. Brit. Ind. 3 : 602, 1882 pro parte.

A bushy shrub with yellow flowers. Scattered in open forest.

Honshu, 3000 m, Sept. 1965, *Sen Gupta* s.n.

J. laurifolium Roxb. Fl. Ind. 1 : 91, 1820 ; Fl. Brit. Ind. 3 : 597, 1882.

Scandent shrub with simple, elliptic, acuminate, 3-nerved leaves. Occasional.

Birti, 600-750 m, April 1964, *Sen Gupta* 1323.

Ligustrum confusum Decaisne in Nouv. Arch. Mus. Paris 2 : 24, 1879; Fl. Brit. Ind. 3 : 616, 1882.

A small tree ; flowers white in terminal panicles. Scarce on the fringe of forest.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5920.

Osmanthus suavis King ex C.B. Cl. in Fl. Brit. Ind. 3 : 607, 1882.

A large bushy shrub ; flowers dull-white. Fragrant.

Lumichawa, 2500 m, *Sen Gupta* s.n.

APOCYNACEAE

S. K. MUKERJEE AND G. SEN GUPTA

Catharanthus roseus (L.) G. Don Gen. Hist. 4 : 95, 1837. *Vinca rosea*

Linn. Syst. Nat. ed. 10. 944, 1759 ; Fl. Brit. Ind. 3 : 640, 1882.

Leafy perennial herb with pink or white flowers, cultivated in gardens and also growing as escapes on roadside.

Phuntsholing, Dec. 1963, *Subba Rao* s.n.

Ecdysanthera micrantha DC. Prodr. 8 : 442, 1844 ; Fl. Brit. Ind. 3 : 662, 1882.

An extensive climber with slender pendulous branches. Occasional in the tropical forests.

Phuntsholing, Dec. 1963, *Subba Rao* 61.

Holarrhena antidysenterica Wall. ex DC. Prodr. 8 : 413, 1844 ; Fl. Brit. Ind. 3 : 644, 1882.

Short tree, very common in association with *Shorea robusta* or with *Acacia catechu* on river side; also found in mixed forests up to an elevation of about 1000 m. Decoction of the bark cures dysentery.

Phuntsholing, Dec. 1963, *Subba Rao* 35 & 165 ; *Ibid.*, April 1964, *Maheshwari* s.n. ; Samchi, Dec. 1963, *Thothathri* 10394.

Ichnocarpus frutescens R. Br. in Ait. Hort. Kew ed. 2, 2 : 69, 1811 ; Fl. Brit. Ind. 3 : 669, 1882.

Scandent or climbing ; branches slender. Frequent on roadside jungles near the foot hills.

Phuntsholing, Jan. 1964, *Subba Rao* 375.

Plumeria acutiflora Poir. in Lamk Encycl. Suppl. 2 : 667, 1812 ; Fl. Brit. Ind. 3 : 641, 1882.

A short sized tree with large leaves whorled at the tips of branches ; flowers large and fragrant. Cultivated in gardens.

Phuntsholing, Dec. 1963, *Subba Rao* 71.

Rauvolfia serpentina (L.) Benth. ex Kurz For. Fl. Brit. Burma 2 : 171, 1877 ; Fl. Brit. Ind. 3 : 632, 1882.

Small shrub ; leaves 3-4 at each node. Occasional on the fringe of forest. Root yields reserpine, used as a remedy in high blood pressure.

Phuntsholing, Dec. 1963, *Subba Rao* 32 ; *Ibid.*, April 1964, *Maheshwari* s.n.

Tabernaemontana divaricata (L.) R. Br. ex Roem. et Schult., Syst. Veg. 4 : 427, 1819. *T. coronaria* Hook.f. Fl. Brit. Ind. 3 : 646, 1882.

A common shrub with white flowers on road side and on the fringe of forests.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 818 ; *Ibid.*, April 1964, *Sen Gupta* 1385 ; Chemari village, Aug. 1965, *A. S. Rao* 43137. Samchi, Dec. 1963, *Thothathri* 10329 ; Phuntsholing, Dec. 1963, *Subba Rao* 63 ; *Ibid.*, April 1964, *Maheshwari* s.n.

Tachelospermum axillare Hook.f. Fl. Brit. Ind. 3 : 668, 1882.

A robust climber with purple flower. Occasional on the fringe of forest.

Gomchu, 2400 m, Sept. 1965, *A. S. Rao* 43407.

Vallaris solanacea K. Schum, in Engl. & Prantl. *Naturl. Pflanz.* 4 : 186, 1895. *V. heynei* Spreng. *Syst.* 1 : 635, 1825 ; *Fl. Brit. Ind.* 3 : 650, 1882.

Local name : Duthe lahara.

An extensive climber, at times scandent ; flowers white. Occasional on the outskirts of forests.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 823 ; Phuntsholing, Dec. 1963, *Subba Rao* s.n.

Wrightia tomentosa (Roxb.) Roem. & Schultes *Syst. Veg.* 4 : 414, 1819 ; *Fl. Brit. Ind.* 3 : 653, 1882.

Short deciduous tree ; flowers dull yellow with orange coloured corona. Frequent in the tropical forests.

Phuntsholing, April 1964, *Maheshwari* s.n.

ASCLEPIADACEAE

Cryptolepis sinensis (Lour.) Merr. in *Philip. Journ. Sc.* 15 : 254, 1919, *C. elegans* Wall. ex Don *Gen. Hist.* 4 : 82, 1837 ; *Fl. Brit. Ind.* 4 : 6, 1883.

A slender climber with yellow flower. Rare in roadside shrubberies. Phuntsholing, Dec. 1963, *Subba Rao* 70.

Hoya lanceolata Wall. ex D. Don, *Prodr. Fl. Nepal.* 130, 1825 ; *Fl. Brit. Ind.* 4 : 54, 1883.

Climber with stout stem and pendulous branches ; leaves fleshy elongate-trapezoid. Frequent in tropical forests.

Phuntsholing, Dec. 1963, *Subba Rao* 78 ; Sangura, 1500 m, Dec. 1963, *Thothathri* 10569.

H. polyneura Hook.f. in *Fl. Brit. Ind.* 3 : 54, 1883.

An epiphyte with long flexuous branches ; leaves thick 7-10 cm long. Rare in the area.

Sham Khara, 1500 m, Nov. 1964, *Deb* 30.

Tylophora hirsuta (Wall.) Wight *Contrib.* 49, 1837 ; *Fl. Brit. Ind.* 4 : 43, 1883.

A rare climber, tomentose all over.

Chunari, Aug. 1965, *A. S. Rao* 43138.

Vincetoxicum officinale Moench. Meth. 717. *Cynanchum vincetoxicum* Pers.

Small erect herb with yellow flowers.

Paro, 2200 m, Oct. 1963, *Mukerjee* 5823 ; *Ibid.*, Aug. 1963, *Sen Gupta* s.n.

BUDDLEJACEAE

S. K. MUKERJEE AND G. SEN GUPTA

Buddleja asiatica Lour. Cochinch. 72, 1790 ; Fl. Brit. Ind. 4 : 82, 1883.

Local name : Bhairang pati ; Phabding.

Tall much branched shrub with white flowers. Common in roadside thickets and forest clearings. Roots used to prepare an intoxicating drink.

Batase, 1600 m, Dec. 1963, *Sen Gupta* 1009 ; Tama, 1150 m, April 1964, *Sen Gupta* 1140 ; between Deothong and Samdrup-Jhonkar, March 1965, *Balakrishnan* 41104 ; Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n. ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 258 ; Dorokha, 1000 m, Dec. 1963, *Thothathri* 10516.

B. paniculata Wall. in Roxb. Fl. Ind. 1 : 412, 1820.

A tall shrub ; flower heads in interrupted panicles ; corolla with pinkish tube and bluish lobes. Rare in the area on open hill slope.

Thimpu, 2500 m, April 1964, *Maheshwari* s.n.

B. tibetica W. W. Smith in Rec. Bot. Surv. Ind. 4 : 270, 1911.

A rare shrub.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5851.

GENTIANACEAE

S. SEN

Exacum teres Wall. [Cat. 4354 (1831)] ex Roxb. Fl. Ind. 1 : 414, 1820 ; Clarke in Fl. Brit. Ind. 4 : 95, 1883.

Erect herb, hardly branched ; leaves sessile, lower petiolate ; cymes from the upper axiles forming a long panicle. Common on open slopes.

Chamarchi (Samchi), 350 m, Dec. 1963, *Thothathri* 10355 ; Phuntsholing, Dec. 1963, *Subba Rao* 40.

E. tetragonum Roxb. Hort. Beng. 10. 1814 ; Clarke in Fl. Brit. Ind. 4 : 95, 1883.

Herbaceous ; little branched below ; leaves sessile ; panicle large and compound or few-fid ; flowers blue.

North of Gomchu on road to Rongthong near Gumpa, 2500 m, *A. S. Rao* 43415 ; Tama, 1450 m, Nov. 1964, *Deb* 291.

Gentiana argentea Royle, Griseb. *Gentian.* 275, 1838 et in DC. *Prodr.* 9 : 107, 1848 ; Clarke in *Fl. Brit. Ind.* 4 : 112, 1883.

A small tufted annual herb ; simple, silvery-shining leaves and clusters of blue flowers ; fruit small, obovoid capsule.

Paro Valley, 2500 m, Aug. 1963, *Balakrishnan* 1327.

G. tibetica King ex Hook.f. *Ic. Pl.* t. 1441. 1883 ; Clarke in *Fl. Brit. Ind.* 4 : 733, 1885.

Stem very stout erect ; stem leaves lanceolate, connate at the base in a cylindric sheath, upper ones sessile whorled ; flowers crowded in the upper most axils, sessile.

Chi la pass, 4200 m, Aug. 1963, *Balakrishnan* 1299.

G. crassuloides Bur. & Planch. in *Bull. Soc. Philom. paris.* Ser 8. 3 : 148, 1891.

Very small herb with many delicate branches ; flowers purple or dark blue. Growing among grass.

Paro Valley, 2500 m, Aug. 1963, *Balakrishnan* 1326 ; Chi-la (on the way to Paro), 3600-4100 m, Aug. 1963, *Sen Gupta* 722.

G. capitata Buch.-Ham. in D. Don *Prodr.* 126. 1825 ; Clarke in *Fl. Brit. Ind.* 4 : 113, 1883.

Stem simple, erect, often naked at the time of flowering except the leaves mixed in the flower head, sometimes leafy in the upper half.

Rampu, 625 m, Sept. 1964, *Maheshwari* s.n.

G. pedicellata (D. Don) Wall. ex Griseb. *Gent.* 273, 1838. *G. quadrifaria* Blume Sensus Clarke in *Fl. Brit. Ind.* 4 : 111, 1883. *G. quadrifaria* var. *pilosula* C. B. Clarke l.c. 112, 1883. *G. squarrosa* Ledeb. Clarke in *Fl. Brit. Ind.* 4 : 111, 1883.

Stem usually many, erect or decumbent ; cauline leaves small, obovate, recurved ; radicle leaves lanceolate ; flowers sub-sessile.

Shemgang, 2100 m, April 1964, *Sen Gupta* 1238.

G. capitata Ham. var. **andersoni** Clarke in *Fl. Brit. Ind.* 4 : 113, 1883.

Stem naked below ; upper cauline leaves petioled, ovate or elliptic.

5 km north of Gomchu on road to Rongthong, 1870 m, Sept. 1965, *A. S. Rao* 43423.

Halenia elliptica D. Don in *Trans. Linn. Soc.* 17 : 529, 1837 ; Clarke in *Fl. Brit. Ind.* 4 : 130, 1883.

Erect herb ; leaves elliptic ; cymes axillary and forming a terminal panicle.

Paro, 1870 m, Oct. 1963, *Mukerjee* 5949 ; Chima Kothi 2150 m, Aug. 1963, *Balakrishnan* 1171 ; road to Tashigong, 12 km from Wamrung, Oct. 1965, *Balakrishnan* 43927 ; hills behind Officers' Mess, Wamrung, 1870 m, Sept. 1965, *A. S. Rao* 43365.

Swertia bimaculata Hook. f. & Th. in Jour. Linn. Soc. 16 : 449, 1878 ; Clarke in Fl. Brit. Ind. 4 : 123, 1883.

Stem stout, 4 angular ; flowers numerous, grayish white with violet dots above ; seeds cuboid-globose, smooth, obscurely reticulated.

Sarbhong, 14-1700 m, Dec. 1963, *Sen Gupta* 994 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 14 ; Chaisilakha, Nov. 1965, *Subba Rao* 296 ; Changda Chungli hills, 1200 m, Dec. 1963, *Thothathri* 10543 ; 2 km west of Narfong, Dautak Camp, \pm 1500 m, *A. S. Rao* 43262 ; Shali, Tashiyangtsi tract, Oct. 1965, *Balakrishnan* 44124.

S. nervosa Wall. [Cat. 4383 (1883)] ex Clarke in Fl. Brit. Ind. 4 : 125, 1883.

Stem long, 4 lineolate or 4 winged ; panicles many flowered ; sepals greenish and petals white spotted. Common on the river bank.

Paro, 2250 m, Oct. 1963, *Mukerjee* 5829 ; Paro, 400 m, Aug. 1964, *Sen Gupta* 754 ; Thinleygaon, 30 m, Sept. 1964, *P. K. Hajra* 384.

S. paniculata Wall. [Cat. 4374 (1831)] ex Clarke in Fl. Brit. Ind. 4 : 122, 1883.

Stem annual ; leaves oblong or lanceolate, 1-3-nerved ; panicles many flowered, whitish.

Paro, 2250 m, Oct. 1963, *Mukerjee* 5912.

S. cordata Wall. [Cat. 4378 (1831)] ex Clarke in Fl. Brit. Ind. 4 : 123, 1883.

Stem long, 4 lineolate, leaves sessile ovate acute. Flower white, more or less large.

Thinleygaon, 300 m, Sept. 1964, *V. Abraham* 2306.

S. angustifolia Ham. in Don Prodr. Nepal. 127. 1825.

var. ***angustifolia*** Clarke in Fl. Brit. Ind. 4 : 125, 1883.

Annual ; stem long ; leaves lanceolate, 3-nerved, base narrowed ; panicle branches sharply quadrangular.

Tashiyangtsi, 8 km from Tashigong, Oct. 1965, *Balakrishnan* 44048.

var. ***pulchella*** Burkill in Journ. As. Soc. Beng. 2 : 375, 1906 ; *S. pulchella* Buch.-Ham. ex Clarke in Fl. Brit. Ind. 4 : 125, 1883 ; *S. affinis* Clarke in Fl. Brit. Ind. 4 : 126, 1883 ; *S. vacillans* Maxim. in Bull. Acad. Peterb. 27, 1881.

Stem short ; leaves lanceolate or linear lanceolate ; branches of the inflorescence relatively short and very often horizontal.

Tashigong, Oct. 1965, *Balakrishnan* 43976; Nyoth forest, Tashiyangtsi tract, Oct. 1965, *Balakrishnan* 44202.

var. **elegans** Burkill in Journ. As. Soc. Beng. 2 : 377, 1906 ; Clarke in Fl. Brit. Ind. 4 : 125, 1883.

Plant dwarf, sepals exceeding the corolla or much shorter than it, corolla lobes subpatent in the young fruit.

Kheri, 3 km to Tashigong, 1050 m, Oct. 1965, *A. S. Rao* 43499.

var. **wallichii** Burkill in Journ. As. Soc. Beng. 2 : 374, 1906. *S. angustifolia* Wall. Cat. 4373, 1828 in part et Pl. Asiat. Rar. 3: 2. t. 204, 1832.

Stem long, branched ; leaves narrowly lanceolate ; inflorescence lax ; sepals linear-lanceolate, exceeding the petals or equalling them.

Kamji, Dec. 1963, *Subba Rao* 355A.

Swertia dilatata Clarke in Fl. Brit. Ind. 4 : 122, 1883.

Stem long, branched ; leaves lanceolate, glabrous, base minutely ciliate ; flower large, greenish yellow.

Paro 2250 m, Oct. 1963, *Mukerjee* 5916.

BORAGINACEAE

S. P. BANERJEE

Cynoglossum glochidiatum Wall. ex Benth. in Royle, Ill. Him. Mount. 306. 1836 ; Fl. Brit. Ind. 4 : 156, 1883.

An erect annual, more or less hirsute ; basal leaves oblong-lanceolate, upper cauline leaves smaller, lanceolate, subsessile, strigose, ciliate or denticulate ; flowers blue, in terminal or axillary racemes ; fruit of 4 ovate, glochidiate nutlets, nutlets depressed dorsally and with a definite elevated margins, formed by the confluent bases of marginal glochidia. Common in open places.

Paro, 22087 m, Oct. 1963, *Mukerjee* 5928 ; Garrison Engineer's Camp, 35 km north from Deothong to Narfong, 1517 m, Aug. 1965, *A. S. Rao* 43223 ; Dorokha, 457, Dec. 1963, *Thothathri* 10512 ; Birti, 700 m, Sarbhang div., April 1964, *Sen Gupta* 1216 ; Sureylakha, 1350-1500 m, Sarbhang div., Dec. 1963, *Sen Gupta* 969.

C. lanceolatum Forsk. Fl. Aegypt. Arab. : 41. 1775 ; Fl. Brit. Ind. 4 : 156, 1883.

An erect annual or biennial, hispid ; basal leaves broadly ovate, shortly petiolate, upper cauline leaves smaller, lanceolate, subsessile, hirsute, strongly nerved beneath ; flowers light blue to whitish, in terminal or

subterminal racemes, laxly paniculate ; nutlets 4, shortly ovate, glochidiate on all sides, hardly or not all margined, not depressed dorsally. Common in waste places.

Rani Camp to Tama, Nov. 1964, *Deb* 254 ; Birti, 100-700 m, April 1964, *Sen Gupta* 1329 ; on way from Lumichawa to Punakha, Sept. 1965, *Sen Gupta* 1985 ; near the confluence of Paro and Thimpu, 2400 m, Aug. 1963, *Balakrishnan* 1199.

Cynoglossum zeylanicum Thunb. ex Lehm. in Neve Schrigt. Fl. Brit. Ind. 4 : 157, 1883, *pro syn.*

Erect annual or biennial herb with soft appressed grey pubescence ; basal leaves oblong-lanceolate, base cuneate, upper cauline leaves smaller, variable, frequently subdecurrent, densely softly appressed strigose ; flowers blue, in terminal or subterminal racemes ; nutlets 4, ovoid, glochidiate on all sides, not depressed dorsally. Common in open places.

Shemgang, Sarbhong div., April 1964, *Sen Gupta* 1264 ; Thimpu, Aug. 1965, *Sen Gupta* 1628 ; Dochu La, 3100 m, Aug. 1965, *Sen Gupta* 1680 ; Chima Kothi, 2150 m, Aug. 1963, *Balakrishnan* 1175 ; Zhamlchow, Nov. 1964, *Deb* 59.

Tournefortia hookeri Clarke in Hook.f. Fl. Brit. Ind. 4 : 147, 1883.

A large, woody, subscaudent nearly glabrous shrub ; leaves ovate or elliptic, glabrous, shortly acuminate, obtuse and unequal at base, prominently reticulated beneath ; flowers greenish white to cream, in terminal, diffuse, rusty pubescent, sub-2-seriate scorpioid spikes ; corolla 2-4 mm long, hardly exceeding the calyx, cylindrical, strigose ; fruit a sessile ovoid drupe, pyrenes two, 2-celled, 2-seeded.

Gaylegphug, 300 m, April 1964, *Sen Gupta* 1413.

T. viridiflora (Lehm.) Wall. in Fl. Ind. ed. Carey & Wall. 2 : 5, 1824 ; Fl. Brit. Ind. 4 : 146, 1883.

A woody subscaudent shrub ; leaves ovate-oblong to ovate lanceolate, sparsely strigose above, softly hairy beneath, acuminate, base obtuse-rounded ; flowers in unilateral, dense, scorpioid spikes, arranged in dichotomous, terminal cymes ; corolla striate, glabrous ; fruit a sessile ovoid drupe, pyrenes two, 1-2-seeded.

On the way to Samdrup Jhonkar to Deothong, March 1965, *Balakrishnan* 41955 ; Deothong Road to Tashigong, Oct. 1965, *Balakrishnan* 43859.

CUSCUTACEAE

K. C. MALICK

Cuscuta reflexa Roxb. Pl. Corom. 2 : 3. t. 104, 1798 ; Fl. Brit. Ind. 4 : 225, 1883.

A leafless twining parasite.

Dakpai, 1650 m, Nov. 1964, *Deb* 351 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5894 ; *Ibid.*, Aug. 1963, *Sen Gupta* s.n. ; Samchi, Dec. 1963, *Thothathri* 10435.

CONVOLVULACEAE

S. K. MUKERJEE AND K. C. MALICK

Argyrea capitata (Vahl) Arn. ex Choisy. *Conv. Or.* 41, 1833. *Lettsomia strigosa* Roxb. *Fl. Ind.* 2 : 80, 1824 ; *Fl. Brit. Ind.* 4 : 193, 1883.

A large climber, hispidly hairy all over with long hairs. Occasional. Gayleghphug, 270 m, Dec. 1963, *Sen Gupta* 858.

A. hookeri Clarke in *Fl. Brit. Ind.* 4 : 185, 1883.

A large climber ; leaves cordate-ovate ; flowers tubular, funnel-shaped, pink. Rare.

Phuntsholing, Dec. 1963, *Subba Rao* 22.

A. roxburghii Arn. ex Choisy. var. **ampla** (Wall. ex Choisy.) Clarke in *Fl. Brit. Ind.* 4 : 185, 1883.

A common climber ; leaves silky villous, white and more or less shining. Tama 1450 m, Nov. 1964, *Deb* 289.

Ipomoea eriocarpa R. Br. *Prodr.* 484, 1810 ; *Fl. Brit. Ind.* 4 : 204, 1883.

A twiner with small pink flowers. Occasional in the area.

Kheri, 1000 m, Sept. 1965, *A. S. Rao* 43541.

I. alba Linn. *Sp. Pl.* 161, 1753. *I. bona-nox* Linn. *Sp. Pl.* ed. 2, 228, 1762 ; *Fl. Brit. Ind.* 4 : 197, 1883.

A twiner with large white flowers. Occasional on roadside thickets.

Kheri, 1000 m, Sept. 1965, *A. S. Rao* 43486 ; Samchi, Dec. 1963, *Thothathri* 10462 ; Phuntsholing, Dec. 1963, *Subba Rao* 128.

I. muricata (Linn.) Jacq. *Hort. Schoenbr.* 3 : 40. t. 323, 1798 ; *Fl. Brit. Ind.* 4 : 197, 1883.

A glabrous twiner with a milky juice ; flowers large, rose-purple. Frequent on roadside shrubberies, often cultivated.

Kheri, 1000 m, Sept. 1965, *A. S. Rao* 43486.

I. pes-tigridis Linn. *Sp. Pl.* 162, 1753 ; *Fl. Brit. Ind.* 4 : 204, 1883.

A twiner with deeply 5-9 lobed leaves ; all parts patently hirsute ; flowers pink.

Kanglum, Sept. 1965, *A. S. Rao* 43554.

I. purpurea (L.) Roth *Bot. Abh.* 27, 1787 ; *Fl. Brit. Ind.* 4 : 200, 1883.

A twiner of the hedges. Commonly cultivated.

Paro, 250 m, Oct. 1965, *Mukerjee* 5894.

- Ipomoea quamoclit*** Linn. Sp. Pl. 1 : 159, 753 ; Fl. Brit. Ind. 4 : 199, 1883.
A slender twiner ; leaves pinnate with linear segments ; flowers small, crimson. Cultivated.
Phuntsholing, Jan. 1964, *Subba Rao* 368.
- Merremia umbellata*** (Linn.) Hall. f. in Eng. Bot. Jahrb. 16 : 553, 1893.
Ipomoea cymosa Roem. & Sch. Syst. 4 : 241, 1819 ; Fl. Brit. Ind. 4 : 211, 1883.
An occasional twiner of the roadside jungles.
Birti, 600-900 m, April 1964, *Sen Gupta* 1350.
- Porana paniculata*** Roxb Pl. Corom. 3 : 31. t. 235, 1819 ; Fl. Brit. Ind. 4 : 222, 1883.
An extensive climber, very common at the foot hills ; flowers white, small, numerous in much branched panicles.
Mongirdzon, Nov. 1965, *Balakrishnan* 44626 ; Samchi hill, Dec. 1963, *Thothathri* 10414 ; Phuntsholing, Dec. 1963, *Subba Rao* 25.
- P. racemosa*** Roxb. Fl. Ind. 2 : 41, 1824 ; Fl. Brit. Ind. 4 : 222, 1883.
A much branched twiner with white flowers in exposed forests. Common.
Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 915 ; on way from Rani Camp to Tama, 1350-1650 m, Nov. 1964, *Deb* 255 ; road to Tashigong, Oct. 1965, *Balakrishnan* 43864 ; Wamrung, 2500 m, Sept. 1965, *A. S. Rao* 43349 ; on way to Lhunsi from Nayalangdong, Oct. 1965, *Balakrishnan* 44501 ; Samchi hill, 1000 m, Dec. 1963, *Thothathri* 10396 ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 180.

SOLANACEAE

G. SEN GUPTA

- Capsicum annum*** L. Sp. Pl. 188, 1753.
Erect undershrub. Probably cultivated.
Dakpai, 1650 m, Nov. 1964, *Deb* 340.
- Datura stramonium*** L. Sp. Pl. 179, 1753 ; Fl. Brit. Ind. 4 : 242, 1883.
An erect branched herb with white flowers and spiny capsules. On the roadsides and waste places.
Paro, 2500 m, August 1963, *Balakrishnan* 1268 ; Dakpai, 1650 m, Nov. 1964, *Deb* 330 ; Pam Camp, 15 km from Rongthong, Sept. 1965, *A. S. Rao* 43475.
- Lycopersicon esculentum*** Mill. Gard. Dict. (ed. 8.) n. 2, 1768 ; Fl. Brit. Ind. 4 : 237, 1883.

An escape with yellow flowers.

Dakpai, 1650 m. Nov. 1964, *Deb* 337.

Nicandra physalode (L.) Gaertn. *Fruct.* 2 : 237, 1791 ; *Fl. Brit. Ind.* 4 : 240, 1883 (*physaloides*).

Local name : Dong dongey bin (Nep.).

Stout shrub with blue-violet flowers and berries enclosed within inflated calyces ; in clearings of forests. Abundant in some places.

Forests around Betni bridge & Rhola, 1200 m, Dec. 1963, *Sen Gupta* 1070 ; Rani Camp to Tama, 1350-1650 m. Nov. 1964, *Deb* 237 ; Dakpai, 1650 m, Nov. 1964, *Deb* 331.

Nicotiana tabacum L. *Sp. Pl.* 180, 1753 ; *Fl. Brit. Ind.* 4 : 245, 1883.

Erect herb with pinkish-red flowers and capsules. An escape from cultivation.

Jela la Hill, Paro, 2500 m, August 1963, *Sen Gupta* 799 ; Manas Camp., 600 m, Nov. 1964, *Deb* 458.

Physalis minima L. *Sp. Pl.* 183, 1753 ; *Fl. Brit. Ind.* 4 : 238, 1883.

Branched herb with yellow flowers. Frequent.

Punakha, Aug. 1965, *Sen Gupta* 2051 ; Kheri, Sept. 1965, *A. S. Rao* 43484.

Scopolia lurida (Link et Otto) Dun. in *DC. Prodr.* 13(1) : 555, 1852 ; *Fl. Brit. Ind.* 4 : 243, 1883.

Local name : Bapshunda (Bl.).

Stout herb with pale cream-yellow flowers. Probably cultivated in homestead.

Ha village, 3000 m, Aug. 1963, *Sen Gupta* 631.

Solanum crassipetalum Wall. ex Wall. in *Roxb. Fl. Ind.* 2 : 256, 1824 ; *Fl. Brit. Ind.* 4 : 232, 1883. *Lycianthes pachypetala* (Spreng.) Better in *Abhandl. Naturw. Ver. Brema* 24 : 475, 1920.

Local name : Bon Khusani (Nep.).

Branched undershrub or shrub with white flowers and shining orange-red berries.

Gaylegphug, 300 m, Dec. 1963, *Sen Gupta* 871 ; Changda chungli hills, 1000 m, Dec. 1963, *Thothathri* 10551 ; Gaylegphug, 300 m, Nov. 1964, *Deb* 156.

S. erianthum D. Don, *Prodr. Fl. Nepal.* 96, 1825. *S. verbascifolium* *Fl. Brit. Ind.* 4 : 230, 1883, non Linn.

Local name : Namphai (Bh.).

Tall shrub, up to 3 m tall, flowers pale white. Frequent in shrubberies. Birti, 700 m, April 1964, *Sen Gupta* 1203 ; Tama, Nov. 1964, *Deb* 308 ; Punakha, 1500 m, Aug. 1965, *Sen Gupta* 2063.

Solanum indicum L. Sp. Pl. 187, 1753 ; Fl. Brit. Ind. 4 : 234, 1883.

Local name : Bin (Nep.).

Prickly shrub with violet flowers and orange-red berries. On roadsides and forest clearings.

Gaylegphug forests, 300 m, Dec. 1963, *Sen Gupta* 924 ; Dorokha, 1000 m, Nov. 1964, *Mukerjee* 6114 ; Tama, 1450 m, Nov. 1964, *Deb* 307.

S. myriacanthum Dun. Hist. Solan. 218, t. 19. 1813. *S. khasianum* Clarke var. *chatterjeeanum* Sen Gupta in Bull. Bot. Surv. India 3 : 411, 1961.

Local name : Karchinda kara (Nep.).

Branched and very prickly undershrub with white flowers and golden yellow berries. In open grounds and roadsides.

Paro valley, 2500 m, Aug. 1963, *Balakrishnan* 1314 ; Changtar, Samchi, 300 m, Dec. 1963, *Thothathri* 10331 ; Sureylakha, 1350 m, Dec. 1963, *Sen Gupta* 974 ; Birti, 550 m, April 1964, *Sen Gupta* 1205 ; Dorokha, 1000 m, Nov. 1964, *Mukerjee* 6144 ; Rani Camp to Tama, 1450 m, Nov. 1964, *Deb* 262 ; Punakha, 1500 m, Aug. 1965, *Sen Gupta* 2001 ; Samdrup Jhonkar, March 1965, *Balakrishnan* 41101.

S. kurzii Brace ex Prain in J. Asiat. Soc. Beng. 65(2) nat. Sc. 3 : 541, 1896.

S. pubescens var. ? *lobata* Clarke in Fl. Brit. Ind. 4 : 231, 1883.

Shrub with violet flowers and green berries. On roadsides.

Birti, 650-850 m, April 1964, *Sen Gupta* 1326.

S. nigrum L. Sp. Pl. 186, 1753 ; Fl. Brit. Ind. 4 : 229, 1883.

Tender herb with white flowers. Common in various habitats.

Chima Kothi, 2150 m, Aug. 1963, *Balakrishnan* 1177 ; Phuntsholing, Dec. 1963, *Subba Rao* 66 ; Changtai, Samchi, 160 m, Dec. 1963, *Thothathri* 10461 ; Birti, 700 m, April 1964, *Sen Gupta* 1221 ; Gaylegphug, 300 m, April 1964, *Sen Gupta* 1348 ; Deothong to Narfong 1200 m, Aug. 1965, *A. S. Rao* 43169 ; 10 km north of Deothong towards Narfong, 1400 m, Aug. 1965, *A. S. Rao* 43202.

S. torvum Sw. Prodr. 47, 1778 ; Fl. Brit. Ind. 4 : 234, 1883.

Local name : Bin (Nep.).

Erect prickly shrub with white flowers and edible berries. Frequent in open jungles.

Gaylegphug, 300 m, Dec. 1963, *Sen Gupta* 817 ; Dorokha forest, 660 m, Dec. 1963, *Thothathri* 10521 ; Birti, 700 m, April 1964, *Sen Gupta* 1206 ; Phuntsholing, Sept. 1964, *Abraham* 332 ; Gaylegphug, 300 m, Nov. 1964, *Deb* 116 ; Narfong, 1650 m, Aug. 1965, *A. S. Rao* 43270.

SCROPHULARIACEAE

S. K. MUKERJEE AND K. THOTHATHRI

- Ellisiophyllum pinnatum** (Wall.) Makino in Bot. Mag. Tokyo 20 : 91, 1906.
Sibthorpia pinnata (Wall.) Benth. ex Hook.f. Fl. Brit. Ind. 4 : 288, 1884.
 Herb with creeping stem, hirsute all over with soft spreading hairs ;
 flowers small on long, slender pedicels. Rare along road side jungle.
 Chima Kothi, 1800 m, April 1964, *Maheshwari* 5305.
- Euphrasia simplex** D. Don Prodr. Fl. Nepal. 95, 1825. *E. officinalis* Benth.
 in DC. Prodr. 10 : 552, 1846 non Linn. ; Fl. Brit. Ind. 4 : 304, 1884 p.p.
 A small herb with lilac flowers on open ground. Rare.
 Ha Valley, 3000 m, Aug. 1963, *Sen Gupta* 634.
- Hemiphragma heterophyllum** Wall. in Trans. Linn. Soc. 13 : 612, 1822 ;
 Fl. Brit. Ind. 4 : 289, 1884.
 A creeping herb with slender stem and dimorphic leaves and pink
 flowers. In patches on the fringe of forests and on foot tracks.
 Thimpu, 2500 m, April 1964, *Maheshwari* 5208 ; Chima Kothi, 2000 m,
 April 1964, *Maheshwari* 5288 ; Shemgang, 1950 m, Nov. 1964, *Deb* 407.
- Limnophila rugosa** (Roth) Merr. Interp. Herb. Amb. 466, 1917. *L. roxburghii*
 G. Don Gen. Syst. 4 : 543, 1838 ; Fl. Brit. Ind. 4 : 266, 1884.
 An aromatic herb with bluish flower. Occasionally growing in marshy
 area.
 Samchi, Dec. 1963, *Thothathri* 10448.
- L. sessiliflora** (Vahl) Bl. Bijdr. 749, 1826 ; Fl. Brit. Ind. 4 : 270, 1884.
 Small herb of the swamps. Scarce.
 On road to Rongthong, 4 km north of Gomchu, 2200 m, Sept. 1965,
A. S. Rao 43425.
- L. sessilis** (Benth.) Fischer in Kew Bull. 1932 : 62, 1932. *L. conferta* Benth.
 in DC. Prodr. 10 : 386, 1846 ; Fl. Brit. Ind. 4 : 267, 1884.
 A small herb of the marshy area. Scarce.
 Samchi, Dec. 1963, *Thothathri* 10636.
- Lindenbergia grandiflora** Benth. Scroph. Ind. 22, 1835 ; Fl. Brit. Ind. 4 : 261,
 1884.
 A rambling herb with yellow flowers in rock crevices. Occasional.
 Dakpai, 1650 m, Nov. 1964, *Deb* 407.
- L. indica** (Linn.) Vatka in Oster Bot. Zeits. 25 : 10, 1875. *L. polyantha*
 Royle ex Benth. Scroph. Ind. 22, 1835 ; Fl. Brit. Ind. 4 : 262, 1884.

L. urticaefoliu Lehm. in Link & Otto Ind. Sem. Hort. Hamb. 1829 : 5, 1830 ; Fl. Brit. Ind. 4 : 262, 1884.

A small, tender herb with yellow flowers. Common on rocky places.

On way to Tama from Rani Camp, 1600 m, Nov. 1964, *Deb* 249 ; on road to Rongthong north of Gomchu, 2500 m, Sept. 1965, *A. S. Rao* 43420 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5861.

Lindernia ruelloides (Colsm.) Pennell in Britt. 2 : 182, 1936. *Bonnaya reptans* Spr. Syst. 1 : 410, 1824 ; Fl. Brit. Ind. 4 : 284, 1884.

A small, semi-erect herb with pink flowers. Frequent in open situations.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 843 ; *Ibid.*, May 1964, *Sen Gupta* 1418 ; Sham Khara, 1350 m, Dec. 1963, *Sen Gupta* 1115.

Mazus japonicus (Thunb.) O. Ktze. Rev. Gen. 1 : 462, 1891. *M. rugosus* Lour. Fl. Cochinch. 385, 1790 ; Fl. Brit. Ind. 4 : 259, 1884.

A small herb with purple branches and white flowers. Common on grassy lawns.

Birti, 900 m, April 1964, *Sen Gupta* 1345 ; Chaisilakha, 1500 m, April 1964, *Maheshwari* 5120 ; Thimpu, 2500 m, April 1964, *Maheshwari* s.n.

M. surculosus D. Don Prodr. Fl. Nepal. 87, 1825 ; Fl. Brit. Ind. 4 : 260, 1884.

Small herb with deep violet flowers. Frequent on meadow lands.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1283.

Mimulus nepalensis Benth. Scroph. Ind. 29, 1835 ; Fl. Brit. Ind. 4 : 258, 1884.

Semi-prostrate herb with yellow flowers, forming undergrowth in forests under damp situations.

Birti, 600 m, April 1964, *Sen Gupta* 1434 ; Gomchu, opposite workshop, 2400 m, Sept. 1965, *A. S. Rao* 43405.

Pedicularis bifida (Buch.-Ham. ex D. Don) Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 144, 1943. *P. carnosus* Wall. Pl. As. Rar. 2 : 44, t. 154, 1831 ; Fl. Brit. Ind. 4 : 313, 1884.

Small herbs with thick roots ; flowers rose-coloured but crimson-purple at the tips. Frequent on meadows.

On road to Rongthong near Gumpa, 5 km north of Gomchu, 2500 m, Sept. 1965, *A. S. Rao* 43416.

P. gracilis Wall. ex Benth. Scroph. Ind. 53, 1835 ; Fl. Brit. Ind. 4 : 306, 1884.

Small herb on open ground with pink flowers. Frequent.

Gomchu, 2400 m, Sept. 1965, *A. S. Rao* 43449.

Scoparia dulcis Linn. Sp. Pl. 116, 1753 ; Fl. Brit. Ind. 4 : 289, 1884.

A small herb with white flowers. Common on pathways and open rocky soil.

Sureylakha, 1350 m, Dec. 1963, *Sen Gupta* 939 ; Gaylegphug, 270 m, April 1964, *Sen Gupta* 1347 ; Samchi hill, 500 m, Dec. 1963, *Thothathri* 10359 ; Phuntsholing, April 1964, *Maheshwari* 5050 ; *Ibid.*, Dec. 1963, *Subba Rao* 37 ; Paro, 2000 m, Aug. 1963, *Sen Gupta* 742.

Scrophularia elatior Benth. Scroph. Ind. 18, 1835 ; Fl. Brit. Ind. 4 : 255, 1884.

Tall herb on roadside shrubberies.

Gomchu opposite workshop, 2400 m, Sept. 1965, *A. S. Rao* 43394.

Sopubia trifida Buch.-Ham. ex D. Don Prodr. Fl. Nepal. 88, 1825 ; Fl. Brit. Ind. 4 : 302, 1884.

A herb of the grassland ; flowers yellow.

Kheri camp, 3 km to Tashigong, 1100 m, Sept. 1965, *A. S. Rao* 43524.

Torenia cordifolia Roxb. Pl. Corm. 2 : 52, 1798 ; Fl. Brit. Ind. 4 : 276, 1884.

Small tender herb of moist places ; flowers violet-blue. Common and forming small patches on open ground.

Sham Khara, 1500 m, Nov. 1964, *Deb* 47 ; Wamrung approach, 2300 m, Sept. 1965, *A. S. Rao* 43357.

T. diffusa D. Don Prodr. Fl. Nepal. 86, 1825. *T. vagans* Roxb. Fl. Ind. 3 : 96, 1832 ; Fl. Brit. Ind. 4 : 277, 1884.

Small herb with purple flowers, scattered all over in moist situations and in rock-crevices.

Sureylakha, 1650 m, Dec. 1963, *Sen Gupta* 992 ; Sham Khara, 1350 m, Dec. 1963, *Sen Gupta* 1113 ; Gaylegphug, 270 m, April 1964, *Sen Gupta* 1360.

T. violacea Pennell in Journ. Arn. Arb. 24 : 255, 1943. *T. peduncularis* Benth. ex Hook.f. Fl. Brit. Ind. 4 : 276, 1884.

Small herb with violet flowers. Scarce in the area.

Gaylegphug, 270 m, Nov. 1964, *Deb* 106.

Verbascum thapsus Linn. Sp. Pl. 177, 1753 ; Fl. Brit. Ind. 4 : 250, 1884.

Shrubs bordering cultivated fields and on roadside ; leaves and inflorescence thickly covered with a soft greyish tomentum ; flowers yellow.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5835 ; *Ibid.*, *Sen Gupta* 788 ; Thimpu, 2500 m, April 1964, *Maheshwari* 5223.

Veronica anagallis-aquatica Linn. Sp. Pl. 12, 1753; Fl. Brit. Ind. 4: 293, 1884.

Herb with soft ascending stem and pale violet flowers. Common near ditches and running water.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5941 & 5942; *Ibid.*, Aug. 1963, *Sen Gupta* s.n.

V. javanica Bl. Bijdr. 742, 1826; Fl. Brit. Ind. 4: 296, 1884.

Erect tender herb on forest fringe.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5905; Thimpu, 2500 m, April 1964, *Maheshwari* 5225; Chaisilakha, 1500 m, April 1964, *Maheshwari* 5117.

OROBANCHACEAE

A. S. RAO AND N. P. BALAKRISHNAN

Aeginetia indica Linn. Sp. Pl. 632, 1753; Fl. Brit. Ind. 4: 320, 1884.

Leafless small herbs; flowers scapose, solitary, purple in colour. Sporadic in shady places.

On way to Deothong, 13 km down from Garrison Engineer's Camp, Sept. 1965, *A. S. Rao* 43588; 4 km to Tashiyangtsi from Nyoth, Oct. 1965, *Balakrishnan* 44267.

LENTIBULARIACEAE

K. SUBRAMANYAM

Utricularia scandens Benj. var. *firmula* (Oliv.) Subra. & Ban. comb. et stat nov. *U. walliehiana* Wight var. *firmula* Oliv. in Journ. Linn. Soc. 3: 182, 1859; Fl. Brit. Ind. 4: 333, 1884.

Small erect herb with slender stem and spurred yellow flower. Common in marshes.

Paro, 2500 m, Aug. 1963, *Balakrishnan* 1246; *Ibid.*, Oct. 1963, *Mukerjee* 5900.

GESNERIACEAE

S. K. MUKERJEE, A. S. RAO AND N. P. BALAKRISHNAN

Aeschynanthus chiritoides Clarke in Fl. Brit. Ind. 4: 341, 1884.

Slender herb with white flowers, overhanging from rocks in damp shade or epiphytic on trees. Common.

Near Betni bridge, 1050 m, Dec. 1963, *Sen Gupta* 1064.

A. grandiflora Spreng. Syst. 4: 238, 1827; Fl. Brit. Ind. 4: 338, 1884.

Epiphytic herb common in lower hills; flowers with red tube and orange lobes, with black-purple dots.

Tashigong to Yangtsi, 2000 m, March 1965, *Balakrishnan* 41362.

A. sikkimensis (Clarke) Stapf in Bot. Mag. t. 8938, 1922. *A. maculata* Clarke in Fl. Brit. Ind. 4: 339, 1884 p.p. non Lindl. & var. *sikkimensis* Clarke.

Small epiphytic herb with many pink flowers.

Phuntsholing, Dec. 1963, *Subba Rao* 124.

Aeschynanthus parviflorus (D. Don) Spreng. Syst. 4 : 238, 1827. *A. ramossissima* Wall. Pl. As. Rar. 1 : 55, t. 71, 1829 ; Fl. Brit. Ind. 4 : 339, 1884.

Succulent herb, epiphytic on tree trunks. Frequent.

Kamji, Dec. 1963, *Subba Rao* 235 ; Dorokha, 1000 m, Dec. 1963, *Thothathri* 10498 ; Sureylakha, 1500 m, Dec. 1963, *Sen Gupta* 978.

Chirita acuminata R. Br. in Benn. Pl. Jav. Rar. 117, 1838 ; Fl. Brit. Ind. 4 : 359, 1884.

An undershrub of humid forests ; flowers yellowish white.

Way to Monger from Nyalangdom, 1250 m, Nov. 1965, *Balakrishnan* 44568.

C. pumila D. Don, Prodr. Fl. Nepal. 90, 1825 ; Fl. Brit. Ind. 4 : 357, 1884.

Herb with few oblique leaves ; flowers bluish. Frequent in shady damp places.

On road to Narfong, 16 km from Deothong, 1500 m, Aug. 1965, *A. S. Rao* 43212 ; road to Tashigong, Oct. 1965, *Balakrishnan* 43880.

C. urticifolia Buch.-Ham. ex D. Don Prodr. Fl. Nepal. 90, 1825 ; Fl. Brit. Ind. 4 : 358, 1884.

Herb with leaves unequal at base ; flowers purple with yellow lines within. Frequent in shady damp places.

Garrison Engineer's Camp, on way to Narfong 35 km north from Deothong, 1700 m, Aug. 1965, *A. S. Rao* 43216.

Corallodiscus lanuginosus (DC.) Burtt. in Gard. Chron. Ser. 3. 122 : 212 1947. *Didissandra lanuginosa* (DC.) Clarke in DC. Monogr. Phaner. 5 : 66, 1883 ; Fl. Brit. Ind. 4 : 355, 1884.

A dwarf herb with a very short stem and crowded leaves, fulvous tomentose when young ; flowers pale blue. Frequent in damp shady places.

Nyoth forest, Tashiyangtsi, Oct. 1965, *Balakrishnan* 44167 ; 3 km north of Gomchu, 2500 m, Sept. 1965, *A. S. Rao* 43216.

Didymocarpus cinerea D. Don Prodr. Fl. Nepal. 122, 1825 ; Fl. Brit. Ind. 4 : 346, 1884.

Herb with a short stem and crowded leaves, greyish tomentose ; flowers purple.

Narfong, 2 km north along stream bank, down the hill, 1900 m, Aug. 1965, *A. S. Rao* 43256.

Loxostigma griffithii (Wight) Clarke in DC. Monogr. Phaner. 5 : 60, 1883 ; Fl. Brit. Ind. 4 : 244, 1884.

A common undershrub, often epiphytic ; leaf base oblique ; flowers dull brownish yellow.

Sureylakha, 1500 m, Dec. 1963, *Thothathri* 10542 ; Tashiyangtsi, Oct. 1965, *Balakrishnan* 44167.

Lysionotus serrata D. Don in Edin. Philos. Journ. 7 : 85, 1882 ; Fl. Brit. Ind. 4 : 344, 1884.

Glabrous epiphytic herbs ; leaves closely crenate-serrate near to the base ; flowers purple.

Near Betni Bridge, 1050 m, Dec. 1963, *Sen Gupta* 1074 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 61 ; Deothong, Dantak Camp, Aug. 1965, *A. S. Rao* 43164.

Rhynchoglossum obliquum Bl. Bijdr. 741, 1826 ; Fl. Brit. Ind. 4 : 367, 1884.

A small herb growing in clumps in moist shady situations ; flowers blue.

Tama, 1450 m, Nov. 1964, *Deb* 297 ; from Deothong to Narfong, 1200 m, Aug. 1965, *A. S. Rao* 43170 ; road to Tashigong, Oct. 1965, *Balakrishnan* 43874.

Rhynchotechum ellipticum (Wall. ex Dietr.) A. DC. in DC. Prodr. 9 : 285, 1846 ; Fl. Brit. Ind. 4 : 373, 1884.

Local name : Galeto.

Erect herb tomentose or woolly in younger parts ; flowers rose-purple. In forest floor as well as on road side, abundant at some places. Used as a fodder plant.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 1076 ; on road to Narfong, 10 km from Deothong, 1400 m, Aug. 1965, *A. S. Rao* 43204 ; Samchi hill, 700 m, Dec. 1963, *Thothathri* 10453.

R. vestitum Wall. ex Clarke Comm. & Cyrt. Beng. 132, t. 92, 1874 ; Fl. Brit. Ind. 4 : 373, 1884.

An erect undershrub ; flowers pink.

PHRYMACEAE

S. K. MUKERJEE

Phryma leptostachya Linn. var. **oblongifolia** (Koidz.) Honda in Bot. Mag. Tokyo 50 : 608, 1936. *P. leptostachya* Clarke in Fl. Brit. Ind. 4 : 562, 1885 non Linn.

An erect herb with membranous leaves and pale purple flowers. Rare.

Gomchu, down the stream, 2400 m, Sept. 1965, *A. S. Rao* 43438 ; Lumichawa, 2560 m, Aug. 1965, *Sen Gupta* s.n.

ACANTHACEAE

K. THOTHATHRI

Adhatoda vasica Nees in Wall. Pl. As. Rar. 3 : 103, 1832 ; Fl. Brit. Ind. 4 : 540, 1885.

 Birti, 550 m, April 1964, *Sen Gupta* 1227.

- Barleria strigosa** Willd. Sp. Pl. 3 : 379, 1800 ; Fl. Brit. Ind. 4 : 489, 1884.
Samchi, Dec. 1963, *Thothathri* 10616.
- Daedalacanthus splendens** T. Andr. in Journ. Linn. Soc. 9 : 486, 1867;
Fl. Brit. Ind. 4 : 418, 1884.
Samchi, 500 m, Dec. 1963, *Thothathri* 10347.
- D. tubiflorus** T. Andr. *Ibid.* 9 : 485, 1867; Fl. Brit. Ind. 4 : 417, 1884.
Gaylegphug, Dec. 1963, *Sen Gupta* 847.
- Dianthera virgata** Benth. in Gen. Pl. 2 : 1114, 1876 ; Fl. Brit. Ind. 4 : 542,
1885.
Gaylegphug, Nov. 1964, *Deb* 172.
- Dicliptera roxburghiana** Nees in Wall. Pl. As. Rar. 3 : 112, 1832 ; Fl. Brit.
Ind. 4 : 553, 1885.
Samchi, 300 m, Dec. 1963, *Thothathri* 10304.
- Eranthemum indicum** Clarke in Fl. Brit. Ind. 4 : 497, 1884.
Changda Chungi hills, 1500 m, Dec. 1963, *Thothathri* 10556; Surey-
lakha, 1600 m, Dec. 1963, *Sen Gupta* 848.
- E. platiferum** Nees in Wall. Pl. As. Rar. 3 : 108, 1832 ; Fl. Brit. Ind. 4 :
498, 1884.
Sureylakha, 1600 m, Dec. 1963, *Sen Gupta* 1001; Gaylegphug, Nov.
1964, *Deb* 169.
- Hygrophila polysperma** T. Andr. in Journ. Linn. Soc. 11 : 456, 1870 ; Fl.
Brit. Ind. 4 : 406, 1884.
Samchi, Dec. 1963, *Thothathri* 10622.
- Lepidagathis incurva** Don, Prodr. Fl. Nepal. 119, 1825; Fl. Brit. Ind. 4 :
521, 1885.
Samchi, Dec. 1963, *Thothathri* 10617 ; Gaylegphug, May 1964, *Sen*
Gupta 1426.
- Peristrophe speciosa** Nees in Wall. Pl. As. Rar. 3 : 113, 1832 ; Fl. Brit.
Ind. 4 : 556, 1885.
Samchi, 500 m, Dec. 1963, *Thothathri* 10343.
- Phlogacanthus pubinervius** T. Andr. in Journ. Linn. Soc. 9 : 508, 1867;
Fl. Brit. Ind. 4 : 513, 1885.

Dorokha, 2500 m, Dec. 1963, *Thothathri* 10304; Sham Khara, 1600 m, Dec. 1963, *Sen Gupta* 1089.

Phlogacanthus thyrsoiflorus Nees in Wall. Pl. As. Rar. 3 : 99, 1832 ; Fl. Brit. Ind. 4 : 512, 1884.

Sibachang, 800 m. Dec. 1963, *Thothathri* 10580 ; Dakpai, 1650 m, Nov. 1964, *Deb* 440.

Rungia himalayensis Clarke in Fl. Brit. Ind. 4 : 548, 1885.

Tama, 1100 m, April 1964, *Sen Gupta* 1149 ; Tama, 1450 m, Nov. 1964, *Deb* 293.

Strobilanthes capitatus T. Andr. in Journ. Linn. Soc. 9 : 475, 1867 ; Fl. Brit. Ind. 4 : 459, 1884.

Samchi, 300 m, Dec. 1963, *Thothathri* 10321.

S. coloratus T. Andr. *Ibid.* 9 : 481, 1867 ; Fl. Brit. Ind. 4 : 473, 1884.

Sangura, 1000 m, Dec. 1963, *Thothathri* 10572.

S. divaricatus T. Andr. *Ibid.* 9 : 478, 1867 ; Fl. Brit. Ind. 4 : 468, 1884.

Sangura, 1000 m, Dec. 1963, *Thothathri* 10642.

S. pentstemonoides T. Andr. *Ibid.* 9 : 479, 1867 ; Fl. Brit. Ind. 4 : 460, 1884.

Batase, 1600 m, Dec. 1963, *Sen Gupta* 1014 ; Rani Camp, 1650 m, Nov. 1964, *Deb* 78.

S. thomsoni T. Andr. *Ibid.* 9 : 478, 1867 ; Fl. Brit. Ind. 4 : 512, 1884.

Sangura, 1000 m, Dec. 1963, *Thothathri* 10575.

Thunbergia grandiflora Roxb. Fl. Ind. 3 : 34, 1832 ; Fl. Brit. Ind. 4 : 392, 1884.

Gaylegphug, Nov. 1964. *Deb* 128.

LAMIACEAE

S. K. MUKERJEE

Achyrosperrum wallichianum (Benth.) Benth. ex Hook.f. Fl. Brit. Ind. 4 : 673, 1885.

A common undershrub of the forest floor at lower elevations ; flowers small, pale purple. Floral parts eaten in curries.

Gayleghug, 270 m, Dec. 1963, *Sen Gupta* 878 ; *Ibid.*, Nov. 1964, *Deb* 108 ; Sureylakha, 1350 m, Dec. 1963, *Sen Gupta* 938 ; *Ibid.*, Dec. 1963, *Sen Gupta* 986 ; Garrison Engineers' Camp, 1900 m, Sept. 1965, *A. S. Rao* 43553 & 43582 ; Phuntsholing, Dec. 1963, *Subba Rao* 100 ; Samchi, Dec. 1963, *Thothathri* 10310.

Ajuga bracteosa Wall. ex Benth. in Wall. Pl. As. Rar. 1 : 59, 1829 ; Fl. Brit. Ind. 4 : 702, 1885.

Small herb ; branches many from a rootstock, trailing ; flowers blue in short, bracteate spikes. Occasional along pathways.

Ha Valley, 2700 m, Aug., 1965, *Sen Gupta* s. n. ; Chaisilakha, 1500 m, Jan. 1964, *Subba Rao* 421 ; *Idid.*, April 1964, *Maheshwari* 5152.

A. macrosperma Wall. ex Benth. in Wall. Pl. As. Rar. 1 : 58, 1829 ; Fl. Brit. Ind. 4 : 704, 1885.

var. macrosperma

A procumbent herb with pale blue flowers in terminal spikes. Occasional in meadow lands and hill slopes.

Thimpu, 250 m, Aug. 1965, *Sen Gupta* s.n. ; Tama, 1200 m, April 1964, *Sen Gupta* 1158 ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 177.

var. breviflora Hook.f. Fl. Brit. Ind. 4 : 704, 1885.

Small herb of the hill-slopes. Scarce.

Sham Khara, 1350 m, Dec. 1963, *Sen Gupta* 1109.

var. thomsoni (Maxim.) Hook.f. Fl. Brit. Ind. 4 : 704, 1885.

Small herb ; flowers blue purple. Scarce on hill-slopes.

Sham Khara, 1350 m, Dec. 1963, *Sen Gupta* 1116.

Anisomeles indica (L.) O. Ktze. Rev. Gen. Pl. 1 : 512, 1891. *A. ovata* R. Br. Fl. Brit. Ind. 4 : 672, 1885.

Suffruticose herb, softly tomentose in younger parts ; flowers purple. Common on road side and waste places.

Samchi, Dec. 1963, *Thothathri* 10391 ; Kheri, 1200 m, Sept. 1965, *A. S. Rao* 43505 ; Gayleghug, 270 m, Dec. 1963, *Sen Gupta* 851.

Anisochilus pallidus Wall. Pl. As. Rar. 2 : 18, 1831 ; Fl. Brit. Ind. 4 : 629, 1885.

An erect herb in roadside jungle ; flowers very small, crowded in conical spikes. Rare.

Samchi, Dec. 1963, *Thothathri* 10369.

Clinopodium umbrosum (M. Bieb) C. Koch in *Linnaea* 21 : 673, 1848. *Calamintha umbrosa* Benth. in DC. *Prodr.* 12 : 232, 1848 ; *Fl. Brit. Ind.* 4 : 650, 1885.

A procumbent herb with small purplish flowers in axillary whorls. Common along pathways and meadow lands.

Chenari village, Aug. 1965, *A. S. Rao* 43158 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5964.

Colebrookia oppositifolia Smith *Exot. Bot.* 2 : t. 3, 1805 ; *Fl. Brit. Ind.* 4 : 642, 1885.

A tall shrub ; flowers small, crowded in spikes. Frequent in tropical and subtropical forests.

Samchi, Dec. 1963, *Thothathri* 10338.

Coleus forskalii (Willd.) Brig. in *Engl. Pflanzenf.* 4 : (3a) : 359, 1897. *C. barbatus* (Andr.) Benth. in *Wall. Pl. As. Rar.* 2 : 15, 1801 ; *Fl. Brit. Ind.* 4 : 625, 1885.

Perennial herb with a fleshy rootstock ; leaves slightly thick ; flowers small bluish. Rare.

Punakha, 1500 m, Aug. 1965, *Sen Gupta* s.n.

Colquhonia coccinea Wall. in *Trans. Linn. Soc.* 13 : 608, 1822 ; *Fl. Brit. Ind.* 4 : 674, 1885.

var. **coccinea**

A tall shrub with scandent and sprawling branches, tomentose with white stellate hairs ; flowers red in axillary on terminal spikes. Common in open jungles.

Paro, 200 m, Oct. 1963, *Mukerjee* 5849.

var. **mollis** Prain in *Journ. As. Soc. Beng.* 62 : 37, 1893.

Tall shrub with a dense, rusty tomentum ; flowers larger, orange red. Common in open jungle.

Paro, 2000 m, Oct. 1963, *Mukerjee* 5974.

var. **vestita** (Wall.) Prain in *Journ. As. Soc. Beng.* 62 : 36, 1893.

Semi-scandent shrub with a dense, floccose, white, stellate tomentum ; flowers pink. Scattered in the fringe of forests.

Thimpu, 2000 m, Aug. 1965, *Sen Gupta* s.n.

Craimiotome versicolor Reichb. *Icon. Exot.* 1 : 39, 1824 ; *Fl. Brit. Ind.* 4 : 672, 1885.

Erect perennial herb ; flower very small, numerous, crowded in subsecund cymes arranged in a terminal panicle. Common along roadside jungles.

Kamji, 1000 m, Dec. 1963, *Subba Rao* 191 ; Chaisilakha, 1500 m, April 1963, *Maheshwari* 5130 ; Wamrung approach, Sept. 1965, *A. S. Rao* 43360 ; Batase, 1600 m, Dec. 1963, *Sen Gupta* 1018.

Dysophylla linearis Benth. in DC. Prodr. 12 : 157, 1848 ; Fl. Brit. Ind. 4 : 639, 1885.

Erect herb with usually unbranched stem ; leaves whorled ; flowers small purple. Scarce.

Tashiyangtshi, Oct. 1965, *Balakrishnan* 44287.

Elsholtzia blanda Benth. Lab. Gen. et. Sp. 162, 1833 ; Fl. Brit. Ind. 4 : 643, 1885.

Local name : Mirey pati.

An aromatic undershrub with white flowers in second paniculate spikes. Frequent on hill slopes in the open.

Sureylakha, 1350 m, Dec. 1963, *Sen Gupta* 935 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 4 ; Wamrung approach, Sept. 1965, *A.S. Rao* 43358 ; Paro, 2000 m, Oct. 1963, *Mukerjee* 5863 ; Chaisilakha, 1500 m, April 1964, *Maheshwari* 5133 ; Samchi hill, 1000 m, Dec. 1963, *Thothathri* 10471.

E. ciliata (Thunb.) Hyland in Bot. Noiser 1941 : 129, 1941. *E. cristata* Willd. in Roem. et. Ust. Bot. Mag. 4-2 : 5, t. 1, 1890.

An undershrub with small pale violet flowers. Common on roadside, forest paths and hill slopes.

Sham Khara, 1500 m, Nov. 1964, *Deb* 21 ; Paro 2000 m, Oct. 1963, *Mukerjee* 5840.

E. fruticosa (D. Don) Rehder in Pl. Wilson 3 : 381, 1916. *E. polystachya* Benth. Lab. Gen. et Sp. 161, 1833 ; Fl. Brit. Ind. 4 : 643, 1885.

A shrub with long slender branches ; flowers small in long slender spikes. Occasional on roadside jungles.

Paro, 2000 m, Oct. 1963, *Mukerjee* 5921 ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 178 ; Honshu, Aug. 1965, *Sen Gupta* 657.

E. stachyoidea (Link) Raizada & Saxena in Ind. For. 72 : 106, 1962. *E. incisa* Benth. Lab. Gen. et Sp. 162, 1833 ; Fl. Brit. Ind. 4 : 644, 1885.

Slender aromatic herb of waste places ; flowers small, corolla white.

Dakpai, 1650 m, Nov. 1964, *Deb* 339.

E. pilosa Benth. Lab. Gen. et Sp. 163, 1833 ; Fl. Brit. Ind. 4 : 644, 1885.

Undershrub with purple violet flowers.

On way from Rani Camp to Tama, 1450 m, Nov. 1964, *Deb* 259.

Gomphostemma parviflorum Wall. ex Benth. in Wall. Pl. As. Rar. 2 : 12, 1831 ; Fl. Brit. Ind. 4 : 697, 1885.

Local name : Kaman dhusur.

Tall robust herb with a woody stem ; flowers yellow in axillary cymes.

Gayleghphug, 270 m, Dec. 1963, *Sen Gupta* 910 ; *Ibid.*, Nov. 1964, *Deb* 23.

Hyptis suaveolens Poit. in An. Mus. Par. 7 : 472, t. 29, f.2. 1806 ; Fl. Brit. Ind. 4 : 630, 1885.

Tall shrub with blue flowers. Common in open places and roadside jungles.

Gayleghug, 270 m, Dec. 1963, *Sen Gupta* 827 ; Phuntsholing, Dec. 1963, *Subba Rao* 9 ; Samchi, Dec. 1963, *Thothathri* 10307.

Lamium amplexicaule Linn. Sp. Pl. 579, 1753 ; Fl. Brit. Ind. 4 : 679, 1885.

A decumbent herb ; flowers in axillary whorls, red-purple. Scarce along pathways.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1273.

Leucas cephalotes (Roth) Spreng. Syst. Veg. 2 : 743, 1825 ; Fl. Brit. Ind. 4 : 689, 1885.

Small herbs with white flowers, crowded in globose whorls. Common in waste land.

Kheri, Sept. 1965, *A. S. Rao* 43480.

L. ciliata Benth. in Wall. Pl. As. Rar. 1 : 61, 1830 ; Fl. Brit. Ind. 4 : 687, 1885.

An undershrub, hirsute with brown hairs ; flowers in globose whorls ; mouth of fruiting calyx ciliate and stellately spreading.

North of Gomchu, Sept. 1965, *A. S. Rao* 43358 ; Lumichawa, Aug. 1965, *Sen Gupta* s.n.

L. mollissima Wall. Pl. As. Rar. 1 : 62, 1830 ; Fl. Brit. Ind. 4 : 682, 1885.

Slender herb with straggling branches ; flowers white in axillary whorls. Occasional on roadside jungle.

Kheri, Sept. 1965, *A. S. Rao* 43512 ; Punakha, 1500 m, Aug. 1965, *Sen Gupta* s.n.

Leucosceptum canum Smith, Exot. Bot. 2 : 113, t. 116, 1806 ; Fl. Brit. Ind. 4 : 699, 1885.

Small tree, younger parts hoary tomentose, flowers in erect spikes. Common in open jungles and fringe of forests.

Sureylakha, 1350 m, Dec. 1963, *Sen Gupta* 966 ; Dorokha, 1000 m, Dec. 1963, *Thothathri* 10499.

Mentha sylvestris Linn. Sp. Pl. (ed. 2) 804, 1763 ; Fl. Brit. Ind. 4 : 647, 1885.

Tall aromatic herb ; flowers pale purple in dense spikes. Abundant along ditches and nullahs.

Paro, 2500 m, Aug. 1963, *Sen Gupta* s.n. ; *Ibid.*, Oct. 1963, *Mukerjee* 5877.

Micromeria biflora Benth. Lab. Gen. et. Sp. 378, 1834 ; Fl. Brit. Ind. 4 : 650, 1885.

Tufted herb with small sessile leaves and small flowers in axillary whorls. Scattered in grasslands.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5889 ; Thimpu, 2500 m. April 1964, *Maheshwari* s.n. ; *Ibid.*, Aug. 1965. *Sen Gupta* s.n.

Microtoena insuavis (Hance) Prain ex Dunn in Notes Bot. Gard. Edin. 28 : 128, 1915. *Plectranthus patchouli* Clarke ex Hook.f. Fl. Brit. Ind. 4 : 624, 1885.

Erect branching herb ; flowers yellow in paniculate cymes. A rare plant.

Gomchu, 2450 m, Sept. 1965, *A. S. Rao* 43446.

Melissa parviflora Benth. in Wall. Pl. As. Rar. 1 : 65, 1830 ; Fl. Brit. Ind. 4 : 651, 1885.

Undershrub with pale pink flowers. Scattered in shady forest floor.

Sureylakha, 165 ; Dec. 1963, *Sen Gupta* 988 ; Batase, 1600 m, Dec. 1963, *Sen Gupta* 1012 ; Rani Camp, 1650 m, Nov. 1944, *Deb* 96 ; Narfong, 1900 m, *A. S. Rao* 43245 ; Narfong to Wamrung, 2000 m, Sept. 1965, *A. S. Rao* 43320 ; Wamrung to Gomchu, 2450 m, *A. S. Rao* 43388 ; Chaisilakha, 1500 m, Jan. 1964, *Subba Rao* 442 ; *Ibid.*, April 1964. *Maheshwari* 5081 ; Ha Valley, 2500 m, Aug. 1963, *Sen Gupta* s.n.

Nepeta laevigata (D. Don) Hand. Mazz. Sym. Sin. 7 : 916, 1936. *N. spicata* Benth. in Wall. Pl. As. Rar. 1 : 64, 1830 ; Fl. Brit. Ind. 4 : 659, 1885.

An erect herb with small blue flowers in dense terminal spikes. Rare in open jungle.

Dochu La, 2000 m, Aug. 1965, *Sen Gupta* s.n.

Notochaete hamosa Benth. in Wall. Pl. As. Rar. 1 : 63, 1830 ; Fl. Brit. Ind. 4 : 649, 1885.

Undershrub ; small white flowers in globose, axillary heads ; fruiting calyx with hooked spines. Frequent in warm temperate forests.

ShamKhara, 1500 m, Nov. 1964, *Deb* 55 ; north of Narfong, 1960 m, Sept. 1965, *A. S. Rao* 43296 ; road to Tashigong, Oct. 1965. *Balakrishnan* 43945 ; Chaisilakha, 1500 m, Dec. 1963, *Subba Rao* 403.

Ocimum basilicum Linn. Sp. Pl. 597, 1753 ; Fl. Brit. Ind. 4 : 608, 1885.

Undershrub ; flowers very small, pale purple. Cultivated or self sown in village shrubberies.

Gaylegphug, 270 m, Nov. 1964, *Deb* 112 ; Kheri, 1200 m, Sept. 1965, *A. S. Rao* 43510.

Origanum vulgare Linn. Sp. Pl. 590, 1753 ; Fl. Brit. Ind. 4 : 648, 1885.

Erect dichotomously branched herb ; flowers small, pink in corymbose cymes. Occasional along roadside jungles.

Paro, 2500 m, Aug. 1963, *Sen Gupta* 758 ; Ha Valley, 3000 m, Aug. 1963, *Sen Gupta* 676 ; Honshu, 2800 m, Aug. 1965, *Sen Gupta* s.n.

Orthosiphon incurvus Benth. in Wall. Pl. As. Rar. 2 : 15, 1831 ; Fl. Brit. Ind. 4 : 614, 1885.

Small undershrub with tubular purple flowers in long racemes. Occasional in open jungles.

North of Narfong, 1950 m, Sept. 1965, *A. S. Rao* 43288.

Phlomis macrophylla Wall. Pl. As. Rar. 1 : 62, 1830 ; Fl. Brit. Ind. 4 : 692, 1885.

Tall herb with stout stem ; bracts and calyx spinescent ; corolla red, villous with white hairs. Rare in open forest.

Dochu La, 3000 m, *Sen Gupta* s.n.

P. japonicus (Burm.f.) Koidz. in Bot. Mag. Tokyo, 43 : 386, 1929.

Spreading shrub with small blue flowers in terminal panicles. Common in the forest fringes.

Gayleghug 270 m, Dec. 1963, *Sen Gupta* 841 ; Sureylakha, 1350 m, Dec. 1963, *Sen Gupta* 973 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 25 ; Gomchu, Sept. 1965, *A. S. Rao* 43458 ; Paro, 2000 m, Oct. 1963, *Mukerjee* 5832 ; Dorokha, 1000 m, Dec. 1963, *Thothathri* s.n.

Plectranthus gerardianus Benth. in Wall. Pl. As. Rar. 2 : 17, 1831 ; Fl. Brit. Ind. 4 : 617, 1885.

Herb ; hispidly hairy all over with rusty tomentum ; flowers small, bluish white. Occasional in open forest.

From Rani Camp to Tama, 1450 m, Nov. 1964, *Deb* 246 ; Shemgang, 1950 m, Nov. 1964, *Deb* 402.

P. hispidus Benth. in Wall. Pl. As. Rar. 2 : 17, 1831 ; Fl. Brit. Ind. 4 : 618, 1885.

Stout herb, villous all over ; corolla white, speckled with red. Rare.

Wamrung, 2300 m, Sept. 1965, *A. S. Rao* 43759 & 43561.

P. maddenii Benth. ex Hook.f. Fl. Brit. Ind. 4 : 620, 1885.

Stout erect herb, nearly glabrous ; flowers small, purple. Rare in road side jungle.

Chaisilakha, 1500 m, Dec. 1963, *Subba Rao* 412.

P. repens Wall. Pl. As. Rar. 2 : 17, 1931 ; Fl. Brit. Ind. 4 : 619, 1885.

Small herb ; stem prostrate below ; flowers small, white. Rare in roadside jungle.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5923.

Plectranthus rugosus Wall. Pl. As. Rar. 2 : 17, 1831 ; Fl. Brit. Ind. 4 : 620, 1885.

Erect shrub, hoary with stellate hairs ; leaves slightly thick, rugose above ; flowers small, corolla white with rose or purple spots. Rare in open jungles.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5855.

P. scrophularioides Wall. Pl. As. Rar. 2 : 16, 1831 ; Fl. Brit. Ind. 4 : 616, 1885.

Slender shrub, almost glabrous ; flowers pale rose. Occasional in roadside jungles.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5833.

P. striatus Benth. in Wall. Pl. As. Rar. 2 : 17, 1831 ; Fl. Brit. Ind. 4 : 618, 1885.

Local name : Dolo patey, Mirey pati.

A herb with small white flowers in lax panicle. Scattered in open forests.

Sham Khara & Maorey forests, 1500-1650 m, Dec. 1963, *Sen Gupta* 1103.

P. ternifolius D. Don Prodr. Fl. Nepal. 117, 1825 ; Fl. Brit. Ind. 4 : 621, 1885.

Local name : Peng-dong-dongla.

Erect shrub ; leaves thick, in whorls of 3 or 4, rugose above ; flowers white, small. Scattered in open jungles. Leaves used for smoking.

On way from Tama to Birti, 1000 m, April 1964, *Sen Gupta* 1191 ; on way from Rani Camp to Tama, 1350-1650 m, Nov. 1964, *Deb* 269.

Pogostemon dasianus De et Mukerjee in Ind. For. 66 : 331, 1940.

Tufted herb with prostrate and ascending branches ; flowers small. Rare in forest fringes.

Wamrung approach, Sept. 1965, *A. S. Rao* 43363.

P. tuberculosus Benth. in Wall. Pl. As. Rar. 1 : 31, 1880 ; Fl. Brit. Ind. 4 : 633, 1885.

Undershrub with stiff branches ; flowers purple. Wide spread on roadside and forest fringes.

Sureylakha, 1350 m, Dec. 1963, *Sen Gupta* 942 ; on way to Tama from Rani Camp, 1500 m, Nov. 1964, *Deb* 251 ; Samchi hill, 1000 m, Dec. 1963, *Thothathri* 10371.

Prunella vulgaris Linn. Sp. Pl. 100, 1753 ; Fl. Brit. Ind. 4 : 670, 1885.

Small herb with blue flowers in a dense spike ; scattered on meadow lands.

Chai la Pass, 3000 m, Aug. 1963, *Sen Gupta* 606 ; Thimpu, 2500 m, Aug. 1965, *Sen Gupta* s.n.

Salvia glutinosa Linn. Sp. Pl. 26, 1753.

Tall robust herb, viscidly hairy ; leaves more or less hastate ; flowers yellow in lax panicles. Rare in forest fringes.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5939.

Scutellaria discolor Colebr. in Wall. Pl. As. Rar. 1 : 66, 1830 ; Fl. Brit. Ind. 4 : 667, 1885.

Small annual herb ; leaves radical, elliptic, long-petioled ; flowers pale blue, in lax racemes. On rocky hill slopes, scarce.

Sham Khara & Maorey forests, 1500-1650 m, Dec. 1963, *Sen Gupta* 1101 ; Punakha, 1500 m, Aug. 1965, *Sen Gupta* s.n.

Teucrium viscidum Bl. Bijdr. 14 : 827, 1825. *T. stoloniferum* Roxb. Fl. Ind. 3 : 3, 1832 ; Fl. Brit. Ind. 4 : 700, 1885.

Erect perennial herb, stoloniferous ; corolla pink or white with purple tinge. Rare along forest path.

Gayleghug, 270 m, May 1964, *Sen Gupta* 1416.

PLANTAGINACEAE

S. K. MUKERJEE AND K. C. MALICK

Plantago erosa Wall. in Roxb. Fl. Ind. 1 : 423, 1820. *P. major* Hook.f. Fl. Brit. Ind. 4 : 705, 1885 non Linn.

Small herb with radical leaves and small white flowers in peduncled spikes. Common on grasslands.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1288 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5970 ; *Ibid.*, Aug. 1963, *Sen Gupta* 1163 ; Thimpu, 2500 m, Aug. 1965, *Sen Gupta* 904 ; Lumichawa, 2500 m, Aug. 1965, *Sen Gupta* 812 ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 251 ; Chaisilakha, 1500 m, April 1964, *Maheshwari* 5084 ; Chima Kothi, 2000 m, April 1964, *Maheshwari* 5256 ; on road to Narfong, 16 km from Deothong, 1550 m, Aug. 1965, *A. S. Rao* 43205.

P. tibetica Hook.f. et Th. ex Hook.f. Fl. Brit. Ind. 4 : 706, 1885.

Small perennial herb with short stout root stock and radical leaves ; flowers very small, on peduncled spikes. Rare among grasses.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5859.

NYCTAGINACEAE

S. K. MUKERJEE

Boerhaavia diffusa Linn. Sp. Pl. 3, 1753. *B. repens* Linn. Sp. Pl. 3, 1753 ; Fl. Brit. Ind. 4 : 709, 1885.

A rambling undershrub in roadside shrubberies ; stem and branches with a purplish tinge ; leaves ovate or orbicular, green with purplish tinge ; flowers small in lax panicles.

Phuntsholing, April 1964. *Maheshwari* 5061.

Oxybaphus himalaicus Edgew. in Trans. Linn. Soc. 20 : 87, 1846 ; Fl. Brit. Ind. 4 : 708, 1885.

Erect herb with brittle stem ; flowers rose coloured, involucrate, panicled. Rare in open jungle.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5954.

AMARANTHACEAE

S. K. MUKERJEE AND K. C. MALICK

Achyranthes aspera Linn. Sp. Pl. 1 : 204, 1753 ; Fl. Brit. Ind. 4 : 730, 1885.

An undershrub, softly tomentose all over ; flowers small in long spikes, bracts and bracteoles spinescent ; rachis elongating in fruit. Scattered on road side and waste places.

Phuntsholing, Dec. 1963, *Subba Rao* 21 ; Kheri, 1150 m, Sept. 1965, *A. S. Rao* 43515.

A. bidentata Bl. Bijdr. 545, 1825 ; Fl. Brit. Ind. 4 : 730, 1885.

A herb with few, long, slender branches ; flowers small, whorled in long slender spikes, bracts and bracteoles spinescent. Occasional in exposed forests.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 888 ; Sureylakha, 1650 m, Dec. 1963 *Sen Gupta* 1002.

Aerva sanguinolenta (Linn.) Blume Bijdr. 547, 1825. *A. scandens* (Roxb.) Moq. in DC. Prodr. 13 : 2 : 826, 1849 ; Fl. Brit. Ind. 4 : 727, 1885.

An undershrub with straggling branches, hoary tomentose all over ; flowers minute in spikate whorls. Frequent on road side and waste places.

Tama, 1450 m, Nov. 1964, *Deb* 310 ; Samchi, Dec. 1963, *Thothathri* 10598.

Alternanthera sessilis (Linn.) DC. in Caf. Host. Monspel. 77, 1813 ; Fl. Brit. Ind. 4 : 731, 1885.

Weak prostrate herb with minute flowers in axillary whorls. Common on open ground.

Birti, 700 m, April 1964, *Sen Gupta* 1316 ; Gaylegphug, 270 m, April 1964, *Sen Gupta* 1354 ; Samchi, Dec. 1963, *Thothathri* 10271 ; Punakha, 1500 m, Aug. 1965, *Sen Gupta* s.n.

Amaranthus paniculatus Linn. Sp. Pl. ed. 2. 1406, 1762 ; Fl. Brit. Ind. 4 : 718, 1885.

Tall robust herb with pinkish stem ; flowers minute in large panicles. Cultivated and found as escape.

Paro, 2000 m, Oct. 1963, *Mukerjee* 5841.

A. spinosus Linn. Sp. Pl. 991, 1753 ; Fl. Brit. Ind. 4 : 718, 1885.

An erect spinous herb with minute flowers. Frequent in waste places.

On way from Rani Camp to Tama, 1500 m, Nov. 1964, *Deb* 261 ; Punakha 1500 m, Aug. 1965, *Sen Gupta* s.n.

A. viridis Linn. Sp. Pl. (ed. 2.) 1405, 1762 ; Fl. Brit. Ind. 4 : 720, 1885.

Erect or decumbent herb ; stem pale pink ; flowers minute. A weed of waste places.

Phuntsholing, Dec. 1963, *Subba Rao* 358 ; Birti 550 m, April 1964, *Sen Gupta* 1208.

Cyathula capitata Moq. in DC. Prodr. 13 : 329, 1849 ; Fl. Brit. Ind. 4 : 722, 1885.

A slender herb ; flowers minute in white glistening heads. Rare.

Gomchu, opposite to workshop, 2450 m, Sept. 1965, *A. S. Rao* 43399.

C. prostrata (Linn.) Bl. Bijdr. 549, 1825 ; Fl. Brit. Ind. 4 : 723, 1885.

Annual with ascending stem ; flowers minute, in spikes bluish clusters. In forest clearings or on roadside, frequent.

Gaylegphug 270 m, Dec. 1963, *Sen Gupta* 809 & 886 ; *Ibid.*, Nov. 1964, *Deb* 130.

C. tomentosa (Roth) Moq. in DC. Prodr. 13 : 2 : 327, 1849 ; Fl. Brit. Ind. 4 : 722, 1885.

A straggling undershrub, tomentose or woolly ; flowers in white glistening heads arranged in elongate spikes. Rare in open roadside jungle.

Lumichawa, 2500 m, Aug. 1965, *Sen Gupta* s.n.

Deeringia amaranthoides (Lam.) Merr. Int. Rumph. Herb. Amb. 211, 1917.

D. celosioides R. Br. Prodr. Fl. Nov. Holl. 413, 1810 ; Fl. Brit. Ind. 4 : 714, 1885.

Local name : Benthuya, Bangi lahara.

Scandent or subscaudent shrub with long arching branches ; flowers very small, greenish white, in long pendant spikes ; berries globose, scarlet.

Common in tropical forests. Fruits and roots are used in stomach troubles. Phuntsholing, Dec. 1963, *Subba Rao* 5 ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 172 ; Samchi, Dec. 1963, *Thothathri* 10527 ; Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 801 ; *Ibid.*, Nov. 1964, *Deb* 122 ; Batase, 1500-1650 m, Dec. 1963, *Sen Gupta* 1028 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 54 ; Samdrup Jhonkar, Oct. 1965, *Balakrishnan* 43827 ; on way to Nyoth from Shali, *Balakrishnan*. s. n.

CHENOPODIACEAE

K. THOTHATHRI

Chenopodium album Linn. Sp. Pl. 1 : 219, 1753 ; Fl. Brit. Ind. 5 : 3, 1886.

Annual herb, woody below, younger parts covered with white tomentum ; flowers minute in terminal or axillary spikes. Cultivated as well as an escape.

Birti 550 m, April 1964, *Sen Gupta* 1217 ; *Ibid.*, 600-960 m, April 1964, *Sen Gupta* 1343 ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5956 ; *Ibid.*, Aug. 1963, *Sen Gupta* s.n.

C. ambrosioides Linn. Sp. Pl. 1 : 219, 1753 ; Fl. Brit. Ind. 5 : 4, 1886.

Branched aromatic herb with minute flowers. Occasionally found in cultivated fields.

Dakpai, 1650 m, Nov. 1964, *Deb* 369.

C. botrys Linn. Sp. Pl. 1 : 219, 1753 ; Fl. Brit. Ind. 5 : 4, 1886.

Strongly aromatic herb ; flowers minute. Occasional in roadside jungles.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5959 ; *Ibid.*, Aug. 1963, *Sen Gupta* 756 ; Chaisilakha, 1500 m, Aug. 1963, *Sen Gupta* 766.

BASELLACEAE

K. THOTHATHRI

Basella alba Linn. Sp. Pl. 272, 1753. *B. rubra* Linn. Sp. Pl. 272, 1753 ; Fl. Brit. Ind. 5 : 20, 1886.

A fleshy twiner, usually cultivated for use as vegetable.

Samchi, Dec. 1963, *Thothathri* 10443.

POLYGONACEAE

S. K. MUKERJEE AND P. K. HAJRA

Aconogonum molle (D. Don) Hara, Fl. East. Him. 68, 1966. *Polygonum molle* D. Don Prodr. Fl. Nepal. 72, 1825 ; Fl. Brit. Ind. 5 : 50, 1886. *Local name* : Thothney.

var. **molle**

Large spreading shrub with tender branches; flowers very small, pinkish white, in much branched panicle. Gregarious in roadside jungles. Tender branchlets are used as vegetables and in preparing condiments.

Batase, 1600 m, Dec. 1963, *Sen Gupta* 1010; Chi la Pass, 2500 m, Aug. 1963, *Sen Gupta* 1010.

var. **frondosum** (Meissn.) Hara, Fl. East. Him. 68, 1966. *Polygonum frondosum* (Meissn.) DC. Prodr. 14 : 137, 1856; Fl. Brit. Ind. 5 : 49, 1886.

Shrub with pendant branches and white flowers. A common undergrowth in the forests, forming large communities.

Shemgang, 1950 m, Nov. 1964, *Deb* 417; Kamji, 1000 m, 1963, *Subba Rao* 171; Gomchu, on road to Tashigong from Wamrung, 2200 m, March 1965, *Balakrishnan* 41156; 90 km point on road from Narfong to Wamrung, Sept. 1965, *A. S. Rao* 43327.

Bilderdykia pterocarpa (Wall. ex Meissn.) Green. Leaf. 1 : 23, 1904. *Polygonum pterocarpum* Wall. ex Meissn. in Wall. Pl. As. Rar. 3 : 62, 1832; Fl. Brit. Ind. 5 : 54, 1886.

Twining shrub with small flowers and winged fruit. Rare in roadside shrubbery.

Sangura, 1500 m, Dec. 1963, *Thothathri* 10576.

Bistorta sphaerostachya (Meissn.) Green. Leaf. Bot. Obs. 1.21, 1904. *Polygonum sphaerostachyum* Meissn. Monogr. Polygo. 53, 1826; Fl. Brit. Ind. 5 : 32, 1886.

Erect perennial herb with a woody rootstock; flowers crimson, drooping in dense spike. Rare in the forest.

Chi la Pass, 3000 m, Aug. 1963. *Sen Gupta* 718.

B. vacciniifolia (Wall. ex Meissn.) Green. Leaf. 1 : 21, 1904. *Polygonum vacciniifolium* Wall. ex Meissn. in Wall. Pl. As. Rar. 3 : 54, 1832; Fl. Brit. Ind. 5 : 33, 1886.

Perennial herb of tufted habit; stem stout; flowers rose coloured. Frequent in open jungles.

Dongala, 3500 m, Oct. 1965, *Balakrishnan* 44440.

Fagopyrum diobotrys (D. Don) Hara, Fl. East. Him. 69, 1966. *F. cymosum* (Trev.) Meissn. in Wall. Pl. As. Rar. 3 : 63, 1832; Fl. Brit. Ind. 5 : 55, 1886.

Erect herb woody near the base. Common on roadside and in open situation.

Shemgang, 1950 m, Nov. 1964, *Deb* 423; Paro, 2500 m, Oct. *Mukerjee* 5862; *Ibid.*, Aug. 1963, *Sen Gupta* s.n.

Fagopyrum esculentum Moench Meth. 290, 1794; Fl. Brit. Ind. 5 : 55, 1886.

Local name : Phapar.

Branched herb with deltoid leaves and pink flowers. Cultivated and found as an escape. Flour is obtained from seeds; tender parts of the plant are used as vegetable.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 923; Sham Khara, 1500 m, Nov. 1964, *Deb* 66; Samchi, Dec. 1963, *Thothathri* 10312.

F. tataricum (Linn.) Gaertner, Fruct. et Sem. 2 : 182, t. 119, f. 6, 1791; Fl. Brit. Ind. 5 : 55, 1886.

Slender herb with spreading branches; flowers white or pale pink. Cultivated and found as an escape. Seeds and twigs are used in a similar manner as *F. esculentum*.

Birti, 550 m, April 1964, *Sen Gupta* 1222; *Ibid.*, 700 m, April 1964, *Sen Gupta* 1318; Tama, 1450 m, Nov. 1964, *Deb* 319.

Persicaria barbata (Linn.) Hara, Fl. East. 70, 1966. *Polygonum barbatum* Linn. Sp. Pl. 362, 1753; Fl. Brit. Ind. 5 : 37, 1886.

Erect herb near ditches; flowers small, white or pinkish. Common.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 852; Phuntsholing, Dec. 1963, *Subba Rao* 1; on way to Tashiyangtsi, 8 km from Tashigong, Oct. 1965, *Balakrishnan* 44042; Kanglung, Sept. 1965, *A. S. Rao* 43550.

P. capitata (Buch.-Ham.) H. Gross in Eng. Bot. Jahrb. 49 : 277, 1913.

Polygonum capitatum Buch.-Ham. ex D. Don Prodr. Fl. Nepal. 73, 1825; Fl. Brit. Ind. 5 : 44, 1886.

Much branched herb, prostrate or creeping; flowers minute, crowded in small pedunculate heads. Frequent on hill slopes or near edge of streams.

Sureylakha, 1400 m, Dec. 1963, *Sen Gupta* 944; Birti, 750 m, April 1964, *Sen Gupta* 1295; Tashigong, 1200 m, March 1965, *Balakrishnan* 41180; Phuntsholing, April 1964, *Maheshwari* 5312B; Samchi, Dec. 1963, *Thothathri* 10373; Chaisilakha, 1500 m, Dec. 1963, *Subba Rao* 404.

P. chinensis (Linn.) H. Gross in Engl. Bot. Jahrb. 49 : 269, 1913. *Polygonum chinense* Linn. Sp. Pl. 363, 1753; Fl. Brit. Ind. 5 : 44, 1886.

var. chinensis

A spreading undershrub of bushy habit; flowers minute, in branched panicles. In roadside jungles and forest clearings, wide-spread and gregarious.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 807, 868; *Ibid.*, Nov. 1964, *Deb* 121; Sureylakha, 1350 m, Dec. 1963, *Sen Gupta* 961; Phuntsholing, Dec. 1963, *Subba Rao* 129; Samdrup Jhonkar forest, Oct. 1965, *Balakrishnan* 43804.

var. ovalifolia (Meissn.) Hara, Fl. East. Himal. 71, 1966. *Polygonum chinense* Linn. var. *ovalifolia* Meissn. in Wall. Pl. As. Rar. 3 : 60, 1832; Fl. Brit. Ind. 5 : 45, 1886.

Slender herb with pinkish white flowers, forming communities along forest fringes.

Sham Khara, 1500 m, Nov. 1964, *Deb* 26; Narfong, 1900 m, Aug. 1965, A. S. Rao, 43261; on way to Samdrup Jhonkar from Narfong, March 1965, Balakrishnan 41938; Dorokha, 1000 m, Dec. 1963, *Thothathri* 10504.

Persicaria pubescens (Bl.) Hara var. **acuminatum** (Franch. et Sav.) Hara in Journ. Jap. Bot. 17 : 335, 1941. *Polygonum flaccidum* Meissn. in DC. Prodr. 14 : 107, 1856; Fl. Brit. Ind. 5 : 39, 1886.

Tall herb, creeping near the base; flowers minute, white. Common in shady moist places forming communities.

Birti, April 1964, *Sen Gupta* 1298; Gaylegphug, 270 m, Nov. 1964, *Deb* 153; Paro, 2000 m, Aug. 1963, *Sen Gupta* s.n.

P. hydropiper (Linn.) Opiz, Seznam 72, 1852. *Polygonum hydropiper* Linn. Sp. Pl. 361, 1753; Fl. Brit. Ind. 5 : 39, 1886.

Erect herb with minute pinkish flowers. Scattered in wet places.

Tashigong to Yangtzi, 1200 m, March 1965, Balakrishnan 41266; Chaisilakha, 1500 m, April 1964, Maheshwari s.n. ; Paro, 2500 m, Aug. 1963, *Sen Gupta* s.n.

P. microcephala (D. Don) H. Gross in Engl. Bot. Jahrb. 49 : 277, 1913. *Polygonum microcephalum* Don Prodr. Fl. Nepal. 72, 1825; Fl. Brit. Ind. 5 : 42, 1886.

Perennial herb, woody below; leaves often hastate; flowers small in axillary or subterminal heads. Rare in roadside shrubberies.

Samchi, Dec. 1963, *Thothathri* 10324.

P. kawagoana (Makino) Nakai in Rigakkai 24 : 300, 1926. *P. minus* Huds. sensu Fl. Brit. Ind. 5 : 36, 1886.

Small slender herb with minute pink flowers. Frequent on damp hill slopes.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 864; Sureylakha, 1200-1500 m, Dec. 1963, *Sen Gupta* 937; Phuntsholing, April 1964, Maheshwari s.n.

P. orientale (Linn.) Vilm. Fl. Pl. Terre. ed. 2, 660. *Polygonum orientale* Linn. Sp. Pl. 362, 1753; Fl. Brit. Ind. 5 : 30, 1886.

A tall annual with hollow stem; flowers white in long racemes. Common in wet places often in standing water, forming communities.

Gaylegphug 270 m, Dec. 1963, *Sen Gupta* 856; *Ibid.*, April 1964, *Sen Gupta* 1406.

Persicaria nepalensis (Meissn.) H. Gross in Engl. Bot. Jahrb. 49 : 277, 1913. *Polygonum alatum* Buch.-Ham. ex Spreng. Syst. Veg. Cur. Post. 154, 1827; Fl. Brit. Ind. 5 : 41, 1886.

Annual herb; stem creeping near base; leaves broadly winged at base; flowers very small, purple or pink or white in peduncled heads. Common in open damp places.

On road to Narfong, 24 km north of Deothong, 1600 m, *A. S. Rao* 43214; Chaisilakha, 1500 m, April 1964, *Maheshwari* 507; *Ibid.*, Dec. 1963, *Subba Rao* 409; Paro, 2500 m, Oct. 1963, *Mukerjee* 5906 & 5472; Kamji, 1000 m, Dec. 1963, *Subba Rao* 244; Chima Kothi, 2000 m, Aug. 1963, *Sen Gupta* s.n. ; Ha Valley, 3000 m, Aug. 1963, *Sen Gupta* s.n.

P. perfoliata (Linn.) H. Gross in Engl. Bot. Jahrb. 49 : 275, 1913. *Polygonum perfoliatum* Linn. Sp. Pl. (ed. 2) 521, 1763; Fl. Brit. Ind. 5 : 46, 1886.

A rambling, prickly annual of wet places; leaves long petioled; flowers white or lilac.

Tashigong, hill slopes on to bank of Mithidanga river, Oct. 1965, *Balakrishnan* 43977.

P. posumbu (D. Don) H. Gross in Engl. Bot. Jahrb. 49 : 313, 1913. *Polygonum posumbu* D. Don Prodr. Fl. Nepal. 71, 1825; Fl. Brit. Ind. 5 : 38, 1886.

Slender flaccid annual, flowers small, white or pink; scattered on forest floor in small communities.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 891; Sham Khara, 1500 m, Nov. 1964, *Deb* 65; Dorokha, 1000 m, Dec. 1963, *Thothathri* 10493; Kamji, 1000 m, Dec. 1963, *Subba Rao* 206; Phuntsholing, April 1964. *Maheshwari* 5361; Samchi, Dec. 1963, *Thothathri* 10367.

P. runcinata (Buch.-Ham.) H. Gross in Engl. Bot. Jahrb. 49 : 277, 1913. *Polygonum runcinatum* Buch.-Ham. in D. Don Prodr. Fl. Nepal. 73, 1825; Fl. Brit. Ind. 5 : 43, 1886.

Local name : Jongroma.

Slender annual, creeping at base; leaves runcinate-pinnatifid; flowers small, white or pink, in globose peduncled heads. Common on roadside and waste places.

Sham Khara, 1350 m, Dec. 1963, *Sen Gupta* 1111; *Ibid.*, 1500 m, Nov. 1963, *Deb* 67; Tama, 1350 m, April 1964, *Sen Gupta* 1173; Kamji, 1000 m, Dec. 1963, *Subba Rao* 201; Dorokha, 1000 m, Dec. 1963, *Thothathri* 10436; Tashiyangtsi Track, Oct. 1965, *Balakrishnan* 44080.

P. sagittata (Linn.) H. Gross in Beib. Bot. Centralbl. 37 : 113, 1919. *Polygonum sagittatum* Linn. Sp. Pl. 363, 1753; Fl. Brit. Ind. 5 : 47, 1886,

Prickly herb with sagittate base, flowers small, pink, in peduncled heads; occasional in open shrubberies.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5914 & 59494.

Persicaria virginiana (Linn.) Gaertn. Fruct. 2 : 180, 1791. *Polygonum virginianum* Linn. Sp. Pl. 361, 1753; Fl. Brit. Ind. 5 : 31, 1886.

Tall shrub; stem stout, hollow; flowers red in long racemes. Rare. Dakpai, 1650 m, Nov. 1964, *Deb* 345.

Polygonum plebejum R. Br. Prodr. Fl. Nov. Holl. 420, 1810; Fl. Brit. Ind. 5 : 27, 1886.

Diffusely branched, prostrate herb; flowers small, reddish, sunken in the stipules. Frequent on open ground.

Birti, 550 m, April 1964, *Sen Gupta* 1223 & 1294; Thimpu, 2500 m, April 1964, *Maheshwari* 394; Nangadzung, March 1965, *Balakrishnan* 41858.

Tiniaria convolvulus (Linn.) Webb. & Moq. in Webb. & Berth. Phyt. Canar. 3 : 221, 1849. *Polygonum convolvulus* Linn. Sp. Pl. 364, 1753; Fl. Brit. Ind. 5 : 53, 1886.

A twining herb with more or less hastate leaves; outer sepals of flowers enlarged in fruit and narrowly winged. Frequent in roadside shrubberies.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5965; Kheri Camp, 3 km to Tashigong, 1100 m, Sept. 1965, *A. S. Rao* 43542.

T. dumetorum (Linn.) Opiz Sezman 98, 1852. *Polygonum dumetorum* Linn. Sp. Pl. 521, 1753; Fl. Brit. Ind. 5 : 54, 1886.

Twining herb; leaves subhastate; pedicels of flowers very slender, outer perianth winged in fruit. Rare in the fringe of forest.

Gomchu, 2400 m, Sept. 1965, *A. S. Rao* 43448.

Rheum acuminatum Hook. f. et Thoms. in Bot. Mag. t. 4877, 1855; Fl. Brit. Ind. 5 : 57, 1886.

A stout herb with a leafy stem; flowers dark red in terminal, branched panicle. Cultivated.

Chi la pass, 3000 m, Aug. 1963, *Sen Gupta* 737.

Rumex maritimus Linn. Sp. Pl. 1 : 335, 1753; Fl. Brit. Ind. 5 : 59, 1886.

Annual herb; flowers very small, in panicles which are leafy to the top. A common weed of waste places.

Phuntsholing, April 1964, *Maheshwari* s.n.

R. nepalensis Spreng. Syst. Veg. 2 : 159, 1825; Fl. Brit. Ind. 5 : 60, 1886.

Erect herb; radical leaves larger, oblong or triangular ovate; flowers

very small, in elongated racemes. A common weed in open situation. Leaf-paste is useful in eczema.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5966; Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n. ; Thimpu, 2500 m, April 1964, *Maheshwari* s.n. ; Shemgang, 2000 m, April 1964, *Sen Gupta* 1261; Tashigong, 1200 m, March 1965, *Balakrishnan* 41197; Peme, Dongala Lhutsi Track, Oct. 1965, *Balakrishnan* 44459.

ARISTOLOCHIACEAE

S. K. MUKERJEE

Aristolochia griffithii Hook. f. et Thoms. ex. Duchart. in DC. Prodr. 15 : 437, 1864; Fl. Brit. Ind. 5 : 77, 1886.

A long climber, woolly or tomentose in younger parts; flowers axillary, tubular-jug-shaped, red and yellow; capsule cylindrical, up to 18 cm long, with ribs and furrows.

Chima Kothi, 2000 m, April 1964, *Maheshwari* 5379.

PIPERACEAE

S. K. MUKERJEE AND P. K. HAJRA

Peperomia pellucida (Linn.) H. B. & K. Nov. Gen. 1 : 64, 1815. *P. exigua* (Bl.) Miq. Syst. Pip. 77, 1843; Fl. Brit. Ind. 5 : 97, 1886.

Small, succulent, epiphytic herb; leaves usually in whorls of 4; flowers very minute, in terminal spike.

Phuntsholing, Aug. 1965, *Sen Gupta* 1134.

P. tetraphylla (G. Forst.) Hook. & Arn. Bot. Beech. Voy. 96, 1832. *P. reflexa* A. Dietr. Sp. Pl. 1 : 180, 1831; Fl. Brit. Ind. 5 : 99, 1886.

A small, epiphyte with tufted, leafy stem; leaves 4 in a whorl, orbicular; flowers very minute, in short terminal spikes. Frequent.

Sureylakha, 1650 m, Dec. 1963, *Sen Gupta* 987; Sham Khara 1500 m, Nov. 1964, *Deb* 11; Chaisilakha, 1500 m, April 1964, *Maheshwari* 5317; *Ibid.*, Dec. 1963, *Subba Rao* 393; Dorokha, 1000 m, Dec. 1963, *Thoihathri* 10483; Lumichawa, 2500 m, Aug. 1965, *Sen Gupta* 1205; Wamrung, 2500 m, Sept. 1965, *A. S. Rao* 43352; Jeri chu, Sept. 1965, *A. S. Rao* 43434.

Piper attenuatum Buch.-Ham. ex Miq. Syst. Pip. 306, 1843; Fl. Brit. Ind. 5 : 92, 1886.

Local name : Chabo.

A rambling undershrub with stout flexuous branches; leaves suborbicular, 7-nerved from near the base; flowers minute, unisexual, female spike lengthening in fruit. Occasional.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 857; Chenari village, Aug. 1965, *A. S. Rao* 43230.

Piper diffusum Vahl Enum. 1 : 333, 1804; Fl. Brit. Ind. 5 : 96, 1886.

A spreading shrub with scandent branches in roadside thickets. Occasional.

Birti, 700 m, April 1964, *Sen Gupta* 1305; Narfong, 1850 m, Aug. 1965, *A. S. Rao* 43230.

P. hamiltonii Cas. DC. in Prodr. 16 : 359, 1869; Fl. Brit. Ind. 5 : 88, 1886.

Scandent shrub; stem flexuous, rooting at the nodes below; leaves suborbicular, 5-7-nerved from above the base. Scarce.

Birti, 700 m, April 1964, *Sen Gupta* 1305.

P. hymenophyllum Miq. in Hook. Lond. Journ. Bot. 5 : 554, 1846 ; Fl. Brit. Ind. 5 : 93, 1886.

A scandent shrub; leaves 2-3 nerved from the base; fruits red when ripe. Scarce in deep forests.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 893.

P. khasianum Cas. DC. in Prodr. 16 : 349, 1869; Fl. Brit. Ind. 5 : 89, 1886.

Scandent shrub in shade of forests; leaves lanceolate, 5-nerved above the base. Frequent.

Gaylegphug, 270 m, Nov. 1964, *Deb* 118.

P. mullesua D. Don Prodr. Fl. Nepal. 20, 1825. *P. brachystachyum* Wall. ex Hook. f. Fl. Brit. Ind. 5 : 87, 1886.

Much branched shrub with scandent branches; leaves 5-nerved from the base; fruiting spike subglobose. Scattered in the forest.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 849; Samchi, Dec. 1963, *Thothathri* 10394; Phuntsholing, Aug. 1965, *Sen Gupta* 1121; *Ibid.*, April 1964, *Maheshwari* s.n.

P. nepalense Miq. Syst. Pip. 318, 1843; Fl. Brit. Ind. 5 : 89, 1886.

Local name : Dakley chabo.

A scandent undershrub of the forests; fruiting spike about 15 cm long. Frequent.

Gaylegphug, 270 m, Nov. 1964, *Deb* 150; Sureylakha, 1650 m, Dec. 1963, *Sen Gupta* 983; Shemgang, 2000 m, April 1964, *Sen Gupta* 1270; Sangura, 1500 m, Dec. 1963, *Thothathri* 10263; Kamji, 1000 m, Dec. 1963, *Subba Rao* 210 & 254.

P. pedicellosum Wall. ex Cas. DC. in Prodr. 16 : 343, 1869; Fl. Brit. Ind. 5 : 81, 1886.

A bushy shrub with stout scandent branches; leaves coriaceous, 5-7 nerved from the base; fruiting spike 2-3 cm long, stout. Occasional in out-skirts of forests.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1405; Phuntsholing, April 1964, *Maheshwari* 5317.

Piper peepuloides Roxb. Fl. Ind. 1 : 159, 1820; Fl. Brit. Ind. 5 : 83, 1886.

A bushy shrub with slender scandent branches; spikes yellow-green, fruiting spike conico-cylindric. Common in shady rock crevices.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 836; *Ibid.*, Nov. 1964, *Deb* 117; near Betni bridge, 1050 m, Dec. 1963, *Sen Gupta* 1073; Samchi, Dec. 1963, *Thothathri* 10125; Phuntsholing, Dec. 1963, *Subba Rao* 125.

P. thomsoni (Cas. DC.) Hook. f. Fl. Brit. Ind. 5 : 87, 1886.

Local name : Rakatang.

Robust shrub with scandent branches; leaves 5-nerved from the base; fruiting spike subglobose, red when ripe; berries edible and officinal. Scattered in dense forest and in roadside thickets.

On way from Tama to Birti, 500 m, April 1964, *Sen Gupta* 1194; Gaylegphug, 270 m, Nov. 1964, *Deb* 119; *Ibid.*, Dec. 1963, *Sen Gupta* 894; *Ibid.*, April 1964, *Sen Gupta* 1392; *Ibid.*, May 1965, *Sen Gupta* 1424.

CHLORANTHACEAE

K. C. MALICK

Chloranthus officinalis Bl. Enum. Pl. Jav. 79, 1827; Fl. Brit. Ind. 5 : 100, 1886.

Erect undershrub; flowers minute, male and female in pairs; berries small. Common as undergrowth in evergreen forests.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1407; *Ibid.*, Nov. 1964, *Deb* 170.

LAURACEAE

A. S. RAO AND N. P. BALAKRISHNAN

Actinodaphne confertiflora Meissn. in DC. Prodr. 15 : 1 : 219, 1864 ; Fl. Brit. Ind. 5 : 154, 1886.

Local name : Kalo Bori.

Middle sized tree with yellow flowers. Frequent in subtropical forests.

Sham Khara and Maorey forests, 1500-1650 m, Dec. 1963, *Sen Gupta* 1080.

A. sikkimensis Meissn. in DC. Prodr. 15 : 1 : 213, 1864 ; Fl. Brit. Ind. 5 : 147, 1886.

Local name : Rudilo.

A bushy plant with yellow flowers. Frequent in subtropical and temperate forests.

Sham Khara and Maorey forest, 1500-1650 m, Dec. 1963, *Sen Gupta* 1085.

Beilschmedia gammieana King ex Hook.f. Fl. Brit. Ind. 5 : 124, 1886.

A medium-sized tree with small flowers in very short panicles. Occasional in deep forests.

Kamji, 1000 m, Dec. 1963, *Subba Rao* 189.

B. roxburghiana Nees in Wall. Pl. As. Rar. 2 : 69, 1831 ; Fl. Brit. Ind. 5 : 121, 1886.

A small deciduous tree with woolly branches ; flowers small, in short panicles ; fruits oblong, about 5 cm long, purple. Common in dense tropical forests.

Gaylegphug, 270 m, Nov. 1964, *Deb* 115.

Cinnamomum obtusifolium Nees in Wall. Pl. As. Rar. 2 : 73, 1831 ; Fl. Brit. Ind. 5 : 128, 1886.

Large trees with coriaceous leaves which are 3-nerved from base ; flowers small, in lax panicles. Frequent in subtropical or temperate forests.

Kamji, 1000 m, Dec. 1963, *Subba Rao* 173.

Cryptocarya amygdalina Nees in Wall. Pl. As. Rar. 2 : 69, 1831 ; Fl. Brit. Ind. 5 : 118, 1886.

Small much branched tree, with coriaceous leaves ; flowers very small, in much branched panicles. Occasional in the tropical forests.

Phuntsholing, Dec. 1963, *Subba Rao* 142.

Lindera heterophylla Meissn. in DC. Prodr. 15 : 246, 1864 ; Fl. Brit. Ind. 5 : 186, 1886.

A small deciduous tree, branches flexuous ; leaves 3-lobed at the tip or entire ; flowers small, in umbels in axils of membranous deciduous bracts. Occasional in temperate forests.

Dochu La, 3250 m, Aug. 1965, *Sen Gupta* 1743.

L. neesiana (Nees) Kurz For. Fl. 2 : 309, 1877 ; Fl. Brit. Ind. 5 : 186, 1886.

Small tree with membranous, deciduous leaves, triple nerved at base ; flowers small, in umbels near the apex of shoots. Occasional in temperate forests.

Litsaea chartacea (Nees) Hook.f. Fl. Brit. Ind. 5 : 170, 1886.

Moderate sized tree ; leaves thinly coriaceous ; flowers small, in small umbels, unisexual. Occasional in tropical and subtropical forests.

Samchi, Dec. 1963, *Thothathri* 10606.

L. cubeba (Lour) Pers. Syn. Pl. 2 : 4, 1806. *L. citrata* Bl. Bijdr. 565, 1825 ; Fl. Brit. Ind. 5 : 155, 1886.

Local name : Timur.

Small tree with citrus scented leaves ; flowers small, in umbels or corymbs, unisexual. Common in subtropical forests. Oil from seeds is used in muscular pains.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 920 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 50 ; Dorokha, 1000 m, Dec. 1963, *Thothathri* 10510.

Litsaea kingii Hook.f. Fl. Brit. Ind. 5 : 156, 1886.

A bushy shrub or small tree with a spicy odour, deciduous ; flowers small, in spreading umbels. Rare.

Hill near Phuntsholing, 700 m, Dec. 1963, *Subba Rao* 349.

L. lancifolia (Nees) Hook.f. Fl. Brit. Ind. 5 : 159, 1886.

A small bushy tree with slender branches, and thin leaves. Occasional in subtropical forests.

Sham Khara, 1500 m, Nov. 1964, *Deb* 35.

L. salicifolia (Roxb. ex Nees) Hook.f. Fl. Brit. Ind. 5 : 167, 1886.

var. **salicifolia**

Tall shrub, evergreen ; flowers very small, 4-6 in an umbel. Rare in tropical forests.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 1883.

var. **attenuata** (Wall. ex Nees) Hook.f. Fl. Brit. Ind. 5 : 168, 1886.

Leaves subdistichous, linear-oblong, acute. Rare.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1359.

Machilus gamblei King ex Hook.f. Fl. Brit. Ind. 5 : 138, 1886.

Small tree ; branches slender ; leaves thinly coriaceous. Rare.

Gomchu, opposite to workshop, 2450 m, Sept. 1965, *A. S. Rao* 43340.

Persea odoratissima (Nees) Kosterm. in Journ. Sci. Res. 1 : 116, 1952.

Machilus odoratissima Nees in Wall. Pl. As. Rar. 2 : 70, 1831 ; Fl. Brit. Ind. 5 : 139, 1886.

A large tree ; flowers small, in axillary panicles. Frequent in subtropical forests.

Rani Camp, 1650 m, Nov. 1964, *Deb* 214 ; Chima Kothi, 2000 m, April 1964, *Maheshwari* s.n.

Phoebe lanceolata Nees Syst. Lour. 109, 1836 ; Fl. Brit. Ind. 5 : 141, 1886.

Small tree ; branches slender ; flowers small, pale yellow, in axillary panicles. Frequent in subtropical forests.

Tama, 1200 m, April 1964, *Sen Gupta* 1161 ; Birti, 700 m, April 1964, *Sen Gupta* 1310.

THYMELAEACEAE

G. SEN GUPTA AND K. C. MALICK

Daphne bholua Buch.-Ham. ex D. Don Prodr. Fl. Nepal. 68, 1825. *D. cannabina* Wall. in As. Res. 13 : 315. t.8, 1820, p.p. ; Fl. Brit. Ind. 5 : 193, 1886.

A shrub with long branches and coriaceous leaves ; flowers purplish white, fragrant. Occasional in open forests.

Kanglung, 2500 m, Sept. 1965, *A. S. Rao* 43469 ; Thimpu, 2500 m, April 1964, *Maheshwari* s.n.

D. suriel W. W. Smith & Cave in Rec. Bot. Surv. Ind. 6 : 51, 1914.

Shrubs with coriaceous leaves and fragrant white flowers. Frequent in way side jungle.

Kamji, 1000 m, Dec. 1963, *Subba Rao* 186 ; *Ibid.*, Aug. 1965, *Sen Gupta* s.n.

D. involucrata Wall. in As. Res. 13 : t. 6, 1820 ; Fl. Brit. Ind. 5 : 193, 1886.

Shrubs with few branches ; flowers fragrant, flesh coloured ; berries red. Rare in roadside jungles.

Dakpai, 1650 m, Nov. 1964, *Deb* 355.

Edgeworthia gardneri Meissn. in Denkschr. Regensb. Bot. Gesell. 3 : 280, 1841 ; Fl. Brit. Ind. 5 : 195, 1886.

A large bushy shrub ; flowers yellow, densely crowded in axillary heads. Frequent in the fringe of forests.

Kamji, 1000 m, Dec. 1963, *Subba Rao* 185 ; Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n.

ELAEAGNACEAE

G. SEN GUPTA AND K. C. MALICK

Elaeagnus conferta Roxb. Fl. Ind. 1 : 460, 1820. *E. latifolia* Linn. Sp. Pl. (ed. 2) : 77, 1762 ; Fl. Brit. Ind. 5 : 202, 1886.

A short tree with shining silvery scales in younger parts as well as under surface of leaves ; flowers white ; berries edible. Occasional in subtemperate forests.

Chima Kothi, 1800 m, April 1964, *Maheshwari* s.n.

E. umbellata Thunb. Fl. Jap. 66, 1874 ; Fl. Brit. Ind. 5 : 201, 1886.

Deciduous shrub ; leaves with silvery scales beneath ; flowers white, fragrant. Frequent in open forests.

Honshu, 2850 m, Aug. 1965, *Sen Gupta* s.n. ; Chaisilakha, 1500 m, Aug. 1963, *Sen Gupta* s.n.

Hippophae rhamnoides Linn. Sp. Pl. 1023, 1753 ; Fl. Brit. Ind. 5 : 203, 1886.

A thorny shrub ; leaves linear-oblong, clothed beneath with shiny, circular scales ; flowers unisexual, very small ; fruit orange-yellow or scarlet. Abundant along watercourses on gravelly soil.

Paro. 2500 m, Aug. 1963, *Sen Gupta* 925 ; *Ibid.*, Oct. 1963, *Mukerjee* 5844.

LORANTHACEAE

G. SEN GUPTA AND P. K. HAJRA

Dendrophthoe falcata (Linn.f.) Etting. in *Denkschr. Akad. Wiss. Math. Nat.* Cl. 32 : 5⁷, 1872. *Loranthus longiflorus* Desr. in Lamk. *Encycl.* 3 : 498, 1789 ; Fl. Brit. Ind. 5 : 214, 1886.

Parasitic shrub ; flowers tubular, red. Frequent at lower elevations, and in plains.

Rani Camp, 1650 m, Nov. 1964, *Deb* 208.

Macrosolen cochinchinensis (Lour.) Van Teigh. in *Bull. Soc. Bot. Fr.* 41 : 122, 1895. *Loranthus globosus* Roxb. Fl. Ind. 2 : 206, 1824 ; Fl. Brit. Ind. 5 : 220, 1896.

Parasitic shrub ; flowers orange-yellow. Frequent in tropical forests.

Rani Camp, 1650 m, Nov. 1964, *Deb* 207.

M. psilanthus (Hook. f.) Dancer in *Blumea* 2 : 36, 1936. *Loranthus psilanthus*. Hook. f. Fl. Brit. Ind. 5 : 222, 1886.

A parasite with red flowers. Frequent.

Sham Khara & Maorey forests, 1550, Dec. 1963, *Sen Gupta* 1098 ; *Ibid.*, Nov. 1964, *Deb* 33.

Scurrula parasitica Linn. Sp. Pl. 110, 1753. *Loranthus scurrula* Linn. Sp. Pl. ed. 2. 1 : 472, 1762 ; Fl. Brit. Ind. 5 : 208, 1886.

Local name : Ajiru.

A parasite with buff coloured flower. Common in tropical forests.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 918 ; Betni, 1400 m, Dec. 1963, *Sen Gupta* 1048 ; Tama, 1450 m, Nov. 1964, *Deb* 300 ; Shemgang, 2000 m, April 1964, *Sen Gupta* 1258 ; Lumichawa, 2500 m, Aug. 1965, *Sen Gupta* 1258, 1048, 918.

S. pulverulenta (Wall.) G. Don *Gen. Hist.* 3 : 421, 1834. *Loranthus pulverulentus* Wall. in Roxb. Fl. Ind. 2 : 221, 1824 ; Fl. Brit. Ind. 5 : 211, 1886.

Parasites ; branches rather stout ; flowers greenish. Frequent in subtropical forests.

Sangura, 1500 m, Dec. 1963, *Thothathri* 10574.

Scurrula umbellifer (Schult.) G. Don Gen. Hist. 3 : 421, 1834 ; *Loranthus umbellifer* Schult. Syst. Veg. 7 : 97, 1829 ; Fl. Brit. Ind. 5 : 211, 1886. Parasite with rather stout branches ; corolla-tube curved. Lumichawa, Aug. 1965, *Sen Gupta* s.n.

Tolypanthus involucratus (Roxb.) Bl. in Schult.f. Syst. 7 : 1731, 1830. *Loranthus involucratus* Roxb. Fl. Ind. 2 : 208, 1824 ; Fl. Brit. Ind. 5 : 218, 1886. Slender parasite ; corolla with straight tube and recurved lobes, pinkish green. Rare. Gaylegphug, 270 m, May 1964, *Sen Gupta* 1422.

Viscum monoicum Roxb. ex DC. Prodr. 4 : 278, 1830 ; Fl. Brit. Ind. 5 : 224, 1886. Parasite with dichotomous branches ; flowers minute, unisexual. Occasional. Near Wamrung hill, Sept. 1965, *A. S. Rao* 43565 ; Dorokha, 1000 m, Dec. 1963, *Thothathri* 10529.

V. ovalifolium Wall. ex DC. Prodr. 4 : 278, 1830 ; Fl. Brit. Ind. 5 : 225, 1886. Bushy with dichotomous branches and coriaceous leaves. Occasional on the higher branches of trees. Sham Khara & Maorey forests, 1660 m, Dec. 1963, *Sen Gupta* 1092 ; Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n.

SANTALACEAE

G. SEN GUPTA AND P. K. HAJRA

Henslovia granulata Hook. f. et Thoms. ex DC. Prodr. 14 : 632, 1857 ; Fl. Brit. Ind. 5 : 232, 1886. Parasites with stout branches ; flowers minute, unisexual, numerous. Occasional on *Quercus* spp. On way from Rani Camp to Tama, 1500 m, Nov. 1964, *Deb* 270.

Osyris wightiana Wall. ex Wight Icon. t. 1853, 1852. *O. arborea* Wall. ex DC. Prodr. 14 : 633, 1857 ; Fl. Brit. Ind. 232, 1886. Tall shrubs with leathery leaves ; drupes very small, orange when ripe. Frequent on roadside. Kheri, 3 km to Tashigong, Sept. 1965, *A. S. Rao* 43503.

Pyrularia edulis (Wall.) DC. Prodr. 14 : 628, 1857 ; Fl. Brit. Ind. 5 : 230, 1886.

A thorny, deciduous shrub of the roadside ; flowers small, unisexual. Occasional.

Rani Camp, 1650 m, Nov. 1964, *Deb* 87 ; Chima Kothi, 2000 m. April 1964, *Maheshwari* s.n.

BALANOPHORACEAE

G. SEN GUPTA

Balanophora dioica Br. ex Royle *Illus. Bot. Him.* 330, 1836 ; *Fl. Brit. Ind.* 5 : 237, 1886.

A low fleshy root parasite. Frequent in deep forests.

Rani Camp, 1650 m, Nov. 1964, *Deb* 87 ; road to Narfong, 10 km north of Deothong, 1400 m, Aug. 1965, *A. S. Rao* 43190 ; Narfong, 1500 m, Aug. 1965, *A. S. Rao* 43239.

EUPHORBIACEAE

S. K. MUKERJEE AND K. C. MALICK

Acalypha brachystachya Hornem. *Hort. Hafn.* 909, 1853 ; *Fl. Brit. Ind.* 5 : 416, 1887.

Small flaccid herb ; flowers unisexual, very small. Rare in damp situation.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5881 ; Punakha, 1500 m, Aug. 1965, *Sen Gupta* s.n. ; Lumichawa, Aug. 1965, *Sen Gupta* s.n.

Antidesma acuminatum Wall. ex Wight *Icon.* 6 : t. 1991, 1853 ; *Fl. Brit. Ind.* 5 : 363, 1887.

A large shrub with minute unisexual reddish flowers. Frequent.

Birti, 750 m, April 1964, *Sen Gupta* 1353 ; Gaylegphug, 270 m, April 1964, *Sen Gupta* 1399.

A. diandrum (Roxb.) Hejue ex Roth *Nov. Sp.* 369, 1821 ; *Fl. Brit. Ind.* 5 : 361, 1887.

A large bushy shrub ; flowers greenish yellow. Rare in the fringe of forests.

Birti, 650 m, April 1964, *Sen Gupta* 1301 ; on way to Deothong, 5 miles from Samdrup-Jhonkar, Aug. 1965, *A. S. Rao* 43124.

Baccaurea sapida (Roxb.) Muell.-Arg. in *DC. Prodr.* 15 : 459, 1866 ; *Fl. Brit. Ind.* 5 : 371, 1887.

Local name : Kusum.

Small tree with globose, yellow fruits.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1380.

Baliospermum calycinum Muell.-Arg. in Flora 47 : 470, 1864 ; Fl. Brit. Ind. 5 : 462, 1887.

Local name : Kalpati.

A large shrub with fruits splitting into 3 globose cocci. Frequent in deep forests.

Sureylakha, 1650 m, Dec. 1963, *Sen Gupta* 996 ; Narfong, 1850 m, Aug. 1965, *A. S. Rao* 43234.

B. corymbiferum Hook. f. Fl. Brit. Ind. 5 : 463, 1887.

A tall shrub with few slender branches ; fruits white. Frequent in deep forests.

Sham Khara, 1500 m, Nov. 1964, *Deb* 56 ; Mongerdezong, *Balakrishnan* 44637 & 44638.

Bischofia javanica Bl. Bijdr. 1168, 1825 ; Fl. Brit. Ind. 5 : 345, 1887.

Middle sized deciduous tree with 3-foliolate leaves ; fruits bluish black, fleshy, on long thickened pedicels. Occasional in tropical forests.

Gaylegphug, 270 m, May 1964, *Sen Gupta* 1419.

Bridelia montana Willd. Sp. Pl. 4 : 978, 1806 ; Fl. Brit. Ind. 5 : 269, 1887.

A short tree ; leaves membranous, prominently veined ; fruits small. Rare along the foot hills.

Phuntsholing, Dec. 1963, *Subba Rao* 391.

B. retusa (Linn.) Spreng. Syst. Veg. 3 : 48, 1829 ; Fl. Brit. Ind. 5 : 268, 1887.

Middle sized tree with fleshy fruits. Frequent in Pine forests.

Tama, 1450 m, Nov. 1964, *Deb* 306 ; Dakpai 1650 m, Nov. 1964, *Deb* 435 ; Kheri, 1000 m, Sept. 1965, *A. S. Rao* 43478.

B. sikkimensis Gehrm. in Engl. Jahrb. 41 : Biebl. 95 : 34, 1908.

Local name : Lahara gaijo.

A twiner of subtropical forests, fruits black.

Near Betni khola, 1350 m, Dec. 1963, *Sen Gupta* 1029.

B. tomentosa Bl. Bijdr. 597, 1825 ; Fl. Brit. Ind. 5 : 271, 1887.

A small tree with slender branches ; fruit small, blue-black. Rare in the foot hills.

Samchi, Dec. 1963, *Thothathri* 10420.

B. verrucosa Haines in Journ. Bot. 59 : 193, 1921.

A shrub in the forest fringes. Rare.

Punakha, 1500 m, Aug. 1965, *Sen Gupta* s. n.

Croton caudatus Geisel, Monogr. Croton 73, 1807 ; Fl. Brit. Ind. 5 : 388, 1887.

Shrub with scurfily, stellately hairy branches ; fruit with 6 slender ridges. Frequent in lower altitude.

Birti, 600-750 m, April 1964, *Sen Gupta* 1361 ; Gaylegphug, 270 m, April 1964, *Sen Gupta* 1361 ; Phuntsholing, April 1964, *Maheshwari* s. n.

C. roxburghii Balak. in Bull. bot. Surv. India 3 : 39, 1961. *C. oblongifolius* Roxb. Fl. Ind. 3 : 685 ; Fl. Brit. Ind. 5 : 386, 1887.

Small deciduous tree ; flowers small, yellow. Frequent in subtropical forests. Flowers are eaten by local people.

Tama, 1150 m, April 1964, *Sen Gupta* 1148 ; Birti, 650 m, April 1964, *Sen Gupta* 1305.

Emblica officinalis Gaertn. Fruct. 2.122, t. 108, 1807. *Phyllanthus emblica* Linn. Sp. Pl. 982, 1753 ; Fl. Brit. Ind. 5 : 289, 1887.

Small tree with distichous leaves and greenish yellow fruits. Common in open forests at lower altitude and near human habitations. Fruits are edible and officinal.

Birti, 530 m, April 1964, *Sen Gupta* 1209 ; Phuntsholing, Dec. 1963, *Subba Rao* 47.

Euphorbia hirta Linn. Sp. Pl. 454, 1753. *E. pilulifera* Linn. Amoen. Acad. 3 : 114, 1756 ; Fl. Brit. Ind. 5 : 250, 1887.

Small prostrate weed, with milky latex. Common on open ground.

Birti, 550 m, April 1964, *Sen Gupta* 1220 ; Shemgang, 1950 m, Nov. 1964, *Deb* 413 ; Phuntsholing, Dec. 1963, *Subba Rao* 362 ; *Ibid.*, April 1964, *Maheshwari* s.n. ; Punakha, 1000 m, Aug. 1965, *Sen Gupta* 1220.

E. hypericifolia Linn. Hort. Cliff. 198, 1737 ; Fl. Brit. Ind. 5 : 249, 1887.

Annual herb with ascending or decumbent stem ; leaves pale, obliquely oblong. Frequent in open places.

Tama, 1450 m, Nov. 1964, *Deb* 322 ; Kheri, 1200 m, Sept. 1965, *A. S. Rao* 43509 ; Punakha, 1500 m, Aug. 1965, *Sen Gupta* s.n.

E. griffithii Hook. f. Fl. Brit. Ind. 5 : 259, 1887.

Tall glabrous herb with sessile, linear leaves ; flower clusters scarlet or orange-red. Frequent in the open in temperate regions.

Kanglung, Sept. 1965, *A. S. Rao* 43478 ; Honslue, 2850 m, Aug. 1965, *Sen Gupta* s.n. ; Paro, 2500 m, Oct. 1963, *Mukerjee* 5930.

E. sikkimensis Boiss. in DC. Prodr. 15 : 113, 1866 ; Fl. Brit. Ind. 5 : 259, 1887.

Tall herb with stout stem ; involucre hemispheric. Rare in open places.

Thimpu, 2500 m, April 1964, *Maheshwari* s.n.

Glochidion assamicum (Muell.-Arg.) Hook.f. Fl. Brit. Ind. 5 : 319, 1887.

Local name : Haldi Kath.

A small tree ; leaves brownish-purple beneath ; flowers very small, yellow. Frequent in roadside jungles.

Tama, 1350 m, April 1964, *Sen Gupta* 1184 ; Birti, 550 m, April 1964, *Sen Gupta* 1226 ; Gaylegphug, 270 m, April 1964, *Sen Gupta* 1383.

G. oblatum Hook. f. Fl. Brit. Ind. 5 : 312, 1887.

A small tree with slender, leafy branches. Rare in the tropical forests. Phuntsholing, Dec. 1963, *Subba Rao* 107.

G. velutinum Wight Ic. t. 1907/2, 1853 ; Fl. Brit. Ind. 5 : 322, 1887.

A short tree with orbicular-ovate leaves. Occasional in lower forests.

Puuakha, 1500 m, Aug. 1965, *Sen Gupta* s.n.

Hemicicca glauca (Muell.-Arg.) Hurusawa et Ya. Tanaka in Har. Fl.

East. Himal. 179, 1966. *Phyllanthus glaucus* Muell.-Arg. in *Linnaea* 32 : 14, 1863 ; Fl. Brit. Ind. 57 : 288, 1887.

A much branched shrub with membranous leaves and purple globose berries. Occasional.

On way to Deothong, 505 km from Samdrup-Jhonkar, Aug. 1965, *A. S. Rao* 43117.

Jatropha curcas Linn. Sp. Pl. 1006, 1753 ; Fl. Brit. Ind. 5 : 383, 1887.

Small tree ; leaves long petioled, orbicular-cordate, 3-5 lobed or angled. Occasionally planted in villages at the foot hills.

Phuntsholing, Dec. 1963, *Subba Rao* 160.

Kirganellia reticulata (Poir.) Baill. Etud. Gen. Euph. 613, 1858. *Phyllanthus reticulatus* Poir., *Encycl.* 5 : 298, 1804 ; Fl. Brit. Ind. 5 : 288, 1887.

A shrub with slender lenticellate branches. Frequent in roadside jungles at lower altitudes.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 921 ; Phuntsholing, Dec. 1963, *Subba Rao* 49.

Macaranga denticulata Muell.-Arg. in DC. Prodr. 15 : 1000, 1866 ; Fl. Brit. Ind. 5 : 446, 1887.

A small tree with deltoid ovate leaves ; capsules black with yellow waxy glands. Rare in subtropical forests.

Kamji 1600 m, Dec. 1963, *Subba Rao* 236.

Mallotus albus (Roxb.) Muell.-Arg. in *Linnaea* 34 : 188, 1865 ; Fl. Brit. Ind. 5 : 429, 1887.

A small tree with stout branches ; younger parts and lower surface of

leaves, stellately or scurfily white or rusty tomentose ; fruits white. Rare in tropical forests.

Mallotus nepalensis Muell.-Arg. in *Linnaea* 34 : 188, 1865 ; *Fl. Brit. Ind.* 5 : 428, 1887.

A small tree with stout branches ; fruit covered with short spines. Occasional in temperate forests.

On road to Gomchu, 21 km from Wamrung, 2300 m, Sept. 1965, *A. S. Rao* 43391.

M philippinensis (Lamk.) Muell.-Arg. in *Linnaea* 34 : 196, 1865 ; *Fl. Brit. Ind.* 5 : 442, 1887.

Local name : Sinduriya.

A small tree ; younger parts rusty and tawny pubescent ; leaves triple-nerved ; capsules covered with crimson powder. Common at the foot hills.

Gayleghug, 270 m, Dec. 1963, *Sen Gupta* 804 ; Tama, 1450 m, Nov. 1964, *Deb* 290 ; Samchi, Dec. 1963, *Thothathri* 10349.

Ostodes paniculata Bl. *Bijdr.* 620, 1825 ; *Fl. Brit. Ind.* 5 : 400, 1887.

Local name : Bepari.

A small tree with stout branches and white bark ; flowers pinkish white ; fruits globose, about 3 cm in diam. Fairly common in subtropical forests.

Sureylakha, 1650 m, Dec. 1963, *Sen Gupta* 985 ; Birci, 750 m, April 1964, *Sen Gupta* 1328.

Phyllanthus clarkei Hook. f. *Fl. Brit. Ind.* 5 : 297, 1887.

Shrub with spreading stiff branches ; leaves obovate or obcordate. In deep forests under shade of trees.

Gayleghug, 270 m, Dec. 1963, *Sen Gupta* 850 ; Dorokha, 1000 m, Dec. 1963, *Thothathri* 10514.

P. griffithii Muell.-Arg. in *Linnaea* 32 : 27, 1865 ; *Fl. Brit. Ind.* 5 : 294, 1887.

A much branched shrub ; flowers yellow. Frequent in open forest.

Gayleghug, 270 m, April 1964, *Sen Gupta* 1386 & 1388.

P. parvifolius Buch.-Ham. ex D. Don *Prodr. Fl. Nepal.* 63, 1825 ; *Fl. Brit. Ind.* 5 : 294, 1887.

Tall shrub with pale bark and slender branches ; leaves membranous, close and distichous ; seeds minutely mottled with brown. Rare in tropical forests.

P. urinaria Linn. *Sp. Pl.* 982, 1753 ; *Fl. Brit. Ind.* 5 : 293, 1887.

Small annual herb ; leaves distichous, stipules peltate. Occasional in shady places.

Kheri camp, 3 km to Tashigong. 1150 m, Sept. 1965, *A. S. Rao* 4396 ; Phuntsholing, Dec. 1963, *Subba Rao* 391.

Ricinus communis Linn. Sp. Pl. 1007, 1753 ; Fl. Brit. Ind. 5 : 457, 1887.

Local name : Chamela.

Tall shrub with unbranched stem or a few long branches ; leaves large, palmately 7-many lobed ; capsules globose oblong, echinate ; seeds oblong, smooth, mottled. Planted and self sown on roadside near villages.

Phuntsholing, Dec. 1963, *Subba Rao* 31 ; Tama, 1350 m, April 1964, *Sen Gupta* 1185.

Sapium sebiferum Roxb. Fl. Ind. 3 : 693, 1832 ; Fl. Brit. Ind. 5 : 470, 1888.

Small tree with long petioled, subrhomboid leaves which are glaucous beneath. Rare in the area.

Punakha, 1400 m, Aug. 1965, *Sen Gupta* s.n.

Sauropus androgynous (Bl.) Merr. in For. Bur. Philipp. 30, 1903. *S. albicans* Bl. Bijdr. 596, 1825 ; Fl. Brit. Ind. 5 : 332, 1887.

A spinous undershrub ; branches near the apex of a slender stem ; flowers greenish red. Frequent in deep forests.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 821 ; *Ibid.*, Nov. 1964, *Deb* 113.

Securinega virosa (Roxb. ex Willd.) Pax et Hoffm. in Pflanzenfam. ed. 2. 19 c : 60, 1931. *Flueggea microcarpa* Bl. Bijdr. 580, 1825 ; Fl. Brit. Ind. 5 : 328, 1887.

Local name : Sersingma.

A small deciduous tree ; flowers small, in dense fascicles, bracts minute, crowded.

Birti, 650 m, April 1964, *Sen Gupta* 1201.

BUXACEAE

S. K. MUKERJEE

Sarcococca wallichii Stapf in Kew Bull. 1916 : 37, 1916. *S. pruniformis* Hook. f. Fl. Brit. Ind. 5 : 266, 1887 p.p. non Lindl.

Shrubs with green branches ; leaves coriaceous, ovate-lanceolate ; flowers small, yellow. Occasional in open situations.

Sangura, 1500 m, Dec. 1963, *Thothathri* s.n.

DAPHNIPHYLLACEAE

P. K. HAJRA

Daphniphyllum bengalense Rosenth. in Eng. Pflanzenr. Daphniphyll. 4: 147 a

11, 1919. *D. himalayense* Muell.-Arg. in DC. Prodr. 16 : 4, 1869 p.p. ; Fl. Brit. Ind. 5 : 354, 1887 p.p.

Small tree.

Shemgang, 2000 m, April 1964, *Sen Gupta* 1229.

Daphniphyllum himalayense Muell.-Arg. in DC. Prodr. 16 : 4, 1869 ; Fl. Brit. Ind. 5 : 354, 1887 p.p.

Small tree ; branches grooved ; leaves lanceolate, papillose beneath ; fruit crowned with persistent stigma.

Dakpai, 1650 m, Nov. 1964, *Deb* 386.

CANNABACEAE

Cannabis sativa Linn. Sp. Pl. 1027, 1753 ; Fl. Brit. Ind. 5 : 487, 1888.

Herb with digitate leaves. Common in open places. Leaves and tender parts of the plants are used as narcotics.

Birti, 600 m, April 1964, *Sen Gupta* 1195 ; Dakpai, 1650 m, Nov. 1964, *Deb* 343 ; Paro, 2000 m, Oct. 1963, *Mukerjee* 5814 ; Honshu, 2850 m, Aug. 1965, *Sen Gupta* 1195.

MORACEAE

R. M. DUTTA

Allaeanthus kurzii Hook.f. Fl. Brit. Ind. 5 : 490, 1888.

Climber with globose fruit. Rare.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1396.

Conocephalus suaveolens Bl. Bijdr. 483, 1825 ; Fl. Brit. Ind. 5 : 545, 1888.

Local name : Kholabor.

A gigantic climber.

Near Betni bridge. 1050 m, Dec. 1963, *Sen Gupta* 1072.

Ficus auriculata Lour. Fl. Cochinch. 666, 1790. *F. roxburghii* Wall. ex Miq. in Ann. Mus. Lugd. Bat. 3 : 296, 1867 ; Fl. Brit. Ind. 5 : 534, 1885.

Local name : Newara.

Middle-sized tree with edible fruits.

Near Betni bridge, 1050 m, Dec. 1963, *Sen Gupta* 1067.

F. ischnopoda Miq. in Ann. Mus. Lugd. Bat. 3 : 229, 1867. *F. pyriformis* Hook. & Arn. var. *ischnopoda* (Miq.) King in Ann. Roy. Bot. Gard. Calc. 1 : 158, 1888 ; Fl. Brit. Ind. 5 : 533, 1888.

Small tree by the riverside.

Tama, 1400 m, Nov. 1964, *Deb* 314.

Ficus pubigera (Wall. ex Miq.) Miq. var. **maliformis** (King) Corner in Gard.

Bull. 18 : 6, 1960. *F. foveolata* Wall. ex Miq. var. *maliformis* King et var. *oleaeformis* King in Ann. Roy. Bot. Gard. Calc. 1 : 134, 1888 ; Fl. Brit. Ind. 5 : 528, 1888.

Stout woody climber.

Rani Camp. 1650 m, Nov. 1964, *Deb* 89.

F. subincisa Sm. in Rees Cyclop. 14. n. 91, 1810. *F. clavata* Wall. ex Miq. in Lond. Journ. Bot. 7 : 431, 1848 ; Fl. Brit. Ind. 5 : 520, 1888.

Shrub.

Dakpai, 1650 m, Nov. 1964, *Deb* 439.

F. benghalensis Linn. Hort. Cliff. 471, 1737 ; Fl. Brit. Ind. 5 : 499, 1888.

A large spreading tree with prop roots coming from the main branches.

Occasional at the foot hills.

Phuntsholing, Dec. 1963, *Subba Rao* 376.

F. cunia Buch.-Ham. ex Roxb. Fl. Ind. 3 : 561, 1832 ; Fl. Brit. Ind. 5 : 523, 1888.

Short sized tree ; leaves oblique at base. Frequent at lower altitude.

Punakha, 1000 m, Aug. 1965, *Sen Gupta* s.n.

F. hederacea Roxb. Fl. Ind. 3 : 538, 1832. *F. scandens* Roxb. Fl. Ind. 3 : 536, 1832 ; Fl. Brit. Ind. 5 : 526, 1888.

Scandent or climbing by rooting stem and branches ; receptacles axillary, long peduncled.

Samchi, Dec. 1963, *Thothathri* 10593.

F. hispida Linn.f. Suppl. Pl. 442, 1781 ; Fl. Brit. Ind. 5 : 522, 1888.

Short sized tree. Frequent at the foot hills.

Samchi, Dec. 1963, *Thothathri* 10640.

Morus australis Poir. in Lamk. Encycl. Meth 4 : 380, 1797. *M. indica* Linn. Sp. Pl. 986, 1753 ; Fl. Brit. Ind. 5 : 492, 1888.

Shrub with shining crimson edible fruits, in shade.

Tama, 1200 m, April 1964, *Sen Gupta* 1141.

URTICACEAE

R. M. DUTTA

Boehmeria hamiltoniana Wedd. in Ann. Sci. Nat. Ser. 4 : 199, 1854 ; Fl. Brit. Ind. 5 : 579, 1888.

Local name : Kamley ; Chipley.

Shrub. A fodder plant.

Betni, 1350-1500 m, Dec. 1963, *Sen Gupta* 1041 & 1069 ; G. E. Camp, 1710 m, Sept. 1965, *A. S. Rao* 43574 ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 265.

Boehmeria macrophylla D. Don Prodr. Fl. Nepal, 60, 1825 ; Fl. Brit. Ind. 5 : 577, 1888.

Local name : Chipley.

Shrub frequently over hanging river banks.

Gaylegphug, 270 m. Dec. 1963, *Sen Gupta* 832 ; Samchi, Dec. 1963, *Thothathri* 10590 ; Phuntsholing, Dec. 1965, *Subba Rao* 94.

B. platyphylla D. Don Prodr. Fl. Nepal. 60, 1825 ; Fl. Brit. Ind. 5 : 578, 1888 p.p.

A small shrub with soft branches.

From Samdrup Jhonkar to Deothong, August 1965, *A. S. Rao* 43118 ; Samchi, Dec. 1963, *Thothathri* 10327 ; Phuntsholing, Dec. 1963, *Subba Rao* 56.

B. platyphylla D. Don var. **macrostachya** Brandis For. Fl. Ind. 403, 1874.

B. platyphylla Hook.f. Fl. Brit. Ind. 5 : 578, 1888 p.p.

Shrub, 1.3 m, tall. An undergrowth in tropical forests.

Gaylegphug, 270 m, Nov. 1964, *Deb* 168.

B. polystachya Wedd. in Ann. Sci. Nat. Ser. 4 : 200, 1854 ; Fl. Brit. Ind. 5 : 579, 1888.

Tall shrub with red flowers, an undergrowth in deep forests.

Sureylakha, 1200-1500 m, Dec. 1963, *Sen Gupta* 956 ; Paro, 2000 m, Oct. 1963, *Mukerjee* 5909.

B. sidaefolia Wedd. in Ann. Sci. Nat. Ser. 4 : 203, 1854 ; Fl. Brit. Ind. 5 : 576, 1888.

Shrub with soft stem and minute flowers.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1365 ; Samchi, Dec. 1963, *Thothathri* 10456.

Chamabainia cuspidata Wight Icon. t. 1981, 1853 ; Fl. Brit. Ind. 5 : 580, 1888.

A slender diffuse herb with 3-nerved leaves ; stipules, conspicuous, enclosing ten flower clusters. Occasional in damp places.

Krishnagiri Saddle, on road from Narfong to Wamrung, 2100 m, Sept. 1965, *Rao* 43228.

Debregeasia longifolia (Burm.) Wedd. in DC. Prodr. 16 : 235, 1869. *D. velutina* Gaud. Bot. Bonite. Voy. t. 90, 1842-43 ; Fl. Brit. Ind. 5 : 590, 1888.

Local name : Tusare (Nep.).

Tall shrub to small tree with green flowers and orange yellow fruits.

Sureylakha, 1200-1500 m, Dec. 1963, *Sen Gupta* 965 ; Birti, 600-900 m, April 1964, *Sen Gupta* 1331 ; Tama, 1450 m, Nov. 1964, *Deb* 317 ; Dorokha, 1000 m, Dec. 1963, *Thothathri* 10526.

Elatostema cornutum Wedd. Monogr. Urt. 316, 1856 ; Fl. Brit. Ind. 5 : 574, 1888.

Slender creeping herb with flaccid stem. Occasional in damp situation. Phuntsholing, Aug. 1965, *Sen Gupta* s.n.

E. hookerianum Wedd. Monogr. Urt. 309, 1856 ; Fl. Brit. Ind. 5 : 567, 1888.

A trailing or creeping herb ; leaves falcate, up to 18 cm long. Frequent in shady roadside jungles.

Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n. ; Kamji, 1000 m, Dec. 1963, *Subba Rao* 222.

E. rupestre Wedd. Monogr. Urt. 304, 1856 ; Fl. Brit. Ind. 5 : 564, 1888.

Herb with stout ascending stem ; leaves up to 12 cm long, obliquely and narrowly elliptic. Occasional on shady hill-side.

Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n.

E. lineolatum Wight Icon. t. 1984, 1853 ; Fl. Brit. Ind. 5 : 565, 1888.

Local name : Chhotey gaglota (Nep.).

Small undershrub with white flowers. In shade as an undergrowth.

Near Betni Kholra, 1350 m, Dec. 1963, *Sen Gupta* 1046 ; Birti, 600-700 m, April 1964, *Sen Gupta* 1307 ; Phuntsholing, April 1964, *Maheshwari* s.n. ; Samchi, 300 m, Dec. 1963, *Thothathri* 10419.

E. platyphyllum Wedd. Monogr. Urt. 301, 1856 ; Fl. Brit. Ind. 5 : 566, 1888.

Local name : Gaglata.

Undershrub with minute flowers. Used as vegetable.

Batase, 1500-1650 m, Dec. 1963, *Sen Gupta* 1016 ; Rani Camp, 1650 m, Nov. 1964, *Deb* 225 ; Samchi, 300 m, Dec. 1963, *Thothathri* 10589.

E. sesquifolium Hassk. Cat. Hort. Bogor. 79, 1844 ; Fl. Brit. Ind. 5 : 564, 1888.

Narfong, 2 km north along the stream bank down the hill, 1510 m, Aug. 1965, *Rao* 43255.

E. surculosum Wight Icon. t. 2091, f. 4. 1853 ; Fl. Brit. Ind. 5 : 572, 1888.

From Deothong to Narfong, 1260 m, Aug. 1965, *A. S. Rao* 43202 ; from Wamrung to Gomchu, Sept. 1965, *A. S. Rao* 43369.

Girardinia palmata (Forsk.) Gaud. in Freyc. Voy. Bot. 498, 1830. *G. heterophylla* Decne. in Jacquem. Voy. Bot. 4 : 151, t. 153, 1844 ; Fl. Brit. Ind. 5 : 550, 1888.

Local name : Bhyangrey shishmi.

Shrub armed with weak stinging prickles.

Sureylakha, 1200-1500 m, Dec. 1963, *Sen Gupta* 953 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 42 ; Chaisilakha, 1500 m, April 1964, *Maheshwari* s.n.

Laportea crenulata Gaud. Freyc. Voy. Bot. 498, 1830 ; Fl. Brit. Ind. 5 : 550, 1888.

Local name : Morengey.

Shrub with stinging hairs and milky white fruits. Frequent near the foot hills.

Near Betni bridge, 1050 m, Dec. 1963, *Sen Gupta* 1063 ; Samchi, 300 m, Dec. 1963 *Thothathri* 10641 ; Phuntsholing. Dec. 1963, *Subba Rao* 109.

Iecanthus peduncularis (Royle) Wedd. in DC. Prodr. 16 : 164, 1869. *L. wightii* Wedd. in Ann. Sci. Nat. Ser. 4 : 187, 1854 ; Fl. Brit. Ind. 5 : 559, 1888.

Succulent creeping herb with minute flowers on forest floor.

Sureylakha, 1200-1500 m, Dec. 1963, *Sen Gupta* 949 ; *Ibid.*, 1500-1800 m, Dec. 1963, *Sen Gupta* 995 ; Sham Khara, 1500 m, Nov. 1964, *Deb* 41 ; Deothong to Narfong, 1260 m, Aug. 1965, *A. S. Rao* 43185.

Pilea anisophylla Wedd. Monogr. Urt. 193, 1856 ; Fl. Brit. Ind. 5 : 552, 1888.

A small sparingly branched undershrub. Rare.

Kheri, 1050 m, Sept. 1965, *A. S. Rao* 43513.

P. bracteosa Wedd. Monogr. Urt. 245, 1856 ; Fl. Brit. Ind. 5 : 555, 1888.

Herbaceous plants, woody near base ; peduncles, slender. Occasional.

Deothong to Narfong, 1260 m, Aug. 1965, *A. S. Rao* 43198.

P. insolens Wedd. in DC. Prodr. 16 : 118, 1869 ; Fl. Brit. Ind. 5 : 552, 1888.

Small glabrous herb ; leaves of 2 kinds, larger long-petioled, smaller sessile. Rare.

Kanglung, Sept. 1965, *A. S. Rao* 43549.

P. scripta (Ham.) Wedd. Monogr. Urt. 222, 1856 ; Fl. Brit. Ind. 5 : 556, 1888.

Local name : Sheta gaglata (Nep.).

Small herb with minute greenish-white flowers. Frequent on hill slope.

Betni, 1400 m, Dec. 1963, *Sen Gupta* 1035 ; Rani Camp, 1650 m, Nov. 1964, *Deb* 97.

Pilea smilacifolia Wedd. in Ann. Sci. Nat. Ser. 4 : 186, 1854 ; Fl. Brit. Ind. 5 : 553, 1888.

Suffruticose herb with robust stem, woody and many-angled below. Frequent.

On road from Samdrup Jhonkar to Deothong, Aug. 1965, *A. S. Rao* 43129 ; on road from Deothong to Narfong, 1260 m, Aug. 1965, *A.S. Rao* 43197.

P. symmeria Wedd. Monogr. Urst. 246, 1856 ; Fl. Brit. Ind. 5 : 554, 1888.

Succulent herb. Occasional on outskirts of the forest.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 900.

P. umbrosa Wedd. in Ann. Sci. Nat. Ser. 4 : 187, 1854 ; Fl. Brit. Ind. 5 : 556, 1888.

Narfong, 1710 m, Aug. 1965, *A. S. Rao* 43252 ; Dochu La, 3100 m, Aug. 1965. *Sen Gupta* s.n.

Pouzolzia hirta Hassk. Cat. Hort. Bogor. 80, 1844 ; Fl. Brit. Ind. 5 : 586, 1888.

Creeping herb with minute flowers. Common.

Sureylakha, 1200-1500 m, Dec. 1963, *Sen Gupta* 934 ; Sham Khara, 1350 m, Dec. 1963, *Sen Gupta* 1117 ; Rani Camp, 1650 m, Nov. 1964, *Deb* 227 ; Chenari village, Aug. 1965, *A. S. Rao* 43163.

P. viminea Wedd. in DC. Prodr. 16 : 228, 1869 ; Fl. Brit. Ind. 5 : 581, 1888.

Erect herb. Scattered in dense forest.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 830 ; Sham Khara, 1350 m, Dec. 1963, *Sen Gupta* 1121 & 1123 ; 10 km on road from Samdrup Jhonkar to Deothong, Aug. 1965, *A. S. Rao* 43126 ; beyond Chenari village near Deothong, Aug. 1965, *A. S. Rao* 43152 ; Phuntsholing, Dec. 1963, *Subba Rao* 90 ; Punakha 1500 m, Aug. 1965, *Sen Gupta* s.n.

P. viminea Wedd. var. **fulgens** Wedd. in DC. Prodr. 16 : 229, 1869 ; Fl. Brit. Ind. 5 : 581, 1888.

Herbs with leaves white beneath.

From Deothong to Narfong, 1050 m, Aug. 1965, *A. S. Rao* 43166.

P. zeylanica (Linn.) J. Bennett et Brown Pl. Jav. Rar. 67, 1838. *P. indica* Gaudich. Frey. Voy. Bot. 503, 1830 ; Fl. Brit. Ind. 5 : 581, 1888.

Prostrate and ascending herb, hoary pubescent. Frequent in shady places.

Paro, 2000 m, Aug. 1963, *Sen Gupta* s.n.

Urtica parviflora Roxb. Fl. Ind. 3 : 581, 1832 ; Fl. Brit. Ind. 5 : 548, 1888.

Local names : Hariya shishnu, Phusrey shishnu.

Stout herbs with perennial base and stinging prickles. Locally widespread. Decoction of roots is given in dog bites.

Sureylakha, 1200-1500 m, Dec. 1963, *Sen Gupta* 971; near Betni bridge, 1050 m, Dec. 1963, *Sen Gupta* 1077 & 1078; Sham Khara, 1500 m, Nov. 1964, *Deb* 15 ; Lumichawa, 2500 m, Aug. 1965, *Sen Gupta* s.n.

JUGLANDACEAE

G. SEN GUPTA

Engelhardtia spicata Leschen. ex Bl. Bijdr. 528. 1825 ; Fl. Brit. Ind. 5 : 595, 1888.

Local name : Mawa.

A medium sized tree ; flowers unisexual, in separate pendulous spikes, bracts of female spikes persistent and adnate to fruits. Scattered on hill-slopes.

On way from Shemgang to Birti, 1000 m, April 1964, *Sen Gupta* 1289 ; Sham Khara, 1950 m, Nov. 1964, *Deb* 1.

E. acerifolia Bl. Fl. Jav. Jugland. 11, 1835 ; Fl. Brit. Ind. 5 : 596, 1888.

Large tree with pendulous fruiting spikes with persistent bracts adnate to the fruits.

On way from Tama to Birti, 600 m, April 1964, *Sen Gupta* 1190.

MYRICACEAE

Myrica esculenta Ham. ex D. Don Prodr. Fl. Nepal. 56, 1825. *M. nagi* Hook.f. Fl. Brit. Ind. 5 : 597, 1888 p.p. non Thunb.

A short evergreen tree with oblanceolate leaves which have resinous glands beneath ; fruit globose, succulent, granulate. An occasional tree with edible fruits.

On way from Rani Camp to Tama, 1500 m, Nov. 1964, *Deb* 278.

FAGACEAE

S. N. BISWAS

Castanopsis indica (Roxb.) DC. in Seem. Journ. Bot. 1 : 182, 1863 ; Fl. Brit. Ind. 5 : 620, 1888.

Medium sized to tall evergreen trees ; branchlets rufous tomentose ; leaves ovate-oblong, coarsely serrate in the upper portion ; inflorescence

rufous tomentose ; involucre densely covered with straight, simple, long, subulate, adpressed-pubescent prickles.

Dhoan khola, Samchi, 429 m. Dec. 1963, *Thothathri* 10426 ; Tama, 1500-1650 m, Nov. 1964, *Deb* 302 ; Manas Camp 600 m. Nov. 1964. *Deb* 455.

Castanopsis tribuloides (Sm.) DC. in Seem. Journ. Bot. 1 : 182, 1863 ; Fl. Brit. Ind. 5 : 622, 1888.

Small evergreen trees ; branchlets glabrous ; leaves lanceolate to oblong acuminate, distantly serrate ; involucre ovoid rufous tomentose bearing numerous simple and branched, slightly flattened, stout, curved pubescent spines. Abundant.

Shemgang, 2000 m. Nov. 1964, *Deb* 397.

C. hystrix DC. in Seem. Journ. Bot. 1 : 182, 1863 ; Fl. Brit. Ind. 5 : 620, 1888.

Tall evergreen trees ; branchlets glabrous ; leaves coriaceous, lanceolate to oblong-lanceolate, remotely serrate in the upper portion ; ripe involucre more or less four angled, covered with simple and branched spines.

Shemgang, 2000 m. April 1964, *Sen Gupta* 1228.

Lithocarpus chittagonga (King) Merrill in Brittonia 4 : 39, 1941. *Quercus spicata* Sm. var. *chittagonga* King ex Hook.f. in Fl. Brit. Ind. 5 : 610, 1888.

Small trees ; leaves narrowly lanceolate, entire and glabrous, much narrowed to the base ; female spike erect ; cupule minutely tuberculate.

Shemgang, 2000 m. April 1964, *Sen Gupta* 1266.

L. grandifolius (D. Don) S. N. Biswas var. *gracilipes* (Miq.) S. N. Biswas in Bull. bot. Surv. India 10 : 259, 1968 ; *Quercus spicata* Sm. var. *gracilipes* (Miq.) Miq. ; Fl. Brit. Ind. 5 : 610, 1888.

Tall trees, sparingly branched ; leaves oblanceolate to oblong, glabrous ; cupules prominently tuberculate.

Sureylakha, 1350-1500 m, Dec. 1963, *Sen Gupta* 954.

L. fenestratus (Roxb.) Rehder in Journ. Arn. Arbor. 1 : 126, 1919. *Quercus fenestrata* Roxb. Fl. Ind. 3 : 633, 1832 ; Fl. Brit. Ind. 5 : 608, 1888.

Moderate-sized to tall evergreen trees ; leaves narrowly oblong-lanceolate to elliptic-lanceolate, entire, coriaceous ; female spike stiff erect and pubescent ; cupular scales rufous-pubescent.

Sham Khara, 1650-1850 m, Dec. 1963, *Sen Gupta* 1096.

L. dealbatus (Hook.f. et Thoms. ex Miq.) Rehder in Journ. Arn. Arbor. 1 : 124-25, 1919. *Quercus dealbata* Hook. f. et Thoms. ex Miq. Fl. Brit. Ind. 5 : 609, 1888.

Small to middle-sized tree. Leaves elliptic ovate to lanceolate, entire, coreaceous. Cupule striate tubercled.

Rani Camp to Tama, 1350-1650 m. Nov. 1964. *Deb* 274.

Quercus griffithii Hook.f. et Thoms. ex DC. Prodr. 16 : 14. 1864; Fl. Brit. Ind. 5 : 602, 1888.

Moderate-sized to tall deciduous trees with spreading branches; leaves obovate-oblong to oblanceolate, sinuate dentate; cupule hemispherical; scales closely adpressed. Common.

Tama, 1500-1650 m, April 1964, *Sen Gupta* 1178; Shemgang, 2000 m, April 1964, *Sen Gupta* 1234; Rani Camp to Tama, 1350-1650 m. Nov. 1964, *Deb* 273.

Q. pachyphylla Kurz in Journ. As. Soc. Beng. 2 : 197, t. 14. 1875; Fl. Brit. Ind. 5 : 608, 1888.

Medium-sized to tall evergreen trees; leaves oblong-lanceolate to elliptic acuminate, entire; fruiting spike stout, erect; ripe cupule woody, hemispherical, lower rows of scales completely fused together.

Rani Camp, 1650 m, Nov. 1964, *Deb* 197 & 223.

GYMNOSPERMS

TAXACEAE

S. K. MUKERJEE

Taxus baccata Linn. Sp. Pl. 1040, 1753; Fl. Brit. Ind. 5 : 648, 1888.

Bepa, 2500 m, Oct. 1965, *Balakrishnan* 44377.

PINACEAE

Picea smithiana (Wall.) Boiss. Fl. Orient. 5 : 700, 1884. *P. morinda* Link. in Linnaea 15 : 522, 1841; Fl. Brit. Ind. 5 : 653, 1888.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5962.

Pinus wallichiana A. B. Jackson in Kew Bull. 1938 : 85, 1938. *P. excelsa* Wall. Pl. As. Rar. 3 : t. 201, 1831; Fl. Brit. Ind. 5 : 651, 1888.

East of Mongerdzong, 2000 m, Nov. 1965, *Balakrishnan* 44654; Gomchu, 2200 m, Sept. 1965, *A. S. Rao* 43473; Paro, 2500 m, Oct. 1963, *Mukerjee* 5961.

Tsuga dumosa (D. Don) Eichler in Eng. & Prantf. Nat. Pflanzenf. 2 : 80, 1889. *T. brunoniana* Carr. Traite Conif. 188, 1855; Fl. Brit. Ind. 5 : 654, 1888.

Tobrang, 2000 m, March 1965, *Balakrishnan* 41458.

CUPRESSACEAE

Cupressus funebris Endl. Conif. 58, 1847 ; Fl. Brit. Ind. 5 : 646, 1888.
Shali, 2500 m, March 1965, *Balakrishnan* 41300.

C. torulosa D. Don Prodr. Fl. Nepal. 55, 1825 ; Fl. Brit. Ind. 5 : 645, 1888.
Paro, 2500 m, Oct. 1963, *Mukerjee* 5884 ; Shali, March 1965,
Balakrishnan 41301.

Juniperus wallichiana Hook.f. ex Parl. in DC. Prodr. 16 : 482, 1868.
Paro, 2500 m, Oct. 1963, *Mukerjee* 5891.

GNETACEAE

Gnetum montanum Margkr. in Bull. Jard. Bot. Buitenz. 10, 1930.
A huge liana of the tropical forests.
Phuntsholing, May 1964, *Maheshwari* 5354.

MONOCOTYLEDONS

ORCHIDACEAE

A. S. RAO AND N. P. BALAKRISHNAN

Acampe longifolia Lindl. Fol. Orch. 1, 1852. *Saccolabium longifolium*
Hook.f. Fl. Brit. Ind. 6 : 62, 1890 ; King & Pantling in Ann. R. Bot.
Gard. Calc. 8 : 220, t. 292, 1898.

Tashigong, Tashiyangtsi Track, 4 km from Shergaon towards Shali,
1200 m, March 1965, *Balakrishnan* 41293.

Acrochaene punctata Lindl. Fol. Orch. 1, 1852 ; Fl. Brit. Ind. 5 : 783, 1890 ;
King & Pantling l.c. 8 : 153, t. 209, 1898.

Flowered under cultivation in Shillong.

Bhutan, no precise locality, *Balakrishnan* 43018.

Aerides vandarum Reichb. f. in Gard. Chron. 997, 1867 ; Fl. Brit. Ind.
6 : 44, 1890.

On way to Monger from Pakchang, Lhuntoi-Monger track, Nov.
1965, *Balakrishnan* 44597.

Agrostophyllum brevipes King & Pantling l.c. 8 : 156, t. 213, 1898.

Chaisilakha, 1500 m, Dec. 1965, *Subba Rao* 399.

A. callosum Reichb. f. in Seemann Fl. Vit. 296, 1868 ; Fl. Brit. Ind. 5 : 824,
1890 ; King & Pantling l.c. 8 : 155, 1898.

Shali, between Tashigong and Nyoth, 2000 m, March 1965, *Balakrishnan* 41994 ; between Shali and Nyoth, 2000 m, March 1965, *Balakrishnan* 41244.

Anthogonium gracile Lindl. Gen. Sp. Orch. 426, 1840 ; Fl. Brit. Ind. 5 : 822, 1890 ; King & Pantling l.c. 8 : 96, t. 134, 1898.

Nyoth forest, 2000 m, Oct. 1965, *Balakrishnan* 44172 ; Sept. 1965, *Balakrishnan* 43366.

Arachnis clarkei (Reichb.f.) J. J. Sm. in Nat. Tydschr. Ned. Ind. 72 : 76, 1912. *Arachnanthe clarkei* Rolf. in Gard. Chron. 2 : 567, 1888 ; Fl. Brit. Ind. 6 : 28, 1890.

Nyoth, northwest of Shali on way to Tashiyangtisi, 2000 m, March 1965, *Balakrishnan* 41325 ; way to Tashigong from Bagengla, 2000 m, Nov. 1965, *Balakrishnan* 44683.

Arundina graminifolia (D. Don) Hochr. Bull. N. Y. Bot. Gard. 6 : 270, 1910. *A. bambusifolia* Lindl. Gen. Sp. Orch. 125, 1831 ; Fl. Brit. Ind. 5 : 857, 1890 ; King & Pantling l.c. 8 : 113, t. 156, 1898.

Tama, 1450 m, Nov. 1964. *Deb* 292 ; on way to Tashigong from Monger, 2000 m, Nov. 1965, *Balakrishnan* 44678.

Ascocentrum micranthum (Lindl.) Holtt. Gard. Bull. 11 : 275, 1947. *Saccolabium micranthum* Lindl. Gen. Sp. Orch. 220, 1833 ; Fl. Brit. Ind. 6 : 59, 1890. *Cleisostoma micrantha* (Lindl.) King & Pantling l.c. 8 : 231, t. 132, 1898.

Gaylephug, 270 m, Dec. 1963, *Sen Gupta* 903.

Bulbophyllum affine Lindl. Gen Sp. Orch. 48, 1830 ; Fl. Brit. Ind. 5 : 756, 1890 ; King & Pantling l.c. 8 : 67, 1898.

4 km east of Mongerdzong, 2000 m, Nov. 1965, *Balakrishnan* 44655.

B. amplifolium (Rolfe) Balak. et Chowdhury in Bull. bot. Surv. India 9 : 89, 1967. *Cirrhopetalum amplifolium* Rolfe in Notes R. Bot. Gard. Edinb. 8 : 21, t. 10, 1913.

Nyoth, 1800 m, Oct. 1965, *Balakrishnan* 44192.

B. brachypodium Rao et Balak. in Bull. bot. Surv. India 10 : 350, 1968. *Cirrhopetalum brevipes* Hook. f. Fl. Brit. Ind. 5 : 777, 1890 (non *B. brevipes* Ridley 1903).

Tashiyangtisi, 2000 m, Oct. 1965, *Balakrishnan* 44298.

var. **parviflorum** Rao et Balak. l.c. 1969.

Gumdrithang, 2000 m, Mar. 1965, *Balakrishnan* 43004.

- Bulbophyllum candidum** Hook.f. Fl. Brit. Ind. 5 : 770, 1890.
Nyoth, 2000 m, March 1965, *Balakrishnan* 41999.
- B. cylindraceum** Lindl. Gen. Sp. Orch. 53, 1830 ; Fl. Brit. Ind. 5 : 765, 1890 ; King & Pantling l.c. 8 : 70, t. 96, 1898.
On way to Tashiyangtsi near Nyoth, 2000 m, March 1965, *Balakrishnan* 43006.
- B. careyanum** Spr. Syst. Veg. 3 : 732, 1826 ; Fl. Brit. Ind. 5 : 760, 1890 ; King & Pantling l.c. 8 : 71, t. 97, 1898.
Dorokha, 1500 m, Dec. 1963, *Thothathri* 10501.
- B. densiflorum** Rolfe in Kew Bull. 139, 1892.
Nyoth, 1800 m, March 1865, *Balakrishnan* 41998.
- B. eublepharum** Reichb. f. in Walp. Ann. 6 : 252, 1865 ; Fl. Brit. Ind. 5 : 764, 1890 ; King & Pantling l.c. 78, t. 108, 1898.
On way to Tashigong, 6 km east of Mongerdzong, 2000 m, Nov. 1965, *Balakrishnan* 43052 ; on road to Wamrung, 2000 m, Sept. 1965, *A. S. Rao*, 43312.
- B. griffithii** Reichb. f. in Walp. Ann. 6 : 247, 1865 ; Fl. Brit. Ind. 5 : 756, 1890 ; King & Pantling l.c. 8 : 66, t. 147, 1898.
Nyoth forest, 2000 m, Oct. 1965, *Balakrishnan* 44201.
- B. leopardinum** (Wall.) Lindl. Gen. Sp. Orch. 48, 1830 ; Fl. Brit. Ind. 5 : 756, 1890 ; King & Pantling l.c. 8 : 67, t. 92, 1898.
Nyoth forest, 2000 m, March 1965, *Balakrishnan* 41995.
- var. **tuberculatum** Balak. et Chowdhury in Bull. bot. Surv. India 9 : 90, 1968.
Nyoth, 1800 m, March 1965, *Balakrishnan* 41971.
- B. odoratissimum** (Sm.) Lindl. Gen. Sp. Orch. 55, 1830 ; Fl. Brit. Ind. 5 : 758, 1890 ; King & Pantling l.c. 8 : 79, t. 109, 1898.
Local name : Chhotey sunakhari.
Betni, 1350 m, Dec. 1963, *Sen Gupta* 1231 ; on way to Nyoth from Shali, 1500 m, March 1965, *Balakrishnan* 41984.
- B. reptans** Lindl. Gen. Sp. Orch. 51, 1830 ; Fl. Brit. Ind. 5 : 768, 1890 ; King & Pantling l.c. 8 : 77, t. 106, 1898.
Near Narfong, 1900 m, Sept. 1963, *Balakrishnan* 41139 ; 8 km from Shali to Nyoth, 1500 m, March 1965, *Balakrishnan* 41348 ; Shemgang, 2000 m, April 1964, *Sen Gupta* 1231.

- Bulbophyllum striatum** Reichb. f. in Walp. Ann. 6 : 257, 1865 ; Fl. Brit. Ind. 5 : 755, 1890 ; King & Pantling l.c. 8 : 75, t. 102, 1898.
Tashiyangtsi track, Nyoth forest, 2000 m, Oct. 1965, *Balakrishnan* 44179.
- B. thomsoni** Hook. f. Fl. Brit. Ind. 5 : 764, 1890 ; King & Pantling l.c. 8 : 83, t. 116, 1898.
Nyalamdong, Dongla-Lhunsi track, Oct. 1965, *Balakrishnan* 44498.
- Calanthe biloba** Lindl. Fol. Orch. 3, 1853 ; Fl. Brit. Ind. 5 : 848, 1890.
On way to Tama from Rani Camp, 1500 m, Nov. 1964, *Deb* 235.
- C. mannii** Hook.f. Fl. Brit. Ind. 5 : 850, 1890.
On way to Nyoth, 2 km from Shali, 2000 m, March 1965, *Balakrishnan* 41972 ; Tobrang forest, 2000 m, March 1965, *Balakrishnan* 41465.
- C. masuca** (Don) Lindl. Gen. Sp. Orch. 249, 1833 ; Fl. Brit. Ind. 5 : 850, 1890. *Bletia masuca* Don Prodr. Fl. Nepal. 30, 1825.
Kamji, 1000 m, Dec. 1963, *Subba Rao* 345.
- C. plantaginea** Lindl. Gen. Sp. Orch. 250, 1833 ; Fl. Brit. Ind. 5 : 853, 1890.
Between Shali and Nyoth, 1500 m, March 1965, *Balakrishnan* 41310 ;
Rani Camp, 1650 m, Nov. 1964, *Deb* 92.
- C. puberula** Lindl. Gen. Sp. Orch. 352, 1838 ; Fl. Brit. Ind. 5 : 848, 1890.
Shemgang, 1950 m, Nov. 1964, *Deb* 405.
- C. whiteana** King & Pantling in Journ. Asiat. Soc. Beng. 65 : 121, 1895.
Birti, 750 m, April 1964, *Sen Gupta* 1346.
- Chrysoglossum erraticum** Hook.f. Fl. Brit. Ind. 5 : 784, 1890.
Near Tobrang, 2000 m, March 1965, *Balakrishnan* 41992.
- Cirrhopetalum maculosum** Lindl. in Bot. Reg. 81, 1841 ; Fl. Brit. Ind. 5 : 776, 1890 ; King & Pantling l.c. 8 : 95, t. 132, 1898.
Nyoth forest, 2000 m, Oct. 1965, *Balakrishnan* 43032.
- C. refractum** Zoll. in Flora 457, 1847 ; Fl. Brit. Ind. 5 : 779, 1890 ; King & Pantling l.c. 8 : 87, t. 119, 1898.
Sureylakha, 1650 m, Dec. 1963, *Sen Gupta* 1003, Kamji, 1000 m, Dec. 1963, *Subba Rao* 275.
- C. wallichii** Lindl. in Wall. Pl. As. Rar. 1 : 53, t. 67, 1829 ; Fl. Brit. Ind. 5 : 776, 1890 ; King & Pantling l.c. 8 : 88, t. 121, 1898.

Road to Tashigong, 9 km from Narfong, 1700 m, Oct. 1965, *Balakrishnan* 43897 ; Bepa, on way to Dongla, 1500 m, Oct. 1965, *Balakrishnan* 44361.

Coelogyne barbata Griff. Notal. 3 : 280, 1851 ; Fl. Brit. Ind. 5 : 839, 1890.
Nyoth, 2000 m, Oct. 1965, *Balakrishnan* 43016.

C. corymbosa Lindl. Fol. Orch. 7, 1855 ; Fl. Brit. Ind. 5 : 831, 1890 ; King & Pantling l.c. 8 : 134, t. 185, 1898.
Narfong, 1720 m, March 1965, *Balakrishnan* 41964.

C. ovalis Lindl. in Bot. Reg. 91, 1838 ; Fl. Brit. Ind. 5 : 836, 1890 ; King & Pantling l.c. 8 : 135, t. 187, 1898. *C. fimbriata* Lindl. in Bot. Reg. 92, 1838 ; Fl. Brit. Ind. 5 : 836, 1890.
Road to Tashigong, 3 km north east of Narfong, 1800 m, March 1965, *Balakrishnan* 43007.

C. fuscescens Lindl. Gen. Sp. Orch. 41, 1830 ; Fl. Brit. Ind. 5 : 833, 1890 ; King & Pantling l.c. 8 : 132, t. 181, 1898.

Local name : Sunakhori.

Near Betni bridge, 1050 m, Dec. 1963, *Sen Gupta* 1061 ; on way to Tama from Rani Camp, 1500 m, Nov. 1964, *Deb* 244 ; Manas Camp, 750 m, Nov. 1964, *Deb* 457 ; Dorokha, 1000 m, Dec. 1963, *Thothathri* 10503.

C. gardneriana Lindl. in Wall. Pl. As. Rar. 1 : 33, t. 38, 1829 ; Fl. Brit. Ind. 5 : 828, 1890.

Local name : Phasrey sunakhari.

Near Betni Bridge, 1950 m, Dec. 1963, *Sen Gupta* 1075.

C. longipes Lindl. Fol. Orch. 10, 1859 ; Fl. Brit. Ind. 5 : 839, 1890 ; King & Pantling l.c. 8 : 136, t. 189, 1898.

Narfong, 1850 m, March 1965, *Balakrishnan* 41981 ; Rani Camp, 1650 m, Nov. 1964, *Deb* 100.

C. occultata Hook.f. Fl. Brit. Ind. 5 : 832, 1890 ; King & Pantling l.c. 8 : 135, t. 186, 1898.

Road to Tashigong, near Narfong, 1800 m, March 1965, *Balakrishnan* 41986.

C. ochracea Lindl. Bot. Reg. 69, 1846 ; Fl. Brit. Ind. 5 : 831, 1890 ; King & Pantling l.c. 8 : 132, t. 182, 1898.

Between Deothong and Narfong, 1800 m, March 1965, *Balakrishnan* 43042 ; Sangura, 1500 m, Dec. 1963, *Thothathri* 10562.

- Coelogyne prolifera** Lindl. Gen. Sp. Orch. 40, 1830; Fl. Brit. Ind. 5 : 838, 1890; King & Pantling l.c. 8 : 137, t. 190, 1898.
Narfong, 1850 m, March 1965, *Balakrishnan* 41980.
- Cryptochilus lutea** Lindl. in Journ. Linn. Soc. 3 : 20, 1858; Fl. Brit. Ind. 5 : 827, 1890; King & Pantling l.c. 8 : 163, t. 221, 1898.
Tashiyangtsi forest, on way to Bepa, Oct. 1965, *Balakrishnan* 44314.
- C. sanguinea** Wall. Tent. Fl. Nepal. 36, t. 26, 1826; Fl. Brit. Ind. 5 : 827, 1890; King & Pantling l.c. 8 : 163, t. 220, 1898.
Nyoth forest, 2000 m, Oct. 1965, *Balakrishnan* 44158; Narfong, 2000 m, March 1965, *Balakrishnan* 41985.
- Cymbidium cyperifolium** Wall. ex Lindl. Gen. Sp. Orch. 163, 1833; Fl. Brit. Ind. 6 : 13, 1890; King & Pantling l.c. 8 : 186, t. 248, 1890.
Shemgang, 1950 m, Nov. 1964, *Deb* 416.
- C. giganteum** Wall. ex Lindl. Gen. Sp. Orch. 163, 1833; Fl. Brit. Ind. 6 : 12, 1890; King & Pantling l.c. 8 : 191, t. 155, 1898.
On the way to Monger from Pakchang, Nov. 1965, *Balakrishnan* 44587; Dorokha forest, 700 m, Dec. 1963, *Thothathri* 10643.
- C. grandiflorum** Griff. Icon. Pl. As. t. 321, 1847; Fl. Brit. Ind. 6 : 12, 1890; King & Pantling l.c. 8 : 192, t. 256, 1898.
Near Narfong, 2000 m, March 1965, *Balakrishnan* 41147.
- C. lancifolium** Hook. f. Exot. Fl. t. 51, 1823; Fl. Brit. Ind. 6 : 9, 1890; King & Pantling l.c. 8 : 185, t. 247, 1898.
On way to Tobrang from Gunadrithang, *Balakrishnan* 41982.
- C. longifolium** D. Don Prodr. Fl. Nepal. 36, 1825; Fl. Brit. Ind. 6 : 13, 1890; King & Pantling l.c. 8 : 191, t. 154, 1898.
Laurijampa near Tobrang, March 1965, *Balakrishnan* 43012; Monger forest, 1500 m, Nov. 1965, *Balakrishnan* 44642.
- Cyperorchis elegans** (Lindl.) Bl. Rumphia 4 : 47, 1836; Fl. Brit. Ind. 6 : 14, 1890. *Cymbidium elegans* Lindl. Gen. Sp. Orch. 163, 1832.
Down the hill from Perna towards Lhunsi, Oct. 1965, *Balakrishnan* 43017; 5 km from Tobrang towards Tashiyangtsi, March 1965, *Balakrishnan* 41474.
- C. mastersii** (Griff. ex Lindl.) Benth. in Journ. Linn. Soc. 18 : 318, 1881; Fl. Brit. Ind. 6 : 15, 1890.
Rani Camp, 1650 m, Nov. 1964, *Deb* 232.

- Dendrobium aggregatum** Roxb. var. **jenkinsii** (Lindl.) King & Pantling
l.c. 8 : 60, t. 85, 1896.
Samdrup Jhonkar, March 1965, *Balakrishnan* 41959.
- D. amoenum** Wall. ex Lindl. Gen. Sp. Orch. 78, 1830; Fl. Brit. Ind. 5 : 738,
1890; King & Pantling l.c. 8 : 60, t. 85, 1892.
On way from Shemgang to Birti, 1000 m, April 1964, *Sen Gupta* 1292.
- D. anceps** Sw. in Act. Holm. 246, 1800; Fl. Brit. Ind. 5 : 724, 1890; King
& Pantling l.c. 8 : 42, t. 54, 1898.
Gaylegphug, 270 m, Nov. 1964, *Deb* 180.
- D. candidum** Wall. in Lindl. Bot. Reg. 54, 1838; Fl. Brit. Ind. 5 : 735, 1890;
King & Pantling l.c. 8 : 49, t. 68, 1898. *D. spathaceum* Lindl. in Journ.
Linn. Soc. 3 : 15, 1859; Fl. Brit. Ind. 5 : 737, 1890.
Gongo, south of Tashiyangtsi, 2100 m, March 1965, *Balakrishnan*
41968.
- D. chrysanthum** Wall. ex Lindl. Gen. Sp. Orch. 80, 1830; Fl. Brit. Ind.
5 : 747, 1890; King & Pantling l.c. 8 : 55, t. 77, 1898.
Road to Tashigong, 16 km up from Deothong, 2000 m, March 1965,
Balakrishnan 43011.
- D. densiflorum** Wall. ex Lindl. in Wall. Pl. As. Rar. 1 : 34, t. 40, 1830; Fl.
Brit. Ind. 5 : 748, 1890; King & Pantling l.c. 8 : 56, t. 79, 1898.
Gongo, south of Tashiyangtsi, March 1965, *Balakrishnan* 43046.
- D. eriaeflorum** Griff. Notul. 3 : 316, 1851; Fl. Brit. Ind. 5 : 715, 1890; King
& Pantling l.c. 8 : 44, t. 61, 1898.
8 km S.E. of Shali towards Nyoth, 2000 m, March 1965, *Balakrishnan*
41347; on way to Nyoth from Shali, 2000 m, Oct. 1965, *Balakrishnan* 44137.
- D. falconeri** Hook. f. Bot. Mag. t. 4944, 1856; Fl. Brit. Ind. 5 : 742, 1890.
Shemgang, 2000 m, April 1964, *Sen Gupta* 1263; on way to Nyoth,
8 km from Shali, 2000 m, March 1965, *Balakrishnan* 41346; on way to
Tashigong, Narfong 50 km from Deothong, 1900 m, March 1965,
Balakrishnan 41983.
- D. fimbriatum** Hook. Exot. Fl. t. 71, 1823 ; Fl. Brit. Ind. 5 : 745, 1890.
On way to Birti from Tama, 1000 m, April 1964, *Sen Gupta* 1293.
- var. **oculata** Hook. f. Bot. Mag. t. 4160, 1856; Fl. Brit. Ind. 5 : 745, 1890;
King & Pantling l.c. 8 : 58, t. 82, 1898.
On way to Tashiyangtsi from Nyoth, Oct. 1965, *Balakrishnan* 43047.

- Dendrobium heterocarpum** Wall. in Lindl. Gen. Sp. Orch. 78, 1830; Fl. Brit. Ind. 5 : 737, 1890; King & Pantling l.c. 8 : 53, t. 74, 1898. Shemgang, 2000 m, April 1964, *Sen Gupta* 1257A.
- D. hookerianum** Lindl. in Journ. Linn. Soc. 3 : 8, 1859; Fl. Brit. Ind. 5 : 745, 1890; King & Pantling l.c. 8 : 59, t. 83, 1898. Narfong, 1800 m, July 1965, *A. S. Rao* 43232; on way to Gongga from Tashiyangtsi, March 1965, *Balakrishnan* 43001 & 41488; on road to Nyoth, 8 km from Shali, 2000 m, March 1965, *Balakrishnan* 41345; Nyoth, 1000 m, Oct. 1965, *Balakrishnan* 44143.
- D. longicornu** Lindl. Gen. Sp. Orch. 80, 1830; Fl. Brit. Ind. 5 : 720, 1890; King & Pantling l.c. 8 : 46, t. 64, 1898. Shemgang, 2000 m, April 1964, *Sen Gupta* 1257; Dakpai, 1650 m, Nov. 1964, *Deb* 382; Nyoth, 2000 m, Oct. 1965, *Balakrishnan* 44221.
- D. nobile** Lindl. Gen. Sp. Orch. 24, 1830; Fl. Brit. Ind. 5 : 740, 1890; King & Pantling l.c. 8 : 51, t. 71, 1898. Shali, 2000 m, March 1965, *Balakrishnan* 41970.
- D. pauciflorum** King & Pantling l.c. 8 : 54, t. 76, 1898. Narfong, 1850 m, March 1965, *Balakrishnan* 41977.
- D. pierardi** Roxb. in Hook. Exot. Fl. t. 9, 1822; Fl. Brit. Ind. 5 : 738, 1890; King & Pantling 8 : 51, t. 72, 1898. Samdrup Jhonkar, 1000 m, March 1965, *Balakrishnan* 41960 & 43045.
- D. stuposum** Lindl. in Bot. Reg. Misc. 52, 1838. *D. sphegidoglossum* Reichb. f. in Bonpl. 2 : 58, 1852; Fl. Brit. Ind. 5 : 737, 1890. Nyoth forest, 2000 m, Oct. 1965, *Balakrishnan* 43043.
- Doritis taenialis** (Lindl.) Benth. in Gen. Pl. 3 : 574, 1883; Fl. Brit. Ind. 6 : 31, 1890; King & Pantling l.c. 8 : 199, t. 266, 1898. Towards Tobrang, 5 km from Tashiyangtsi, March 1965, *Balakrishnan* 41391; Shali, Oct. 1965, *Balakrishnan* 44111.
- Epigenum fargesii** (Finet) Gagnep. in Bull. Mus. Nat. Hist. Natur. (Ser. 2): 4 : 595, 1932. *Dendrobium fargesii* Finet in Bull. Soc. Bot. Fr. 50 : 374, t. 7, 1903. Narfong, 1775 m, March 1965, *Balakrishnan* 43013.
- Eria alba** Lindl. Gen. Sp. Orch. 67, 1830; Fl. Brit. Ind. 5 : 795, 1890. On way to Tashiyangtsi from Nyoth, March 1965, *Balakrishnan* 41967.

- Eria carinata** Gibson in Cal. Journ. Nat. Hist. 5 : 365, 1845; Fl. Brit. Ind. 5 : 808, 1890; King & Pantling l.c. 8 : 129, t. 179, 1898.
3 km east of Mongerdzong, Nov. 1956, *Balakrishnan* 44651.
- E. clausa** King & Pantling in Journ. As. Soc. Beng. 65 : 121, 1897 et l.c. 8 : 121, t. 167, 1890.
Without precise locality, *Balakrishnan* 43029.
- E. confusa** Hook. f. Ic. Pl. t. 1850, 1889; Fl. Brit. Ind. 5 : 796, 1890; King & Pantling l.c. 8 : 122, 1898.
Local name : Mem.
Tama, 1350 m, April 1964, *Sen Gupta* 1171.
- E. coronaria** (Lindl.) Reichb. f. in Walpers Ann. 6 : 272, 1865. *Trichosma suavis* Lindl. Bot. Reg. 83, 1841; Fl. Brit. Ind. 5 : 827, 1890.
Nyoth, 2000 m, March 1965, *Balakrishnan* 43023; *Ibid.*, Oct. 1965, *Balakrishnan* 44219; Shemgang, 1950 m, Nov. 1964, *Deb* 419.
- E. graminifolia** Lindl. in Journ. Linn. Soc. 3 : 54, 1859; Fl. Brit. Ind. 5 : 794, 1890; King & Pantling l.c. 8 : 119, t. 164, 1898.
Between Tashiyangtsi and Tobrang, 1850 m, March 1965, *Balakrishnan* 41991; between Nyoth and Tashiyangtsi, 2000 m, Oct. 1965, *Balakrishnan* 44256.
- Eulophia hormusji** Duthie in Ann. R. Bot. Gard. Calc. 9 : 125, 1906.
Phuntsholing, Dec. 1963, *Subba Rao* 42.
- E. merguensis** Lindl. in Journ. Linn. Soc. 3 : 52, 1859; Fl. Brit. Ind. 5 : 791, 1890.
Shemgang, 2000 m, April 1964, *Sen Gupta* 1265.
- E. muscicola** Lindl. in Journ. Linn. Soc. 3 : 47, 1859; Fl. Brit. Ind. 5 : 789, 1890; King & Pantling l.c. 8 : 117, t. 159, 1898.
Nyoth, 2000 m, Oct. 1965, *Balakrishnan* 44223.
- E. stricta** Lindl. Coll. Bot. t. 41, 1821; Fl. Brit. Ind. 5 : 791, 1890; King & Pantling l.c. 8 : 125, t. 173, 1898.
Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 901.
- Galeola kuhlii** (Reichb. f.) Reichb. f. Xen. Orch. 2 : 78, 1865. *G. hydra* Reichb. f. Xen. Orch. 2 : 77, 1865; Fl. Brit. Ind. 6 : 89, 1890; King & Pantling l.c. 8 : 264, t. 351, 1898.
Gaylegphug, 270 m, April 1964, *Sen Gupta* 1410.

- Gastrochilus acutifolius** (Lindl.) O. Ktz. Rev. Gen. 2: 661, 1891. *Saccolabium acutifolium* Lindl. Gen. Sp. Orch. 223, 1833; Fl. Brit. Ind. 6 : 61, 1890. Rani Camp, 1650 m, Nov. 1964, *Deb* 99.
- G. obliquus** (Lindl.) O. Ktz. Rev. Gen. 2 : 661, 1891. *Saccolabium obliquum* Lindl. Gen. Sp. Orch. 223, 1833; Fl. Brit. Ind. 6 : 61, 1890. Gaylegphug, 270 m, Nov. 1964, *Deb* 171 ; Rani Camp, 1650 m, Nov. 1964, *Deb* 461.
- G. calceolaria** (Sm.) D. Don Prodr. Fl. Nepal. 32, 1825. *Saccolabium calceolare* (Sm.) Lindl. Gen. Sp. Orch. 223, 1833; Fl. Brit. Ind. 6 : 60, 1890. Towards Tobrang, 3 km from Tashiyangtshi, 2000 m, March 1965, *Balakrishnan* 41030 & 41390; Chaisilakha, 1500 m, Dec. 1963, *Subba Rao* 420 & 444; Gaylegphug, 270 m, Nov. 1964, *Deb* 171; Changda chungli hill, 1300 m, Dec. 1963, *Thothathri* 10546.
- G. distichus** (Lindl.) O. Ktz. Rev. Gen. 661, 1891. *Saccolabium distichum* Lindl. in Journ. Linn. Soc. 3: 36, 1859; Fl. Brit. Ind. 6 : 64, 1890. 1 km north of Wamrung, 2000 m, Sept. 1965, *A. S. Rao* 43350.
- G. obtusifolius** (Lindl.) Rao & Mukerjee comb. nov. *Uncifera obtusifolia* Lindl. in Journ. Linn. Soc. 3 : 40, 1858. *Saccolabium obtusifolium* Hook. f. Fl. Brit. Ind. 6 : 65, 1890. Kamji, 1000 m, Dec. 1963, *Subba Rao* 230.
- G. papillosus** (Lindl.) O. Ktz. Rev. Gen. 661, 1891. *Saccolabium papillosum* Lindl. in Bot. Reg. t. 1552, 1841; Fl. Brit. Ind. 6 : 63, 1890. Samdrup Jhonkar, Nov. 1965, *Balakrishnan* 44701.
- Goodyera foliosa** (Lindl.) Hook. f. Fl. Brit. Ind. 6 : 113, 1890; King & Pantling l.c. 8 : 281, t. 374, 1898. To Laurijampa, 4 km from Tobrang, March 1965, *Balakrishnan* 41438.
- G. secundiflora** Lindl. in Journ. Linn. Soc. 1 : 182, 1853; Fl. Brit. Ind. 6 : 113, 1890; King & Pantling l.c. 8 : 183, t. 376, 1898. On way to Laurijampa from Tobrang, March 1965, *Balakrishnan* 43003.
- Habenaria densa** Wall. ex Lindl. Gen. Sp. Orch. 326, 1835; Fl. Brit. Ind. 6 : 153, 1890; King & Pantling l.c. 8 : 319, t. 420, 1898. Paro, 2500 m, Oct. 1963, *Mukerjee* 5848.
- H. furcifera** Lindl. Gen. Sp. Orch. 319, 1835; Fl. Brit. Ind. 6 : 149, 1890; King & Pantling l.c. 8 : 313, t. 410, 1898. Gomchu, down the large stream, 2450 m, Sept. 1965, *A. S. Rao* 43439.

- Herminium angustifolium** (Lindl.) Benth. ex Hook. f. Fl. Brit. Ind. 6 : 129, 1890; King & Pantling l.c. 8 : 332, t. 434, 1898.
Tashiyangtsi forest, 2000 m, Oct. 1965, *Balakrishnan* 44278.
- Ione bicolor** Lindl. Fol. Orch. 3, 1853. *Bulbophyllum bicolor* (Lindl.) Hook. f. Fl. Brit. Ind. 5 : 770, 1890; King & Pantling l.c. 8 : 159, t. 216, 1898.
Bepa, Oct. 1965, *Balakrishnan* 44360.
- I. paleacea** Lindl. Fol. Orch. 2, 1853. *Bulbophyllum paleaceum* (Lindl.) Benth. Gen. Pl. 3 : 503, 1883; Fl. Brit. Ind. 5 : 769, 1890; King & Pantling l.c. 8 : 158, t. 215, 1898.
Narfong, 1850 m, March 1965, *Balakrishnan* 41917 & 43021.
- Katherinea ampla** (Lindl.) Hawkes in Lloydia, 19 : 95, 1956. *Dendrobium amplum* Lindl. Gen. Sp. Orch. 74, 1830; Fl. Brit. Ind. 5 : 711, 1890; King & Pantling l.c. 8 : 63, t. 89, 1898.
Between Nyoth and Tashiyangtsi, 1900 m, Oct. 1965, *Balakrishnan* 44266.
- K. fuscescens** (Griff.) Hawkes l.c. 19 : 95, 1956. *Dendrobium fuscescens* Griff. Notul. 3 : 308, 1851; Fl. Brit. Ind. 5 : 712, 1890; King & Pantling l.c. 8 : 62, t. 88, 1898.
To Gumdrithong, 6 km from Tashiyangtsi, 2000 m, March 1965, *Balakrishnan* 41407; Bepa, 2200 m, Oct. 1965, *Balakrishnan* 44341.
- K. navicularis** Balak. et Choudhury in Bull. bot. Surv. India 8 : 316, 1967.
Narfong, 1560 m, March 1965, *Balakrishnan* 43014.
- Liparis bootanensis** Griff. Notul. 3 : 278, 1851; Fl. Brit. Ind. 5 : 700, 1890; King & Pantling l.c. 8 : 30, t. 40, 1898.
Narfong, 1850 m, March 1865, *Balakrishnan* 43002.
- L. cordifolia** Hook. f. Ic. Pl. t. 1811, 1889; Fl. Brit. Ind. 5 : 692, 1890; King & Pantling l.c. 8 : 24, t. 28, 1898.
On way to Laurijampa from Tobrang, 2000 m, March 1965, *Balakrishnan* 43005.
- L. griffithii** Ridley in Journ. Linn. Soc. 22: 285, 1886; Fl. Brit. Ind. 5: 700, 1890; King & Pantling l.c. 8 : 33, 1898.
On way to Tashiyangtsi from Nyoth, 2000 m, March 1965, *Balakrishnan* 41364; Nyoth forest, Oct. 1965, *Balakrishnan* 44190.

- Liparis longipes** Lindl. in Wall. Pl. As. Rar. 1 : 31, t. 35, 1829; Fl. Brit. Ind. 703, 1890; King & Pantling l.c. 8 : 30, t. 37, 1898.
Sanguta, 1500 m, Dec. 1965, *Thothathri* 10581; Gaylegphug, 270 m, Nov. 1964, *Deb* 189.
- L. plantaginea** Lindl. Gen. Sp. Orch. 29, 1830; Fl. Brit. Ind. 5 : 702, 1890; King & Pantling l.c. 8 : 29, t. 36, 1898.
Nyoth, 2000 m, Oct. 1965, *Balakrishnan* 44190.
- L. resupinata** Ridley in Journ. Linn. Soc. 22 : 290, 1886; Fl. Brit. Ind. 5 : 705, 1890; King & Pantling l.c. 8 : 36, t. 49, 1898.
Kamji, 1000 m, Dec. 1963, *Subba Rao* 229; Sangura, 1500 m, Dec. 1963, *Thothathri* 10470.
- Listera pinetorum** Lindl. in Journ. Linn. Soc. 1 : 175, 1857; Fl. Brit. Ind. 6 : 104, 1890.
Lisipang on way to Dongala, Oct. 1965, *Balakrishnan* 44392.
- Luisia inconspicua** (Hook. f.) King & Pantling l.c. 8 : 203, t. 272, 1898; *Saccolabium inconspicuum* Hook. f. Fl. Brit. Ind. 6 : 56, 1890.
Local name : Konchiru.
Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 869.
- L. teretifolia** Gaud. Bot. Frey. Voy. 427, t. 37, 1829; Fl. Brit. Ind. 6 : 22, 1890; King & Pantling l.c. 8 : 202, t. 271, 1898.
Nyalangdong, on way to Lhunsi, Oct. 1965, *Balakrishnan* 43040 & 44496.
- Malaxis sikkimensis** Reichb. f. in Walp. Ann. 6 : 212, 1865. *Oberonia myriantha* Lindl. Fol. Orch. 4 : 1853; Fl. Brit. Ind. 5 : 679, 1890; King Pantling l.c. 8 : 10, t. 12, 1898.
Local name : Suna khari.
Sham Khara, 1500 m, Nov. 1964, *Deb* 20; on way to Kharchemg from Nagerdzong, 2000 m, *Balakrishnan* 43009.
- Neogyna gardneriana** (Lindl.) Reichb. f. in Bot. 2 cit. 10 : 931, 1852. *Coelogyne gardneriana* Lindl. in Wall. Pl. As. Rar. 1 : 33, t. 38, 1829; Fl. Brit. Ind. 5 : 828, 1890.
Nyoth forest, 2000 m, Oct. 1965, *Balakrishnan* 43020 & 44162.
- Oberonia falcata** King & Pantling in Journ. As. Soc. Beng. 64 : 329, 1895; et l.c. 8 : 12, t. 14, 1898.
Kamji, 1000 m, Dec. 1963, *Subba Rao* 252A.

- Oberonia pachyrachis** Reichb. ex Hook. f. Fl. Brit. Ind. 5 : 681, 1890; King & Pantling l.c. 8 : 6, t. 3, 1898.
Local name : Baglapata Sunakhari.
Betni, 1500 m, Dec. 1963, *Sen Gupta* 1030.
- O. pyrulifera** Lindl. Fol. Orch. 2, 1853; Fl. Brit. Ind. 5 : 678, 1890; King & Pantling l.c. 8 : 15, t. 16A, 1898.
Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 905.
- Ornithochilus fuscus** Wall. in Lindl. Gen. Sp. Orch. 242, 1833; Fl. Brit. Ind. 6 : 76, 1890; King & Pantling l.c. 8 : 200, t. 268, 1898.
Sham Khara and Maorey forests, 1500-1650 m, Dec. 1963, *Sen Gupta* 1082.
- Otochilus fusca** Lindl. Gen. Sp. Orch. 35, 1830; Fl. Brit. Ind. 5 : 844, 1890; King & Pantling l.c. 8 : 143, t. 199, 1898.
Nyoth, 2000 m, March 1965, *Balakrishnan* 41343; Sangura, 1500 m, Dec. 1963, *Thothathri* 10517; Sureylakha, 1350 m, Dec. 1963, *Sen Gupta* 948; Sham Khara and Maorey forests 1500-1650 m, Dec. 1963, *Sen Gupta* 1107; Tama, 1350 m, April 1964, *Sen Gupta* 1172.
- O. porrecta** Lindl. Gen. Sp. 36, 1830; Fl. Brit. Ind. 5 : 844, 1890; King & Pantling l.c. 8 : 142, t. 198, 1898.
Shemgang, 2000 m, April 1964, *Sen Gupta* 1244; Kamji, 1000 m, Dec. 1963, *Subba Rao* 276; Chaisilakha, 1500 m, Dec. 1963, *Subba Rao* 402.
- Panisea tricallosa** Rolfe in Kew Bull. 148, 1901.
Between Neothang and Narfong, 1700 m, March 1965, *Balakrishnan* 43024.
- Peristylus constrictus** Lindl. Gen. Sp. Orch. 300, 1835. *Habenaria constricta* (Lindl.) Hook. f. Fl. Brit. Ind. 6 : 161, 1890; King & Pantling l.c. 8 : 325, t. 429, 1898.
Samchi, Dec. 1963, *Thothathri* 10614.
- Pholidota articulata** Lindl. Gen. Sp. Orch. 38, 1830; Fl. Brit. Ind. 5 : 844, 1890; King & Pantling l.c. 8 : 146, t. 205, 1898.
Rani Camp, 1650 m, Nov. 1964, *Deb* 84 & 203; towards Deothong, 7 km from Narfong, March 1965, *Balakrishnan* 41928.
- var. **griffithii** (Hook. f.) King & Pantling l.c. 8 : 147, t. 204, 1898. *Pholidota griffithii* Hook. f. Ic. Pl. t. 1811, 1889; Fl. Brit. Ind. 5 : 845, 1890.
Nangardzong, on way to Tashigong from Tashiyangtsi, March 1965, *Balakrishnan* 41989.

- Pholidota imbricata** (Roxb.) Lindl. in Hook. Fl. Exot. 2 : t. 138, 1825; Fl. Brit. Ind. 5 : 845, 1890; King & Pantling l.c. 8 : 144, t. 201, 1898. Narfong, 1850 m, March 1965, *Balakrishnan* 41920; near Betni bridge, 1050 m, Dec. 1963, *Sen Gupta* 1066; Phuntsholing, Dec. 1963, *Subba Rao* 86.
- var. *sessilis* Hook. f. Fl. Brit. Ind. 5 : 864, 1890.
Between Deothong and Narfong, 1600 m, March 1965, *Balakrishnan* 43038.
- P. protracta** Hook. f. Ic. Pl. t. 1877, 1889; Fl. Brit. Ind. 5 : 845, 1890; King & Pantling l.c. 8 : 146, t. 203, 1898. Nyoth, 2000 m, March 1965, *Balakrishnan* 43010.
- P. rubra** Lindl. Gen. Sp. Orch. 37, 1830; Fl. Brit. Ind. 5 : 847, 1890; King & Pantling l.c. 8 : 145, t. 202, 1898. Chaisilakha, 1500 m, Dec. 1963, *Subba Rao* 410.
- Pleione praecox** (Sm.) D. Don Prodr. Fl. Nepal. 37, 1825. *Coelogyne praecox* (Sm.) Lindl. Coll. Bot. 37, 1821; Fl. Brit. Ind. 5 : 840, 1890; King & Pantling l.c. 8 : 141, t. 196, 1898. Chaisilakha, 1500 m, Dec. 1963, *Subba Rao* 450; between Nyoth and Tashiyangtsi, Oct. 1965, *Balakrishnan* 44258; way to Tobrang, March 1965, *Balakrishnan* 43019; Tashiyangtsi forest, 2000 m, Oct. 1965, *Balakrishnan* 44305.
- Porpax meirax** (Par. & Reichb. f.) King & Pantling l.c. 8 : 114, t. 158, 1898. *Eria meirax* N.E. Br. in Gard. Chron. 603, 1880; Fl. Brit. Ind. 5 : 786, 1890. Nyoth forest, 2000 m, Oct. 1965, *Balakrishnan* 44166.
- Rhynchostylis retusa** (Linn.) Bl. Bijdr. 286, t. 49, 1825; Fl. Brit. Ind. 6 : 32, 1890; King & Pantling l.c. 8 : 213, t. 284, 1898. Birti, 750 m, April 1964, *Sen Gupta* 1372.
- Ritaia himalaica** (Hook. f.) King & Pantling l.c. 8 : 157, t. 214, 1898. *Cerato-stylis himalaica* Hook. f. Fl. Brit. Ind. 5 : 826, 1890. Narfong, 2000 m, March 1965, *Balakrishnan* 41988.
- Sarcanthus filiformis** Lindl. Bot. Reg. 61, 1842; Fl. Brit. Ind. 6 : 66, 1890; King & Pantling l.c. 8 : 240, t. 319. Nyoth forest, 2000 m, Oct. 1965, *Balakrishnan* 44159.

Sarcanthus pallidus Lindl. Bot. Reg. 78, 1840; Fl. Brit. Ind. 6 : 68, 1890; King & Pantling l.c. 8 : 241, t. 320.

Shali, 1900 m, March 1965, *Balakrishnan* 41299 & 42000.

S. williamsonii Reichb. f. in Hamb. Gartenzeit. 21. 333, 1865 et in Gard. Chron. 674, 1865; Fl. Brit. Ind. 6 : 67, 1890.

Nyoth, 1850 m, Oct. 1965, *Balakrishnan* 43044.

Saccolabium himalaicum Deb, Sen Gupta et Malick in Bull. bot. Soc. Beng. 22 : 213, 1968.

The species differs from *S. filiforme* Lindl. in oblong-lanceolate, dorsal sepals, obovate petals, much longer and narrower spur amongst others.

Shemgang, Nov. 1964, *Deb* 424.

Satyrium nepalensis D. Don Prodr. Fl. Nepal. 26, 1825; Fl. Brit. Ind. 6 : 168, 1890; King & Pantling l.c. 8 : 338, t. 444, 1898.

Tashiyangtsi forest, Oct. 1965, *Balakrishnan* 44277.

Schaenorchis geminata (Lindl.) J. Sm. in Nat. Tijdschr. Ned. Ind. 72 : 100, 1912. *Saccolabium geminatum* Lindl. in Bot. Reg. 50, 1838; Hoek. f. Fl. Brit. Ind. 6 : 55, 1890. *Cleisostoma geminatum* King & Pantling l.c. 8 : 235, t. 33, 1898.

Narfong, 1850 m, March 1965, *Balakrishnan* 41976.

Thelasis longifolia Hook. f. Fl. Brit. Ind. 6 : 87, 1890; King & Pantling l.c. 8 : 250, t. 332, 1898.

Narfong, 2000 m, March 1965, *Balakrishnan* 41996.

Thunia alba (Lindl.) Reichb. f. in Bot. Zeit. 764, 1852. *Phajus albus* Lindl. Gen. Sp. Orch. 128, 1831; Fl. Brit. Ind. 5 : 818, 1890; King & Pantling l.c. 8 : 110, t. 153, 1898.

On way to Bomthang, Nov. 1965, *Balakrishnan* 44546.

Vanda bicolor Griffith Notul. 3 : 354, 1851; Fl. Brit. Ind. 6 : 52, 1890.

Tashigong forest, 2000 m, March 1965, *Balakrishnan* 41253; between Shali and Nyoth, 2000 m, March 1965, *Balakrishnan* 41966; on way to Monger from Pakchang, Nov. 1965, *Balakrishnan* 44585.

V. cristata Lindl. Gen. Sp. Orch. 216, 1833; Fl. Brit. Ind. 6 : 53, 1890; King & Pantling l.c. 8 : 216, t. 287, 1898.

On way to Tashiyangtsi from Nyoth, 2000 m, March 1965, *Balakrishnan* 41358.

Vanda parviflora Lindl. Bot. Reg. 30 : (Misc.) 45, 1830; Fl. Brit. Ind. 6 : 50, 1890; King & Pantling l.c. 8 : 215, 1898.

On way to Tobrang from Tashiyangtshi 2000 m, March 1965, *Balakrishnan* 41990.

V. teres Lindl. Gen. Sp. Orch. 217, 1833; Fl. Brit. Ind. 6 : 49, 1890; King & Pantling l.c. 8 : 214, t. 285, 1898.

Gaylegphug, 270 m, May 1964, *Sen Gupta* 1433.

Vandopsis undulata (Lindl.) J. J. Sm. in Nat. Tijdschr. Ned. Ind. 72 : 77, 1912. *Stauropsis undulatus* Benth. ex Hook. f. Fl. Brit. Ind. 6 : 27, 1890; King & Pantling l.c. 8 : 205, t. 275, 1898.

On way to Tobrang, March 1965, *Balakrishnan* 43035; 6 km from Tashiyangtshi towards Gumdritham, March 1965, *Balakrishnan* 41402.

ZINGIBERACEAE

K. THOTHATHRI

Alpinia malaccensis (Burm.) Rosc. in Trans. Linn. Soc. 8 : 345, 1807; Fl. Brit. Ind. 6 : 255, 1892; Schumann in Das Pflanzenr. IV-46, Ht. 20 : 335, 1904. *Maranta malaccensis* Burm. Fl. Ind. 2, 1768.

A tall, erect herb, up to 3 m high; leaves oblong lanceolate, up to 1 m long; inflorescence a raceme, 40 cm long, rachis stout and pubescent; corolla segments white, lip ovate, white with pinkish striations in the centre.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1411.

Cautleya gracilis (Sm.) Dandy in Journ. Bot. 70 : 328, 1932. *Roscoea gracilis* Sm. in Trans. Linn. Soc. 13 : 460, 1822. *Cautleya lutea* Royle Ill. Bot. Himal. 361, 1839; Fl. Brit. Ind. 6 : 208, 1890; Schumann, l.c. 123, 1904.

Leaves oblong-lanceolate to lanceolate, 20-24 cm long; inflorescence a terminal spike, 15 cm long; flowers yellow.

Chaisilakha, 1900 m, Aug. 1963, *Balakrishnan* 1191.

This species is reported for the first time from Bhutan.

C. spicata (Sm.) Baker in Hook. f. Fl. Brit. Ind. 6 : 209, 1890; Schumann, l.c. 125, 1904. *Roscoea spicata* Sm. in Trans. Linn. Soc. 13 : 461, 1822.

A robust herb, up to 70 cm high; leaves oblong-lanceolate, 25-35 cm long, caudate at apex; inflorescence a terminal spike, 15-25 cm long; flowers yellow, bracts pinkish in colour.

Chaisilakha, 1665 m, Sept. 1964, *Abraham* 506; *Kamji*, 1334 m, Oct. 1963, *Mukerjee* 5986.

Curcuma zedoaria (Berg.) Rosc. Monandr. Pl. t. 109, 1828; Fl. Brit. Ind. 6 : 210, 1890; Schumann, l.c. 110, 1904. *Amomum zedoaria* Berg. Mat. Med. 41, 1788.

Root stock ovoid; tubers cylindric and oblong; leafless during summer; flowers yellow, bracts reddish, spreading. Common in open meadows.

Birti, 550 m, April 1964, *Sen Gupta* 1212.

Globba hookeri Clarke ex Baker in Hook. f. Fl. Brit. Ind. 6 : 202, 1890; Schumann, l.c. 138, 1904.

A herb up to 1 m high; leaves oblong, shortly acuminate, up to 25 cm long; inflorescence a panicle, 30-40 cm long, lower branches with 2-3 flowers; flowers yellow.

Lumichawa, 700 m, Aug. 1965, *Sen Gupta* 1881.

This species is a new record for Bhutan Himalayas.

G. multiflora Wall. ex Baker in Hook f. Fl. Brit. Ind. 6 : 202, 1890; Schumann, l.c. 138, 1904.

A herb, growing in small communities on the forest floor; leaves ovate-oblong, caudate at apex, up to 24 cm long, pubescent beneath; flowers in panicles with axillary bulbils on the lower branches of the panicle.

Gaylegphug, Nov. 1964, *Deb* 157.

A new record for Bhutan.

G. racemosa Smith Exot. Bot. 2 : 115, t. 117, 1804; Fl. Brit. Ind. 6 : 201, 1890; Schumann, l.c. 135, 1904.

Plant up to 60 cm high; leaves oblong-lanceolate, 10-12 cm long, glabrous above, puberulous beneath, caudate at apex; inflorescence a terminal raceme.

Phuntsholing, Sept. 1964, *Abraham* 327.

Hedychium acuminatum Rosc. Monandr. Pl. t. 47, 1828. *H. spicatum* Ham. ex Sm. var. *acuminatum* (Rosc.) Wall. in Hook. Kew Journ. Bot. 5 : 328, 1853; Fl. Brit. Ind. 6 : 227, 1892; Schumann, l.c. 50, 1904.

6 km from Narfong on road to Wamrung, 2160 m, Sept. 1965, *A. S. Rao* 43301.

H. aureum Clarke et Mann ex Baker in Hook. f. Fl. Brit. Ind. 6 : 229, 1892; Schumann, l.c. 41, 1904.

5 km north of Narfong, 2000 m, Sept. 1965, *Rao* 43289.

The occurrence of this species in Bhutan is a new record.

H. coccineum Buch.-Ham. var. *squarrosum* Buch.-Ham. ex Wall. in Hook. Kew Journ. Bot. 5 : 371, 1853; Fl. Brit. Ind. 6 : 231, 1892; Schumann, l.c. 53, 1904.

A herb; leaves lanceolate, up to 30 cm long; inflorescence a terminal spike, 20 cm long; bracts conspicuous, oblong; fruit a capsule.

On way from Rani Camp to Tama, 1350-1650 m, Nov. 1964, *Deb* 248.

Hedychium densiflorum Wall. in Hook. Kew Journ. Bot. 5 : 368, 1853 ; Fl. Brit. Ind. 6 : 227, 1892; Schumann, l.c. 49, 1904.

A shrub; leaves oblong, 18-22 cm long; flowers in terminal spikes, yellow in colour.

On the way from Rani Camp to Tama, 1350-1650 m, Nov. 1964, *Deb* 282.

A new record for Bhutan.

H. ellipticum Buch.-Ham. ex Sm. in Ress, Cyclop. 17 : 2, 1811; Fl. Brit. Ind. 6 : 228, 1892; Schumann, l.c. 47, 1904.

A perennial herb; leaves oblong to oblong elliptic, 14-20 × 7.5-9 cm, shortly acuminate; spike 8-10 cm long, bracts oblong; flowers white.

Paro, 3000-4000 m, Aug. 1963, *Sen Gupta* 798.

This species is reported for the first time from Bhutan.

H. spicatum Ham. ex Sm. var. **trilobum** Wall. in Hook. Kew Journ. Bot. 5 : 328, 1853; Fl. Brit. Ind. 6 : 227, 1892. *H. trilobum* Wall. Cat. 6554. 1832 (nomen.).

Root stock globose; leaves oblong, 20-25 cm long, entire, narrowed at base, acute at apex, subcoriaceous, glabrous on both surfaces ; inflorescence a terminal spike, lax, 15 cm long; flowers white, bracts oblong, up to 3 cm long, convolute round the calyx; calyx tubular shorter than the bracts; corolla tube narrow, up to 5 cm long, corolla segments and staminodes linear, lip bilobed with a small tooth between the 2 lobes.

Lumichawa, 2000 m, Aug. 1965, *Sen Gupta* 1819.

This species has so far been reported from Nepal, the type locality (*Wallich* 6554). Hence its occurrence in Bhutan Himalayas constitutes a new record for this species.

H. stenopetalum Lodd. Bot. Cab. t. 1902, 1853; Fl. Brit. Ind. 6 : 231, 1892; Schumann, l.c. 58, 1904.

6 km north on road from Deothong to Narfong, 1400 m, Aug. 1965, *Rao* 43201.

A new record for Bhutan Himalayas.

H. thyriforme Ham. ex Sm. in Ress, Cyclop. 17 : 4, 1811; Fl. Brit. Ind. 6 : 230, 1892; Schumann, l.c. 57, 1904.

A herbaceous undershrub, 1.5 m high; leaves oblong, 20-30 cm long; flowers in dense, terminal spikes with conspicuous, cylindric bracts; corolla white; staminodes linear.

Changuna, Samchi, 2000 m, Dec. 1963, *Thothathri* 10451; on way from Rani Camp to Tama, 1350-1650 m, Nov. 1964, *Deb* 252; Kamji, Dec. 1963, *Subba Rao* 179.

A new record for Bhutan.

MARANTACEAE

S. N. BISWAS

Phrynium capitatum Willd. Sp. Pl. 1 : 17, 1797; Fl. Brit. Ind. 6 : 258, 1892 (excl. syn. *Phyllodes placentaria* Lour. & *Maranta placentaria* A. Dietr.); Merrill in Philip. Journ. Sc. 15 : 230, 1919, in obs.

Herb with creeping rhizome in damp forest floor. Used as Elephant fodder.

Local name : Kouvepat, Koupat (Nepali).

Gaylegphug, 300 m, Dec. 1963, *Sen Gupta* 829.

CANNACEAE

Canna indica Linn. Sp. Pl. 1 : 1, 1753; Fl. Brit. Ind. 6 : 260, 1892, pro parte. Kraenzelin in Pflanzenf. 56 : 59, 1912.

Chenari village near Deothong, Aug. 1965, *A. S. Rao* 43143.

HAEMODORACEAE

S. K. JAIN

Ophiopogon intermedius D. Don Fl. Nepal. 48, 1825; Fl. Brit. Ind. 6 : 269, 1892; Hara, Fl. East. Himal. 409, 1966.

A scapigerous herb; rootstock short; leaves 10-15 cm long, linear, curved; scape slender, decurved, few-flowered, flowers white or purplish; fruit greenish, indehiscent.

Paro, 3300-3750 m, Aug. 1963, *Sen Gupta* 775; 1 km north of Wamrung, 2250 m, Sept. 1965, *A. S. Rao* 43343; Gaylegphug, 270 m, April 1964, *Sen Gupta* 1382.

Critical note : The first specimen listed above resembles var. *parviflora* Hook. f., and could be treated as a species distinct from *O. intermedius* as done by Hara (l.c. 1966). The question of identity of *O. wallichianus* (Kunth) Hook. f.; vis-a-vis *O. intermedius* D. Don, as also of those two taxa vis-a-vis *O. parviflorus* (Hook. f.) Hara seems uncertain at this stage. The plants are, therefore, treated as *O. intermedius* D. Don (Sensu lato).

IRIDACEAE

DEBIKA DAS

Belamcauda chinensis (Linn.) Leman in Redoute Liliac. 3 : t. 121, 1805; Fl. Brit. Ind. 6 : 277, 1892. *Ixia chinensis* Linn. Sp. Pl. 1 : 36, 1753. Dantak camp, Sept. 1965, *A. S. Rao* 43557.

Iris clarkei Baker, Handb. Irid. 25, 1892; Fl. Brit. Ind. 6 : 275, 1892; Dykes, Gen. Iris 29, t. 5, 1913. *I. himalaica* Dykes, in Gard. Chron. 45 : 3 & 36, 1909.

An erect herb; flowers violet; fruits 3-gonous, oblong. Common in shady places.

Near Ha Valley, 3050 m, Aug. 1963, *Sen Gupta* 666; Chi-La, on the way to Paro, 350 m, Aug. 1963, *Sen Gupta* 727.

HYPOXIDACEAE

S. K. JAIN

Curculigo capitulata (Lour.) O. Kuntze Rev. Gen. Pl. 2 : 703, 1891. *C. recurvata* Dryand. in Ait. Hort. Kew Ed. 2: 253, 1810; Fl. Brit. Ind. 6 : 278, 1892.

A scapigerous herb; rootstock tuberous; leaves long-petioled, lanceolate, plicate; scapes 8-20 cm, villous; flowers in heads; perianth about 2 cm diam; fruits globose, hairy, slightly beaked; seeds black.

Sangura, 1300 m, Nov. 1964, *Mukerjee* 6086.

Hypoxis aurea Lour. Fl. Cochin. 200, 1790; Fl. Brit. Ind. 6 : 277, 1892.

A softly villous or hairy scapigerous herb; leaves narrowly linear; scapes 2-10 cm long, 1-2 flowered; perianth sessile on the top of the ovary, yellow; fruit clavate; seeds black.

Paro, 2550 m, Aug. 1963 (in fl. and frt.), *Balakrishnan* 1250; on grassy hill slope, Wamrung, Sept. 1965, *A. S. Rao* 43559.

DIOSCOREACEAE

S. P. BANERJEE

Dioscorea bulbifera Linn. Sp. Pl. 2 : 1033, 1753; Prain & Burk. in Ann. R. Bot. Gard. Calc. 14 : 111, t. 49-51, 1936; Burk. Fl. Males. 4 : 311, 1951. *D. sativa* Thunb. Fl. Jap. 151, 1784; non Linn. 1753; Fl. Brit. Ind. 6 : 295, 1892.

Twinner winding clockwise with 3-winged fruit.

Sham Khara, 1500 m, rare, Nov. 1964, *Deb* 23.

D. glabra Roxb. Fl. Ind. 3 : 804, 1832; Fl. Brit. Ind. 6 : 294, 1892. Prain & Burk. in Ann. R. Bot. Gard. Calc. 14 : 354, t. 131, 1938; Burk. Fl. Males. 4 : 331, 1951.

Phuntsholing, fruiting, Dec. 1963, *Subba Rao* 137.

D. hamiltonii Hook. f. Fl. Brit. Ind. 6 : 295, 1892; Prain & Burk. in Ann.

R. Bot. Gard. Calc. 14 : 299, t. 122, 1938. *D. hookeri* Prain ex Wood in Rec. Bot. Surv. Ind. 2 : 143, 1902.

Twiner with edible tubers.

Sham Khara & Maorey forests, 1500-1650 m. Dec. 1963, *Sen Gupta* 1090.

Dioscorea pentaphylla Linn. Sp. Pl. 2 : 1032, 1753; Fl. Brit. Ind. 6 : 289, 1892; Prain & Burk. in Ann. R. Bot. Gard. Calc. 14 : 160, t. 57, 1936; Burk. Fl. Males. 4 : 315, 1951.

Chaisilakha, 1300 m, fruiting, Dec. 1963, *Subba Rao* 448.

D. pubera Blume, Enum. Pl. Jav. 1 : 21, 1827; Prain & Burk. in Ann. R. Bot. Gard. Calc. 14 : 402, t. 138 & 143, 1938. *D. anguina* Roxb. Fl. Ind. 3 : 803, 1832; Fl. Brit. Ind. 6 : 293, 1892.

Dhoankhola, Samchi, 1200 m, rare, in fruits, Dec. 1963, *Thothathri* 10425.

D. kumaonensis Kunth, Enum. Pl. 5 : 395, 1850; Fl. Brit. Ind. 6 : 290, 1892; Prain & Burk. in Ann. R. Bot. Gard. Calc. 14 : 146, t. 62-64, 1936.

Paro, 2500 m, in fruit, Oct. 1963, *Mukerjee* 5837; Paro, in fruits, Oct. 1963, *Mukerjee* 5936.

LILIACEAE

N. C. MAJUMBAR

Asparagus filicinus Buch.-Ham. ex D. Don Prodr. Fl. Nepal. 49, 1825; Fl. Brit. Ind. 6 : 314, 1892.

On the slope of hill in dry soil with black berries.

Paro valley, Geptem hill, 2500 m, Aug. 1963, *Balakrishnan* 1308.

Chlorophytum nepalense (Lindl.) Baker in Journ. Linn. Soc. 15 : 330, 1876.

Phalangium nepalense Lindley in Trans. Hort. Soc. Lond. 6 : 277, 1826.

Chlorophytum undulatum Wall. ex Hook. f. in Fl. Brit. Ind. 6 : 335, 1892.

Dantak Camp, Wamrung, Sept. 1965, *A. S. Rao* 43558.

Dianella ensifolia (Linn.) DC. in Red. Lil. 1, t. 1, 1802; Fl. Brit. Ind. 6 : 337, 1892. *Dracaena ensifolia* Linn. Mant. 1 : 63, 1767.

Herb in white flowers. Scarce.

On way to Birti from Tama, 500-1500 m, April 1964, *Sen Gupta* 1199.

Disporum cantoniense (Lour.) Merrill in Philip. Journ. Sci. 15 : 229, 1919.

Fritillaria cantoniense Lour. Fl. Cochinch. 206, 1790. *Disporum pullum* Salisb. in Trans. Hort. Soc. Lond. 1 : 331, 1812; Fl. Brit. Ind. 6 : 360, 1892.

Herb up to 1 m tall, in flower buds.

Tama, 1200-1500 m, April 1964, *Sen Gupta* 1170.

Dracaena angustifolia Roxb. Fl. Ind. 2: 155, 1832; Fl. Brit. Ind. 6: 327, 1892.

A shrub, 2.5-3 m high, flowers cream coloured.

Between Sihachang and Bhaintholi, 762 m, Dec. 1963, *Thothathri* 10583.

Lilium giganteum Wall. Tent. Fl. Nepal. 21, t. 12, 1824; Fl. Brit. Ind. 6: 349, 1892.

Paro, 2500 m, Aug. 1963, *Balakrishnan* 1310.

Paris polyphylla Smith in Rees, Cyclop. 26, no. 2, 1819; Fl. Brit. Ind. 6: 362, 1892.

Gomchu, 2223 m, Sept. 1965, *A. S. Rao* 43442.

Polygonatum cirrhifolium (Wall.) Royle, Ill. Bot. Himal. 380, 1839; Fl. Brit. Ind. 6: 322, 1892. *Convallaria cirrhifolia* Wall. in Asiat. Res. 13: 382, 1820.

Paro, 2500 m, Aug. 1963, *Balakrishnan* 1311.

P. oppositifolium (Wall.) Royle, Ill. Bot. Himal. 1: 380, 1839; Fl. Brit. Ind. 6: 320, 1892. *Convallaria oppositifolia* Wall. in Asiat. Res. 13: 380, 1820.

Epiphytic shrub with globose fruits. Rare.

Changda chungu hills, 1220 m, Dec. 1963, *Thothathri* 10559.

Smilacina fusca Wall. in Pl. Asiat. Rar. 3: 37, 1832; Fl. Brit. Ind. 6: 323, 1892.

Dochu La, 3175 m, Sept. 1964, *Hajra* 383.

Smilax bracteata Prest, Rel. Haenk, 1: 131, 1827. subsp. **verruculosa** (Merr.) T. Koyama in H. Hara, Fl. E. Himal. 415, 1966; *S. verruculosa* Merrill in Philip. Journ. Sci. 5: 173, 1910; *S. aspericaulis* Wall. ex DC. Monogr. Phaner. 1: 195, 1878; Fl. Brit. Ind. 6: 306, 1892. A climber, fruit creamy yellow with a reddish calyx.

Kamji, 1000 m, Dec. 1963, *Subba Rao* 268; Changda chungu hills, 1220 m, Dec. 1963, *Thothathri* 10545.

S. lanceaefolia Roxb. Fl. Ind. 3: 792, 1832; Fl. Brit. Ind. 6: 308, 1892.

A climber; fruit greenish.

Changda chungu hills, 1220 m, Dec. 1963, *Thothathri* 10557.

S. ocreata DC. Monogr. Phaner. 1: 193, 1878. *S. roxburghiana* Wall. ex Hook. f. Fl. Brit. Ind. 6: 311, 1892. p.p.

Stiff prickly climber; flowers pale yellow.

Tama, Sarphang Div., 1200-1500 m, April 1964, *Sen Gupta* 1153.

Tupistra clarkei Hook. f. in Fl. Brit. Ind. 6 : 325, 1892.

Herb on rocky slopes. Fruits edible.

Betni, 1500 m, Dec. 1963, *Sen Gupta* 1053.

PONTERIACEAE

K. THOTHATHRI

Monochoria vaginalis (Burm. f.) Presl Rel. Haenk. 1 : 128, 1827; Fl. Brit. Ind. 6 : 363, 1892; Fl. Malesiana Ser. 1. 4 : 256, 1951. *Pontederia vaginalis* Burm. f. Fl. Ind. 80, 1768.

An aquatic herb; leaves radical, long-petioled, lanceolate, 3-4 × 0.5-0.7 cm acuminate, glabrous; raceme 3-flowered; flowers blue, pedicellate.

Punakha, 1350 m, Sept. 1965, *Sen Gupta* 2025.

COMMELINACEAE

R. M. DUTTA

Aneilema scaberrimum (Bl.) Kunth Enum. 4 : 69, 1843; Fl. Brit. Ind. 6 : 382, 1892. *Commelina scaberrima* Blume, Enum. Pl. Jav. 1 : 4, 1827.

13 km down from Garrison Engineer's Camp on road to Deothong, Sept. 1965, *A. S. Rao* 43592.

Belosynapsis vivipara (Dalz.) Fischer in Kew Bull. 1928 : 254, 1928. *Cyanotis vivipara* Dalz. in Journ. Bot. 226, 1851; Fl. Brit. Ind. 6 : 388, 1892.

Kanji, 1000 m, Dec. 1963, *Subba Rao* 245.

Commelina hasskarlii Clarke Commel. & Cyrt. Beng. 13, t. 3, 1874; Fl. Brit. Ind. 6 : 370, 1892.

Spreading herbs. Growing on paddy field bunds.

Punakha, 1350 m, Sept. 1965, *Sen Gupta* 2026.

C. paludosa Blume Enum. Pl. Jav. 1 : 2, 1827; Rolla & Kammathy in Journ. Bombay nat. Hist. Soc. 59 : 60, 1962. *C. obliqua* Buch.-Ham. ex D. Don, Prodr. Fl. Nepal. 45, 1825 (non Vahl, 1806); Fl. Brit. Ind. 6 : 372, 1892 (excl. Syn. *C. maculata* Edgew. & *C. striata* Edgew.).

Tall spreading herbs. Common on sandy forest floor and on low sandy soils.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 925; Changum in Samchi, 100 m, Dec. 1963, *Thothathri* 10449; Phuntsholing, Dec. 1963, *Subba Rao* 133 B; Gaylegphug, Nov. 1964, *Deb* 125; north slope of hills beyond Chenari village near Deothong, 1000 m, Aug. 1965, *A. S. Rao* 43153.

Cyanotis cristata (Linn.) D. Don Prodr. Fl. Nepal. 46, 1825; Fl. Brit. Ind. 6 : 385, 1892. *Commelina cristata* Linn. Sp. Pl. ed. 1, 1 : 42, 1753. Spreading herbs. Common on rocky edges.

Punakha, 1350 m, Sept. 1965, *Sen Gupta* 2037.

The above combination has often been attributed to Roemer & Schultes (1830), but it is antedated by an effectively made earlier combination by D. Don (1825), and, hence, this combination should be credited to D. Don and not to Roemer & Schultes.

C. fasciculata (Heyne ex Roth) Roem. & Schult. Syst. 7 : 1152, 1830; Fl. Brit. Ind. 6 : 387, 1892. *Tradescantia fasciculata* Heyne ex Roth, Nov. Pl. Sp. 189, 1821.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5856.

C. vaga (Lour.) J. A. & J. H. Schultes, Syst. Veg. 7 : 1153, 1830; Fl. Brit. Ind. 6 : 387, 1892. *Tradescantia vaga* Lour. Fl. Cochinch. 1 : 239, 1790. Succulent spreading herbs with blue flowers.

Kheri, 3 km to Tashigong, t. 1166 m, Sept. 1965, *A. S. Rao* 43506; Paro, 2500 m, Oct. 1963, *Mukerjee* 5890; *Ibid.*, 2550 m, Aug. 1963, *Balakrishnan* 1235.

Floscopa scandens Lour. Fl. Cochinch. 1 : 193, 1790; Fl. Brit. Ind. 6 : 390, 1892. *Tradescantia paniculata* Roxb. Pl. Corom. 2 : 6, t. 109, 1799. Small herbs; flowers pinkish.

Gaylegphug, 270 m, Nov. 1964, *Deb* 126; Changuna in Samchi, 330 m, Aug. 1963, *Thothathri* 10455.

Forrestia hookeri Hassk. Flora 1864: 629, 1864; Clarke, Commel. & Cyrt. Bengl. t. 41, 1874; Fl. Brit. Ind. 6 : 384, 1892.

Epiphytes; flowers greenish.

Gaylegphug, 300 m, April 1964; *Sen Gupta* 1408.

F. mollissima (Bl.) Koorder var. *hispida* (Less. et A. Rich.) Backer, Handb. Fl. Jav. 3 : 18-39, 1924.

Tall herbs with small flowers. Common as an undergrowth in shade or on tree trunk.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1408; Nov. 1964, *Deb* 160; 10 km north on road from Deothong to Narfong, 1400 m, Aug. 1965, *A. S. Rao* 43192.

Murdannia loriforme (Hassk.) Rolla et Kammathy in Bull. bot. Surv. India 3 : 393, 1961. *Aneilema loriforme* Hassk. in Pl. Jungh. 143, 1852. *A. nudiflorum* R. Br. var. *terminalis* (Wt.) Clarke in DC. Mon. Phan. 3 : 211, 1881; Fl. Brit. Ind. 6 : 378-379, 1892.

Small herbs.

Gayleghug, 270 m, April 1964, *Sen Gupta* 1309; April 1964, *Sen Gupta* 1389.

Murdannia nudiflora (Linn.) Brenan in Kew Bull. 1952: 189, 1952. *Commelina nudiflora* Linn. Sp. Pl. ed. 1, 41, 1753 (pro parte). *Aneilema nudiflorum* (Linn.) Kunth, Enum. 4 : 66, 1843; Fl. Brit. Ind. 6 : 379, 1892 (pro parte).

Semi-prostrate herbs with fruits. Growing on hill slopes.

Sham Khara & Maorey forests, 1500-1650 m, Dec. 1962, *Sen Gupta* 1087.

Streptolirion volubile Edgew. in Trans. Linn. Soc. 20 : 90, 1846; Fl. Brit. Ind. 6 : 389, 1892. *S. cordifolium* (Griff.) O. Kuntze, Rev. Gen. Pl. 2 : 722, 1891.

Decumbent herbs with white flowers. Common in shady places.

35 km north on road from Deothong to Narfong, 1766 m, Aug. 1965, *A. S. Rao* 43219; Chaisilakha, 1900 m, Aug. 1963, *Balakrishnan* 1189; *Ibid.*, 1667 m, Sept. 1964, *Hajra* 485; Paro, 4000-4200 m, Aug. 1963, *Sen Gupta* 745.

JUNCACEAE

K. THOTHATHRI

Juncus himalensis Klotzsch in Klotzsch and Garcke die bot. Ergeb. der. Rei. Pri. Waldem. von Pre. den Jahren 60. t. 97. 1845; Engler, Bot. Jahrb. 6 : 227, 1885; Fl. Brit. Ind. 6 : 398, 1892.

An erect herb; leaves tubular and canaliculate above; inflorescence a cyme, made up of several herbs; flowers shortly pedicellate, brown in colour; fruit a capsule with a conical beak.

Chi la Pass, 3700 m, Aug. 1963, *Sen Gupta* 733.

ARECACEAE

R. N. BANERJEE

Calamus leptospadix Griff. in. Calcutta Journ. Nat. Hist. 5 : 49, 1845; Fl. Brit. Ind. 6 : 441, 1892.

Prickly scandent shrub with pale-yellow flowers. By the side of foot track on the fringe of forest.

Gayleghug, 270 m, April 1964, *Sen Gupta* 1364.

C. polygamus Roxb. (Hort. Beng. 73. 1814, nom. nud.) Fl. Ind. 3 : 780, 1832; Fl. Brit. Ind. 6 : 462, 1893; Becc. in Ann. R. Bot. Gard. Calc. 1 : 501, 1908. *C. flagellum* Griff. in Mart. Hist. Nat. Palm.

3 : 333, t. 176, f. 9. 1836-50; Fl. Brit. Ind. 6 : 439, 1892; Becc. l.c. 1 : 127, 1908.

Chamurchi forest, 300 m, Samchi, Dec. 1963, *Thothathri* 10610.

Didymosperma nana H. Wendl. et Drude in Kerch. Palm. 243, 1878; Fl. Brit. Ind. 6 : 420, 1892.

Narfong, 2000 m, Aug. 1965, *A. S. Rao* 43240.

Wallichia densiflora Mart. Hist. Nat. Palm. 2 : 190, 1823-1826; Fl. Brit. Ind. 6 : 419, 1892.

Dhumdum hill, 3000 m, Samchi, Dec. 1963, *Thothathri* 10599.

ARACEAE

K. RAMAMURTHY

Acorus calamus Linn. Sp. Pl. ed. 1, 1 : 324, 1753; Fl. Brit. Ind. 6 : 555, 1893. Dorokha, Nov. 1964, *Mukerjee* 6128.

Alocasia fallax Schott in Bonpland 7 : 28, 1859. Fl. Brit. Ind. 6 : 527, 1893.

Small aroid with orange-yellow spadix. Occasionally as undergrowth in forests.

Batase, 1500-1600 m, Dec. 1963, *Sen Gupta* 1020.

Amorphophalus campanulatus Bl. ex Decne in Ann. Mus. Hist. Nat. Par. 3 : 366, 1834 (excl all syn. but Roxb.); Fl. Brit. Ind. 6 : 513, 1893.

Arum campanulatum Roxb. Cor. Pl. 3 : 68, t. 272, 1812.

Phuntsholing, Dec. 1963, *Subba Rao* 120.

Arisaema consanguineum Schott in Bonpland 7 : 27, 1859; Fl. Brit. Ind. 6 : 505, 1893.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5919.

A. costatum (Wall.) Mart. ex Schott in Flora 2 : 458, 1831; Fl. Brit. Ind. 6 : 501, 1893. *Arum costatum* Wall. Tent. Fl. Nep. 28, t. 19.

Herb with cylindric-oblong root-stock, growing in shade.

Sham Khara, 1500 m, Nov. 1964, *Deb* 44.

A. decipiens Schott in Oestr. Bot. Zeitschr 373, 1857; Fl. Brit. Ind. 6 : 503, 1893.

Gomchu Hill, 2466 m, Sept. 1965, *A. S. Rao* 43414.

A. petiolulatum Hook. f. Fl. Brit. Ind. 6 : 498, 1893. Kamji, 1600 m, Dec. 1963, *Subba Rao* 346.

Arisaema roxburghii Kunth Enum. 3 : 18, 1841; Fl. Brit. Ind. 6 : 497, 1893.
Sureylakha, 1500-1800 m, Dec. 1963, *Sen Gupta* 990.

Pothos cathcartii Schott Aroid 1 : 22, t. 44, 45, 1853; Fl. Brit. Ind. 6 : 552, 1893.

Gigantic epiphyte or lithophyte with pale yellow spathe.

Near Betni bridge, 1050 m, Dec. 1963, *Sen Gupta* 1058; Gaylegphug, 270 m, Nov. 1964, *Deb* 147.

P. scandens Linn. Sp. Pl. 968, 1753; Fl. Brit. Ind. 6 : 551, 1893.

A climber, adressed to tree trunks; flowers white.

Samchi, Jan. 1964, *Thothathri* 10632; *Ibid.*, Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 875.

Rhapidophora eximia Schott in Bonpland 5 : 45, 1857; Fl. Brit. Ind. 6 : 547, 1893.

Gigantic climber.

Narfong, 2 km West of Dantak Camp, 1866 m, Aug. 1965, *A. S. Rao* 43233; *Ibid.*, Gaylegphug, 270 m, Nov. 1964, *Deb* 186.

R. glauca (Wall.) Schott in Bonpland 5 : 45, 1857; Fl. Brit. Ind. 6 : 547, 1893. *Pothos glaucus* Wallich, Pl. Asia. Rar. 2 : 45, t. 156, 1831.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 866A; *Ibid.*, Kamji, 1600 m, Dec. 1963, *Subba Rao* 227.

R. hookeri Schott in Bonpland 5 : 45, 1857; Fl. Brit. Ind. 6 : 546, 1893.

Big epiphyte, climbing to great heights.

Gaylegphug, 270 m, Dec. 1963, *Sen Gupta* 866B; *Ibid.*, Nov. 1964, *Deb* 155 ; April 1964, *Sen Gupta* 1403.

Remusatia vivipara (Lodd.) Schott Melet 1 : 18, 1832; Fl. Brit. Ind. 6 : 521, 1893. *Caladium viviparum* Lodd. Bot. Cat. 3 : t. 281, 1818.

North slope hill beyond the Chanari village near Deothong, Aug. 1965, *A. S. Rao* 43145.

ERIOCAULACEAE

DEBIKA DAS

Eriocaulon cinereum R. Br. Prodr. 254, 1810. *E. sieboldianum* Sieb. et. Zucc. ex Steud. Syn. Pl. Cyp. 2 : 272, 1855; Fl. Brit. Ind. 6 : 571, 1894;

W. Ruhland in Engler Pflanzenr. 13 (iv. 30) : 111, 1903.

Small tufted herb; heads ash coloured. Scattered in rice fields.

Sham Khara, 1350 m, Dec. 1963, *Sen Gupta* 1114; Thoribhadi, Samchi-300 m, Jan. 1964, *Thothathri* 10638.

Eriocaulon nepalense Presc. ex Beng. Act. Petrop. Sc. math. Sér. iv. 1 : 610, 1831 ; Fl. Brit. Ind. 6 : 581, 1894 ; W. Ruhland in Engler Pflanzenr. 13 (iv. 30) : 88, 1903. *E. quinquangulare* Wall. Cat. 6072 E, 1831-32, nom. nud.
Paro, 2500 m, Oct. 1963, *Mukerjee* 5885.

CYPERACEAE

D. C. S. RAJU

Carex baccans Nees in Wt. Contrib. Bot. Ind. 122, 1834; Fl. Brit. Ind. 6 : 722, 1894; Kükenth. in Pflanzenr. 38 : 258, 1909; Nelmes in Reinwardtia 1 : 322, 1951.

A tall sedge with turgid berry like utricles.

Sham Khara, 1350 m, Dec. 1963, *Sen Gupta* 1126.

C. composita Boott, Illustr. 1 : 3, t. 8, 1858; Fl. Brit. Ind. 6 : 724, 1894.
Samdrup, Sept. 1965, *Rao* 43570.

C. cruciata Wahlenb. in Vent. Akad. Handl. Stock. 24 : 149, 1803; Fl. Brit. Ind. 6 : 715, 1894; Kükenth. l.c. 38 : 259, 1909 ; Nelmes l.c. 1 : 277, 1951.

Betni, 1-1200 m, Dec. 1963, *Subba Rao* 175; Ranichanpa to Tama, 1650 m, Nov. 1964, *Deb* 253; Dhamkhola-Samchi, 4000 m, Dec. 1963, *Thothathri* 10411.

C. doniana Spreng. Syst. 3 : 825, 1826; Nelmes in Kew Bull. 1949 : 391, 1949 et l.c. 1 : 399, 1951. *C. japonica* Clarke in Fl. Brit. Ind. 6 : 736, 1894, pro parte (non Thunb. 1784).

Small sedge.

Tama, 1050-1200 m, April 1964, *Sen Gupta* 1164.

C. insignis Boott, Illustr. 1 : 5, t. 14, 1858; Fl. Brit. Ind. 6 : 725, 1894; Kükenth. l.c. 38 : 546, 1909.

Hill near Wamrung, *Rao* 43566.

C. myosurus Nees in Wt. Contrib. Bot. Ind. 122, 1834 (excl. pl. Nepal); Fl. Brit. Ind. 6 : 723, 1894. Kükenth. l.c. 38 : 258, 1909.

Dhorokha, Samchi, 500 m, Dec. 1963, *Thothathri* 10424.

Cyperus brevifolius (Rottb.) Hassk. Cat. Hort, Bog. 24, 1844; Kükenth.

l.c. 101 : 600, 1935-36. *Kyllinga brevifolia* Rottb. Deser. & l.c. 13. t. 4, f. 3, 1773; Fl. Brit. Ind. 6 : 588, 1893.

Frequent along streams.

Birti, 550 m, April 1965, *Sen Gupta* 1215; Phuntsholing, Dec. 1963, *Subba Rao* 383.

Cyperus cyperinus (Retz.) VAKKO-SUR. Gesl. Cyp. Mal. Arch. 154, F. 6. f. 10. 1898; Kukenth. l.c. 101 : 518, 1935-36. *Kyllinga cyperina* Retz. Obs. 6 : 21, 1791. *Mariscus cyperinus* (Retz.) Vahl, Enum. 2: 377, 1806; Fl. Brit. Ind. 65 : 621, 1893.

Gaylegphug, 270 m, April 1964, *Sen Gupta* 1390.

C. difformis Linn. Sp. pl. 1 : 67, 1753; Fl. Brit. Ind. 6 : 599, 1893; Kukenth. l.c. 101 : 237, 1935-36.

A common sedge.

Paro, 2500 m, Oct. 1963, *Mukerjee* 5944.

C. diffusus Vahl, Enum. 2 : 321, 1806; Fl. Brit. Ind. 6 : 603, 1893; Kukenth. l.c. 101 : 208, 1935-36.

Gaylegphug, 270 m, Nov. 1964, *Deb* 173; Phuntsholing, Dec. 1963, *Subba Rao* 134.

var. **macrostachyus** Boeck. in Linnaea 35 : 534, 1868, Kukenth. l.c. 101 : 209, 1935-36. *C. pubisquama* Steud. Synop. Cyper. 20, 1855; Fl. Brit. Ind. 6 : 604, 1893.

Phuntsholing, *Subba Rao* 135.

C. haspan Linn. Sp. Pl. 45, 1753; Fl. Brit. Ind. 6 : 606, 1893; Kukenth. l.c. 101 : 247, 1935-36.

Tama, 1050-1200 m, April 1964, *Sen Gupta* 1166.

C. iria Linn. Sp. Pl. 1 : 67, 1753; Fl. Brit. Ind. 6 : 606, 1893; Kukenth. l.c. 101 : 150, 1935-36.

Frequent weed in fields.

Phuntsholing, Dec. 1964, *Subba Rao* 18; Samchi, 560 m, Dec. 1963, *Thothathri* 10429.

Fimbristylis dichotoma (Linn.) Vahl, Enum. 2 : 287, 1806; Kern in Reinwardtia 6 : 46, 1961. *Scirpus dichotomus* Linn. Sp. Pl. 50, 1753. *Scirpus diphyllus* Retz. Obs. 5 : 15, 1789. *Fimbristylis diphylla* (Retz.) Vahl, Enum. 2 : 289, 1806; Fl. Brit. Ind. 6 : 636, 1893.

Thoribhadi, Samchi, 300 m, Jan. 1964, *Thothathri* 10634.

Fimbristylis tenera Roem. & Schultz. Syst. Nant. 2 : 51, 1824; Fl. Brit. Ind. 6 : 642, 1893.

9 km from Wamrung, 2700 m, Sept. 1965, *Rao* 43379.

Lipocarpa chinensis (Osb.) Kern in Blumea Suppl. 4 : 167, 1958. *Scirpus chinensis* Osb. Dagb. Ostend. Resa 220, 1757. *Hypaelyptum argenteum* Vahl, Enum. 2 : 283, 1806. *Lipocarpa argentea* (Vahl) R. Br. et Nees in Linnaea 9 : 287, 1835; Fl. Brit. Ind. 6 : 667, 1893.

Tama, 1050 m, April 1964, *Sen Gupta* 1165.

Scirpus comosus Wall. ex Roxb. Fl. Ind. 1 : 234, 1820; Koyama in Fl. Afgh. 58, 1960. *Eriophorum comosum* Wall. ex Nees in Wt. Contrib. 110, 1834; Fl. Brit. Ind. 6 : 664, 1893.

Samdrup Jhonkar to Deothong, Aug. 1965, *Rao* 413128; between Bhaintholi and Samchi, 500 m, Dec. 1963, *Thothathri* 10586.

S. juncoides Roxb. Fl. Ind. 1 : 218, 1820; Kern in Reinwardtia 6 : 33, 1961.

S. erectus auct. plur. (non Poiret, 1804) Fl. Brit. Ind. 6 : 656, 1893.

Paro, 800 m, Oct. 1963, *Mukerjee* 5944.

Scleria terrestris (Linn.) Fass. in Rhodora 26 : 159, 1924; Blake in Journ. Arn. Arb. 35 : 228, 1954; Kern in Reinwardtia 6 : 72, 1961. *Zizania terrestris* Linn. Sp. Pl. 991, 1753. *Diaphora cochinchinensis* Lour. Fl. Cochinch. 578, 1790. *Scleria elata* Thw. Enum. Pl. Zeyl. 353, 1864; Fl. Brit. Ind. 6 : 690, 1894.

Gayleghug, 270 m, April 1964, *Sen Gupta* 1363; *Ibid.*, April 1964, *Sen Gupta* 1412.

S. cochinchinensis (Lour.) Druce, Rept. Bot. Exch. Club. Brit. Isles 4 : 646, 1917.

A tall sedge with white muricate utricles.

Chenari village, Aug. 1965, *Rao* 43156.

POACEAE

S. K. JAIN

Arundinaria callosa Munro Trans. Linn. Soc. 26 : 30, 1868; Fl. Brit. Ind. 7 : 380, 1896.

Bhutan, *Deb* 90.

Arundinella nepalensis Trin. Gram. Panic. 62, 1826. *A. brasiliensis* Hook. f. Fl. Brit. Ind. 7 : 73, 1896 (non Raddi).

An erect, slender or stout, variable grass.

Dorokha forest, 450 m, Dec. 1963, *Thothathri* 10534; Tama, 1500-1650 m, April 1964, *Sen Gupta* 1182.

Calamagrostis pseudophragmites (Hall. f.) Koeler Descr. Gram. 106, 1802.
C. littorea Beauv. Ess. Agrost. 15, 1812; Fl. Brit. Ind. 7 : 261, 1896.

A tall erect grass with plume-like inflorescence.

Paro, 2500 m, Aug. 1963, *Balakrishnan* 1234; Paro, Aug. 1963, *Sen Gupta* 782.

Capillipedium assimile (Steud.) A. Camus in Lecomte Fl. Gen. de Indo-Chine 7 : 314, 1922. *Andropogon assimilis* Steud., Fl. Brit. Ind. 7 : 179, 1896.

A much branched grass occurring on road-sides and bare places.

Sham Khara, Sarbhag Division, 1650-1850 m, Dec. 1963, *Sen Gupta* 1084; Dorokha, 1000 m, Nov. 1964; *Mukerjee* 6112; Dakpai, Nov. 1964, *Deb* 441.

Chloris virgata Sw. Fl. Ind. Occ. 1 : 203, 1797; Fl. Brit. Ind. 7 : 291, 1896.

A grass with decumbent or erect culms.

Paro, 2550 m, Aug. 1963, *Balakrishnan* 1243.

Cymbopogon flexuosus (Nees ex Steud.) Wats. in Atkins. Gaz. N. W. Prov. Ind. 392, 1882.

var. **flexuosus**

Andropogon nardus L. subsp. *flexuosus* (Nees) Hack. Mongr. Andro. 676, 1889; Fl. Brit. Ind. 7 : 207, 1896.

A tall aromatic grass.

Confluence of Thimphu and Paro rivers, 2400 m, Aug. 1963, *Balakrishnan* 1198 (all the four sheets of this collection show dense inflorescence; the description of var. *sikkimensis* Bor, does not suggest such dense inflorescence, hence the specimens are assigned here).

var. **sikkimensis** Bor, in J. Bombay nat. Hist. Soc. 52. 162, 1954.

Dhamdhun, 800 m, Nov. 1964, *Mukerjee* 6166.

Cyrtococcum patens (L.) A. Camus in Bull. Mus. Hist. Nat. Paris 27 : 118, 1921. *Panicum patens* L. Sp. Pl. 2 : 1046, 1753; Fl. Brit. Ind. 7 : 57, 1896.

A variable grass, usually with creeping stems.

Changtar, Samchi, 300 m, Dec. 1963, *Thothathri* 10334; Sureylakha, Sarbhag Division, 1350-1500 m, Dec. 1963, *Sen Gupta* 930.

Dendrocalamus hamiltonii Nees et Arn. ex Munro in Trans. Linn. Soc. 26 : 151, 1868; Fl. Brit. Ind. 7 : 405, 1896.

A large bamboo; spikelets in congested heads.
Phuntsholing, Dec. 1963, *Subba Rao* 152.

Digitaria preslii (Kunth) Henr. Monogr. Digitaria 589, 1950.

A small grass, creeping below.
Bhutan, *Deb* 63.

D. timorensis (Kunth) Balansa in Morot, J. de Bot. 4 : 138, 1890. *Paspalum sanguinale* Lamk. var. *debile* Hook. f. Fl. Brit. Ind. 7 : 16, 1896.

A small grass.
Changtar, Samchi, 300 m, Dec. 1963, *Thothathri* 10335.

D. violascens Link Hort. Berol. 1 : 229, 1827.

A small handsome grass.
Thoribhadi, Samchi, 300 m, Jan. 1964, *Thothathri* 10634.

Echinochloa colonum (L.) Link Hort. Berol. 2 : 209, 1833. *Panicum colonum* L. Syst. Nat. 2 : 870, 1759 (ed. 10); Fl. Brit. Ind. 7 : 32, 1896.

A grass of rather moist situations; stems decumbent or creeping below.
Dwarapani, Samchi, 300 m, Dec. 1963, *Thothathri* 10613.

E. stagnina (Retz.) Beauv. Ess. Agrost. 53 : 161, 1812. *Panicum crusgalli* L. Sp. Pl. 56, 1753; Fl. Brit. Ind. 7 : 30, 1896 (pro parte).

A grass, chiefly of moist situations.
Dwarapani, Samchi, 300 m, Dec. 1963, *Thothathri* 10625.

Eleusine coracana (L.) Gaertn. Fruct. 1 : 8, 1789; Fl. Brit. Ind. 7 : 294, 1896.

Cultivated for millets.
Gaylephug, 270 m, Nov. 1964, *Deb* 102.

E. indica (L.) Gaertn. Fruct. 1 : 8, 1789; Fl. Brit. Ind. 7 : 293, 1896.

An annual grass.
Changtar, Samchi, 300 m, Dec. 1963, *Thothathri* 10333.

Eragrostis japonica (Thunb.) Trin. in Mem. Acad. Sci. Petersb., Ser. 6, 1 : 405, 1831. *E. interrupta* Beauv. var. *tenuissima* Stapf ex Hook. f. Fl. Brit. Ind. 7 : 316, 1896.

A handsome grass with long inflorescences.
Dwarapani, Samchi, 300 m, Dec. 1963, *Thothathri* 10618.

E. unioides (Retz.) Nees ex Steud. Pl. Glum. 1 : 264, 1854. *E. amabilis* Wt. et Arn. ex Hook. et Arn. Bot. Beechey Voy. 251, 1838; Fl. Brit. Ind. 7 : 317, 1896.

A slender grass with pink or purple spikelets.

Samchi, 300 m, Dec. 1963, *Thothathri* 10378.

Erianthus longisetosus Anderss. in Oefers. K. Vet. Akad. Forh. Stockh. 163, 1855; Fl. Brit. Ind. 7 : 124, 1896.

A tall handsome grass with golden inflorescence.

Chamarchi forest, Samchi, 150 m, Dec. 1963, *Thothathri* 10608.

E. rufipilus (Steud.) Griseb. in Nachr. Ges. Wiss. Gottingen 93, 1868.

A tall perennial grass with mauve or purplish inflorescence.

Paro Valley, 2500 m, Aug. 1963, *Balakrishnan* 1333.

Ischaemum rugosum Salisb. Icon. Stirp. Rar. 1, t. 1, 1791; Fl. Brit. Ind. 7 : 127, 1896.

A very variable species, found in variety of habitats.

Samchi, 300 m, Dec. 1963, *Thothathri* 10382; Dwarapani, Samchi, 300 m, Dec. 1963, *Thothathri* 10611 & 10612.

Microstegium ciliatum (Trin.) A. Camus in Ann. Soc. Linn. Lyon, n.s. 68 : 201, 1921. *Pollinia ciliata* Trin. in Mem. Acad. Sci. Ser. 6. 2 : 306, 1832; Fl. Brit. Ind. 7 : 116, 1896.

A much-branched, erect or straggling grass.

Dhoankhola, Samchi, 360 m, Dec. 1963, *Thothathri* 10403.

Neyraudia reynaudiana (Kunth) Keng ex Hitch. in Am. J. Bot. 21 : 131, 1934. *N. madagascariensis* Hook. f. var. *zollingeri* Hook. f. Fl. Brit. Ind. 7 : 305, 1896.

A tall perennial grass.

Kharpaga hills, Samchi, 390 m, Dec. 1963, *Thothathri* 10344; Betni, Sarbhang Division, 1500-1650 m, Dec. 1963, *Sen Gupta* 1049.

Oplismenus compositus (L.) Beauv. Ess. Agrost. 54 : 168, 169, 1812; Fl. Brit. Ind. 7 : 66, 1896.

A tall, often gregarious grass.

Changtar, Samchi, 300 m, Dec. 1963, *Thothathri* 10336; Hatipali near Gaylegphug, Nov. 1964, *Deb* 165.

Panicum incomtum Trin. Gram. Panic. 200, 1826. *P. sarmentosum* Hook. f. Fl. Brit. Ind. 7 : 54, 1896 (non Roxb. 1820).

A tall grass.

Gaylegphug, 300 m, Dec. 1963, *Sen Gupta* 881; Changtar, Samchi, 150 m, Dec. 1963. *Thothathri* 10463.

Paspalum conjugatum Berg. in Act. Helv. Phys. Math. 7 : 129, 1772; Fl. Brit. Ind. 7 : 11, 1896.

A grass creeping and branching below.

Gaylegphug, 300 m, Dec. 1963, *Sen Gupta* 853; Dwarapani, Samchi, 300 m, Dec. 1963, *Thothathri* 10626; Hatipali near Gaylegphug, Nov. 1964, *Deb* 163.

Pennisetum flaccidum Griseb. in Goett. Nachr. 86, 1868; Fl. Brit. Ind. 7 : 84, 1896.

A perennial tufted grass.

Paro Valley, 2550 m, Aug. 1963, *Balakrishnan* 1244.

Phragmites karka (Retz.) Trin. ex Steud. Nom. Bot. ed. 2, 2 : 324, 1841.
var. **cincta** Hook. f. Fl. Brit. Ind. 7 : 305, 1896.

A tall, perennial reed-grass.

Paro, 2550 m, Aug. 1963, *Balakrishnan* 1245.

Poa annua L. Sp. Pl. ed. 1, 68, 1753; Fl. Brit. Ind. 7 : 345, 1896.

A small variable grass.

Shemgang, April 1964, *Sen Gupta* 1254 & 1282.

Pogonatherum crinitum (Thunb.) Kunth Enum. Pl. 1 : 478, 1833. Fl. Brit. Ind. 7 : 141, 1896.

A slender grass.

Birti, Sarbhang Division, 700-850 m, April 1964, *Sen Gupta* 1311.

P. paniceum (Lamk.) Hack. in Allg. Bot. Z. 12 : 178, 1906.

A slender grass.

Tama, 1200-1500 m, April 1964, *Sen Gupta* 1150.

Polytoca digitata (L.f.) Druce in Rep. Bot. Exch. Club, Brit. Isles 4 : 641, 1916.

A tall branched grass.

Dwarapani, Samchi, 300 m, Dec. 1963, *Thothathri* 10611.

Pseudoechinolaena polystachya (H.B.K.) Stapf in Prain Fl. Trop. Afr. 9 : 495, 1919. *Panicum uncinatum* Raddi, Agrost. Bras. 41, 1823; Fl. Brit. Ind. 7 : 58, 1896.

A slender, straggling grass.

Malbashi hill, Samchi, 540 m, Dec. 1963, *Thothathri* 10404.

Saccharum arundinaceum Retz. Obs. Bot. 4 : 14, 1786 ; Fl. Brit. Ind. 7 : 119, 1896.

A tall perennial grass.

Dhamdhun, 600 m, Nov. 1964, *Mukerjee* 6146.

Saccharum spontaneum L. Mant. Alt. 183, 1771; Fl. Brit. Ind. 7: 119, 1896.
A tall perennial grass with extensive root system.
Phuntsholing, Sept. 1964, *S.I.* 302.

Setaria glauca (L.) Beauv. Ess. Agrost. 51 : 178, 1812; Fl. Brit. Ind. 7 : 78, 1896 pro parte.
An annual grass up to about 60 cm high.
Birti, Sarbhang Division, April 1964, *Sen Gupta* 1342.

S. pallide-fusca (Schum.) Stapf et Hubb. in Kew Bull. 1930; 259, 1930.
S. glauca Hack. in Bot. Soc. 3 : 135, 1884 non Beauv.; Fl. Brit. Ind. 7 : 78, 1896.
Samchi, 300 m, Dec. 1963, *Thothathri* 10379.

S. palmifolia (Koen.) Stapf in J. Linn. Soc. (Bot.) 42 : 186, 1914. *Panicum plicatum* Hook. f. Fl. Brit. Ind. 7 : 55, 1896. (non Lamk.) pro parte.
A perennial tall grass.
Rani Camp to Tama, Nov. 1964, *Deb* 260.

Critical Note : This specimen is curious, because bristles below the spikelets, which are characteristic of this group, are rarely seen, but they are present in lowest racemes.

S. paniculifera (Steud.) Fourn. ex Hemsl. Biol. Centr. Amer. Bot. 3 : 505, 1885.
Dhoankhola, Samchi, 400 m, Dec. 1963, *Thothathri* 10388.

This is tropical American species; it is reported to have been cultivated in Ceylon as a fodder and for ornament. It has not been reported before from north-east India or eastern Himalayas. An examination of the material in the Calcutta herbarium, however, showed that the grass was collected earlier also by Prain from Kohima in Naga Hills.

S. viridis (L.) Beauv. Ess. Agrost. 51:171, 178, 1812; Fl. Brit. Ind. 7:80, 1896.
An annual grass.
Paro, 2550 m, Aug. 1963, *Balakrishnan* 1240.

Sporobolus diander (Retz.) Beauv. Ess. Agrost. 26 : 147, 178, 1812; Fl. Brit. Ind. 7 : 247, 1896.
A small grass.
Dhoankhola, Samchi, 300 m, Dec. 1963, *Thothathri* 10385; Samchi, Nov. 1964, *Mukerjee* 6179.

S. fertilis (Steud.) Clayton, Kew Bull. 19 : 287, 1965. *S. indicus* auct. plur. non (L.) R. Br.; Fl. Brit. Ind. 7 : 247, 1896.
A slender grass with a long narrow panicle.
Samchi, 300 m, Dec. 1963, *Thothathri* 10380.

- Themeda caudata** (Nees) A. Camus in Lecomte Fl. Gen de l' Indo-Chine 7 : 364, 1922. *Anthistiria gigantea* Cav. subsp. *caudata* Hack. Mongr. Andr. 676, 1889; Fl. Brit. Ind. 7 : 217, 1896.
A tall grass with large inflorescence.
Dhoankhola, Samchi, 360 m, Dec. 1963, *Thothathri* 10440.
- T. triandra** Forsk. Fl. Aegypt-Arab. 178, 1775. *Anthistiria imberbis* Retz. var. *imberbis* Hack. Fl. Brit. Ind. 7 : 212, 1896.
A gregarious grass.
Ha, 2700 m, Aug. 1963, *Sen Gupta* 692.
- Thysanolaena maxima** (Roxb.) O. Kuntze Rev. Gen. Pl. 2. 794, 1891. *T. agrostis* Nees in Edinb. New Phil. J. 18 : 180, 1835; Fl. Brit. Ind. 7 : 61, 1896.
A large grass with long inflorescence.
Gaylegphug, 300 m, Dec. 1963, *Sen Gupta* 831; Birti, Sarbhang Division, April 1964, *Sen Gupta* 1296.
- Tripogon filiformis** Nees ex Steud. Syn. Pl. Glum. 1 : 301, 1854; Fl. Brit. Ind. 7 : 288, 1896.
A slender grass with filiform leaves.
Geptem, Paro Valley, 2500 m, Aug. 1963, *Balakrishnan* 1302; Ha, 2500 m, Aug. 1963, *Sen Gupta* 694.

**IMPORTANT MEDICINAL PLANTS OF BHUTAN
AVAILABLE IN LARGE QUANTITIES**

Name	Locality	Medicinal uses
<i>Acacia catechu</i> Willd.	Phuntsholing Gaylegphug Samchi	The bark cures itching, sore throat, bronchitis, heaviness, ulcers, boils, inflammations, leprosy, anaemia and leucoderma.
<i>Acorus calamus</i> Linn.	Paro Sangura	The rhizome is emetic and is useful in stomachic dyspepsia, colic, remittent fevers, as nerve tonic, in bronchitis, dysentery of children, insectifuge and in snake-bite.
<i>Adhatoda vasica</i> Nees	Phuntsholing	The plant is useful in bronchitis, leprosy, blood impurities, heart troubles, thirst, asthma, fever, vomiting, loss of memory, leucoderma, jaundice, tumours and diseases of mouth.
<i>Asparagus racemosus</i> Willd.	Kamji, Thimpu	The roots are useful in dysentery, tumours, inflammations, biliousness, diseases of the blood and the eye, throat complaints, tuberculosis, leprosy, epilepsy and night blindness.
<i>Berberis aristata</i> DC.	Ha Valley	It is useful in skin diseases, menorrhagia, diarrhoea, jaundice. A decoction of the root-bark is used as a wash for unhealthy ulcers.
<i>Boerhaavia diffusa</i> Linn.	Phuntsholing	It is useful in biliousness, blood impurities, leucorrhoea, anaemia, inflammations and asthma.

Name	Locality	Medicinal uses
<i>Cassia alata</i> Linn.	Phuntsholing Samchi	The leaves are useful in itching, coughs, asthma, ringworm and skin diseases.
<i>Celastrus paniculatus</i> Willd.	Samchi	The leaf sap is used as an antidote for opium poisoning. The seeds are used as stimulant and diaphoretic in rheumatism, gout, carious fevers, emetic and tonic.
<i>Centella asiatica</i> Urb.	Paro Sham Khara	It cures leucoderma, anaemia, urinary discharges, diseases of the blood, bronchitis, inflammations, fevers, asthma, smallpox. It is also used in the insanity.
<i>Cinnamomum obtusifolium</i> Nees	Kamji	The bark is used in dyspepsia and liver complaint.
<i>Cymbopogon nardus</i> Rendle	Paro	The infusion of the leaves is used as a stomachic and carminative. It is used as a rubeficient.
<i>Datura metel</i> Linn.	Phuntsholing	The flowers are used in asthma and the fruits in earache. The pounded leaves are applied to swellings, tumours and rheumatic pains. A decoction of the seed is used for diseases of the eye.
<i>D. stramonium</i> Linn.	Paro	It is used chiefly to relieve the spasm of the bronchioles in asthma. The leaves are applied to boils, sores and fish-bites and the juice of the flowers is used for earache. The seeds are useful in leucoderma, skin diseases, ulcers, jaundice and piles.

Name	Locality	Medicinal uses
<i>Dichroa febrifuga</i> Lour.	Kamji Doroka Hills Sureylakha	The stems and leaves are considered excellent remedy for all kinds of fevers and the root is given as a tonic.
<i>Eclipta prostrata</i> Linn.	Samchi	The herb is used as tonic and deobstruent in hepatic and spleen enlargements and in skin diseases. The plant juice is administered in combination with aromatics, for catarrhal jaundice. The expressed leaf juice, alongwith honey is a popular remedy for catarrh. It is good for the complexion of hair. The root is emetic and purgative. It is applied externally as antiseptic to ulcers and wounds in cattle.
<i>Elephantopus scaber</i> Linn.	Samchi	It is useful in all poisoning from the bites of animals. A decoction of the roots and leaves is used as emellent and is given in dysuria, diarrhoea, dysentery and swellings or pains in the stomach. The root is given to arrest vomiting; powdered with peper it is applied in toothache. Bruised leaves, boiled in coconut oil are applied to ulcers and eczema.
<i>Emblica officinalis</i> Gaertn.	Phuntsholing	Dried fruit is useful in haemorrhage, diarrhoea and dysentery. A fermented liquor prepared from the fruit is used in jaundice, dyspepsia and cough. The seeds are used in the treatment of asthma, bronchitis and biliousness. The leaf is used in ophthalmia and incipient blindness.

Name	Locality	Medicinal uses
<i>Gaultheria fragrantissima</i> Wall.	Paro	Oil which is obtained from the leaves by distillation is applied externally in the form of liniment ointment in rheumatism, sciatics and neuralgia. The oil is also given internally and is best administered in the form of an emulsion. It has vermicidal action against hookworm.
<i>Hippophae rhamnoides</i> Linn.	Paro	The fruit is acidic and is made into a jelly with sugar. A syrup, prepared from it is used in lung complaints; a decoction is used for cutaneous eruption.
<i>Holarrhena antidysenterica</i> Wall.	Samchi Phuntsholing	The bark is used in the treatment of amoebic dysentery and diarrhoea, and is usually administered as extract or decoction. It is also used for diseases of the skin.
<i>Mahonia nepaulensis</i> DC.	Paro	The berries are considered diuretic and demulcent in dysentery.
<i>Mallotus philippinensis</i> Muell.-Arg.	Phuntsholing Samchi Gayleghpug	The glands on the fruit cure ulcers, wounds, tumours, stone in the bladder. It is also useful in bronchitis, diseases of the abdomen and enlargement of the spleen.
<i>Mentha sylvestris</i> Linn.	Paro	The plant is useful in diseases of the heart, bronchitis, loss of appetite, diarrhoea and dysentery.

Name	Locality	Medicinal uses
<i>Moringa oleifera</i> Lamk.	Phuntsholing	The root bark improves the appetite and is useful in heart complaints, eye diseases, inflammations, dyspepsia, enlargement of the spleen, tuberculous glands in the neck and pains. The leaves remove all kinds of excessive pain and faltening.
<i>Paederia foetida</i> Linn.	Phuntsholing Samchi Gaylegphug	The plant cures inflammations, piles and fever. It is also good for diseases of the eye and night blindness.
<i>Phlogacanthus thyrsiflorus</i> Nees	Phuntsholing Samchi Gaylegphug	The plant is useful in bronchitis, leprosy, heart troubles, fever, vomiting, loss of memory, leucoderma, jaundice, tumours and diseases of mouth. The root is useful in leucorrhoea with blood discharges.
<i>Piper attenuatum</i> Buch.-Ham. ex Miq.	Gaylegphug	The root macerated in water is an excellent diuretic.
<i>Rauvolfia serpentina</i> Benth. ex Kurz.	Phuntsholing	The root contains an alkaloid which is a valuable remedy for blood pressure. It is also sedative and specific for insanity. It cures ulcer, the poisonous effect of scorpion sting and snake bites.
<i>Rubia cordifolia</i> Linn.	Doroka Hills Chima Kothi Sureylakha	The root improves the voice and cures inflammations, diseases of the eye, ear and blood. It cures leucoderma, ulcers, urinary discharges, jaundice and piles. The fruit cures diseases of spleen.

Name	Locality	Medicinal uses
<i>Smithia sensitiva</i> Ait.	Phuntsholing	It is used for headache.
<i>Solanum khasianum</i> Clarke	Samchi Phuntsholing Gaylegphug	The berries yield an alkaloid, the solasodine which is important in the steroidal industry.
<i>Valeriana hardwickii</i> Wall.	Chai la pass	The root cures epileptic fits, head troubles, diseases of the eyes and the blood.
<i>V. jatamansi</i> Jones	Thimpu	Same as above.
<i>Ventilago calyculata</i> Tul.	Phuntsholing	The juice of the bark and young shoots is applied to the body as a remedy for the pains which accompany malarial fever.
<i>Zanthoxylum acanthopodium</i> DC.	Kamji	The fruit removes pain, tumour, abdominal troubles. It is useful in eye and ear diseases, diseases of the lips, headache, leucoderma, asthma, troubles of the spleen.

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INDEX OF LATIN NAMES

(Synonyms in Italics)

A	Page	A—contd.	Page
<i>Abacopteris multilineata</i> (Wall. ex Hook.) Ching	16	<i>Actinodaphne confertiflora</i> Meissn.	183
<i>Abroma angusta</i> Linn.	46	<i>sikkimensis</i> Meissn.	183
<i>Abrus precatorius</i> Linn.	67	<i>Adenosacme longifolia</i> Wall. ex Kurz	119
<i>pulchellus</i> Wall. ex Thw.	66	<i>Adenostemma lavenia</i> (Linn.) O. Ktz. var. <i>elata</i> (D. Don)	
<i>Abutilon indicum</i> (L.) Sweet	44	<i>Kitamura</i>	123
<i>Acacia caesia</i> (Linn.) Willd.	86	<i>Adhatoda vasica</i> Nees	162
<i>catechu</i> (Linn. f.) Willd.	86	ADIANTACEAE	4
<i>farnesiana</i> (Linn.) Willd.	86	<i>Adiantum capillus-veneris</i> Linn.	4
<i>intisia</i> Willd.	86	<i>caudatum</i> Linn.	4
<i>Acalypha brachystachya</i> Hornem.	189	var. <i>edgeworthii</i> (Hook.) Bedd.	4
<i>Acampe longifolia</i> Lindl.	204	<i>cultratum</i> Willd.	9
ACANTHACEAE	162	<i>edgeworthii</i> Hook.	4
<i>Acanthopanax leucorrhizum</i> (Oliv.) Harms	110	<i>lunulatum</i> Burm.	4
ACERACEAE	63	<i>philippense</i> Linn.	4
<i>Acer campbellii</i> Hook. f. et Thoms. ex Hiern.	63	<i>Aeginetia indica</i> Linn.	160
<i>sikkimense</i> Miq.	63	<i>Aerides vandarum</i> Reichb. f.	204
<i>Achyranthes aspera</i> Linn.	173	<i>Aerva sanguinolenta</i> (Linn.) Blume	173
<i>bidentata</i> Bl.	173	<i>scandens</i> (Roxb.) Moq.	173
<i>Achyrospermum wallichianum</i> (Benth.) Benth. ex Hook. f.	164	<i>Aesandra butyracea</i> (Roxb.) Backni	143
<i>Aconitum atrox</i> (Bruhl) Mukerjee	25	<i>Aeschynomene indica</i> Linn.	67
<i>palmatum</i> D. Don	25	<i>Aeschynanthus chiritooides</i> Clarke	160
<i>spicatum</i> (Bruhl) Stapf	25	<i>grandiflora</i> Spreng.	160
<i>Aconogonum molle</i> (D. Don) Hara	175	<i>maculata</i> Clarke	160
var. <i>frondosum</i> (Meissn.) Hara	176	var. <i>sikkimensis</i> Clarke	160
var. <i>molle</i>	176	<i>parviflorum</i> (D. Don) Spreng	161
<i>Acorus calamus</i> Linn.	229	<i>ramosissima</i> Wall.	161
<i>Acrochaene punctata</i> Lindl.	204	<i>sikkimensis</i> (Clarke) Stapf	160
<i>Acrophorus assamicus</i> Bedd.	10	<i>Agapetes auriculata</i> Hook. f.	136
<i>stipellatus</i> Moore	11	<i>bhutanica</i> Balak. et Chowdhury	136
<i>Acrostichum appendiculatum</i> Willd.	13	<i>saligna</i> (Hook. f.) Hook. f.	136
<i>calomelanos</i> Linn.	5	<i>serpens</i> (Wt.) Sleumer	136
<i>costatum</i> var. <i>deltigerum</i> Hook.	12	<i>smithiana</i> Sleumer var. <i>major</i> Airy Shaw	137
<i>lanceolatum</i> Linn.	24	<i>variegata</i> (Roxb.) D. Don ex G. Don var. <i>elegans</i> Airy Shaw	137
<i>marantae</i> Linn.	5	<i>Ageratum conyzoides</i> Linn.	123
<i>numularifolium</i> J. Sim.	24	<i>Agrimonia eupatorium</i> Hook. f.	87
<i>petiolatum</i> Sw.	13	<i>pilosa</i> Ledeb. var. <i>nepalensis</i> (D. Don) Nakai	87
<i>punctatum</i> Linn.	21	<i>Agrostophyllum brevipes</i> King & Pantling	204
<i>spicatum</i> Linn. f.	19	<i>callosum</i> Reichb. f.	204
<i>thalictroides</i> Linn.	6		
ACTINIDIACEAE	43		
<i>Actinidia callosa</i> Lindl.	43		

A—contd.	Page	A—contd.	Page
<i>Ainsliaea latifolia</i> (D. Don) Schulz.		<i>Aneilema loriforme</i> Hassk.	227
–Bip.	123	<i>nudiflorum</i> (Linn.) Kunth	228
<i>pteropoda</i> DC.	123	<i>nudiflorum</i> R. Br. var. <i>terminalis</i>	
<i>Ajuga bracteosa</i> Wall. ex Benth.	165	(Wt.) Clarke	227
<i>macrosperma</i> Wall. ex Benth.	165	<i>scaberrimum</i> (Bl.) Kunth	226
var. <i>breviflora</i> Hook. f.	165	<i>Anemone vitifolia</i> Bucn.-Ham. ex	
var. <i>macrosperma</i>	165	DC.	25
var. <i>thomsonii</i> (Maxim.) Hook. f.	165	<i>Angiopteris evecta</i> (Forst.) Hoffm.	3
ALANGIACEAE	114	<i>Anisogonium esculentum</i> Presl.	15
<i>Alangium chinense</i> (Lour.) Harms	114	<i>Anisochilus pallidus</i> Wall.	165
<i>Albizia chinensis</i> (Osbeck) Merr.	86	<i>Anisomeles indica</i> (L.) O. Ktze.	165
<i>lucida</i> (Roxb.) Benth.	86	<i>ovata</i> R. Br.	165
<i>procera</i> (Roxb.) Benth.	87	ANNONACEAE	29
<i>stipulata</i> Boivin	86	<i>Anotis calycina</i> Wall. ex Hook. f.	119
<i>Acimandia cathartii</i> (Hook. f. &		<i>ingrata</i> Wall. ex Hook. f.	119
Thoms.) Dandy	28	<i>wightiana</i> Wall. ex Hook. f.	119
<i>Aleuritopteris albomarginatas</i>		<i>Anplectrum assamicum</i> C. B.	
(Clarke) Panigrahi	5	Clarke	100
<i>farinosa</i> (Forsk.) Fée	5	<i>Anthistiria gigantea</i> Cav. subsp.	
<i>Allaeanthus kurzii</i> Hook. f.	195	<i>caudata</i> Hack.	239
<i>Allophyllus zeylanicus</i> Linn. var.		<i>imberbis</i> Retz. var. <i>imberbis</i>	
<i>grandifolia</i> Hiern	64	Hack.	239
<i>Alpinia malaccensis</i> (Burm.) Rosc.	219	<i>Anthocephalus cadamba</i> Miq.	116
<i>Alocasia fallax</i> Schott	229	<i>Anthogonium gracile</i> Lindl.	205
<i>Alsophila latebrosa</i> Wall. ex Hook.	11	<i>Antidesma acuminatum</i> Wall. ex	
<i>brunoniana</i> Wall. ex Hook.	11	Wight	189
<i>Alternanthera sessilis</i> (Linn.) DC.	173	<i>diandrum</i> (Roxb.) Hejue ex Roth	189
<i>Altingia excelsa</i> Noronha	96	ANTROPHYACEAE	3
AMARANTHACEAE	173	<i>Antrophyum coriaceum</i> (Don)	
<i>Amaranthus paniculatus</i> Linn.	174	Hook.	3
<i>spinosus</i> Linn.	174	<i>reticulatum</i> sensu Bedd.	3
<i>viridis</i> Linn.	174	<i>Aphanamixis decandra</i> (Roxb.)	
<i>Ammania peploides</i> Spr.	101	Kosterm.	56
<i>Amomum zedoaria</i> Berg.	220	<i>polystachya</i> (Wall.) Parker	56
<i>Amoora rohituka</i> W. & A.	56	<i>Aphania rubra</i> (Roxb.) Radlk.	64
<i>Amorphophalus campanulatus</i> Bl.		APOCYNACEAE	145
ex Decne	229	AQUIFOLIACEAE	57
<i>Ampelocissus divaricata</i> (Wall.) Pl.	61	ARACEAE	229
<i>Amphicosmia brunoniana</i> (Wall. ex		<i>Arachnanthe clarkei</i> Rolf.	205
Hook.) Bedd.	11	<i>Arachniodes aristata</i> (Forst. f.)	
ANACARDIACEAE	65	Tindale	11
<i>Anaphalis araneosa</i> DC.	123	<i>coniifolia</i> (Moore) Ching	11
<i>busua</i> (Buch.-Ham.) Hand.-		<i>Arachnis clarkei</i> (Reichb. f.) J. J.	
Mazz.	123	Sm.	205
<i>contorta</i> (D. Don) Hook. f.	123	<i>Araiostegia pulchra</i> (Don) Copel.	9
<i>margaritacea</i> (L.) Benth. &		ARALIACEAE	110
Hook. f.	124	<i>Aralia foliolosa</i> (Wall.) Seem. ex	
<i>Andromeda lanceolata</i> Wall.	138	Clarke	111
<i>Andropogon assimilis</i> Steud.	234	<i>pseudo-ginseng</i> Benth. ex Clarke	112
<i>nardus</i> L. subsp. <i>flexuosus</i> (Nees)		<i>Ardisia floribunda</i> Wall.	141
Hack	234	<i>humilis</i> Clarke	141

A—contd.	Page	A—contd.	Page
<i>macrocarpa</i> Wall.	141	<i>nigripes</i> Bl.	14
<i>nerifolia</i> Wall. ex A. DC.	141	<i>polymorphum</i> Wall. ex Hook.	14
<i>solanacea</i> (Poir) Roxb.	141	<i>subpubescens</i> Bl.	15
ARECACEAE	228	<i>tenuisectum</i> Bl.	15
<i>Arenaria benthami</i> Edgew.	37	<i>wallichianum</i> Hook.	10
<i>bhutanica</i> Majumdar & Babu	37	<i>wallichianum</i> Spreng.	12
<i>blinkworthii</i> McNeill	37	<i>Aspidopteris glabriscula</i> A. Juss.	49
<i>Argyrea capitata</i> (Vahl) Arn. ex Chois.	153	<i>roxburghiana</i> A. Juss.	49
<i>hookeri</i> Clarke	153	ASPLENACEAE	16
<i>roxburghii</i> Arn. ex Choise. var. <i>ampla</i> (Wall. ex Choise.) Clarke	153	<i>Asplenium bulbiferum</i> auct (non Forst.) Bedd.	16
<i>Arisaema consanguineum</i> Schott	229	<i>bullatum</i> Wall. ex Mett.	16
<i>costatum</i> (Wall.) Mart. ex Schott	229	<i>cheilosorum</i> Kunze ex Mett.	18
<i>decipiens</i> Schott	229	<i>ensiforme</i> Wall. ex Hook. & Grev.	17
<i>petiolulatum</i> Hook. f.	229	<i>filix-foemina</i> (Linn.) Hope	14
<i>roxburghii</i> Kunth	230	<i>finlaysonianum</i> Wall. ex Hook.	18
ARISTOLOCHIACEAE	181	<i>griffithianum</i> Hook.	16
<i>Aristolochia griffithii</i> Hook. f. et Thoms. ex Duchart.	181	<i>heterocarpum</i> Wall. ex Clarke	18
<i>Artemisia nilagirica</i> (Clarke) Pamp.	124	<i>indicum</i> Sledge	17
<i>vestita</i> Wall. ex DC.	124	<i>laciniatum</i> Don	17
<i>vulgaris</i> auct. non Linn.	124	<i>laciniatum</i> sensu Bedd.	17
<i>Arthromeris lehmannii</i> Mett. Ching	18	<i>latifolium</i> Don	15
<i>himalayensis</i> (Hook.) Ching	18	<i>nidus</i> Linn.	17
<i>wallichiana</i> (Spreng.) Ching	18	<i>nidus</i> var. <i>muscifolia</i> (J. Sm.) Bedd.	17
<i>wardii</i> (Clarke) Ching	19	<i>nitidum</i> Sw.	16
<i>Arum campanulatum</i> Roxb.	229	<i>paucivenosum</i> (Ching) Bir	16
<i>costatum</i> Wall.	229	<i>planicanle</i> Wall. ex Mett.	17
<i>Arundina bambusifolia</i> Lindl.	205	<i>tenuifolium</i> Don	17
<i>graminifolia</i> (D. Don) Hochr.	205	<i>unilaterale</i> Lam. var. <i>unilaterale</i> Lamk.	17
<i>Arundinaria callosa</i> Munro	233	<i>varians</i> Wall. ex Hook. et Grev.	17
<i>Arundinella brasiliensis</i> Hook. f.	233	ASTERACEAE	123
<i>nepalensis</i> Trin.	233	<i>Aster tricephalus</i> Clarke	124
ASCLEPIADACEAE	147	<i>trinervius</i> Roxb.	124
<i>Asclepias micranthum</i> (Lindl.) Holtz.	205	<i>Astilbe rivularis</i> Buch.-Ham. ex D. Don	93
<i>Asparagus filicinus</i> Buch.-Ham. ex D. Don	224	<i>Astragalus stipulatus</i> D. Don ex Sims	67
ASPIDIACEAE	11	ATHYRIACEAE	14
<i>Aspidium aridum</i> Don	15	<i>Athyrium atkinsonii</i> Bedd.	14
<i>aratatum</i> Wall. ex Kunze	12	<i>boryanum</i> (Willd.) Togawa	15
<i>boryanum</i> Willd.	15	<i>drepanopterum</i> (Kunze) A. Br.	14
<i>caryotideum</i> Wall. ex Hook. et Grev.	12	<i>filix-foemina</i> (Linn.) Roth	14
<i>chrysocoma</i> (Christ.) Christ.	12	<i>fimbriatum</i> Moore	14
<i>cicutarium</i> sensu Bedd.	14	<i>nigripes</i> (Bl.) Moore	14
<i>filixmas</i> var. <i>chrysocoma</i> Christ.	12	<i>oxyphyllum</i> Moore	14
<i>foeniculaceum</i> Hook.	10	<i>solenopteris</i> Bedd.	14
<i>lentum</i> Don	14	<i>Atylosia scarabaeoides</i> (Linn.) Benth.	67
<i>multilineatum</i> Wall. ex Mett.	16		

B	Page	B—contd.	Page
<i>Baccaurea sapida</i> (Roxb.) Muell.-Arg.	189	<i>vaccinifolia</i> (Wall. ex Meissn.) Greene	176
BALANOPHORACEAE	189	BLECHNACEAE	18
<i>Balanophora dioica</i> Br. ex Royle	189	<i>Blechnum melanopus</i> Hook.	18
<i>Baliospermum calycinum</i> Muell.-Arg.	190	<i>radicans</i> Linn.	18
<i>corymbiferum</i> Hook. f.	190	<i>Blumea aromatica</i> Wall. ex DC.	125
BALSAMINACEAE	50	<i>balsamifera</i> (Linn.) DC.	125
<i>Barleria strigosa</i> Willd.	163	<i>chinesis</i> (Linn.) DC.	125
<i>Basella alba</i> Linn.	175	<i>lacera</i> (Burm. f.) DC.	125
BASELLACEAE	175	<i>laciniata</i> (Roxb.) DC.	125
<i>Basella rubra</i> Linn.	175	<i>lanceolaria</i> (Roxb.) Dunc.	125
<i>Bassia butyracea</i> Roxb.	143	<i>myriocephala</i> DC.	125
<i>Bauhinia purpurea</i> Linn.	84	<i>Blumeopsis falcata</i> (D. Don) Merrill	125
<i>variegata</i> Linn.	84	<i>Boehmeria hamiltoniana</i> Wedd.	196
BEGONIACEAE	106	<i>macrophylla</i> D. Don	197
<i>Begonia gigantea</i> Wall. ex Clarke	106	<i>platyphylla</i> D. Don	197
<i>nepalensis</i> (A. DC.) Warburg	106	var. <i>macrostachya</i> Brandis	197
<i>rubro-venia</i> Hook. f.	106	<i>platyphylla</i> Hook. f.	197
<i>Beilschmedia gammieana</i> King ex Hook. f.	184	<i>polystachya</i> Wedd.	197
<i>ioxburghiana</i> Nees	184	<i>sidaefolia</i> Wedd.	197
<i>Belamcanda chinensis</i> (Linn.) Leman	222	<i>Boeninghausenia albiflora</i> (Hook.) Meisner	52
<i>Belvisia spicata</i> (Linn. f.) Mirbel	19	<i>Buerhaavia diffusa</i> Linn.	173
<i>Belosynapsis vivipara</i> (Dalz.) Fischer	226	<i>repens</i> Linn.	173
BERBERIDACEAE	31	<i>Bolbitis deltigeria</i> (Hook.) C. Christ.	12
<i>Berberis aristata</i> DC.	31	<i>Bonnaya reptans</i> Spr.	158
<i>bhutanensis</i> Arhrendt.	31	BORAGINACEAE	151
<i>edgeworthiana</i> Schnied.	31	<i>Borreria articularis</i> (Linn.) K. Schum.	116
<i>orthobotrys</i> Bienert ex Ait.	31	<i>ocymoides</i> DC.	116
<i>sublevis</i> W. W. Sm. var. <i>microcarpa</i> (Hook. f. et Thoms.) Anrendt.	31	<i>stricta</i> (Linn. f.) K. Schum.	116
<i>wallichiana</i> DC.	31	<i>Botrychium lanuginesum</i> Wall. ex Hook. et Grev.	2
var. <i>microcarpa</i> Hook. f. & Thoms.	31	<i>Brachystemma calycinum</i> D. Don	37
var. <i>pallida</i> Hook. f. & Thoms.	31	<i>Brassaiopsis aculeata</i> (Buch.-Ham. ex D. Don) Seem.	111
<i>Berchemia floribunda</i> (Wall.) Broming	60	<i>hainla</i> (Buch.-Ham. ex D. Don) Seem.	111
<i>lineata</i> DC.	60	<i>hispidula</i> Seem.	111
<i>Bideas biternata</i> (Lour.) Merr. & Sherfft.	124	BRASSICACEAE	33
<i>pilosa</i> auct. non Linn.	124	<i>Brassica juncea</i> (Linn.) Czern & Coss.	33
<i>tripartita</i> Linn.	124	<i>napus</i> Linn.	33
<i>Bilderdykia pterocarpa</i> (Wall. ex Meissn.) Greene	176	<i>Bridelia montana</i> Willd.	190
<i>Bischofia javanica</i> Bl.	190	<i>retusa</i> (Linn.) Spreng.	190
<i>Bistorta sphaerostachya</i> (Meissn.) Greene	176	<i>sikkimensis</i> Gehrm.	190
		<i>tomentosa</i> Bl.	190
		<i>verrucosa</i> Haines	190
		<i>Brucea mollis</i> Wall. ex Kurz	55
		<i>Bryonia laciniata</i> Linn.	103

B—contd.	Page	C—contd.	
<i>Bucklandia populnea</i> R. Br. ex Griff.	96	<i>masuca</i> (Don) Lindl.	207
Buddlejaceae	148	<i>plantaginea</i> Lindl.	207
<i>Buddleja asiatica</i> Lour.	148	<i>puberula</i> Lindl.	207
<i>paniculata</i> Wall.	148	<i>whiteana</i> King & Pantling	207
<i>tibetica</i> W. W. Smith	148	<i>Celastrus stylosa</i> Wall.	58
<i>Bulbophyllum affine</i> Lindl.	205	<i>Camellia drupifera</i> Thiselton	
<i>amplifolium</i> (Rolfe) Balak. et		Dyer	41
Chowdhury	205	<i>kissi</i> Wall.	41
<i>bicolor</i> (Lindl.) Hook. f.	214	CAMPANULACEAE	134
<i>brachypodium</i> Rao et Balak.	205	<i>Campanula colorata</i> Wall.	134
var. <i>parviflorum</i> Rao et Balak.	205	<i> khasiana</i> Hook. f. & Thoms.	134
<i>candidum</i> Hook. f.	206	<i>sylvatica</i> Wall.	134
<i>careyanum</i> Spr.	206	<i>Campanumaea parviflora</i> (Hook. f.	
<i>cylindraceum</i> Lindl.	206	& Thoms.) Benth.	134
<i>densiflorum</i> Rolfe	206	<i>Campteria biawrita</i> Hook.	7
<i>eublepharum</i> Reichb. f.	206	<i>wallichiana</i> Moore	8
<i>griffithii</i> Reichb. f.	206	<i>Campylotropis eriocarpa</i> (Royle	
<i>leopardinum</i> (Wall.) Lindl.	206	ex Maxim.) Schindl.	68
var. <i>tuberculatum</i> Balak. et		CANNABACEAE	195
Chowdhury	206	<i>Cannabis sativa</i> Linn.	195
<i>odoratissimum</i> (Sm.) Lindl.	206	CANNACEAE	222
<i>palaceum</i> (Lindl.) Benth.	214	<i>Canna indica</i> Linn.	222
<i>reptans</i> Lindl.	206	<i>Capillipedium assimile</i> (Steud.) A.	
<i>striatum</i> Reichb. f.	207	Camus	234
<i>thomsoni</i> Hook. f.	207	CAPPARIDACEAE	34
<i>Bupleurum candolii</i> DC.	107	<i>Capparis acutifolia</i> Sw. ssp. <i>bodini-</i>	
<i>falcatum</i> Linn.	107	<i>nieri</i> (Lévl) Jacobs	34
<i>Butea minor</i> Buch.-Ham. ex Baker	68	ssp. <i>viminea</i> Jacobs	34
<i>parviflora</i> Roxb.	67	<i>multiflora</i> Hook. f. & Thoms.	35
BUXACEAE	194	<i>olacifolia</i> Hook. f. & Thoms.	35
<i>Byrsopteris aristata</i> (Forst.)		CAPRIFOLIACEAE	114
Morton	11	<i>Capsella bursa-pastoris</i> (Linn.)	
<i>coniifolia</i> (Moore) Morton	11	Medik.	33
C		<i>Capsicum annum</i> L.	154
<i>Cacalia quinquelobus</i> (DC.)		<i>Cardamine hirsuta</i> Linn. var. <i>syl-</i>	
Kitamura	126	<i>vatica</i> Hook. f. & Anders.	33
CAESALPINIACEAE	84	<i>scutata</i> Thunb.	33
<i>Caesalpinia cucullata</i> Roxb.	85	<i>circaeoides</i> Hook. f. & Thoms.	33
<i>Cajanus cajan</i> (Linn.) Millsp.	68	<i>Careya arborea</i> Roxb.	98
<i>Caladium viviparum</i> Lodd.	230	<i>Carlemania griffithii</i> Benth.	116
<i>Calamagrostis littorea</i> Beauv.	234	<i>Carex baccans</i> Nees	231
<i>pseudophragmites</i> (Hall. f.)		<i>composita</i> Boott	231
Koeler	234	<i>cruciata</i> Wahlenb.	231
<i>Calamintha umbrosa</i> Benth.	166	<i>doniana</i> Spreng.	231
<i>Calamus flagellum</i> Griff.	228	<i>insignis</i> Boott	231
<i>leptospadix</i> Griff.	228	<i>myosurus</i> Nees	231
<i>polygamus</i> Roxb.	228	<i>Carpesium cernuum</i> var. <i>typica</i>	
<i>Calanthe biloba</i> Lindl.	207	Hook. f. et var. <i>glandulosa</i>	
<i>mannii</i> Hook. f.	207	Hook. f.	126
		<i>nepalense</i> Less.	126
		CARYOPHYLLACEAE	37

C—contd.	Page	C—contd.	Page
<i>Casearia glomerata</i> Roxb.	36	<i>Chloris virgata</i> Sw.	234
<i>vareca</i> Roxb.	36	<i>Chlorophytum nepalense</i> (Lindl.)	
<i>Cassia fistula</i> Linn.	84	Baker	224
<i>grandis</i> Linn.	84	<i>undulatum</i> Wall. ex Hook. f.	224
<i>occidentalis</i> Linn.	84	<i>Chrysoglossum erraticum</i> Hook.	
<i>mimosoides</i> Linn.	85	f.	207
<i>tora</i> Linn.	85	<i>Chrysosplenium nepalense</i> D.	
<i>Castanopsis hystrix</i> DC.	202	Don	93
<i>indica</i> (Roxb.) DC.	201	<i>Cicerbita cyanea</i> (D. Don) Beauv.	126
<i>tribuloides</i> (Sm.) DC.	202	<i>macrantha</i> (Clarke) Beauv.	126
<i>Ceterach paucivenosa</i> Ching	16	<i>Cimicifuga foetida</i> Linn.	25
<i>Catharanthus roseus</i> (L.) G. Don	145	<i>Cinnamomum obtusifolium</i> Nees	184
<i>Caucalis anthriscus</i> Huds	110	<i>Circaea alpina</i> Linn.	102
<i>Cautleya gracilis</i> (Sm.) Dandy	219	var. <i>himalaica</i> Clarke	102
<i>lutea</i> Royle	219	<i>lutetiana</i> Clarke	102
<i>spicata</i> (Sm.) Baker	219	<i>repens</i> Wall. ex Asch.	102
<i>Celastrus monosperma</i> Roxb.	58	<i>Cirrhopetalum amplifolium</i> Rolfe	205
<i>paniculatus</i> Willd. ssp. <i>multi-</i>		<i>brevipes</i> Hook. f.	205
<i>florus</i> (Roxb.) Ding Hou	58	<i>maculosum</i> Lindl.	207
CELASTRACEAE	58	<i>refractum</i> Zoll.	207
<i>Cephalostigma hirsutum</i> Edgew.	135	<i>wallichii</i> Lindl.	207
<i>Cerastium holosteoides</i> Fr. subsp.		<i>Cirsium argyracanthum</i> DC.	126
<i>triviale</i> (Link) Moschl var.		<i>lipskyi</i> Petrak	126
<i>hallaisanense</i> (Nakai) Mizu-		<i>Cissus assamica</i> (Laws.) Craib	61
<i>shima</i>	38	<i>elongata</i> Roxb.	61
<i>vulgatum</i> var. <i>triviale</i> (Link)		<i>repanda</i> Vahl	62
Edgew. & Hook. f.	38	<i>repens</i> Lamk.	62
<i>Ceratopteris thalictroides</i> (Linn.)		<i>Citrus medica</i> Linn.	53
Brongn.	6	<i>reticulata</i> Blanco	53
<i>Ceratostigma griffithi</i> C.B.Cl.	140	<i>Citta nigricans</i> Lour.	79
<i>Ceratostylis himalaica</i> Hook. f.	217	<i>Cleisostoma geminatum</i> King &	
<i>Chasalia curviflora</i> Thw.	116	Pantling	218
<i>Centella asiatica</i> (Linn.) Urb.	107	<i>micrantha</i> (Lindl.) King &	
<i>Ceterachopsis paucivenosa</i> (Ching)		Pantling	205
Ching	16	<i>Clematis acuminata</i> DC.	25
<i>Chaerophyllum reflexum</i> Lindl.	107	<i>acutangula</i> Hook. f. & Thoms.	25
<i>Chamaebinia cuspidata</i> Wight	197	<i>buchananiana</i> DC.	26
<i>Cheilanthes albomarginata</i> Clarke	5	<i>cadmia</i> Wall. ex Hook. f. &	
<i>farinosa</i> (Forsk.) Kaulf.	5	Thoms.	26
CHENOPODIACEAE	175	<i>connata</i> DC.	26
<i>Chenopodium album</i> Linn.	175	<i>gouriana</i> Roxb. ex DC.	26
<i>ambrosioides</i> Linn.	175	<i>grewiflora</i> DC.	26
<i>botrys</i> Linn.	175	<i>loureiriana</i> DC.	26
<i>Chisocheton paniculatus</i> (Roxb.)		<i>montana</i> Buch.-Ham. ex DC.	26
Hiern	56	<i>smilacifolia</i> Wall.	26
<i>Chirita acuminata</i> R. Br.	161	<i>tortuosa</i> (Wall. ex Hook. f. &	
<i>pumila</i> D. Don	161	Thoms.) C.E.C.F.	26
<i>urticifolia</i> Buch.-Ham. ex D.		<i>Clinopodium umbrosum</i> (M. Bieb)	
Don	161	C. Koch	166
CHLORANTHACEAE	183	<i>Cnicus argyracanthus</i> DC. ex Hook.	
<i>Chloranthus officinalis</i> Bl.	183	f.	126

C—contd.	Page	C—contd.	Page
<i>griffithii</i> Hook. f.	126	<i>Corchorus acutangulus</i> Lamk.	47
<i>Codonopsis griffithii</i> Clarke	134	<i>aestuans</i> Linn.	47
<i>viridis</i> Wall.	134	<i>Coriaria nepalensis</i> Wall.	66
<i>Coelogyne barbata</i> Griff.	208	CORNACEAE	113
<i>corymbosa</i> Lindl.	208	<i>Cornus capitata</i> Wall.	113
<i>fimbriata</i> Lindl.	208	<i>Corydalis cachemiriana</i> Royle	32
<i>fuscescens</i> Lindl.	208	<i>casimiriiana</i> Duthie & Prain ex	
<i>gardaeriana</i> Lindl.	208	Prain	32
<i>gardneriana</i> Lindl.	215	<i>leptocarpa</i> Hook. f. & Thoms.	32
<i>longipes</i> Lindl.	208	<i>prainiana</i> Kanodia & Mukerjee	32
<i>occultata</i> Hook. f.	208	<i>Corylopsis himalayana</i> Griff.	96
<i>ochracea</i> Lindl.	208	<i>Cotoneaster bacillaris</i> Wall. ex	
<i>ovalis</i> Lindl.	208	Lindl.	88
<i>praecox</i> (Sm.) Lindl.	217	<i>microphylla</i> Wall. ex Lindl.	88
<i>prolifera</i> Lindl.	209	<i>Craimiotome versicolor</i> Reicheb.	166
<i>Coffea khasiana</i> Hook. f.	117	<i>Crassocephalum crepidoides</i>	
<i>bengalensis</i> Roxb.	116	(Benth.) S. Moor.	126
<i>Colebrookia oppositifolia</i> Smith	166	CRASSULACEAE	95
<i>Coleus barbatus</i> (Andr.) Benth.	166	<i>Crepis japonica</i> Benth.	134
<i>forskalii</i> (Willd.) Brig.	166	<i>Crotalaria alata</i> Buch.-Ham. ex	
<i>Colquhonia coccinea</i> Wall.	166	D. Don	68
var. <i>coccinea</i>	166	<i>bhutanica</i> Thoth.	68
var. <i>mollis</i> Prain	166	<i>calycina</i> Schrank	69
var. <i>vestita</i> (Wall.) Prain	166	<i>capitata</i> Benth.	68
<i>Colysis elliptica</i> (Thbg.) Ching var.		<i>ferruginea</i> Grah. ex Benth.	69
<i>pothifolia</i> (Don) Cling	19	<i>humifusa</i> Grah. ex Benth.	69
<i>hemionitidea</i> (Presl) Presl	19	<i>macrophylla</i> Willd.	78
COMBRETACEAE	96	<i>mucronata</i> Desv.	69
<i>Combretum flagrocarpum</i> Clarke	96	<i>occulta</i> Grah. ex Benth.	70
COMMELINACEAE	226	<i>sessiliflora</i> Linn.	70
<i>Commelina cristata</i> Linn.	227	<i>striata</i> DC.	69
<i>hasskarlii</i> Clarke	226	<i>tetragona</i> Andr.	70
<i>maculata</i> Edgew.	226	<i>trifoliatrum</i> Willd.	70
<i>nudiflora</i> Linn.	228	<i>Croton oblongifolius</i> Roxb.	191
<i>obliqua</i> Buch.-Ham. ex D. Don	226	<i>caudatus</i> Geisel	191
<i>paludosa</i> Blume	226	<i>roxburghii</i> Balak.	190
<i>scaberrima</i> Blume	226	<i>Crypsinus ebenipes</i> (Hook.)	
<i>striata</i> Edgew.	226	Copel.	19
<i>Coniogramme fraxinea</i> (Don) Diels	5	<i>griffithianus</i> (Hook.) Copel.	19
var. <i>serra</i> Fée	5	<i>Cryptocarya amygdalina</i> Nees	184
CONNARACEAE	66	<i>Cryptochilus lutea</i> Lindl.	209
<i>Connarus paniculatus</i> Roxb.	66	<i>sanguinea</i> Wall.	209
<i>Conocephalus suaveolens</i> Bl.	195	CRYPTOGRAMACEAE	6
CONVOLVULACEAE	153	<i>Cryptolepis elegans</i> Wall. ex Don	147
<i>Convallaria cirrhifolia</i> Wall.	225	<i>sinensis</i> (Lour.) Meer.	147
<i>oppositifolia</i> Wall.	225	<i>Cucubalus bacciferus</i> Linn.	38
<i>Conyza japonica</i> Less.	126	<i>Cucumis sativus</i> Linn.	103
var. <i>stricta</i> Willd.	126	CUCURBITACEAE	103
<i>Corallodiscus lanuginosus</i> (DC.)		CUPRESSACEAE	204
Burt.	161	<i>Cupressus funebris</i> Endl.	204
CORIARIACEAE	66	<i>torulosa</i> D. Don	204

C—contd.	Page	C—contd.	Page
<i>Casearia glomerata</i> Roxb.	36	<i>Chloris virgata</i> Sw.	234
<i>vareca</i> Roxb.	36	<i>Chlorophytum nepalense</i> (Lindl.)	
<i>Cassia fistula</i> Linn.	84	Baker	224
<i>grandis</i> Linn.	84	<i>undulatum</i> Wall. ex Hook. f.	224
<i>occidentalis</i> Linn.	84	<i>Chrysoglossum erraticum</i> Hook.	
<i>mimosoides</i> Linn.	85	f.	207
<i>tora</i> Linn.	85	<i>Chrysosplenium nepalense</i> D.	
<i>Castanopsis hystrix</i> DC.	202	Don	93
<i>indica</i> (Roxb.) DC.	201	<i>Cicerbita cyanea</i> (D. Don) Beauv.	126
<i>tribuloides</i> (Sm.) DC.	202	<i>macrantha</i> (Clarke) Beauv.	126
<i>Ceterach paucivenosa</i> Ching	16	<i>Cimicifuga foetida</i> Linn.	25
<i>Catharanthus roseus</i> (L.) G. Don	145	<i>Cinnamomum obtusifolium</i> Nees	184
<i>Caucalis anthriscus</i> Huds	110	<i>Circaea alpina</i> Linn.	102
<i>Cautleya gracilis</i> (Sm.) Dandy	219	var. <i>himalaica</i> Clarke	102
<i>lutea</i> Royle	219	<i>lutetiana</i> Clarke	102
<i>spicata</i> (Sm.) Baker	219	<i>repens</i> Wall. ex Asch.	102
<i>Celastrus monosperma</i> Roxb.	58	<i>Cirrhopetalum amplifolium</i> Rolfe	205
<i>paniculatus</i> Willd. ssp. <i>multi-</i>		<i>brevipes</i> Hook. f.	205
<i>florus</i> (Roxb.) Ding Hou	58	<i>maculosum</i> Lindl.	207
CELASTRACEAE	58	<i>refractum</i> Zoll.	207
<i>Cephalostigma hirsutum</i> Edgew.	135	<i>wallichii</i> Lindl.	207
<i>Cerastium holosteoides</i> Fr. subsp.		<i>Cirsium argyracanthum</i> DC.	126
<i>triviale</i> (Link) Moschl var.		<i>lipskyi</i> Petrak	126
<i>hallaisanense</i> (Nakai) Mizu-		<i>Cissus assamica</i> (Laws.) Craib	61
<i>shima</i>	38	<i>elongata</i> Roxb.	61
<i>vulgatum</i> var. <i>triviale</i> (Link)		<i>repanda</i> Vahl	62
Edgew. & Hook. f.	38	<i>repens</i> Lamk.	62
<i>Ceratopteris thalictroides</i> (Linn.)		<i>Citrus medica</i> Linn.	53
Brongn.	6	<i>reticulata</i> Blanco	53
<i>Ceratostigma griffithi</i> C.B.Cl.	140	<i>Citta nigricans</i> Lour.	79
<i>Ceratostylis himalaica</i> Hook. f.	217	<i>Cleisostoma geminatum</i> King &	
<i>Chasalia curviflora</i> Thw.	116	Pantling	218
<i>Centella asiatica</i> (Linn.) Urb.	107	<i>micrantha</i> (Lindl.) King &	
<i>Ceterachopsis paucivenosa</i> (Ching)		Pantling	205
Ching	16	<i>Clematis acuminata</i> DC.	25
<i>Chaerophyllum reflexum</i> Lindl.	107	<i>acutangula</i> Hook. f. & Thoms.	25
<i>Chamabainia cuspidata</i> Wight	197	<i>buchananiana</i> DC.	26
<i>Cheilanthes albomarginata</i> Clarke	5	<i>cadmia</i> Wall. ex Hook. f. &	
<i>farinosa</i> (Forsk.) Kaulf.	5	Thoms.	26
CHENOPODIACEAE	175	<i>connata</i> DC.	26
<i>Chenopodium album</i> Linn.	175	<i>gouriana</i> Roxb. ex DC.	26
<i>ambrosioides</i> Linn.	175	<i>grewiflora</i> DC.	26
<i>botrys</i> Linn.	175	<i>loureiriana</i> DC.	26
<i>Chisocheton paniculatus</i> (Roxb.)		<i>montana</i> Buch.-Ham. ex DC.	26
Hiern	56	<i>smilacifolia</i> Wall.	26
<i>Chirita acuminata</i> R. Br.	161	<i>tortuosa</i> (Wall. ex Hook. f. &	
<i>pumila</i> D. Don	161	Thoms.) C.E.C.F.	26
<i>urticifolia</i> Buch.-Ham. ex D.		<i>Clinopodium umbrosum</i> (M. Bieb)	
Don	161	C. Koch	166
CHLORANTHACEAE	183	<i>Cnicus argyracanthus</i> DC. ex Hook.	
<i>Chloranthus officinalis</i> Bl.	183	f.	126

D—contd.	Page	D—contd.	Page
<i>Dendrobenthamia capitata</i> (Wall. ex Roxb.) Hutchinson	113	<i>parvifolium</i> DC.	73
<i>Dendrobium aggregatum</i> Roxb. var. <i>jenkinsii</i> (Lindl.) King & Pantling	210	<i>polycarpum</i> DC.	72
<i>amoenum</i> Wall. ex Lindl.	210	<i>podocarpum</i> DC.	72
<i>amplum</i> Lindl.	214	<i>pseudotriquetrum</i> DC.	74
<i>anceps</i> Sw.	210	<i>roylei</i> Wt. & Arn.	73
<i>candidum</i> Wall.	210	<i>sequax</i> Wall.	73
<i>chrysanthum</i> Wall. ex Lindl.	210	<i>triflorum</i> (Linn.) DC.	73
<i>densiflorum</i> Wall. ex Lindl.	210	<i>triquetrum</i> (Linn.) DC. subsp. <i>pseudotriquetrum</i> (DC.) Prain	74
<i>eriaeflorum</i> Griff.	210	<i>velutinum</i> (Willd.) DC.	74
<i>falconeri</i> Hook. f.	210	<i>Desmos chinensis</i> Lour.	29
<i>fargesii</i> Finet	211	<i>dumosus</i> (Roxb.) Safford	29
<i>fimbriatum</i> Hook.	210	<i>Dialcalpe aspidioides</i> Bl.	10
var. <i>oculata</i> Hook. f.	210	<i>Dianella ensifolia</i> (Linn.) DC.	224
<i>fuscescens</i> Griff.	214	<i>Dianthera virgata</i> Benth.	163
<i>heterocarpum</i> Wall.	211	<i>Diaphora cochinchinensis</i> Lour.	233
<i>hookerianum</i> Lindl.	211	<i>Dicalpe foeniculacea</i> Clarke	10
<i>longicornu</i> Lindl.	211	<i>Dichroa febrifuga</i> Lour.	94
<i>nobile</i> Lindl.	211	<i>Dichrocephala chrysanthemifolia</i> DC.	127
<i>pauciflorum</i> King & Pantling	211	<i>Dichrocephala integrifolia</i> (Linn. f.) O. Kt.	127
<i>pierardi</i> Roxb.	211	<i>latifolia</i> DC.	127
<i>spathaceum</i> Lindl.	210	<i>Dicksonia scabra</i> Wall. ex Clarke	8
<i>sphegidoglossum</i> Reichb.	211	<i>Dicliptera roxburghiana</i> Nees	163
<i>stuposum</i> Lindl.	211	DICOTYLEDONS	25
<i>Dendrocalamus hamiltonii</i> Nees et Arn. ex Munro	234	<i>Dicranopteris linearia</i> (Burm.) Underw. var. <i>montana</i> Holtt.	3
<i>Dendrophthoe falcata</i> (Linn. f.) Etting.	187	<i>Dictyopteris chattagramica</i> (Clarke) Bedd.	13
DENSTAEDTIACEAE	8	<i>Didissandra lanuginosa</i> (DC.) Clarke	161
<i>Denstaedtia scabra</i> (Wall. ex Clarke) Moore	8	<i>Didymocarpus cinerea</i> D. Don.	161
<i>Derris polystachya</i> Benth.	71	<i>Didymosperma nana</i> H. Wendl. et Drude	229
<i>Desmodium caudatum</i> (Thunb.) DC.	71	<i>Digitaria preslii</i> (Kunth) Henr.	235
<i>confertum</i> DC.	71	<i>timorensis</i> (Kunth) Balansa	235
<i>dioicum</i> DC.	71	<i>violascens</i> Link	235
<i>floribundum</i> (D. Don) G. Don	71	<i>Dillenia pentagyna</i> Roxb.	28
<i>gangeticum</i> DC.	72	DIOSCOREACEAE	223
<i>gyrans</i> DC. var. <i>roylei</i> (St. Arn.) Baker	73	<i>Dioscorea anguina</i> Roxb.	224
<i>heterocarpon</i> (Linn.) DC.	72	<i>bulbifera</i> Linn.	223
<i>hasianum</i> Prain	72	<i>glabra</i> Roxb.	223
<i>laburnifolium</i> (Poir.) DC.	71	<i>hamiltonii</i> Hook. f.	223
<i>latifolium</i> DC.	74	<i>hookeri</i> Prain ex Wood	224
<i>laxum</i> DC.	72	<i>kumaonensis</i> Kunth	224
<i>microphyllum</i> (Thunb.) DC.	73	<i>pentaphylla</i> Linn.	224
<i>motorium</i> (Houtt.) Merr. var. <i>roylei</i> (Wt. & Arn.) Deb	73	<i>pubera</i> Blume	224
<i>oblongum</i> Wall. ex Benth.	73	<i>sativa</i> Thunb.	223
		<i>Diospyros lotus</i> Linn	143
		<i>Diplazium esculentum</i> (Retz.) Sw.	15

C—contd.	Page	C—contd.	Page
<i>Curculigo capitulata</i> (Lour.) O. Kuntze	223	<i>Cyrtococcum patens</i> (L.) A. Camus	234
<i>recurvata</i> Dryand.	223	<i>Cyrtomium caducum</i> Moore	12
<i>Curcuma zedoaria</i> (Berg.) Rosc.	220	<i>caryotideum</i> (Wall. ex Hook. et Grev.) Presl	12
CUSCUTACEAE	152	<i>falcatum</i> var. <i>caryotideum</i> (Wall. ex Hook. et Grev.) Bedd.	12
<i>Cuscuta reflexa</i> Roxb.	152	<i>hookerianum</i> (Presl) C. Christ.	12
<i>Cyanotis cristata</i> (Linn.) D. Don	227	<i>Cystopteris setosa</i> Bedd.	15
<i>fasciculata</i> (Heyne ex Roth) Roem. & Schult.	227	<i>tenuisecta</i> (Bl.) Mett.	15
<i>vaga</i> (Lour.) J. A. & J. H. Schultes	227		
<i>vivipara</i> Dalz.	226	D	
<i>Cyathea brunoniana</i> (Wall. ex Hook.) Clarke	11	<i>Dactylicapnos scandens</i> (D. Don) Hatch.	33
CYATHEACEAE	11	<i>thalictrifolia</i> Hook. f. & Th.	33
<i>Cyathea latebrosa</i> (Wall. ex Hook.) Copel.	11	<i>Dalbergia assamica</i> Benth.	70
<i>spinulosa</i> Wall. ex Hook.	11	<i>sericea</i> G. Don	70
<i>Cyathula capitata</i> Moq.	174	<i>sissoo</i> Roxb. ex DC.	71
<i>prostrata</i> (Linn.) Bl.	174	<i>stipulacea</i> Roxb.	71
<i>tomentosa</i> (Roth) Moq.	174	<i>Daedalacanthus splendens</i> T. Andr.	163
<i>Cyclosorus aridus</i> (Don) Tagawa	15	<i>tubiflorus</i> T. Andr.	163
<i>subpubescens</i> (Bl.) Ching	15	<i>Daphne bholua</i> buch.-Ham. ex D. Don	186
<i>Cymbidium cyperifolium</i> Wall. ex Lindl.	209	<i>cannabina</i> Wall.	186
<i>elegans</i> Lindl.	209	<i>involutrata</i> Wall.	186
<i>giganteum</i> Wall. ex Lindl.	209	<i>suriel</i> W. W. Smith & Cave	186
<i>grandiflorum</i> Griff.	209	DAPHNIPHYLLACEAE	194
<i>lanceifolium</i> Hook. f.	209	<i>Daphniphyllum bengalense</i> Rosenth.	194
<i>longifolium</i> D. Don	209	<i>himalayense</i> Muell.-Arg.	195
<i>Cymbopogon flexuosus</i> (Nees ex Steud.) Wats.	234	<i>Dysoxylum dobara</i> (Buch.-Ham.) Merrill	56
var. <i>flexuosus</i>	234	<i>Datura stramonium</i> L.	154
var. <i>sikkimensis</i> Bor	234	DAVALLIACEAE	9
<i>Cynanchum vincetoxicum</i> Pers.	148	<i>Davallia griffithiana</i> Hook.	10
<i>Cynoglossum glochidiatum</i> Wall. ex Benth.	151	<i>platyphylla</i> Don	9
<i>lanceolatum</i> Forsk.	151	<i>pulchra</i> Don	10
<i>zeylanicum</i> Thunb. ex Lehm.	152	<i>tenuifolia</i> Sw.	9
CYPERACEAE	231	<i>Debregeasia longifolia</i> (Burm.) Wedd.	197
<i>Cyperus brevifolius</i> (Rottb.) Hassk.	231	<i>velutina</i> Gaud.	197
<i>cyperinus</i> (Retz.) Vakko-Sur. Gesl.	232	<i>Deeringia amaranthoides</i> (Lam.) Merr.	174
<i>difformis</i> Linn.	232	<i>celosioides</i> R. Br.	174
<i>diffusus</i> Vahl	232	DILLENIACEAE	28
var. <i>macrostachyus</i> Boeck.	232	<i>Delonix regia</i> (Boj) Raf.	85
<i>haspan</i> Linn.	232	<i>Delphinium altissimum</i> Wall.	27
<i>iria</i> Linn.	232	<i>denudatum</i> Wall. ex Hook. f. & Thoms.	27
<i>pubisquama</i> Steud.	232	<i>vestitum</i> Wall. ex Royle	27
<i>Cyperorchis elegans</i> (Lindl.) Bl.	209		
<i>mastersii</i> (Griff. ex Lindl.) Benth.	209		

D—contd.	Page	D—contd.	Page
<i>Dendrobenthamia capitata</i> (Wall. ex Roxb.) Hutchinson . . .	113	<i>parvifolium</i> DC.	73
<i>Dendrobium aggregatum</i> Roxb. var. <i>jenkinsii</i> (Lindl.) King & Pantling	210	<i>polycarpum</i> DC.	72
amoenum Wall. ex Lindl.	210	<i>podocarpum</i> DC.	72
<i>amplum</i> Lindl.	214	<i>pseudotriquetrum</i> DC.	74
<i>anceps</i> Sw.	210	<i>roylei</i> Wt. & Arn.	73
<i>candidum</i> Wall.	210	<i>sequax</i> Wall.	73
<i>chrysanthum</i> Wall. ex Lindl.	210	<i>triflorum</i> (Linn.) DC.	73
<i>densiflorum</i> Wall. ex Lindl.	210	<i>triquetrum</i> (Linn.) DC. subsp. <i>pseudotriquetrum</i> (DC.) Prain	74
<i>eriaeflorum</i> Griff.	210	<i>velutinum</i> (Willd.) DC.	74
<i>falconeri</i> Hook. f.	210	<i>Desmos chinensis</i> Lour.	29
<i>fargesii</i> Finet	211	<i>dumosus</i> (Roxb.) Safford	29
<i>fimbriatum</i> Hook.	210	<i>Dialcalpe aspidioides</i> Bl.	10
var. <i>oculata</i> Hook. f.	210	<i>Dianella ensifolia</i> (Linn.) DC.	224
<i>fuscescens</i> Griff.	214	<i>Dianthera virgata</i> Benth.	163
<i>heterocarpum</i> Wall.	211	<i>Diaphora cochinchinensis</i> Lour.	233
<i>hookerianum</i> Lindl.	211	<i>Dicalpe foeniculacea</i> Clarke	10
<i>longicornu</i> Lindl.	211	<i>Dichroa febrifuga</i> Lour.	94
<i>nobile</i> Lindl.	211	<i>Dichrocephala chrysanthemifolia</i> DC.	127
<i>pauciflorum</i> King & Pantling	211	<i>Dichrocephala integrifolia</i> (Linn. f.) O. Kt.	127
<i>pierardi</i> Roxb.	211	<i>latifolia</i> DC.	127
<i>spathaceum</i> Lindl.	210	<i>Dicksonia scabra</i> Wall. ex Clarke	8
<i>sphigidoglossum</i> Reichb.	211	<i>Dicliptera roxburghiana</i> Nees	163
<i>stuposum</i> Lindl.	211	DICOTYLEDONS	25
<i>Dendrocalamus hamiltonii</i> Nees et Arn. ex Munro	234	<i>Dicranopteris linearia</i> (Burm.) Underw. var. <i>montana</i> Holtt.	3
<i>Dendrophthoe falcata</i> (Linn. f.) Etting.	187	<i>Dictyopteris chattagramica</i> (Clarke) Bedd.	13
DENSTAEDTIACEAE	8	<i>Didissandra lanuginosa</i> (DC.) Clarke	161
<i>Denstaetia scabra</i> (Wall. ex Clarke) Moore	8	<i>Didymocarpus cinerea</i> D. Don.	161
<i>Derris polystachya</i> Benth.	71	<i>Didymosperma nana</i> H. Wendl. et Drude	229
<i>Desmodium caudatum</i> (Thunb.) DC.	71	<i>Digitaria preslii</i> (Kunth) Henr.	235
<i>confertum</i> DC.	71	<i>timorensis</i> (Kunth) Balansa	235
<i>dioicum</i> DC.	71	<i>violascens</i> Link	235
<i>floribundum</i> (D. Don) G. Don	71	<i>Dillenia pentagyna</i> Roxb.	28
<i>gangeticum</i> DC.	72	DIOSCOREACEAE	223
<i>gyrans</i> DC. var. <i>roylei</i> (St. Arn.) Baker	73	<i>Dioscorea anguina</i> Roxb.	224
<i>heterocarpon</i> (Linn.) DC.	72	<i>bulbifera</i> Linn.	223
<i>hasianum</i> Prain	72	<i>glabra</i> Roxb.	223
<i>laburnifolium</i> (Poir.) DC.	71	<i>hamiltonii</i> Hook. f.	223
<i>latifolium</i> DC.	74	<i>hookeri</i> Prain ex Wood	224
<i>laxum</i> DC.	72	<i>kumaonensis</i> Kunth	224
<i>microphyllum</i> (Thunb.) DC.	73	<i>pentaphylla</i> Linn.	224
<i>motorium</i> (Houtt.) Merr. var. <i>roylei</i> (Wt. & Arn.) Deb	73	<i>pubera</i> Blume	224
<i>oblongum</i> Wall. ex Benth.	73	<i>sativa</i> Thunb.	223
		<i>Diospyros lotus</i> Linn	143
		<i>Diplazium esculentum</i> (Retz.) Sw.	15

D—contd.	Page	E—contd.	Page
<i>fraxineum</i> Don	5	<i>Ecdysanthera micrantha</i> DC.	146
<i>latifolium</i> (Don) Moore	15	<i>Echinochloa colonum</i> (L.) Link	235
<i>Diplocyclos palmatus</i> (Linn.) G. Jeffrey	103	<i>stagnina</i> (Retz.) Beauv.	235
<i>Diplopterygium longissimum</i> (Bl.) Nakai	4	<i>Eclipta alba</i> Hassk.	127
DIPSACEAE	122	<i>prostrata</i> (Linn.) Linn.	127
<i>Dipsacus asper</i> Wall. ex DC.	122	<i>Edgaria darjeelingensis</i> Clarke	103
<i>Dipteris wallichii</i> (R. Br.) Moore	19	<i>Edgeworthia gardneri</i> Meissn.	186
<i>Disporum cantoniense</i> (Lour.) Merrill	224	<i>Egenolfia appendiculata</i> (Willd.) J. Sm.	13
<i>pullum</i> Salisb.	224	ELAEAGNACEAE	186
<i>Dobinea vulgaris</i> Ham. ex D. Don	64	<i>Elaeagnus conferta</i> Roxb.	186
<i>Docynia indica</i> Dcne.	88	<i>latifolia</i> Linn.	186
<i>Dolichos biflorus</i> Linn.	74	<i>umbellata</i> Thunb.	186
<i>phaseoloides</i> Roxb.	81	ELAEOCARPACEAE	48
<i>pilosus</i> Roxb.	83	<i>Elaeocarpus lanceaefolius</i> Roxb.	48
<i>scarabaeoides</i> Linn.	67	<i>robustus</i> Roxb.	48
<i>trilobus</i> Linn.	80	<i>tectorius</i> (Lour) Poir	48
<i>Doritis taenialis</i> (Lindl.) Benth.	211	<i>Elaphoglossum petiolatum</i> (Sw.) Urban.	13
<i>Dracaena angustifolia</i> Roxb.	225	<i>viscosum</i> Bedd.	13
<i>ensifolia</i> Linn.	224	<i>Elatostema cornutum</i> Wedd.	198
<i>Drymaria cordata</i> sensu Edgew. & Hook. f.	38	<i>lineolatum</i> Wight	198
<i>cordata</i> subsp. <i>diandra</i> (Blume) J. Duke	38	<i>platyphyllum</i> Wedd.	198
<i>Drynaria mollis</i> Bedd.	20	<i>rupestre</i> Wedd.	198
<i>propinqua</i> J. Sm.	20	<i>sesquifolium</i> Hassk.	198
<i>Drymoglossum carnosum</i> J. Sm.	20	<i>surculosum</i> Wight	198
<i>kiloselloides</i> (Linn.) Presl	20	<i>Elephantopus scaber</i> Linn.	127
<i>Dryoathyrium boryanum</i> (Willd.) Ching	15	<i>Eleusine coracana</i> (L.) Gaertn.	235
<i>Dryopteris atrata</i> (Wall. ex Kunze) Ching	12	<i>indica</i> (L.) Gaertn.	235
<i>chrysocoma</i> (Christ.) C. Christ.	12	<i>Ellisiophyllum pinnatum</i> (Wall.) Makino	157
<i>cochleata</i> (D. Don) C. Christ.	13	<i>Elsholtzia blanda</i> Benth.	167
<i>fibrillosa</i> (Clarke) Hand.-Mazz.	12	<i>ciliata</i> (Thunb.) Hyland	167
<i>punctata</i> C. Christ.	7	<i>cristata</i> Willd.	167
<i>wallichiana</i> (Spreng) Hyl.	12	<i>fruticosa</i> (D. Don) Rehder	167
<i>Duabanga grandiflora</i> (Roxb.) Walp.	101	<i>incisa</i> Benth.	167
<i>sonneratioides</i> Buch.-Ham.	101	<i>pilosa</i> Benth.	167
<i>Duchesnea indica</i> (Andr.) focke	88	<i>polystachya</i> Benth.	167
<i>Dumasia villosa</i> DC.	74	<i>stachyoidea</i> (Link) Raizada & Saxena	167
<i>Dysophylla linearis</i> Benth.	167	<i>Embelia floribunda</i> Wall.	141
<i>Dysoxylum binectariferum</i> (Roxb.) Hook. f. ex Bedd.	56	<i>Embliba officinalis</i> Gaertn.	191
<i>procerum</i> Hiern	56	<i>Emilia sonchifolia</i> (Linn.) DC.	127
E		<i>Engelhardtia acerifolia</i> Bl.	201
EBENACEAE	143	<i>spicata</i> Leschen. ex Bl.	201
		<i>Enpianthus deflexus</i> (Griff.) Schn.	137
		<i>himalaiens</i> Hook. f. & Thoms.	137
		<i>Epigenium fargesii</i> (Finet) Gagnep.	211
		<i>Epilobium cylindricum</i> D. Don	102
		<i>roseum</i> Schreb. var. <i>cylindricum</i> (D. Don) Clarke	102

E— <i>contd.</i>	Page	E— <i>contd.</i>	Page
EQUISETACEAE	1	EUPHORBIACEAE	189
<i>Equisetum debile</i> Roxb. ex Vaucher	1	<i>Euphorbia griffithii</i> Hook. f.	191
<i>diffusum</i> D. Don	1	<i>hirta</i> Linn.	191
<i>ramosissimum</i> Desf.	1	<i>hypericifolia</i> Linn.	191
<i>Eragrostis amabilis</i> Wt. et Arn. ex		<i>pilulifera</i> Linn.	191
Hook. et Arn.	235	<i>sikkimensis</i> Boiss.	191
<i>interrupta</i> Beauv. var. <i>tenuissima</i>		<i>Euphrasia officinalis</i> Benth.	157
Stapf ex Hook. f.	235	<i>simplex</i> D. Don	157
<i>japonica</i> (Thunb.) Trin.	235	<i>Eurya acuminata</i> DC.	41
<i>unioloides</i> (Retz.) Nees ex Steud.	235	<i>cavinervis</i> Vesque	42
<i>Eranthemum indicum</i> Clarke	163	<i>cerasifolia</i> (D. Don) Kobuski	42
<i>platiferum</i> Nees	163	<i>japonica</i> Thunb. var. <i>thunbergii</i>	
<i>Eria alba</i> Lindl.	211	Thw.	42
<i>carinata</i> Gibson	212	<i>symplocina</i> Bl.	42
<i>clausa</i> King & Pantling	212	<i>Evodia fraxinifolia</i> (D. Don) Hook.	53
<i>confusa</i> Hook. f.	212	<i>meliaefolia</i> Benth.	53
<i>coronaria</i> (Lindl.) Reichb. f.	212	<i>Exacum teres</i> Wall. ex Roxb.	148
<i>graminifolia</i> Lindl.	212	<i>tetragonum</i> Roxb.	148
<i>metrax</i> N. E. Br.	217	<i>Exbucklandia populnea</i> (R. Br. ex	
<i>Erianthus longisetosus</i> Anderss.	236	Griff.) R. W. Br.	96
<i>rufipilus</i> (Steud.) Griseb.	236		
ERICACEAE	137	F	
<i>Erigeron linifolius</i> auct. non Willd.	127	FABACEAE	66
<i>bellidioides</i> Benth.	127	FAGACEAE	201
<i>multiradiatus</i> Benth.	128	<i>Fagara oxyphylla</i> Eng.	55
<i>sumatrensis</i> Retz.	127	<i>Fagopyrum esculentum</i> Moench	177
ERIOCAULACEAE	230	<i>cymosum</i> (Trev.) Meissn.	176
<i>Eriocaulon cinereum</i> R. Br.	230	<i>diobotrys</i> (D. Don) Hara	176
<i>nepalense</i> Presc. ex Bong.	231	<i>tataricum</i> (Linn.) Gaertner	177
<i>quinquangulare</i> Wall.	231	<i>Ficus auriculata</i> Lour.	195
<i>sieboldianum</i> Sieb. et. Zucc. ex		<i>benghalensis</i> Linn.	196
Steud.	230	<i>clavata</i> Wall. ex Miq.	196
<i>Eriophorum comosum</i> Wall. ex Nees	233	<i>cunia</i> Buch.-Ham. ex Roxb.	196
<i>Erodium malacoides</i> Willd.	49	<i>foveolata</i> Wall. ex Miq. var.	
<i>Eryum hirsutum</i> Linn.	83	<i>maliformis</i> King et var. <i>oleae-</i>	
<i>Erythrina arborescens</i> Roxb.	75	<i>formis</i> King	196
<i>stricta</i> Roxb.	75	<i>hederacea</i> Roxb.	196
ESCALLONIACEAE	94	<i>hispidula</i> Linn. f.	196
<i>Eugenia claviflora</i> Roxb.	98	<i>ischnopoda</i> Miq.	195
<i>kurzii</i> Duthie ex Kurz	97	<i>pubigera</i> (Wall. ex Miq.) var.	
<i>oblata</i> Roxb.	98	<i>maliformis</i> (King) Corner	196
<i>Eulophia hormusji</i> Duthie	212	<i>pyriformis</i> Hook. & Arn. var.	
<i>merguensis</i> Lindl.	212	<i>ischnopoda</i> (Miq.) King	195
<i>musciicola</i> Lindl.	212	<i>roxburghii</i> Wall. ex Miq.	195
<i>stricta</i> Lindl.	212	<i>scandens</i> Roxb.	196
<i>Euonymus grandiflorus</i> Wall.	58	<i>subincisa</i> Sm.	196
<i>theaeifolius</i> Wall. ex Lawson	58	<i>Fimbristylis dichotoma</i> (Linn.)	
<i>vagens</i> Wall.	58	Vahl	232
<i>viburnoides</i> Prain	59	<i>diphylla</i> (Retz.) Vahl	232
<i>Eupatorium cannabinum</i> Linn.	128	<i>tenera</i> Roem. & Schultz.	233
<i>odoratum</i> Linn.	128		

F—contd.	Page	G—contd.	Page
<i>Fissistigma polyanthus</i> (Hk. f. & Thoms.) Merrill	29	<i>Gentiana crassuloides</i> Bur. & Planch.	149
FLACOURTIACEAE	36	<i>pedicellata</i> (D. Don) Wall. ex Griseb.	149
<i>Flemingia congesta</i> Roxb. ex Aiton	78	<i>quadrifaria</i> Blume sensu Clarke	149
<i>congesta</i> Roxb. var. <i>semialata</i> (Roxb.) Baker	79	var. <i>pilosula</i> C. B. Clarke	149
<i>fruticulosa</i> Wall. ex Benth.	78	<i>tibetica</i> King ex Hook. f.	149
<i>semialata</i> Roxb.	79	GERANIACEAE	49
<i>strobilifera</i> R. Br. var. <i>fruticulosa</i> (Wall. ex Benth.) Baker	78	<i>Geranium grevilleanum</i> Wall.	49
<i>Floscopa scandens</i> Lour.	227	<i>nepalense</i> Sweet	49
<i>Flueggea microcarpa</i> Bl.	194	<i>wallichianum</i> D. Don	50
<i>Foeniculum vulgare</i> Gaertn.	108	<i>Gerbera macrophylla</i> Benth.	128
<i>vulgare</i> Miller	108	<i>maxima</i> (D. Don) Beauv.	128
<i>Forrestia hookeri</i> Hassk.	227	<i>piloselloides</i> (Linn.) Cass.	128
<i>mollissima</i> (Bl.) Koorder var. <i>hispidula</i> (Less. et A. Rich) Backer	227	GESNERIACEAE	160
<i>Fragaria indica</i> Andr.	88	<i>Geum urbanum</i> Linn.	89
<i>nubicola</i> Lindl. ex Lacai	88	<i>Girardinia heterophylla</i> Decne.	199
<i>vesca</i> Linn. var. <i>nubicola</i> Hook. f.	88	<i>palmata</i> (Forsk.) Gaud.	199
<i>Fritillaria cantoniense</i> Lour.	224	GLEICHENIACEAE	3
FUMARIACEAE	32	<i>Gleichenia glauca</i> sensu Bedd.	4
		<i>glauca</i> (Thbg.) Hook.	4
		<i>linearis</i> (Burm.) Clarke	4
		<i>longissima</i> Bl.	4
		<i>Globba hookeri</i> Clarke	220
		<i>multiflora</i> Wall. ex Baker	220
		<i>racemosa</i> Smith	220
		G	
<i>Galeola hydra</i> Reichb. f.	212	<i>Glochidion assamicum</i> (Muell.-Arg.) Hook. f.	192
<i>kuhlii</i> (Reichb. f.) Reichb. f.	212	<i>oblatum</i> Hook. f.	192
<i>Galinsoga parviflora</i> Cav.	128	<i>velutinum</i> Wight	192
<i>Galium aparine</i> Linn.	117	<i>Glycine flexilis</i> Grah.	83
<i>asperifolium</i> Wall.	117	<i>max</i> (Linn.) Merr.	75
<i>elegans</i> Wall.	117	<i>soja</i> Baker	75
<i>mollugo</i> Hook. f.	117	<i>vestita</i> Grah.	82
<i>pauciflorum</i> Bunge	117	<i>Glycosmis arborea</i> (Roxb.) DC.	54
<i>rotundifolium</i> Hook. f.	117	<i>pentaphylla</i> Hook. f.	54
<i>Gastrochilus acutifolius</i> (Lindl.) O. Ktz.	213	Gnaphalium affine D. Don	128
<i>calceolaria</i> (Sm.) D. Don	213	<i>hypeoleucum</i> DC.	129
<i>distichus</i> (Lindl.) O. Ktz.	213	<i>luteo-album</i> Linn.	129
<i>obliquus</i> (Lindl.) O. Ktz.	213	var. <i>multiceps</i> (Wall. ex DC.) Hook. f.	128
<i>obtusifolius</i> (Lindl.) Rao & Mukerjee	213	<i>purpureum</i> Linn.	129
<i>papillosus</i> (Lindl.) O. Ktz.	213	GNETACEAE	204
<i>Gaultheria fragrantissima</i> Wall.	137	<i>Gnetum montanum</i> MargKr.	204
<i>griffithiana</i> Wt.	138	<i>Gomphostemma parviflorum</i> Wall. ex Benth.	167
<i>nummularioides</i> D. Don	138	<i>Goniophlebium amoenum</i> J. Sm.	23
GENTIANACEAE	148	<i>argutum</i> J. Sm.	23
<i>Gentiana argentea</i> Royle	149	<i>Goodyera foliosa</i> (Lindl.) Hook. f.	213
<i>capitata</i> Buch.-Ham.	149	<i>secundiflora</i> Lindl.	213
var. <i>andersoni</i> Clarke	149	<i>Gouania leptostachya</i> DC.	60

G—contd.	Page	H—contd.	Page
<i>napalensis</i> Wall. ex Roxb.	60	<i>spicatum</i> Ham. ex Sm. var. <i>acuminatum</i> (Rosc.) Wall.	220
<i>Grammitis avenia</i> Blume	20	var. <i>trilobum</i> Wall.	221
<i>involuta</i> Don	20	<i>stenopetalum</i> Lodd.	221
<i>Grewia glabra</i> Bl.	47	<i>thyrsiforme</i> Ham. ex Sm.	221
<i>laevigata</i> Masters	47	<i>trilobum</i> Wall.	221
<i>multiflora</i> Juss.	47	<i>Hedyotis corymbosa</i> (Linn.) Lam.	117
<i>sapida</i> Roxb.	47	<i>diffusa</i> Willd.	117
<i>Gueldenstaedtia himalaica</i> Baker	75	<i>pinifolia</i> Wall. ex G. Don	117
<i>santapau</i> Thoth.	75	<i>Hedysarum caudatum</i> Thunb.	71
<i>Guizotia abyssinica</i> Cass	129	<i>floribundum</i> D. Don	71
GYMNOGRAMMACEAE	5	<i>gangeticum</i> Linn.	72
<i>Gymnogramme javanica</i> sensu		<i>heterocarpon</i> Linn.	72
<i>Bedd.</i>	5	<i>microphyllum</i> Thunb.	73
<i>vestita</i> Hook.	6	<i>sericeum</i> Thunb.	77
<i>Gymnopetalum cochinchinense</i>		<i>velutinum</i> Willd.	74
(Lour.) Kurz	104	<i>Helwingia himalaica</i> Hook. f. et	
<i>Gymnopteris costata</i> (Hook.) Bedd.	12	Thoms. ex Clarke	113
<i>spicata</i> (Linn. f.) Presl	19	<i>Hemicicca glauca</i> (Muell.-Arg.)	
<i>variabilis</i> (Hook.) Bedd.	21	Hurusawa et Ya Tanaka	192
<i>vestita</i> Underw.	6	<i>Hemidictyum finlaysonianum</i>	
<i>Gymnosporia thomsoni</i> Kurz	59	Moore	18
GYMNOSPERMS	203	<i>Heminoitis esculenta</i> Retz.	15
<i>Gymnostemma pentaphyllum</i>		<i>Hemionitis coreacea</i> Don	3
(Thunb.) Makino	104	<i>polthifolia</i> Don	19
<i>Gymnogramma aurita</i> Hook.	15	<i>Hemiphragma heterophyllum</i> Wall.	157
<i>Gymnosporia acuminata</i> Hook. f.		<i>Hemitelia brunoniana</i> (Wall. ex	
ex Lawson	59	Hook.) Clarke	11
<i>Gynura angulosa</i> DC.	129	<i>Henslovia granulata</i> Hook. f. et	
<i>cusimbua</i> (D. Don) S. Moor.	129	Thoms. ex DC.	188
<i>mitida</i> DC.	129	<i>Heptapleurum venulosum</i> Seem.	113
		var. <i>macrophyllum</i> Clarke	113
H		<i>Heracleum obtusifolium</i> DC.	108
<i>Habenaria constricta</i> (Lindl.)		<i>Hermidium angustifolium</i> (Lindl.)	
Hook. f.	216	Benth. ex Hook. f.	214
<i>densa</i> Wall. ex Lindl.	213	<i>Heterogonium pinnatum</i> (Copel.)	
<i>furcifera</i> Lindl.	213	Holtt.	13
HAEMODORACEAE	222	<i>Heteropanax fragrans</i> (Roxb.)	
<i>Halenia elliptica</i> D. Don	149	Seem.	112
HAMAMELIDACEAE	96	<i>Hibiscus lobatus</i> (Murray) O. Kt.	44
<i>Hamiltonia suaveolens</i> Roxb.	121	<i>pungens</i> Roxb.	44
<i>Hedera helix</i> (auct. non Linn.)		<i>solondra</i> L'Herit	44
Wall. ex Roxb.	111	<i>surattensis</i> Linn.	44
<i>nepalensis</i> K. Koch	111	<i>Hicriopteris glauca</i> (Thbg.) Copel.	4
<i>Hedychium acuminatum</i> Rosc.	220	HIPPOCRATEACEAE	59
<i>aureum</i> Clarke et Mann ex		<i>Hippocratea arborea</i> Roxb.	59
Baker	220	<i>Hippophae rhamnoides</i> Linn.	187
<i>densiflorum</i> Wall.	221	<i>Hiptage benghalensis</i> (L.) Kurz	49
<i>coccineum</i> Buch.-Ham. var. <i>squarrosum</i> Buch.-Ham. ex Wall.	220	<i>madablota</i> Gaertn.	49
<i>ellipticum</i> Buch.-Ham. ex Sm.	221	<i>Hodgsonia heteroclita</i> (Roxb.)	
		Hook. f. & Thoms.	104

H—contd.	Page	I—contd.	Page
<i>macrocarpa</i> (Bl.) Cogn.	104	<i>cristata</i> Wall.	51
<i>Holarrhena antidysenterica</i> Wall. ex DC.	146	<i>drepanophora</i> Hook. f.	51
<i>Holboellia latifolia</i> Wall.	30	<i>gigantea</i> Edgew.	51
var. <i>latifolia</i>	30	<i>laevigata</i> Wall. ex Hook. f.	51
var. <i>angustifolia</i> (Wall.) Hook. f. & Thoms.	30	<i>laxiflora</i> var. <i>khasiana</i> Hook. f.	52
<i>Hoya lanceolata</i> Wall. ex D. Don	147	<i>paludosa</i> Hook. f.	52
<i>polyneura</i> Hook. f.	147	<i>racemosa</i> DC.	52
<i>Humata assamica</i> (Bedd.) C. Chr.	10	<i>radiata</i> Hook. f.	52
HYDRANGEACEAE	95	<i>scabrida</i> Hook. f.	51
<i>Hydrangea altissima</i> Wall.	95	<i>spirifer</i> Hook. f. et Thoms.	52
<i>anomala</i> D. Don	95	<i>tripetala</i> Roxb.	52
var. <i>griffithii</i> Clarke	95	Indigofera atro-purpurea Buch.- Ham.	76
<i>robusta</i> Hook. f. & Thoms.	95	<i>dosua</i> Buch.-Ham. ex D. Don	76
<i>Hydrocotyle asiatica</i> Linn.	107	var. <i>tomentosa</i> Baker	76
<i>javanica</i> Thunb.	108	<i>gerardiana</i> Wall. ex Baker	76
var. <i>podantha</i> (Molk.) Clarke	108	<i>heterantha</i> Wall. ex Brandis	76
<i>rotundifolia</i> Roxb. ex DC.	108	var. <i>longipedicellata</i> Thoth.	77
<i>sibthorpioides</i> Lam.	108	<i>tomentosa</i> Grah.	76
<i>Hygrophila polysperma</i> T. Andr.	163	<i>trifoliata</i> Linn.	77
HYMENOPHYLLACEAE	8	Indofevillea khasiana Chatterji	104
<i>Hymenophyllum exsertum</i> Wall. ex Hook.	8	<i>Inula cappa</i> DC.	129
<i>livingei</i> Clarke	8	<i>Ione bicolor</i> Lindl.	214
<i>polyanthos</i> (Sw.) Sw. Schrad.	8	<i>paleacea</i> Lindl.	214
<i>Hymenopogon parasiticus</i> Wall.	118	<i>Ipomoea alba</i> Linn.	153
<i>Hypaelytrum argenteum</i> Vahl	233	<i>bona-nox</i> Linn.	153
HYPERICACEAE	40	<i>cymosa</i> Roem. & Sch.	154
<i>Hypericum elodeoides</i> Choisy	40	<i>eriocarpa</i> R. Br.	153
<i>hookerianum</i> W. & A.	41	<i>muricata</i> (Linn.) Jacq.	153
<i>japonicum</i> Thunb.	41	<i>pes-tigridis</i> Linn.	153
<i>lalandii</i> Choisy	40	<i>purpurea</i> (L.) Roth	153
<i>napaulense</i> Choisy	40	<i>quamoclit</i> Linn.	154
<i>uralum</i> Ham. ex Don	41	<i>Ixia chinensis</i> Linn.	222
<i>Hyptianthera stricta</i> Wt. & Arn.	118	<i>Iris clarkei</i> Baker	223
<i>Hypolepsis punctata</i> (Thbg.) Mett.	7	<i>himalaica</i> Dykes	223
HYPOXIDACEAE	223	IRIDACEAE	222
<i>Hypoxis aurea</i> Lour.	223	<i>Ischaemum rugosum</i> Salisb.	236
<i>Hyptis suaveolens</i> Poit.	168	<i>Itea macrophylla</i> Wall.	94
I		J	
<i>Ichnocarpus frutescens</i> R. Br.	146	<i>Jasminum amplexicaule</i> Buch.- Ham. ex G. Don	144
ICACINACEAE	57	<i>anastomosans</i> Wall. ex DC.	145
<i>Ilex diplyrena</i> Wall. ex Roxb.	57	<i>caudatum</i> Wall. ex Lindl.	144
<i>fragilis</i> Hook. f.	57	<i>dispermum</i> Wall.	144
<i>insignis</i> Hook. f.	57	<i>grandiflorum</i> Linn.	145
<i>Impatiens angustiflora</i> Hook. f.	51	<i>humile</i> Clarke	145
<i>capillipes</i> Hook. f. & Thoms.	50	<i>humile</i> Linn. var. <i>revolutum</i> (Sims.) Stokes	145
<i>cathcartii</i> Hook. f.	51	<i>laurifolium</i> Roxb.	145

J—contd.	Page	L—contd.	Page
<i>undulatum</i> Auct. non Willd.	144	LECYTHIDACEAE	98
<i>Jatropha curcas</i> Linn.	192	<i>Leea acuminata</i> Wall. ex Clarke	62
JUGLANDACEAE	201	<i>aequata</i> Linn.	62
JUNCACEAE	228	<i>hirta</i> Roxb.	62
<i>Juncus himalensis</i> Klotzsch	228	<i>sambucina</i> Laws.	62
<i>Juniperus wallichiana</i> Hook. f. ex Parl.	204	<i>trifoliata</i> Laws.	62
<i>Jussiaea suffruticosa</i> Linn.	102	<i>Lemmaphyllum carnosum</i> (J. Sm.) Presl	20
K		<i>subrostratum</i> (C. Chr.) Ching	20
<i>Kadsura heteroclita</i> (Roxb.) Craib.	29	LENTIBULARIACEAE	160
<i>roxburghiana</i> Arn.	29	<i>Lepidagathis incurva</i> Don	163
<i>Katherinea ampla</i> (Lindl.) Hawkes	214	<i>Lepisorus macrosphaerus</i> (Bak.) Ching var. <i>asterolepis</i> (Bak.) Ching	22
<i>fuscescens</i> (Griff.) Hawkes	214	<i>pseudonudus</i> Ching	22
<i>navicularis</i> Balak. et Chaudhury	214	<i>Leptochilus decurrens</i> Blume	21
<i>Kirganellia reticulata</i> (Poir.) Baill.	192	<i>Leptocodon gracilis</i> (Hook. f. & Thoms.) Lemaire	135
<i>Knoxia corymbosa</i> Willd.	118	<i>Leptodermis griffithii</i> Hook. f.	118
<i>sumatrensis</i> (Retz.) DC.	118	<i>lanceolata</i> Wall.	118
<i>Kyllinga brevifolia</i> Rottb.	232	<i>Leptogramme aurita</i> (Hook.) Bedd.	15
<i>cyperina</i> Retz.	232	<i>Lespedeza eriocarpa</i> Royle ex Maxim.	68
L		<i>gerardiana</i> Grah. ex Baker	77
<i>Lactuca dissecta</i> D. Don	129	<i>sericea</i> (Thunb.) Miq.	77
<i>hastata</i> DC.	130	<i>Lettsomia strigosa</i> Roxb.	153
<i>hastata</i> DC.	126	<i>Leucas cephalotes</i> (Roth) Spreng.	168
<i>macrantha</i> Clarke	130	<i>ciliata</i> Benth.	168
<i>macrantha</i> Clarke	126	<i>mollissima</i> Wall.	168
<i>Lagerstroemia parviflora</i> Roxb.	101	<i>Leucosceptrum canum</i> Smith	168
<i>Laggera alata</i> (D. Don) Schultz-Bip. ex Oliver	130	<i>Leucostegia assamica</i> (Bedd.) J. Sm.	10
<i>flava</i> Benth.	125	<i>nodosa</i> Bedd.	11
<i>pterodonta</i> Benth.	130	<i>pulchra</i> J. Sm.	10
LAMIACEAE	164	<i>Leucothoe griffithiana</i> Clarke	138
<i>Lamium amplexicaule</i> Linn.	168	<i>Leycesteria formosa</i> Wall.	114
<i>Laportea crenulata</i> Gaud.	199	<i>glaucophylla</i> Hook. f. ex Clarke	114
LARDIZABALACEAE	30	<i>Lightfootia hirsuta</i> (Edgew.) Wimm. ex Hepper	135
<i>Lastrea aristata</i> (Forst. f.) Moore	11	<i>Ligustrum confusum</i> Decaisne	145
<i>coniifolia</i> Moore	11	LILIACEAE	224
<i>flix-mass</i> var. <i>schimperiana</i> Bedd.	12	<i>Lilium giganteum</i> Wall.	225
var. <i>cochleata</i> Bedd.	13	<i>Limnophila conferta</i> Benth.	157
var. <i>parallelogramma</i> Bedd.	12	<i>roxburghii</i> G. Don	157
subvar. <i>fibrillosa</i> Bedd.	12	<i>rugosa</i> (Roth) Merr.	157
<i>hirtipes</i> sensu Bedd.	12	<i>sessiliflora</i> (Vahl) Bl.	157
<i>hookeriana</i> Presl	12	<i>sessilis</i> (Benth.) Fischer	157
LAURACEAE	183	LINACEAE	48
<i>Lecanthus peduncularis</i> (Royle) Wedd.	199	<i>Lindenbergia grandiflora</i> Benth.	157
<i>wightii</i> Wedd.	199	<i>indica</i> (Linn.) Vatka	157

L—contd.	Page	L—contd.	Page
<i>polyantha</i> Royle ex Benth.	157	<i>longiflorus</i> Desr.	187
<i>urticaefolia</i> Lehm.	158	<i>psilanthus</i> Hook. f.	187
<i>Lindera heterophylla</i> Meissn.	184	<i>pulverulentus</i> Wall.	187
<i>neesiana</i> (Nees) Kurz	184	<i>scurrula</i> Linn.	187
<i>Lindernia ruelloides</i> (Colsm.) Pennell	158	<i>umbellifer</i> Schult.	188
<i>Lindsaya cultrata</i> (Willd.) Sw.	9	<i>Loxogramme avenia</i> (Blume) Presl	20
<i>Liparis bootanensis</i> Griff.	214	<i>Loxostigma griffithii</i> (Wight) Clarke	161
<i>cordifolia</i> Hook. f.	214	<i>Ludwigia parviflora</i> Roxb.	103
<i>griffithii</i> Ridley	214	<i>perennis</i> Linn.	103
<i>longipes</i> Lindl.	215	<i>prostrata</i> Roxb.	103
<i>plantaginea</i> Lindl.	215	<i>octovalvis</i> (Jacq) Raven ssp.	
<i>resupinata</i> Ridley	215	<i>sessiliflora</i> (Mich.) Raven	102
<i>Lipocarpa argentea</i> (Vahl) R. Br. et Nees	233	<i>Luffa aegyptiaca</i> Mill. ex Hook. f.	105
<i>chinensis</i> (Osborn) Kern	233	<i>cylindrica</i> (Linn.) Roem.	105
<i>Listera pinetorum</i> Lindl.	215	<i>Luisia inconspicua</i> (Hook. f.) King & Pantling	215
<i>Lithocarpus chittagonga</i> (King) Merrill	202	<i>teretifolia</i> Gaud.	215
<i>dealbatus</i> (Hook. f. et Thoms. ex Miq.) Rehder	202	<i>Lychnis multicaulis</i> Wall. ex Edgew.	38
<i>fenestratus</i> (Roxb.) Rehder	202	<i>natans</i> Royle ex Benth.	39
<i>grandifolius</i> (D. Don) S. N. Biswas var. <i>gracilipes</i> (Miq.) S. N. Biswas	202	<i>Lycianthes pachypetala</i> (Spreng.) Better	155
<i>Lithostegia foeniculacea</i> (Hook.) Ching	10	<i>Lycopersicon esculentum</i> Mill.	154
<i>Litsaea chartacea</i> (Nees) Hook. f.	184	LYCOPODIACEAE	1
<i>cubeba</i> (Lour) Pers.	184	<i>Lycopodium argenteum</i> Wall. ex Hook. et Grev.	2
<i>kingii</i> Hook. f.	185	<i>bryopteris</i> Linn.	2
<i>lancifolia</i> (Nees) Hook. f.	185	<i>clavatum</i> Linn.	1
<i>salicifolia</i> (Roxb. ex Nees) Hook. f.	185	<i>imbricatum</i> Roxb.	2
var. <i>attenuata</i> (Wall. ex Nees) Hook. f.	185	<i>intermedium</i> Bl.	2
var. <i>salicifolia</i>	185	<i>nudum</i> Linn.	1
LOBELIACEAE	135	<i>pennatum</i> Don	2
<i>Lobelia angulata</i> Forst.	135	<i>setaceum</i> Buch.-Ham.	1
<i>colorata</i> Wall.	135	<i>squarrosum</i> Forst.	2
<i>montana</i> Reinw. ex Bl.	136	<i>Lygodium flexuosum</i> (Linn.) Sw.	3
<i>pyramidalis</i> Wall.	135	<i>Lyonia ovalifolia</i> (Wall.) Drude	138
<i>rosea</i> Wall.	136	var. <i>lanceolata</i> Deb, Sen Gupta et Malick	138
<i>zeylanica</i> Linn.	136	var. <i>ovalifolia</i>	138
<i>Lomaria glauca</i> Bl.	3	<i>Lysimachia ovalis</i> Wall.	140
<i>pycnophylla</i> Hook.	2	var. <i>ramosa</i> Wall. ex Duby	141
<i>Lonicera asperifolia</i> (Dcne.) Hk. f. & T.	115	<i>Lysionotus serrata</i> D. Don	162
var. <i>macrantha</i> DC.	115	LYTHRACEAE	101
LORANTHACEAE	187		
<i>Loranthus globosus</i> Roxb.	187	M	
var. <i>involucratus</i> Roxb.	188	<i>Macaranga denticulata</i> Muell.-Arg.	192
		<i>Machilus gamblei</i> King ex Hook. f.	185
		var. <i>odoratissima</i> Nees	185
		<i>Macropanax dispermus</i> (Bl.) O. Ktze.	112

M—contd.	Page	M—contd.	Page
<i>oreophilus</i> Miq.	112	<i>Melissa parviflora</i> Benth.	169
<i>undulatus</i> (Wall. ex G. Don)		<i>Melodorum polyanthum</i> Hk. f. &	
Seem	112	Thoms.	29
<i>Macrosolen cochinchinensis</i>		<i>Melothria indica</i> Lour.	105
(Lour.) Van Teigh.	187	MENISPERMACEAE	30
<i>psilanthus</i> (Hook. f.) Dancer	187	<i>Mentha sylvestris</i> Linn.	168
<i>Maesa chisia</i> Buch.-Ham. ex D.		<i>Merremia umbellata</i> (Linn.) Hall.	
Don	141	f.	154
<i>indica</i> (Roxb.) DC.	142	<i>Melothria maderaspatana</i> (Linn.)	
<i>indica</i> C.B.Cl.	142	Cogn.	105
var. <i>angustifolia</i> Hook. f. et		<i>Mezoneurum cucullatum</i> (Roxb.)	
Thoms. ex C.B.Cl.	142	Wt. & Arn.	85
var. <i>maxima</i> C.B.Cl.	142	<i>Michelia cathcartii</i> Hook. f. &	
<i>macrophylla</i> (Wall.), DC.	142	Thoms.	28
<i>montana</i> DC.	142	<i>doltsopa</i> Buch.-Ham. ex DC.	29
<i>rugosa</i> C.B.Cl.	142	<i>excelsa</i> (Wall.) Bl. ex Wight	29
MAGNOLIACEAE	28	<i>punduana</i> Hook. f. & Thoms.	29
<i>Mahonia acanthifolia</i> G. Don	31	<i>Microlepia platyphylla</i> (Don) J.	
<i>napaulensis</i> DC.	32	Sim.	9
<i>Malaxis sikkimensis</i> Reichb. f.	215	<i>spelunca</i> (Linn.) Moore	9
<i>Mallotus albus</i> (Roxb.) Muell.-Arg.	192	<i>strigosa</i> (Thbg.) Presl	9
<i>nepalensis</i> Muell.-Arg.	193	<i>Micromelum integerrimum</i> (Roxb.)	
<i>philippinensis</i> (Lamk.) Muell.-		Wt. & Arn. ex M. Roem.	54
Arg.	193	<i>Micromeria biflora</i> Benth.	169
MALPIGHIACEAE	49	<i>Microsorium cuspidatum</i> (Don)	
MALVACEAE	44	Tagawa	20
<i>Malva rotundifolia</i> Linn. var. <i>retic-</i>		<i>membranaceum</i> (D. Don) Ching	21
<i>culata</i> Mast.	44	<i>punctatum</i> (Linn.) Copel.	21
<i>verticillata</i> Linn.	45	<i>superficiale</i> (Blume) Ching	21
MARANTACEAE	222	<i>zipellii</i> (Blume) Ching	21
<i>Maranta malaccensis</i> Burm.	219	<i>Microstegium ciliatum</i> (Trin.) A.	
<i>placentaria</i> A. Dietr.	222	Camus	236
MARATTIACEAE	3	<i>Microtoena insuavis</i> (Hance) Prain	
<i>Mariscus cyperinus</i> (Retz.) Vahl	232	ex Dunn	169
<i>Marlea begoniaefolia</i> Roxb.	114	<i>Microtropis discolor</i> (Wall.) Wall.	
<i>Mazus japonicus</i> (Thunb.) O.		ex Arn.	59
Ktze.	158	<i>Mikania cordata</i> (Burm. f.) R. L.	
<i>rugosus</i> Lour.	158	Robinson var. <i>indica</i> Kitamura	130
<i>surculosus</i> D. Don	158	<i>scandens</i> auct. non Willd.	130
<i>Mecodium exsertum</i> (Wall. ex		<i>Milium macrocarpa</i> Hk. f. &	
Hook.) Copel	8	Thoms.	30
<i>livingei</i> (Clarke) Copel.	8	<i>roxburghiana</i> Hk. f. & Thoms.	30
<i>polyanthos</i> (Sw.) Copel.	8	<i>Millettia auriculata</i> Baker ex	
<i>Meconopsis napaulensis</i> DC.	32	Brandis	77
<i>Medinilla rubicunda</i> (Jack) Bl.	98	<i>cinerea</i> Benth.	78
<i>Melastoma malabathricum</i> Linn.	98	<i>pachycarpa</i> Benth.	78
MELASTOMACEAE	98	<i>Millingtonia simplicifolia</i> Roxb.	64
<i>Melia azedarach</i> Linn.	57	<i>Mimosa caesia</i> Linn.	86
MELIACEAE	56	<i>catechu</i> Linn. f.	86
<i>Meliosma simplicifolia</i> (Roxb.)		MIMOSACEAE	86
Walp.	64	<i>Mimosa chinensis</i> Osbeck	86

M—contd.	Page	N	Page
<i>farnesiana</i> Linn.	86	<i>Naravelia zeylanica</i> DC.	27
<i>himalayana</i> Gamble	87	<i>Nasturtium indicum</i> Hk. f. & T. Anders var. <i>benghalense</i> (DC.) Hook. f. & T. Anders.	34 34
<i>lucida</i> Roxb.	86	<i>palustre</i> DC.	34
<i>procera</i> Roxb.	87	<i>Natsiatium herpeticum</i> Buch.-Ham. ex R. Br.	57
<i>pudica</i> Linn.	87	<i>Neanotis calycina</i> (Wall. ex Hook. f.) W. H. Lewis	119
<i>rubicaulis</i> Baker	87	<i>ingrata</i> (Wall. ex Hook. f.) W. H. Lewis	119
<i>Mimulus nepalensis</i> Benth.	158	<i>wightiana</i> (Wall. ex Hook. f.) W. H. Lewis	119
<i>Moghania fruticulosa</i> (Wall. ex Benth.) Mukerjee	78	<i>Neillia thyrsoflora</i> D. Don	89
<i>macrophylla</i> (Willd.) O. Kuntze	78	<i>Neocheiropteris normalis</i> (D. Don) Tagawa	21 21
<i>semialata</i> (Roxb.) Mukerjee	79	<i>phyllomanes</i> (Christ) Ching	21
<i>Momordica charantia</i> Linn.	105	<i>Neogyna gardneriana</i> (Lindl.) Reichb. f.	215
<i>Monachosorum subdigitatum</i> (Bl.) Kuhn.	9	<i>Nepeta laevigata</i> (D. Don) Hand. <i>spicata</i> Benth.	169 169
<i>Monochoria vaginalis</i> (Burm. f.) Presl	226	<i>Nephrodium aridum</i> (Don) Hook. et Bak.	15
MONOCOTYLEDONS	204	<i>cochleatum</i> D. Don	13
MORACEAE	195	<i>molle</i> var. <i>major</i> Bedd.	15
<i>Morinda angustifolia</i> Roxb.	118	<i>moulmeinsis</i> Bedd.	16
MORINGACEAE	66	<i>Nephrolepis cordifolia</i> (Linn.) Presl	10
<i>Moringa oleifera</i> Lamk.	66	<i>Neustanthus javanicus</i> Benth.	81
<i>pterygosperma</i> Gaertn.	66	<i>subspicatus</i> Benth.	81
<i>Morus australis</i> Poir.	196	<i>Neyraudia madagascariensis</i> Hook. f. var. <i>zollingeri</i> Hook. f.	236
<i>indica</i> Linn.	196	<i>reynaudiana</i> (Kunth) Keng ex Hitch.	236
<i>Mucuna imbricata</i> DC.	79	<i>Nicandra physalode</i> (L.) Gaertn.	155
<i>macrocarpa</i> Wall. ex Baker	79	<i>Nicotiana tabacum</i> L.	155
<i>nigricans</i> (Lour.) Steud.	79	<i>Nipholobus adnascens</i> Bedd.	24
<i>pruriens</i> Baker	79	<i>adnascens</i> (Forst.) Bedd.	23
<i>prurita</i> Hooker	79	<i>boothii</i> (Hook.) Bedd.	23
<i>Mukia scabrella</i> Arn.	105	<i>fissus</i> Bedd.	24
<i>Murdannia loriforme</i> (Hassk.) Rolla et Kammathy	227	<i>fissus</i> var. <i>stenophylla</i> Bedd.	23
<i>nudiflora</i> (Linn.) Brenan	228	<i>fissus</i> auct. Pl. (<i>Pro parte non</i> Blume)	24
<i>Murraya exotica</i> Linn.	54	<i>flocculosus</i> (Don) Bedd.	23
<i>koenigii</i> Spreng.	54	<i>heteractis</i> (Mett. ex Kuhn) J. Sm.	23
<i>Mussaenda frondosa</i> Linn.	118	<i>mannii</i> Gies	24
<i>glabra</i> Vahl	118	<i>mallis</i> Kunze	24
<i>macrophylla</i> Wall.	119	<i>numularifolius</i> J. Sim.	24
<i>roxburghii</i> Hook. f.	119	<i>stigmaosus</i> (Sw.) Bedd.	24
<i>Mycetia longifolia</i> (Wall.) O. Ktz.	119	<i>Norysca hookeriana</i> (W. & A.) Wight	41
MYRICACEAE	201		
<i>Myriactis nepalensis</i> Less.	130		
<i>wightii</i> DC.	130		
<i>Myrica esculenta</i> Ham. ex D. Don <i>nagi</i> Hook. f.	201 201		
<i>Myricaria germanica</i> Desv.	40		
<i>Myrioneuron nutans</i> Wall. ex Kurz	119		
MYRSINACEAE	141		
<i>Myrsine capitellata</i> Wall.	142		
<i>semiserrata</i> Wall.	142		
MYRTACEAE	97		

N—contd.	Page	O—contd.	Page
<i>Notochaete hamosa</i> Benth.	169	OXALIDACEAE	50
<i>Notholaena marantae</i> (Linn.) R. Br.	5	<i>Oxalis corniculata</i> Linn.	50
NYCTAGINACEAE	173	<i>Oxybaphus himalaicus</i> Edgew.	173
NYSSACEAE	114	<i>Oxyspora paniculata</i> DC.	100
<i>Nyssa javanica</i> Weng.	114	P	
<i>sessiliflora</i> Hook. f.	114	<i>Pachyrhizus angulatus</i> Rich. ex DC.	79
O		<i>Paederia foetida</i> Linn.	120
<i>Oberonia falcata</i> King & Pantling	215	<i>scandens</i> (Lour.) Merr.	120
<i>myriantha</i> Lindl.	215	<i>tomentosa</i> Bl.	120
<i>pachyrachis</i> Reichb. ex Hook. f.	216	<i>Panax pseudo-ginseng</i> Wall.	112
<i>pyrulifera</i> Lindl.	216	<i>sikkimensis</i> Ban.	112
<i>Ocimum basilicum</i> Linn.	169	<i>Panicum colonum</i> L.	235
<i>Oenanthe hookeri</i> Clarke	109	<i>crusgalli</i> L.	235
<i>javanica</i> (Bl.) DC.	109	<i>incomtum</i> Trin.	236
<i>stolonifera</i> Roxb. ex DC.	109	<i>patens</i> L.	234
OLEACEAE	144	<i>plicatum</i> Hook. f.	238
<i>Oldenlandia corymbosa</i> Linn.	117	<i>sarmentosum</i> Hook. f.	236
<i>diffusa</i> Roxb.	117	<i>uncinatum</i> Raddi	237
<i>Oleandra wallichii</i> (Hook.) Presl	10	<i>Panisea tricallosa</i> Rolfe	216
ONAGRACEAE	102	PAPAVERACEAE	32
<i>Onychium auratum</i> Kaulf	6	<i>Paraleptochilus decurrens</i> (Blume) Copel.	21
<i>japonicum</i> (Thbg.) Kze.	6	<i>Paris polyphylla</i> Smith	225
<i>siliculosum</i> (Desv.) C. Chr.	6	PARKERIACEAE	6
OPHIOGLOSSACEAE	2	<i>Parochetus communis</i> Buch.-Ham. ex D. Don	80
<i>Ophioglossum flexuosum</i> Linn.	3	<i>Paspalum conjugatum</i> Berg.	236
<i>Ophiopogon intermedius</i> D. Don	222	<i>sanguinale</i> Lamk. var. <i>debile</i> Hook. f.	235
<i>parviflorus</i> (Hook. f.) Hara	222	<i>Pavetta indica</i> Linn.	120
<i>wallichianus</i> (Kunth) Hook. f.	222	<i>Pedicularis bifida</i> (Buch.-Ham. ex D. Don) Pennell	158
<i>Ophiorrhiza calcarata</i> Hook. f.	119	<i>carnea</i> Wall.	158
<i>succirubra</i> King ex Hook. f.	120	<i>gracilis</i> Wall. ex Benth.	158
<i>ochroleuca</i> Hook. f.	120	<i>Pennisetum flaccidum</i> Griseb.	237
<i>Oplismenus compositus</i> (L.) Beauv.	236	<i>Pentapanax leschenaultii</i> (DC.) Seem.	112
ORCHIDACEAE	204	var. <i>umbellatus</i> (Seem.) Clarke	112
<i>Origanum vulgare</i> Linn.	170	<i>racemosus</i> Seem.	113
OROBANCHACEAE	160	<i>Pentapterygium serpens</i> (Wt.) Klotz	136
<i>Ornithochilus fuscus</i> Wall. in Lindl.	216	<i>Peperomia exigua</i> (Bl.) Miq.	181
<i>Orthosiphon incurvus</i> Benth.	170	<i>pellucida</i> (Linn.) H. B. & K.	181
<i>Osbeckia crinita</i> Benth.	99	<i>reflexa</i> A. Dietr.	181
<i>nepalensis</i> Hook. f.	99	<i>tetraphylla</i> (G. Forst.) Hook. & Arn.	181
<i>stellata</i> Wall. ex D. Don	99	<i>Peranema cyatheoides</i> Don	11
<i>nutans</i> Wall. ex Triana	99	<i>Peristrophe speciosa</i> Nees	163
<i>Osmanthus suavis</i> King ex C. B. Cl.	145	<i>Peristylus constrictus</i> Lindl.	216
<i>Ostodes paniculata</i> Bl.	193		
<i>Osyris arborea</i> Wall. ex DC.	188		
<i>wightiana</i> Wall. ex Wight	188		
<i>Otochilus fusca</i> Lindl.	216		
<i>porrecta</i> Lindl.	216		

P—contd.	Page	P—contd.	Page
<i>Persea odoratissima</i> (Nees)		var. <i>cincta</i> Hook. f.	237
<i>Kosterm.</i>	185	PHRYMACEAE	162
<i>Persicaria barbata</i> (Linn.) Hara	177	<i>Phryma leptostachya</i> Clarke	162
<i>capitata</i> (Buch.-Ham.) H. Gross	177	<i>leptostachya</i> Linn. var. <i>oblongi-</i>	
<i>chinensis</i> (Linn.) H. Gross	177	<i>folia</i> (Koidz.) Honda	162
var. <i>ovalifolia</i> (Meissn.) Hara	178	<i>Phrynium capitatum</i> Willd.	222
var. <i>chinensis</i>	177	<i>Phyllanthus emblica</i> Linn.	191
<i>kawagoeana</i> (Makino) Nakai	178	<i>clarkei</i> Hook. f.	193
<i>microcephala</i> (D. Don) H. Gross	178	<i>glaucus</i> Muell.-Arg.	192
<i>minus</i> Huds.	178	<i>griffithii</i> Muell.-Arg.	193
<i>nepalensis</i> (Meissn.) H. Gross	179	<i>parvifolius</i> Buch.-Ham. ex D.	
<i>orientale</i> (Linn.) Vilm.	178	Don	193
<i>perfoliata</i> (Linn.) H. Gross	179	<i>reticulatus</i> Poir.	192
<i>posumbu</i> (D. Don) H. Gross	179	<i>urinaria</i> Linn.	193
<i>pubescens</i> (Bl.) Hara var. <i>acu-</i>		<i>Phyllodes placentaria</i> Lour.	222
<i>minatum</i> (Franch. et Sav.)		<i>Physalis minima</i> L.	155
Hara	178	<i>Physospermopsis obtusiuscula</i>	
<i>runcinata</i> (Buch.-Ham.) H.		(DC.) Norman	109
Gross	179	<i>Picea morinda</i> Link	203
<i>sagittata</i> (Linn.) H. Gross	179	<i>smithiana</i> (Wall.) Boiss.	203
<i>virginiana</i> (Linn.) Gaertn.	180	<i>Pieris formosa</i> (Wall.) D. Don	138
<i>Phaeopteris subdigitata</i> Bedd.	9	<i>ovalifolia</i> (Wall.) D. Don	138
<i>Phalangium nepalense</i> Lindley	224	var. <i>lanceolata</i> (Wall.) Clarke	138
<i>Phanerophlebia caryotideia</i> (Wall.		<i>Pilea anisophylla</i> Wedd.	199
ex Hook. et Grev.) Copel	12	<i>bracteosa</i> Wedd.	199
<i>Phaseolus max</i> Linn.	75	<i>insolens</i> Wedd.	199
<i>radiatus</i> Linn.	80	<i>smilacifolia</i> Wedd.	200
<i>vexillatus</i> Linn.	83	<i>scripta</i> (Ham.) Wedd.	199
<i>Phegopteris kingii</i> Bedd.	15	<i>symmeria</i> Wedd.	200
PHILADELPHACEAE	94	<i>umbrosa</i> Wedd.	200
<i>Philadelphus coronarius</i> Linn. var.		<i>Pimpinella diversifolia</i> DC.	109
<i>tomentosus</i> Clarke	94	PINACEAE	203
<i>tomentosus</i> Wall. ex G. Don	94	<i>Pinus excelsa</i> Wall.	203
<i>Phlogacanthus pubinervius</i> T.		<i>wallichiana</i> A. B. Jackson	203
Andr.	163	PIPERACEAE	181
<i>thyrsiflorus</i> Nees	164	<i>Piper attenuatum</i> Buch.-Ham. ex	
<i>Phlomis japonicus</i> (Burm. f.)		Miq.	181
Koidz.	170	<i>brachystachyum</i> Wall. ex Hook. f.	182
<i>macrophylla</i> Wall.	170	<i>diffusum</i> Vahl	182
<i>Phoebe lanceolata</i> Nees	185	<i>hamiltonii</i> Cas. DC.	182
<i>Pholidota articulata</i> Lindl.	216	<i>hymenophyllum</i> Miq.	182
var. <i>griffithii</i> (Hook. f.) King &		<i>khasianum</i> Cas. DC.	182
Pantling	216	<i>mullesua</i> D. Don	182
<i>griffithii</i> Hook. f.	216	<i>nepalense</i> Miq.	182
<i>imbricata</i> (Roxb.) Lindl.	217	<i>pedicellosum</i> Wall. ex Cas. DC.	182
var. <i>sessilis</i> Hook. f.	217	<i>peepuloides</i> Roxb.	183
<i>protracta</i> Hook. f.	217	<i>thomsoni</i> (Cas. DC.) Hook. f.	183
<i>rubra</i> Lindl.	217	<i>Piptanthus nepalensis</i> (Hooker) D.	
<i>Photinia integrifolia</i> Lindl.	89	Don	80
<i>Phragmites karka</i> (Retz.) Trin. ex		<i>Pisum arvense</i> Linn.	80
Steud.	237	<i>sativum</i> Linn. var. <i>arvense</i> Poir.	80

P—contd.	Page	P—contd.	Page
PITTOSPORACEAE	36	<i>ovata</i> (Wall. ex Hook. et Grev.)	
<i>Pittosporum napaulensis</i> (DC.)		Moore	21
Rehder & Wilson var. <i>rawal-</i>		<i>pseudonuda</i> (Ching) Panigr. et	
<i>pindiense</i> Gowda	36	Patn.	22
<i>Pityrogramme calomelanos</i> (Linn.)		<i>punctata</i> (Linn.) Bedd.	21
Link	5	<i>rostrata</i> sensu Bedd.	20
PLAGIOGYRIACEAE	2	<i>simplex</i> Bedd.	21
<i>Plagiogyria communis</i> R. C. Ching	2	<i>wardii</i> (Clarke) Bedd.	19
<i>glauca</i> (Bl.) Mett.	3	<i>zipellii</i> Moore	21
<i>pyncophylla</i> Bedd.	2	PLUMBAGINACEAE	140
PLANTAGINACEAE	172	<i>Plumeria acutiflora</i> Poir.	146
<i>Plantago erosa</i> Wall.	172	POACEAE	233
<i>major</i> Hook. f.	172	<i>Poa annua</i> L.	237
<i>tibetica</i> Hook. f. et Th. ex Hook.		<i>Podophyllum emodi</i> Wall. ex Royle	32
f.	172	<i>Pogonatherum crinitum</i> (Thunb.)	
<i>Plectranthus gerardianus</i> Benth.	170	Kunth	237
<i>hispidus</i> Benth.	170	<i>panicum</i> (Lamk.) Hack.	237
<i>maddenii</i> Benth. ex Hook. f.	170	<i>Pogostemon dasianus</i> De et	
<i>patchouli</i> Clarke ex Hook. f.	169	Mukerjee	171
<i>repens</i> Wall.	170	<i>tuberculosis</i> Benth.	171
<i>rugosus</i> Wall.	171	<i>Poinciana regia</i> Boj.	85
<i>scrophularioides</i> Wall.	171	<i>Pollinia ciliata</i> Trin.	236
<i>striatus</i> Benth.	171	<i>Polybotrya appendiculata</i> J. Sim.	13
<i>ternifolius</i> D. Don	171	POLYGALACEAE	36
Pleione praecox (Sm.) D. Don	217	<i>Polygala arillata</i> Buch.-Ham. ex	
<i>Pleocnemia membranifolia</i> Bedd.	13	D. Don	36
Pleopeltis amarolepia Sledge	22	<i>hyalina</i> Wall. ex Hassk. var.	
<i>bicolor</i> (Takeda) Sledge	22	<i>pusilla</i> Mukerjee	37
<i>ebenipes</i> (Hook.) Bedd.	19	<i>persicariaefolia</i> DC.	37
<i>excavatus</i> (Bory ex Willd.)		<i>sibirica</i> Linn.	37
Sledge	21	<i>tartarinowii</i> Regel	37
<i>griffithianus</i> (Hook.) Moore	19	POLYGONACEAE	175
<i>himalayensis</i> (Hook.) Bedd.	18	<i>Polygonatum cirrhifolium</i> (Wall.)	
<i>juglandifolia</i> (Don) Moore	18	Royle	225
<i>lehmannii</i> (Mett.) Bedd.	18	<i>oppositifolium</i> (Wall.) Royle	225
<i>leiorhiza</i> Moore	20	<i>Polygonum alatum</i> Buch.-Ham. ex	
<i>linearis</i> sensu Bedd.	22	Spreng.	179
<i>linearis</i> sensu Bedd.	22	<i>barbatum</i> Linn.	177
<i>linearis</i> var. <i>steniste</i> Bedd.	22	<i>capitatum</i> Buch.-Ham. ex D.	
<i>loriformis</i> (Wall. ex Mett.)		Don	177
Moore	22	<i>chinense</i> Linn.	177
var. <i>steniste</i> (Clarke) Panigr. &		var. <i>ovalifolia</i> Meissn.	178
Patn.	22	<i>convolvulus</i> Linn.	180
<i>macrospiraera</i> (Bak.) Panigr. et		<i>dumetorum</i> Linn.	180
Patn.	22	<i>flaccidum</i> Meissn.	178
<i>macrospiraera</i> (Bak.) Panigr. et		<i>hydropiper</i> Linn.	178
Patn. var. <i>asterolepis</i> (Bak.)		<i>microcephalum</i> Don	178
Panigr. et Patn.	22	<i>molle</i> D. Don	175
<i>membranacea</i> Bedd.	21	<i>orientale</i> Linn.	178
<i>normalis</i> Moore	21	<i>perfoliatum</i> Linn.	179
<i>nuda</i> Hook.	22	<i>posumbu</i> D. Don	179

P—contd.	Page	P—contd.	Page
<i>runcinatum</i> Buch.-Ham.	179	<i>aculeatum</i> auct. plur. (non <i>Poly-</i> <i>podium aculeatum</i> Linn.) Bedd.	13
<i>pterocarpum</i> Wall. ex Meissn.	176	<i>ilicifolium</i> sensu Bedd.	13
<i>sagittatum</i> Linn.	179	<i>lentum</i> (Don) Moore	14
<i>sphaerostachyum</i> Meissn.	176	<i>setiferum</i> (Forssk.) Moore ex Woynar	13
<i>vaccinifolium</i> Wall. ex Meissn.	176	<i>stimulans</i> Presl	13
<i>virginianum</i> Linn.	180	<i>Polytoca digitata</i> (L.f.) Druce	237
<i>plebejum</i> R. Br.	180	<i>Pongamia cinerea</i> Grah.	78
POLYPODIACEAE	18	PONTERIACEAE	226
<i>Polypodium adnascens</i> Forst.	23	<i>Pontederia vaginalis</i> Burm. f.	226
<i>amoenum</i> (J. Sm.) Mett.	23	<i>Porana paniculata</i> Roxb.	154
<i>argutum</i> (J. Sm.) Hook.	23	<i>racemosa</i> Roxb.	154
<i>aristatum</i> Forst.	11	<i>Porpax meirax</i> (Par. & Reichb. f.) King & Pantling	217
<i>asterolepis</i> Bak.	22	<i>Potentilla fulgens</i> Wall. ex Lehm. kleiniana Wt. & Arn.	89
<i>auriculatum</i> Linn.	13	<i>monantha</i> Lindl. var. <i>sibthor-</i> <i>pioides</i> Hook. f.	89
<i>boothii</i> Hook.	23	<i>Pothos cathcartii</i> Schott	230
<i>cordifolium</i> Linn.	10	<i>glaucus</i> Wallich	230
<i>cuspidatum</i> Don	20	<i>scandens</i> Linn.	230
<i>drepanopterum</i> Kunze	14	<i>Pouzolzia hirta</i> Hassk.	200
<i>ebenipes</i> Hook.	19	<i>indica</i> Gaudich.	200
<i>evectum</i> Forst.	3	<i>viminea</i> Wedd. var. <i>fulgens</i> Wedd.	200
<i>excavatum</i> Bory ex Willd.	21	<i>viminea</i> Wedd.	200
<i>filix-foemina</i> Linn.	14	<i>zeylanica</i> (Linn.) J. Bennett et Brown	200
<i>flocculosum</i> Don	23	<i>Pratia begonifolia</i> (Wall.) Lindl.	135
<i>glaucum</i> Thbg.	4	<i>montana</i> Hassk.	136
<i>griffithianum</i> Hook.	19	<i>Prenanthes hookeri</i> Clarke ex Hook. f.	130
<i>heteractis</i> Mett. ex Kuhn	23	<i>quinqueloba</i> DC.	131
<i>himalayensis</i> Hook.	18	PRIMULACEAE	140
<i>lehmannii</i> Mett.	18	<i>Primula denticulata</i> Sm.	140
<i>lineare</i> var. <i>steniste</i> Clarke	22	<i>filipes</i> Watt ex Hook. f.	140
<i>linearis</i> Burm.	3	<i>Prinsepia utilis</i> Royle	90
<i>loriforme</i> Wall. ex Mett.	22	<i>Priotropis cytisoides</i> (Roxb.) Wt. & Arn.	81
<i>macrospheerum</i> Bak.	22	<i>Prunella vulgaris</i> Linn.	172
<i>membranaceum</i> Don	21	<i>Prunus persica</i> Stokes	90
<i>multilineatum</i> Wall. ex Hook.	16	<i>rufa</i> Wall. ex Hook. f.	90
<i>normale</i> D. Don	21	<i>Pseudodissochaeta assamica</i> (C.B. Clarke) Nayar	100
<i>ovatum</i> Wall. ex Hook. et Grev.	21	<i>Pseudoechinolaena polystachya</i> (H.B.K.) Stapf	237
<i>phyllomanes</i> Christ	21	PSILOTACEAE	1
<i>punctatum</i> Thunb.	7	<i>Psilotum nudum</i> (Linn.) Beauv.	1
<i>setiferum</i> Forssk.	13	<i>Psychotria calocarpa</i> Kurz	120
<i>speluncae</i> Linn.	9	<i>denticulata</i> Wall.	120
<i>stigmatosum</i> (Sw.) Ching	24		
<i>stigmatosum</i> Sw.	24		
<i>subdigitatum</i> Bl.	9		
<i>subrostratum</i> C. Chr.	20		
<i>wallichianum</i> Spreng.	18		
<i>wallichii</i> R. Br.	19		
<i>wardii</i> Clarke	19		
<i>zipellii</i> Blume	21		
<i>Polystichum auriculatum</i> (Linn.) Presl	13		
<i>auriculatum</i> var. <i>lentum</i> Bedd.	14		

P—contd.	Page	R	Page
<i>erratica</i> Hook. f.	121	<i>Randia fasciculata</i> DC.	121
<i>fulva</i> Buch.-Ham. ex Hook. f. . .	121	RANUNCULACEAE	25
PTERIDACEAE	7	<i>Ranunculus aquatilis</i> Linn.	27
PTERIDOPHYTES	1	<i>contonensis</i> DC.	27
<i>Pteridium aquilinum</i> (Linn.) Kuhn		<i>diffusum</i> DC.	27
ex Deckn	7	<i>pensylvanicum</i> Hook. f. & Th. . .	27
<i>Pteris aquilina</i> Linn.	7	<i>Rapanea capitellata</i> (Wall.) Mez. .	142
<i>biaurita</i> Linn.	7	<i>Rauvolfia serpentina</i> (L.) Benth.	
<i>cretica</i> Linn.	7	ex Kurz	146
<i>excelsa</i> Gaud.	7	<i>Reissantia arborea</i> (Roxb.) Hara . .	59
<i>farinosa</i> Forsk.	5	<i>Remusatia vivipara</i> (Lodd.) Schott .	230
<i>longifolia</i> auct. Pl. (non Linn.) .	8	RHAMNACEAE	60
<i>longipes</i> Don	7	<i>Rhamnus nipalensis</i> Wall. ex Roxb. .	60
<i>piloselloides</i> Linn.	20	<i>Rhapidophora eximia</i> Schott	230
<i>quadriaurita</i> Retz.	7	<i>glauca</i> (Wall.) Schott	230
<i>siliculosum</i> Desv.	6	<i>hookeri</i> Schott	230
<i>vittata</i> Linn.	8	<i>Rheum acuminatum</i> Hook. f. et	
<i>wallichiana</i> Ag.	8	Thoms.	180
<i>Pterospermum acerifolium</i> Willd. .	46	<i>Rhododendron arboreum</i> Sm.	138
<i>Pueraria phaseoloides</i> (Roxb.)		<i>dalhousiae</i> Hook. f.	139
Benth.	81	<i>fulgens</i> Hook. f.	139
<i>phaseoloides</i> (Roxb.) Benth. var.		<i>grande</i> Wt.	139
<i>javanicus</i> (Benth.) Baker	81	<i>hodgsoni</i> Hook. f.	139
<i>peduncularis</i> Grah. ex Benth. . . .	81	<i>kendrickii</i> Nutt.	139
<i>subspicata</i> Benth.	81	<i>lepidotum</i> Wall. ex G. Don	139
PYROLACEAE	140	<i>virgatum</i> Hook. f.	140
<i>Pyrola rotundifolia</i> Linn. var.		<i>Rhus insignis</i> Hook. f.	65
<i>asarifolia</i> (Mich.) Clarke	140	<i>javanica</i> Linn.	65
<i>Pyrrosia adnascens</i> (Forst.) Ching .	23	<i>semialata</i> Murray	65
<i>boothii</i> (Hook.) Ching	23	<i>Rhynchoglossum obliquum</i> Bl.	162
<i>flocculosa</i> (Don) Ching	23	<i>Rhynchostylis retusa</i> (Linn.) Bl. . .	217
<i>heteracta</i> (Mett. ex Kuhn) Ching . .	23	<i>Rhynchocheum ellipticum</i> (Wall.	
<i>lanceolata</i> (Linn.) Farwell	24	ex Dietr.) A. DC.	162
<i>mannii</i> (Gies) Ching	24	<i>vestitum</i> Wall. ex Clarke	162
<i>mollis</i> (Kunze) Ching	24	<i>Ricinus communis</i> Linn.	194
<i>numularifolia</i> (Sw.) Ching	24	<i>Ritaia himalaica</i> (Hook. f.) King	
<i>stenophylla</i> (Bedd.) Ching	23	& Pantling	217
<i>stigmosa</i> (Sw.) Ching	24	<i>Robinia candida</i> Roxb.	82
<i>Pyrularia edulis</i> (Wall.) DC.	188	<i>Rorippa dubia</i> (Pers.) Hara var.	
<i>Pyrus communis</i> Linn.	90	<i>benghalense</i> (DC.) Mukerjee	34
		<i>islandica</i> Schinz & Thell	34
Q		ROSACEAE	87
<i>Quercus dealbata</i> Hook. f. et		<i>Rosa indica</i> Linn.	90
Thoms. ex Miq.	202	<i>sericea</i> Lindl.	90
<i>fenestrata</i> Roxb.	202	<i>Roscoea spicata</i> Sm.	219
<i>griffithii</i> Hook. f. et Thoms. ex DC.	203	<i>Rotala indica</i> (Willd.) Koehne	101
<i>pachyphylla</i> Kurz	203	RUBIACEAE	116
<i>spicata</i> Sm. var. <i>chittagonga</i>		<i>Rubia cordifolia</i> Hook. f.	121
King ex Hook. f.	202	<i>sikkimensis</i> Kurz	121
var. <i>gracilipes</i> (Miq.) Miq.	202	f. <i>strigosa</i> Deb et Malick	121
		<i>Rubus acuminatus</i> Sm.	90

R—contd.	Page	S—contd.	Page
biflorus Sm.	91	SANTALACEAE	188
ellipticus Sm.	91	<i>Sapium sebiferum</i> Roxb.	194
ferox Wall. ex Kurz	91	SAPOTACEAE	143
gracilis Roxb. var. hypargyrus (Edgew.) Mukerjee	91	<i>Sarcanthus filiformis</i> Lindl.	217
hamiltoni Hook. f.	92	<i>pallidus</i> Lindl.	218
<i>lasiocarpus</i> Sm. var. <i>rosaefolius</i> Hook. f.	92	<i>williamsonii</i> Reichb. f.	218
lineatus Reinw. ex Bl.	92	<i>Sarcococca pruniformis</i> Hook. f.	194
macilentus Camb.	92	<i>wallichii</i> Stapf	194
moluccanus Linn.	92	<i>Sarcopyramis nepalensis</i> Wall.	100
niveus Thunb. var. <i>rosaefolius</i> (Hook. f.) Hara	92	<i>Satyrium nepalensis</i> D. Don	218
<i>niveus</i> Wall. ex Hook. f. var. <i>hypargyrus</i> (Edgew.) Hook. f.	91	SAURAUICEAE	42
paniculatus Sm.	93	<i>Saurauia nepaulensis</i> DC.	42
rosaefolius Sm.	93	<i>punduana</i> Wall.	43
<i>Rumex maritimus</i> Linn.	180	<i>roxburghii</i> Wall.	43
<i>nepalensis</i> Spreng.	180	<i>Sauropus albicans</i> Bl.	194
<i>Rungia himalayensis</i> Clarke	164	<i>androgynous</i> (Bl.) Merr.	194
RUTACEAE	52	SAXIFRAGACEAE	93
S		ssp. <i>nepalensis</i> Backer	35
SABIACEAE	64	<i>Scaptidium daucifolium</i> (Wall. ex Hook. et Grev.) Lyon	2
<i>Sabia lanceolata</i> Colebr.	64	<i>Schaenorchis geminata</i> (Lindl.) J. Sm.	218
<i>leptandra</i> Hook. f. & Th.	65	<i>Schefflera clarkeana</i> Craib	113
<i>Saccharum arundinaceum</i> Retz.	237	<i>bengalensis</i> Gamble	113
<i>spontaneum</i> L.	238	<i>Schima khasiana</i> Thiselton Dyei	42
<i>Saccolabium acutifolium</i> Lindl.	213	<i>wallichii</i> (DC.) Korthals	42
<i>calceolare</i> (Sm.) Lindl.	213	SCHISANDRACEAE	29
<i>distichum</i> Lindl.	213	SCHIZAEACEAE	3
<i>filiforme</i> Lindl.	218	<i>Scleria cochinchinensis</i> (Lour.) Druce	233
<i>geminatum</i> Lindl.	218	<i>elata</i> Thw.	233
<i>himalaicum</i> Deb	218	<i>terrestris</i> (Linn.) Fass.	233
<i>inconspicuum</i> Hook. f.	215	<i>Scirpus chinensis</i> Osb.	233
<i>longifolium</i> Hook. f.	204	<i>comosus</i> Wall. ex Roxb.	233
<i>micranthum</i> Lindl.	205	<i>dichotomus</i> Linn.	232
<i>obliquum</i> Lindl.	213	<i>diphyllus</i> Retz.	232
<i>obtusifolium</i> Hook. f.	213	<i>erectus</i> auct.	233
<i>papillosum</i> Lindl.	213	<i>juncoides</i> Roxb.	233
<i>Sagenia macrodonta</i> Fée	14	SCROPHULARIACEAE	157
<i>Sagina procumbens</i> sensu Edgew. & Hook. f.	38	<i>Scrophularia elatior</i> Benth.	159
<i>saginoidea</i> (L.) Karsten	38	<i>Scoparia dulcis</i> Linn.	159
<i>Salvia glutinosa</i> Linn.	172	<i>Scopolia lurida</i> (Link et Otto) Dun.	155
<i>Sanicula elata</i> Buch.-Ham. ex D. Don	109	<i>Scurrula parasitica</i> Linn.	187
<i>europaea</i> Linn. sensu Clarke	109	<i>pulverulenta</i> (Wall.) G. Don	187
SAPINDACEAE	64	<i>umbellifer</i> (Schult.) G. Don	188
<i>Sapindus attenuatus</i> Wall. ex Hiern.	64	<i>Scutellaria discolor</i> Colebr.	172
		<i>Securinega virosa</i> (Roxb. ex Willd.) Pax et Hoffm.	194
		<i>Sedum elongatum</i> Wall. ex Hook. f. & Thoms.	95

S—contd.	Page	S—contd.	Page
multicaule Wall. ex Lindl.	95	nepalensis Majumdar	38
triactina Hook. f. & Thoms.	96	<i>Simplocos chinensis</i> (Lour.) Druce	143
SELAGINELLACEAE	2	<i>crataegoides</i> Buch.-Ham. ex D.	
<i>Selaginella argentea</i> (Wall. ex		Don	143
Hook. et Grev.) Spring	2	glomerata King ex C.B.Cl.	143
bryopteris (Linn.) Bak.	2	pyrifolia Wall. ex G. Don	143
intermedia (Bl.) Spring	2	racemosus Roxb.	143
monospora Spring	2	theaeifolia Buch.-Ham. ex D.	
pennata (Don) Spring	2	Don	144
semicordata sensu Burkill	2	SIMRAUBACEAE	55
<i>Selinium candolii</i> DC.	109	SINOPTERIDACEAE	5
striatum (DC.) Clarke	110	<i>Skimmia laureola</i> Hook. f.	54
tenuifolium Clarke	109	melanocarpa Rehd. et Wild.	54
<i>Selliguea elliptica</i> sensu Bedd.	19	<i>Smilacina fusca</i> Wall.	225
hemionitidea Presl.	19	<i>Smilax aspericaulis</i> Wall. ex DC.	225
<i>Senecio araneosus</i> DC.	130	bracteata Prest	225
chrysanthemioides DC. var.		subsp. <i>verruculosa</i> (Merr.) T.	
spectabilis DC.	131	Koyama	225
densiflorus Wall. ex DC.	131	lanceaeifolia Roxb.	225
himalaensis Mukerjee nom. nov.		ocreata DC.	225
<i>S. quinquelobus</i> Hook. f. &		<i>roxburghiana</i> Wall. ex Hook. f.	225
Thoms. ex C.B.Cl.	131	<i>verruculosa</i> Merrill.	225
lamprocarpa Hemsl. ex Forb. &		<i>Smithia ciliata</i> Royle	82
Hemsl.	131	sensitiva Ait.	82
blrot Clarke	131	SOLANACEAE	154
<i>quinquelobus</i> Hook. f. & Thoms.		<i>Solanum crassipetalum</i> Wall. ex	
ex Clarke	126	Wall.	155
scandans D. Don	131	erianthum D. Don	155
triligulatus Buch.-Ham. ex D.		indicum L.	156
Don	131	<i>khasianum</i> Clarke var. <i>chatterjee-</i>	
wallichii DC.	131	<i>anum</i> Sen Gupta	156
<i>Setaria glauca</i> (L.) Beauv.	238	kurzii Brace ex Prain	156
<i>glauca</i> Hack.	238	myriacanthum Dun	156
pallide-fusca (Schum.) Stapf et		nigrum L.	156
Hubb.	238	<i>pubescens</i> var. ? <i>lobata</i> Clarke .	156
palmifolia (Koen.) Stapf	238	torvum Sw.	156
paniculifera (Steud.) Fourn. ex		<i>Sonchus arvensis</i> Linn.	132
Hemsl.	238	asper Hill.	132
viridis (L.) Beauv.	238	oleracepes Linn.	132
<i>Shuteria vestita</i> Wt. & Arn.	82	SONNERATIACEAE	101
<i>Sibthorpia pinnata</i> (Wall.) Benth.		<i>Sopubia trifida</i> Buch.-Ham. ex D.	
ex Hook. f.	157	Don	159
<i>Sida acuta</i> Burm. f.	45	<i>Spatholobus roxburghii</i> Benth.	67
<i>carpinifolia</i> Linn.	45	<i>Spergula arvensis</i> L.	39
<i>cordifolia</i> Linn.	45	<i>Spermacoce hispida</i> Linn.	116
<i>glutinosa</i> Cav.	45	ocymoides Burm. f.	116
mysorensis W. & A.	45	<i>stricta</i> Linn. f.	116
<i>rhombifolia</i> Linn.	45	<i>Spermadictyon suaveolens</i> Roxb.	121
var. <i>retusa</i> (L.) Masters.	45	<i>Sphaeranthus indicus</i> Linn.	132
<i>Siegesbeckia orientalis</i> Linn.	132	<i>Sphenomeris chinensis</i> (Linn.)	
<i>Silene indica</i> Roxb. ex Otth.	39	Max.	9

S—contd.	Page	S—contd.	Page
var. <i>tenuifolia</i> (Sw.) N. C. Nair	9	var. <i>elegans</i> Burkill	151
<i>Spilanthus acmella</i> (Linn.) Murr.	132	var. <i>wallichii</i> Burkill	151
<i>Spiradielis cylindrica</i> Wall. ex Hook.	122	var. <i>pulchella</i> Burkill	150
<i>Spiraea bella</i> Sims.	93	<i>bimaculata</i> Hook. f. & Th.	150
<i>micrantha</i> Hook. f.	93	<i>cordata</i> Wall. ex Clarke	150
<i>Sporobolus diander</i> (Retz.) Beauv.	238	<i>dilatata</i> Clarke	151
<i>fertilis</i> (Steud.) Clayton	238	<i>nervosa</i> Wall. ex Clarke	150
<i>indicus</i> auct.	238	<i>paniculata</i> Wall. ex Clarke	150
STACHYURACEAE	43	<i>pulchella</i> Buch.-Ham. ex Clarke	150
<i>Stachyurus himalaicus</i> Hook. f. & Thoms. ex Benth.	43	<i>vacillans</i> Maxim.	150
<i>Stauroopsis undulatus</i> Benth. ex Hook. f.	219	SYMPLOCACEAE	143
<i>Stellaria alsine</i> Grimm.	39	<i>Synedrella nodiflora</i> Gaertn.	132
<i>crispata</i> Wall. ex Edgew. & Hook. f.	39	<i>Syngamme fraxinea</i> Bedd.	5
<i>media</i> (L.) Vill.	39	<i>fraxinea</i> Bedd.	5
<i>monosperma</i> B.-H. ex D. Don	39	<i>vestita</i> (Hook.) Bedd.	6
<i>saxatilis</i> Hamilt. ex D. Don	40	<i>Syzygium claviflorum</i> Wall. ex Cowan et Cowan	98
<i>sikkimensis</i> Hook. f.	39	<i>oblatum</i> (Roxb.) Wall. ex Cowan et Cowan	98
<i>uliginosa</i> Murr.	39		
<i>vestita</i> Kurz.	40	T	
<i>Stenoloma chinensis</i> (Linn.) Bedd.	9	<i>Tabernaemontana coronaria</i> Hook. f.	146
<i>chinensis</i> (Linn.) Bedd.	9	<i>divaricata</i> (L.) R. Br. ex Roem. et Schult.	146
<i>chusana</i> (Linn.) Copel.	9	<i>Tachelospermum axillare</i> Hook. f.	146
<i>Stenosemia pinnata</i> Copel.	13	<i>Tagetes erecta</i> Linn.	132
<i>Stephania glabra</i> (Roxb.) Miers.	30	<i>Talauma hodgsoni</i> Hook. f. & Thoms.	29
<i>hernondifolia</i> (Willd.) Walp.	30	TAMARICACEAE	40
<i>rotunda</i> Hk. f. et Thoms.	30	<i>Tamarindus indica</i> Linn.	85
STERCULIACEAE	46	<i>Tamarix gallica</i> Thiselton-Dyer	40
<i>Sterculia coccinea</i> Roxb.	46	<i>troupii</i> R. S. Hole	40
<i>indica</i> Merr.	46	<i>Tapiria hirsuta</i> (Roxb.) Hook. f. ex Benth. & Hook. f.	65
<i>villosa</i> Roxb.	46	<i>Taraxacum officinale</i> Wigg.	132
<i>Streptolirion cordifolium</i> (Griff.) O. Kuntze	228	TAXACEAE	203
<i>volubile</i> Edgew.	228	<i>Taxus baccata</i> Linn.	203
<i>Strobilanthes capitatus</i> T. Andr.	164	<i>Tectaria macrodonta</i> (Fée) C. Christ.	14
<i>coloratus</i> T. Andr.	164	<i>polymorpha</i> (Wall. ex Hook.) Copel.	14
<i>divaricatus</i> T. Andr.	164	<i>Tephrosia candida</i> DC.	82
<i>pentstemonoides</i> T. Andr.	164	<i>Teramnus flexilis</i> Benth.	83
<i>thomsoni</i> T. Andr.	164	<i>Terminalia belerica</i> Roxb.	97
<i>Styrax serrulatus</i> Roxb.	144	<i>citrina</i> Roxb. ex Flem.	97
var. <i>serrulatus</i>	144	<i>myriocarpa</i> Heurck et Muell.-Arg.	97
var. <i>agrestis</i> Clarke	144	<i>Tetrastigma bracteolatum</i> (Wall.) Pl. lanceolarium Pl.	62
STYRCACEAE	144		63
<i>Swertia affinis</i> Clarke	150		
<i>angustifolia</i> Ham.	150		
<i>angustifolia</i> Wall.	151		
<i>angustifolia</i> Ham. var. <i>angustifolia</i> Clarke	150		

T—contd.	Page	T—contd.	Page
<i>serrulatum</i> (Roxb.) Pl.	63	<i>Triactina verticillata</i> Hook. f. & Thoms.	96
<i>Teucrium stoloniferum</i> Roxb.	172	<i>Trichomanes chinensis</i> Linn.	9
<i>viscidum</i> Bl.	172	<i>japonicum</i> Thbg.	6
<i>Thalictrum chelidonii</i> DC.	28	<i>polyanthos</i> Sw.	8
<i>foliolosum</i> DC.	28	<i>radicans</i> (Sw.) Schrad.	8
<i>javanicum</i> Bl.	28	<i>strigosum</i> Thbg.	9
<i>rostellatum</i> Hook. f. & Th.	28	<i>Trichosanthos wallichiana</i> (Ser.) Wt.	106
<i>Thamnopteris nidus</i> (Linn.) Presl	17	<i>multiloba</i> Miq. sensu Hook. f.	106
THEACEAE	41	<i>Trichosma suavis</i> Lindl.	212
<i>Thelasis longifolia</i> Hook. f.	218	<i>Tridax procumbens</i> Linn.	133
<i>Thladiantha calcarata</i> Cong.	106	<i>Tripogon filiformis</i> Nees ex Steud.	239
<i>dubia</i> Bunge sensu Hook. f.	106	<i>Triplostegia glandulifera</i> Wall. ex Benth.	123
<i>Thlaspi arvense</i> Linn.	34	<i>Triumfetta annua</i> Linn.	47
THELYPTERIDACEAE	15	<i>bartramia</i> Linn.	48
<i>Thelypteris aurita</i> (Hook.) Ching	15	<i>cana</i> Bl.	47
<i>multilineata</i> (Wall. ex Hook.) Morton	16	<i>pilosa</i> Roth	48
var. <i>bhutanica</i> N. C. Nair	16	<i>rhomboides</i> Jacq.	48
<i>Themeda caudata</i> (Nees) A.	239	<i>Tsuga brunoniana</i> Carr.	203
<i>Camus</i>	239	<i>dumosa</i> (D. Don) Eichler	203
<i>triandra</i> Forsk.	239	<i>Tupistra clarkei</i> Hook. f.	226
<i>Thunbergia grandiflora</i> Roxb.	164	<i>Tylophora hirsuta</i> (Wall.) Wight	147
<i>Thunia alba</i> (Lindl.) Reichb. f.	218		
THYMELAEACEAE	186	U	
<i>Thysanolaena agrostis</i> Nees	239	UMBELLIFERAE	107
<i>maxima</i> (Roxb.) O. Kuntze	239	<i>Uncaria sessilifructus</i> Roxb.	122
<i>Tiarella polyphylla</i> D. Don	94	<i>Uncifera obtusifolia</i> Lindl.	213
TILIACEAE	47	<i>Unona discolor</i> Vahl	29
<i>Tiniaria convolvulus</i> (Linn.) Webb. & Moq.	180	<i>dumosa</i> Roxb.	29
<i>dumetorum</i> (Linn.) Opiz	180	<i>Urania lagopus</i> DC.	83
<i>Tithonia rotundifolia</i> (Mill.) Blake	133	<i>Urena lobata</i> Linn.	46
<i>Toddalia aculeata</i> Pers.	54	URTICACEAE	196
<i>asiatica</i> (Linn.) Lamk.	54	<i>Urtica parviflora</i> Roxb.	201
<i>Tolypanthus involucratu</i> s (Roxb.) Bl.	188	<i>Utricularia scandens</i> Benj. var. <i>firmula</i> (Oliv.) Subra & Ban.	160
<i>Torenia cordifolia</i> Roxb.	159	<i>wallichiana</i> Wight var. <i>firmula</i> Oliv.	160
<i>diffusa</i> D. Don	159		
<i>peduncularis</i> Benth. ex Hook. f.	159	V	
<i>vagans</i> Roxb.	159	VACCINIACEAE	136
<i>violacea</i> Pennell	159	<i>Vaccinium dunalianum</i> Wight	137
<i>Toricellia tiliacifolia</i> DC.	113	<i>nummularia</i> Hook. f. et Thoms. ex C.B.Cl.	137
<i>Torilis japonica</i> (Houtt.) DC.	110	<i>serratum</i> (G. Don) Wt.	137
<i>Tournefortia hookeri</i> Clarke	152	<i>vacciniaceum</i> (Roxb.) Sleum.	137
<i>viridiflora</i> (Lehm.) Wall.	152	VALERIANACEAE	122
<i>Trachydium obtusiusculum</i> (DC.) Clarke	109	<i>Valeriana hardwickii</i> Wall.	122
<i>Tradescantia fasciculata</i> Heyne ex Roth	227	<i>jatamansi</i> Jones	122
<i>paniculata</i> Roxb.	227		
<i>vaga</i> Lour.	227		

V—contd.	Page	V—contd.	Page
<i>wallichii</i> DC.	122	<i>ovalifolium</i> Wall. ex DC.	188
<i>Vallisneria heynei</i> Spreng.	147	VITACEAE	61
<i>solanacea</i> K. Schum	147	<i>Vitis assamica</i> Laws.	61
<i>Vanda bicolor</i> Griffith	218	<i>bracteolata</i> Wall.	62
<i>cristata</i> Lindl.	218	<i>capriolata</i> D. Don	63
<i>parviflora</i> Lindl.	219	<i>elongata</i> (Roxb.) Wall. ex Laws.	61
<i>teres</i> Lindl.	219	<i>lanceolaria</i> Roxb.	63
<i>Vandenboschia radicans</i> (Sw.) Copel.	8	<i>repanda</i> Wt. & Arn.	62
<i>Vandopsis undulata</i> (Lindl.) J. J. Sm.	219	<i>repens</i> Wt. & Arn.	62
<i>Ventilago calyculata</i> Tulasne	60	VITTARIACEAE	6
<i>Verbascum thapsus</i> Linn.	159	<i>Vittaria elongata</i> Sw.	6
<i>Vernonia anthelmintica</i> (L.) Willd. cineria (Linn.) Less.	133	<i>flexuosa</i> Fée	6
<i>saligna</i> DC.	133	<i>lineata</i> sensu Bedd.	6
<i>talaumifolia</i> Hook. f. & Thoms. ex Clarke	133	W	
<i>volkameriaefolia</i> DC.	133	<i>Wallichia densiflora</i> Mart.	299
<i>Veronica anagallis-aquatica</i> Linn. javanica Bl.	160	<i>Wedelia biflora</i> (Linn.) DC.	133
<i>Viburnum colebrookianum</i> Wall. ex Clarke	115	<i>Wendlandia pendula</i> DC.	122
<i>coriaceum</i> Bl.	115	<i>speciosa</i> Cowan	122
<i>corylifolium</i> Hook. f. & Thoms. cotinifolium Don	115	<i>Woodfordia floribunda</i> Salisb.	102
<i>erubescens</i> Wall. ex DC.	115	<i>fruticosa</i> (L.) Kurz	102
<i>foetidum</i> Wall.	115	WOODSIACEAE	10
<i>mullaha</i> Buch.-Ham. ex D. Don sambucinum Reinw. ex Bl.	115	<i>Woodwardia radicans</i> (Linn.) Sm. Wrightia tomentosa (Roxb.) Roem. & Schultes	18 147
<i>stellulatum</i> Wall. ex DC.	115	X	
<i>Vicatia conifolia</i> DC.	110	<i>Xanthium strumarium</i> Linn.	134
<i>millefolia</i> (Kl.) Clarke	110	Y	
<i>Vicia hirsuta</i> (Linn.) Gray	83	<i>Youngia japonica</i> (Linn.) DC.	134
<i>sativa</i> Linn.	83	Z	
<i>Vigna pilosa</i> Baker	83	<i>Zanonia indica</i> Linn.	106
<i>vexillata</i> (Linn.) Benth.	83	<i>Zanthoxylum acanthopodium</i> . DC.	55
<i>Vincetoxicum officinale</i> Moench.	148	<i>alatum</i> Roxb.	55
VIOLACEAE	35	<i>armatum</i> DC.	55
<i>Viola arcuata</i> Bl.	35	<i>oxyphyllum</i> Edgew.	55
<i>betonicifolia</i> Sm.	35	<i>tomentellum</i> Hook. f.	55
<i>diffusa</i> Ging.	35	ZINGIBERACEAE	219
<i>distans</i> Wall.	35	<i>Zizania terrestris</i> Linn.	233
<i>inconspicua</i> Bl.	35	<i>Zizyphus mauritiana</i> Lamk.	61
<i>patrinii</i> Hook. f. & Thoms.	35	<i>Zornia diphylla</i> Baker	84
<i>serpens</i> Wall. ex Roxb. var. <i>glabra</i> Hook. f. & Thoms. var. <i>canescens</i> Wall. ex Roxb.	36	<i>gibbosa</i> Span.	84
<i>Viscum monoicum</i> Roxb. ex DC.	188		

INDEX OF LOCAL NAMES

A	Page	D—contd.	Page
Aishelu	91	Dolo patey, Mirey pati	169
Ajiru	187	Dong dongey bin (Nep.)	155
		Duthe lahara	147
B		G	
Babrumdai	48	Gaglata	198
Baqlapata Sunakhari	216	Gogun	43
Bandre	56	Gaiyo	60
Bapshunda (Bl.)	155	Galeto	162
Benthuya, Bangi lahara	174	Ghiroula	105
Bepari	193	Gujgij lahara	119
Bhaby Shaey patri phul	132		
Bhairang pati; Phabding	148	H	
Bhyangrey shishmi	199	Haldi Kath	192
Bilauni	142	Hariya shishnu, Phusrey shishau	201
Bin (Nep.)	156	Hooki phul	128
Bin lahara	105		
Biraley kara	90	J	
Biri	120	Ja-lang-Ktthem	99
Bogitenga	98	Jongronia	179
Bon gokul	120		
Bon kakra	103	K	
Bon Khusani (Nep.)	155	Kalachamp	142
Bumseng	138	Kala laharey	60
		Kali lahara	65
C		Kalo Bori	183
Chabo	181	Kalpati	190
Chamela	194	Kaman dhusur	165
Chhotey gaglota (Nep.)	198	Kamley; Chipley	196
Chhotey qujur ganta	136	Kanan champa lahara	104
Chhotey sunakhari	206	Kangsengmo	116
Chipley	197	Karchinda kara (Nep.)	156
Chiuri	29, 47	Kanchirna, Phiksangme	142
Chiuri amla lahara	141	Kauscho	44
Chootamaidalu	121	Khanak Pa	53
		Kharney gach	144
D		Kholabor	195
Dakley chabo	182	Konchiru	215
Damey gach	120	Koamrib	92
Debre lahara	96		
Dhungri phul	129		

<i>K—contd.</i>	Page	<i>P—contd.</i>	Page
Korkoriya	62	Phasrey sunakhari	208
Kouvepat	222	Phutki	98
Kurey pat	46	Phutuka	98
Kusum	189	Pinasi lahara	26, 27
		Pomrim	88
L		Prumdai	47
Lahara gaijo	190	Potheli	125
Lali	56		
Lang-tang	100	R	
Lotaphutkola	100	Rakatang	183
		Rudilo	183
M			
Majito	121	S	
Mang, Mang-Ma	43	Samphor	53
Mawa	201	Sersingma	194
Mem	212	Shati lahara	49
Mirey pati	165	Sheta gaglata (Nep.)	199
Morengey	199	Sheti gach	64
		Sheti lahara	96
N		Sinduriya	193
Namphai (Bh.)	155	Suna khari	215
Newara	195	Sunakhori	208
Niam rib	91	Suntala	53
P		T	
Pangmento	128	Taimakhu	129
Pan-kara	91	Titey pati	124
Pata kuro	48	The orange	53
Peng-dong-dongla	169	Thothney	175
Phapar	177	Timur	184
		Tusare (Nep.)	198

