

Plants of Mussoorie

D. R. R. Stewart

Stewart

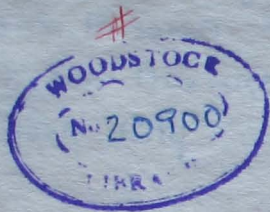
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Flora Check List of
Dehra Dun District, United Provinces
in the vicinity of INDIA
MUSSOORIE

R. L. Fleming
Jen Oak
Mussoorie, U.P.
India

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HCSC Stewart
A catalogue of the plants of Mussoorie



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A Catalogue of the Plants of
Mussoorie
R. R. Stewart

Mussoorie, like so many of the Himalayan Hill Stations, occupies a series of ridges with summits between 6500' and 7500'. It lies on the watershed between the Ganges and the Jumna Rivers and the ridges rise abruptly from Dehra Dun. The Siwaliks separate the Dun from Saharanpur District, U.P. As the crow flies Mussoorie, with its eastern suburb of Landour, is hardly ten miles from Dehra Dun which is only 2200'. Mussoorie is 30° 27' north latitude and 78° 15' east of Greenwich. The flora of the Dun and the Siwaliks is on the whole so different from that of Mussoorie that it deserves separate treatment, although many Dun plants are found up to 5000' and in the case of a good many grasses and monsoon annuals, up to 7000'. The steep ascent to Mussoorie begins at Rajpur seven miles from Dehra Dun at 3000'. I have included in my list those plants which are to be found from Rajpur to the tops of the hills and down to the Aglar River on the north slope; from Kempty Falls and Benog on the west, and to Jabarkhet ridges on the northeast. This area includes about 120 square miles.

For its area, Mussoorie has a very rich flora which may most easily be compared to that of Simla because of Collett's excellent Flora Simlensis. Collett included plants from an area of about 6 square miles and growing between 2,000' and 10,000'. He lists 113 higher plants and 124 ferns and fern allies. If the higher plants of Dehra Dun were added to my list, the totals would exceed those reported from Dimla. During the monsoon, Simla has a rainfall of only 45 inches as against 85 for Mussoorie and this makes it possible for epiphytes to grow luxuriantly in Mussoorie. Quite a few of the more typical Mussoorie species do not reach the Simla Hill. Simla has thirty less orchids, fewer Gesneraceae and does not have a good many of the more tropical woody plants and vines.

Most of the rain falls between the 25th of June and the middle of September and the weather is comparatively dry the rest of the year. The evergreen trees must therefore be quite xerophytic in order to get along during the dry season. Some snow falls on the tops of the hills in the winter which may lie well into March in sheltered places on the northern slopes.

The average rainfall of Mussoorie is about 90 inches, about 75 of which falls during the monsoon. There is a second maximum during the winter months of December, January and February, while October, November, March and April and May are very dry. In Simla there is less monsoon rainfall and winter precipitation is greater. Mussoorie has an average of 100 rainy days each year while Simla has 80.

No records exist, as far as I know, but there must be a good deal of local variation in the rainfall. Dehra Dun may have even more monsoon rain than Mussoorie but the lower mountain slopes are evidently much drier than those which are higher. They are often in sunshine while the mists billow over the higher portions of the range and the comparative poverty in epiphytes and ferns and the more stunted mature trees shows less rain. The lower slopes on the north also get less of the monsoon.

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The ridges are very steep and there are many narrow valleys with cliffs, gorges and all sorts of exposure. Due to a wise forest policy, careless deforestation is not permitted and the hillsides are almost all wooded though there are grassy slopes and there is a little cultivation. There is a great variety of habitat but there is little opportunity for marsh and water plants. Epiphytes and lithophytes are numerous, especially above 1000'. Most of the shrubs and trees of the higher levels are found at similar elevations all along the Western Himalayas. A good many plants which are epiphytic in Mussoorie are lithophytes in Simla and farther west probably all of the Mussoorie epiphytes are lithophytes as well, and some occasionally grow on ordinary soil plants.

Collecting during the monsoon has its difficulties as the forest is full of leeches when one leaves the main paths and the collector has always to be prepared for a downpour. If boots have lace holes the pests can worm their way through the ordinary socks do not stop them. I have had the least trouble when wearing gaiters tucked inside high boots. Even then the leeches may win climbing up one's back and feasting on the neck. The second difficulty is getting the specimens dry when they are collected. I have seen many good specimens spoiled by poor drying and mould starts if the blotters are not changed frequently. I have found the best plan is to change them twice a day and to dry them on a "t_hapa" such as the dhobis use. The heat may come from a brazier or from a small oil heater. For a week at a time there is no sun to dry blotters. When dried during the rains, collectors find that the leaflets of many plants such as legumes and species of tis fall off. I am glad to learn from Mr. M.P. Raisada of the Forest Research Institute at Dehra Dun that if painted with a strong solution of $HgCl_2$, mould cannot grow and the leaflets do not fall off.

A third difficulty is that one cannot go anywhere without climbing and it is not pleasant to climb two or three thousand feet when the humidity is high and vegetation is dripping. Fortunately in most places, the undergrowth is not too dense for one to get rough, though many slopes are too steep for safe climbing.

The first collection of Mussoorie plants was made by Royle, possible as early as 1825. Unfortunately, a large part of his collection is said to have gone to Russia many years ago and has been lost sight of, but part is still in the Forest Research Institute at Dehra Dun. He was followed by Jameson who collected from 1842 to 1846. His collection is also in Dehra Dun but unfortunately his specimens, like Royle's, lack proper labels and are only marked "M.,ss" or "Mussoorie" and it is impossible to say what is meant by this term. Quite a few of these early species have not been collected since, within our area, and it would be interesting to know whether some of his species have come from adjacent parts of the Shri Garhwal or whether they have become extinct due to the construction of houses or to much collecting.

RANUNCULACEAE

1. *Clematis Gouriana* Roxb To 4,000'
2. " *Buchaniana* DC. Common, 4-7,000' very hairy
Edgehill Villa Dhobi Ghat Jabarkhet Witches Hill
3. " *montana* Buch. Ham. Common, 6-7,000'
Eastwood Kempfy Rd Fruit. Aug
4. " *nepalensis* DC. Scarce, 6-7,000' Fruit, May
leaves linear - pale greenish white Below Dhobi ghat
5. " *barbellata* Edgew. Scarce, 7,000' fide F.F.
Midlands Valley Aug.
6. " *grata* Wall. Sparing, 4-5,000' Gollan, Duthie
Tevrapur Stewart
7. " *nutans* Royle Sparing, 3-4,000' Rajpur, Duthie
Below Chajuri, Duthie. Stewart
8. *Anemone vitifolia* Buch. Ham. Common, 4-7,000' Leaves white below
Castle Hill, Witches Hill Middlands Seeds dispersal Nov. Dec. Ta
9. " *rivularis* Buch. Ham. Sparing, Jabarkhet ridges
Jabarkhet ridges Large. Fls & Fruit Aug. Damp places. Dhanaur
Nag Tibb.
10. *Thalictrum saniculaeforme* DC. Very common epiphyte, Rare
on trees & walls rarely in soil 6-7,000'
11. " *foliolosum* DC. Very common, 5-7,500' forest
shady places in Lundour
12. *Ranunculus diffusus* DC. Common in woods, 6-7,000'
Jabarkhet Fairy Glen
13. " *sceleratus* L. Sparing in wet places to 6,500'
Aqlar Witches Hill a water buttercup
14. " *laetus* Wall. Sparing, 5-7,000' Common Buttercup
Sainji Kempfy
15. *Aquilegia pubiflora* Wall var *mussuriensis* Royle. Only
one specimen in Herb. D.D. Columbine Dhanaur
Dhanaur in May May 9, 1942 Dhanaur
Gleny and Ted. 1942
16. *Delphinium denudatum* Wall Common, 5-7,000' May, June
Witches Hill, Jabarkhet

MAGNOLIACEAE

17. *Magnolia grandiflora* L. Cult. sparingly
 American Garden Reach Sumnerville
18. *Schizandra grandiflora* Hk. Very rare, one specimen Herb.
 Nag Tiba
19. " *propinqua* Hk. Rare, Duthie, 3-4,000' Mackinnon
 below Muss.

MENISPERMACEAE

20. *Cocculus laurifolius* DC. Common up to 5,000'
 Aqlar, Below Dhobi Chat Sainji
21. *Stephania elegans* H. and T. Sparingly, 5-6,000' Aug.-Sep
 Aqlar Sainji Mossy Falls Red fruit Slender elongated
 leaves entire
22. " *hernandifolia* Walp. To 5,000' July-Aug.
 Aqlar Sainji note pellate leaves like a garden nasturtium
23. *Cissampelos Pareira* L. Common to 5,000', sunny banks, cliff
 phatauli To Aqlar

LARDIZABALACEAE

24. *Holboellia latifolia* Wall. Shady ravines, 5-7,000'
 Jabarkhet. Mossy Falls Millau's Stream
 Fruit Aug. 1, 1944 The big tree on Dhavaulti Bungalow

BERBERIDACEAE *Barberries*

25. *Berberis ceratophylla* G. Don (*Lycium* Royle) Common in sunny places from 3-6,000' Small tree
Kempfy.
26. " *Chitria* Lindl. (*B. aristata* var. 1 F.B.I.) Common 6-7,000'
27. " *asiatica* Roxb. Sunny places from Dehra up to 6,000' Leaves very coriaceous; veins high
College ridge Subarkhet
28. *Mahonia nepalensis* DC. Common in ravines, 5-7,000'
Aloha Mossy Falls

PAPAVERACEAE

29. *Papaver dubium* L. var *glabra* Koch 5-6,000' Apr.-May
30. *Argemone mexicana* L. Above Rajpur to about 4,000'

FUMARIACEAE


31. *Dicentra Roylei* H. and T., Royle and Falconer Not recently found.
32. *Fumaria parviflora* Lamk. To be expected.
Woodstock School servants' quarters
33. *Corydalis cornuta* Royle One old specimen in Herb. D.
34. " *filiformis* Royle Old one in Herb. D. 1845, Sept
Capparidaceae
- 34a *Cleome viscosa* Raipur, Kempfy

CRUCIFERAE

35. *Nasturtium officinale* R.Br. Water Cress, occasional to 6000'
Kempfy - Aular Above Mossy Falls
36. " *montanum* Wall Not common
Deosari
37. " *indicum* D.C. Occasional to 6,000'
Midlands Stream, opposite Burning Ghat
38. *Arabis alpina* L. fide Martin
39. *Cardamine sylvatica* Link? Tehri Road at 7,000'
Just beyond Woodstock

40. *Cardamine impatiens* L. Spring weed Woodstock
C. flexnosa with. Subspec. *debilis* Nag Tiba
41. *Capsella bursa pastoris* Medic. Spring weed April
 Shepherd's Purse
42. *Sisymbrium Irio*, a spring weed Kandour-bazaar & G.R. Mich Gray 43
43. *Brassica Napus* L. Occasional escape
 Jubartchet
Lepidium pinnatifidum? Pepper grass Homestead

VIOLACEAE

44. *Viola serpens* Wall. In damp woods, 6-7500' Glabrous with runners
 To Aqar Sainji, Fir Clump.
45. " *canescens* Wall. In drier places about 7000'
 To Sainji, common.
46. " *Patrinii* DC. Dry ridges, 4500' 
 46A Is there a 4th, small flowers, acute leaves, no runners.
 46B


BIXACEAE

47. *Flacourtia Ramontchi* L. = *F. indica* (Burm f.) Merrill.
 Herit To about 4500'
 Kompty Sainji
48. *Xylosma longifolium* Clos To about 4500'
 Near Aqar below Childers. Akar Kajpur

PITTOSPORACEAE

49. *Pittosporum eriocarpum* Royle Up to about 5500' Rajpur Rd.
 Barlowganj to Kinraig Fruit hairy

Dipterocarpaceae

50. *Shorea robusta* Gaertn "Sal" To 4,000' Gregarious
 46 B  Flowers whitish with faint purple streaks on lower petal.

POLYGALACEAE

51. *Polygala crotolarioides* Ham. Common Apr.-Oct. dry places
Witches Hill Below Jabarkhet To Aglar
52. " *Tatarinowii* Regel (*triphylla* Ham. in part)
Aug.-Oct. Common, flowers pink Tiny, erect
Happy Valley Below Dhobi Bhat To Aglar
53. " *furcata* Royle "Muss". Herb. D
54. " *Gerardiana* Wall (*Abyssinica* R.Br.) Common in
Kumpty Below D.ghat, Arunachal Pink, erect, branched.
sunny, gravelly places, 3-8000'
55. *elegans* (*monopetala* Camb.) Muss. Sept. Herb. D
56. " *persicariaefolia* DC. Aug.-Sept. 5-7000'
Kumpty To Desari Erect, bract petaloid.
57. " *chinensis* L. Aug.-Sept. 3-5,000' Not rare.
Aglar. Common in Dehra

CARYOPHYLLACEAE

Flowers in cymes, leaves undivided, opposite, nodes swollen.

58. *Saponaria Vaccaria* L. Spring, field weed (= *Vaccaria*
segetalis)
59. *Silene inflata* Sm. Occasional 7000' = *S. venosa*
Nag Tiba
60. " *conoidea* L. To be expected in cultivated fields
D Dun to ?
61. " *Falconeriana* Benth. Aug.-Sept. in grassy pine forest
Look for west of college Jabarkhet blanks
62. *Echinis indica* Aug.-Oct., 5-7000' c. to J. Coll. *L. fimbriata* in
L. nutans fide Marten Nag Tiba Dudgeon.
63. *Gypsophila cerastioides* D. Don fide Marten, none Herb. D
64. *Cerastium vulgatum* L. Common Edghill Villa, Jabarkhet
(*C. triviale*, Link)
65. *Stellaria latifolia* Benth. Common, damp places, 7000'
ovate leaves. Jabarkhet
66. " *Webbiana* Wall. Sparingly, 5-7500' Jabarkhet
Kilburna.

67. *Stellaria media* L. Common weed
Tafton
68. " *paniculata* Edgew. Aug.-Sept. Jabbarkhet, 7000'
35 Nag Tida
69. " *aquatica* Scop. "Choor and Muss.", Royle
70. " *crispata* Wall. Sameson, Sept., 1845, *paniculata?*
Jabbarkhet
71. *Drymaria cordata* Willd. Dehra to 4500'
Bhantali; near Aglar 12 mi.
72. *Arenaria serpyllifolia* L. Common--April to July & a. leptocladus
Portulacaceae
Portulaca cleracea L. Dehra; Aglar

HYPERICINEAE

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73. *Hypericum perforatum* L. 3-8,000', common St. Johnswort
Herbaceous
74. " *cernuum* Roxb. March-May, 5-7000' on rocky banks
finest of the three shrubs.
75. " *lysimachioides* Wall Apr.-Aug. 5-8000' ^{sepals lanceolate}
stamens = to petal length
76. " *patulum* Thunb. Apr.-Aug., 5-7000', damp ravines
Petals twice as long as stamens
Sepals ovate
77. " *elodeoides* Choisy July-Aug., 5-8000', shady woods
Herbaceous. Fringing glands at base of uppermost leaves.

TERNSTROEMIACEAE

78. *Eurya acuminata* DC. Nov-Dec., 5-7000' Common, Mossy Falls
79. *Actinidia callosa* Lindl. Valleys below Muss. F. Flora
80. *Saurauja nepalensis* DC. Rare, 3-5000', above Dehra
81. *Thea sinensis* L. Cult. extensively in the Dun. An abandoned
or *Camellia Thea* plantation at 6000' near Landour Dhobi Ghat
(Link) Flowers Dec.-Mar.

MALVACEAE

82. *Malvastrum tricuspdatum* A. Gray Common American weed,
 = *coromandelianum* (L.) Clarke
 on plains and up to L. Dhobi Ghat
83. *Malva rotundifolia* L. An occasional weed "Cheeses"
Prostrate
84. " *verticullata* L. A common weed near houses and fields
Erect
85. *Sida acuta* Burman, From Dehra up to 5500'
86. " *spinosa* L. From Dehra up to 5000'
87. " *veronicaefolia* Lamk (*humilis* Willd) Dehra-5000' to 7,000'
88. " *obovata* Wall Dehra up to 5000' to 6,000'
 ? " *rhombifolia* L. Fls pink
 under *S. rhombifolia* as a var.
89. *Urena lobata* L. From Dehra to 5000' Toward Deasau
90. *Hibiscus cancellatus* Roxb. = *crinitus* Wall
 A yellow hollyhock Rare, 4500' towards Aglar
 long linear bracteoles; chor. 4y.
91. " *Solandra* L. Herit, Benog, below Muss, Duthie, Herb. I
 " *pungens* Roxb. To 4000' Very large & prickly
92. " *syriacus* L. Cult, Landour and Mussoorie. R.L.F. House
 " *furcatus* Roxb.?
93. *Bombax malabaricum* DC. From Dehra to 5000' Trunks v. prickly
 Leaves like Horse Chestnut *Stalactite*
 Roxb. *Cane*
94. *Kydia calycina* From Dehra to 4000'

STERCULIACEAE

95. *Sterculia pallens* Wall Above Rajpur, 4000', below Muss F.F.
 Leaves like big maple or sycamore
96. " *urens* Roxb. Above Rajpur, below Cloud End, Duthie
97. *Pterospermum acerifolium* Willd. Below Muss. F.F.

TILIACEAE

98. *Grewia oppositifolia* = *G. optiva* Drum ex Burret. Roxb. Up to 4500' Kempty Falls
Leaves shaped like *Celtis* but larger
99. " *elastica* Royle var *vestita* (sp. Wall.) To 4000'
100. *Corchorus acutangulus* Lam. Dehra to 5000' Monsoon season
101. *Triumfetta bartramia* L (rhomboidea Jacq) Common, monsoon
Fring yellow flos. prickly fruits 5500'
102. " *annua* L. To 4500'
103. " *pilosa* Roth "Jumna near Muss." Dehra student

LINACEAE

104. *Reinwardtia trigyna* "Basant" "Sunshine Flower" Common to 7000' Yellow Nov-March
105. *Linum mysorensense* Heyne Manor House Hill, Duthie, Oct. 1882
106. " *usitatissimum* L. Occasionally cult. or escape

MALPIGHIACEAE

107. *Aspidopterys Wallichii* Hook. To 4000', Rajpur; Aglar
Interesting winged fruits, big vine, pale silky leaves

GERANIACEAE

108. *Geranium lucidum* L. Common Apr.-May, 6-8000' Shun
109. " *nepalense* Sweet Common May-Sept, 5-8000'
110. " *Wallichianum* Sweet Common July-Sept., Jabbarkhet
Large stipules
111. " *ocellatum* Camb. March-May to 6000'
112. *Oxalis latifolia* H.B.K. Common, July-Sept. From America
field weed tropical

113. *Oxalis corniculata* Wall. Common, plains to 8000' yellow
114. *Impatiens cristata* Wall. Common, June-Sept, 4-8000' ^{Common} Yellow
115. " *bicolor* Royle (*amphorata* Edgew.) Aug-Oct. 5-8000'
 bronzy yellow
116. " *brachycentra* Kand K. Muss. fide M. R. Raizada whit
 not found
117. " *balsamina* L. Dehra to 5000' Pink
- " *scabrida* DC. Bhatuli Lang spurred yellow
- " *racemosa* DC. var. *ecalcarrata* Hook. Doolari

RUTACEAE

118. *Boenninghausenia albiflora* Reichb. Common in oak woods
 'Pisu-mar' white fls 4-8000' Aug.
119. *Zanthoxylum alatum* Roxb. Common below 5000' v. prickly
 tooth sticks
120. *Murraya Koenigii* Spreng. Common from Dehra to 5000' Curry Plant
 Evil scented
121. " *paniculata* (L) Jack (*exotica* L.) Dehra to 4000'
 beautiful white fls.
122. *Citrus medica* L. Cult. occasionally to 5000'

SIMARUBACEAE

123. *Picrasma quassioides* Benn. "Outer Himalaya above Rajpur" F.F

MELIACEAE

124. *Melia Azederach* L. Dehra Dun to 4000' "Persian Lilac" a gar
125. *Cedrela serrata* Royle Occasional 5-7000' d. lanthus-like leaves
 Largest wild pinnate forest

Aquifoliaceae

126. *Ilex dipyrena* Wall. Fairly common in ravines, 5-7000' Holly
127. " *odorata* Ham. Sparingly, 3-5000'

10.
CELASTRACEAE

128. *Euonymus tingens* Wall. Common 6-7000' in oak forests
129. " *echinatus* Wall. Sparingly on cliffs and trees
6-7000'
130. " *pendulus* Wall. Common, 5-7000'
131. " *Hamiltonianus* Wall. Doubtful, reported only by
Royle, perhaps from Nag Tiba

132. *Celastrus paniculata* Willd. Dehra to Rajpur *Vine*

133. *Gymnosporia rufa* Wall. "Below Zaberkheth" Duthie, F.F. ^{Cut in} Ed. II
134. *Flacodendron glaucum* Pers.

RHAMNACEAE

134. *Rhamnus virgata* Roxb. (*dahuricus* Pall.) Common, 3-7000'
135. " *triqueter* Wall. Common, 3-6000' Yellowish on lower
leaf surface
136. " *procumbens* Edgew. Like prostrate *Cotoneaster* but
more in shade. 6-7000'
137. *Sageretia oppositifolia* Brongn. Common to 6500'
Large scrambler in shrubby places.
138. *Helinus lanceolatus* Brandis, B.D. t 5000', sparingly
climber
139. *Ziziphus mauritiana* Lamk. (X. *Jujuba* Lamk.) DD to 4000'
"ben"
140. " *oxyphylla* Edgew. fide Marten.

VITACEAE

141. *Vitis repanda* W and A. Below 4000', one specimen below
Cloud End, 5-6000', Duthie.
Jharra pani
142. " *rugosa* Wall. Sometimes covering trees; to 6000'

Meliosma dillenifolia
resembles chestnut leaf

Dhanaulti

143. *Vitis parvifolia* Roxb. Fairly common 3-6000'
144. " *himalayana* Brandis (semicordata Wall) Common, 6-7000'
145. " *capreolata* (*Columella capreolata*) Don. Common on damp
Decorations banks and trunks of trees, 5-7000'
146. *lanceolaria* Roxb. 4-5000' Rajpur Road; Cloud End, Duthie.
147. " *affine* Gagnep. Like *capreolata* Don, but more herbaceous; leaflets more acuminate. North slope Landour, 6500' RRS
148. " *obtecta* Wall 5-6000' Barlowganj, Mossy Falls
149. *latifolia* Roxb. Dehra Dun, common
" *divoricata* Wall. Common, large vine on grassy + shrubby places.
150. " *divoricata* Wall Common, large vine on grassy slopes.
151. *Leea aspera* Edgew. DD to 6000' Fairly common
 Leea alata Edgew. Ramgarh + D.D.
152. " *Leea alata* Edgew. DD

SAPINDACEAE

153. *Aesculus indica* Coleb. Deep soil, 6-7000' Horse chestnut
 Cardiospermum Halicacabum L. Sainji 4000
154. *Acer oblongum* Wall. Very common DD to 6500' Pale Below
155. " *laevigatum* Wall. Springly, 6-7000' green
156. " *caesium* Wall Botanical Gardens, Muss. possibly planted.
 Dhanaulti - very large
157. " *pictum* Thunb. Springly, 6-7000' 5 points, green 526
 " ?

SABIACEAE

158. *Sabia campanulata* Wall. Springly, 6-7000'
159. *Meliosma pungens* Wall. Fairly common, 4-7000'

ANACARDIACEAE

- R. coccinea Leaves undivided.
160. *Rhus cotinus* L. Common in sunny places 3-6000' Simple leaf
161. " *Wallichii* Hook. Occasional, 6-7000' School. Poison
162. " *semi-alata* Murray Occasional, 3-5000' Wings on main leaf rachis
163. " *parviflora* Roxb. Rare, 3-5000' Common near Sainji & Kemptly.
164. *Pistacia integerrima* Stewart Common 3-6000' Kakar Singh
Sainji Bungalow
165. *Lannea grandis* Engl. (*Odina Woodier* Roxb) DD to 5000'
leaves pinnate
166. *Semecarpus anacardium* L. Rajpur, 3000' Leaves large, simple
V. poisonous

CORIARIACEAE

167. *Coriaria nepalensis* Wall Very common 4-7000' Often a small tree rather than a shrub "Masuri"

Leguminosae

168. *Argyrolobium flaccidum* J and S. Common in sunny places 4-7000' Yellow flowers Aug.-Sept.
169. *Crotolaria albida* Heyne Dry places 4-7000'
170. *Crotolaria alycynea* Schrank Rare Muss. Duthie to Aglar
RRS
171. " *sessiliflora* L. DD to 6500' Only blue sp.
172. " *sericea* Retz East f Landour, 5500', RRS
173. *Trifolium repens* L. Common, Apr.-Sept. White clover, dhob ghat.
174. " *pratense* L. Sparingly, 6-7000' Pink clover

175. *Trigonella gracilis* Benth. In sunny places, 5-7000' common
176. *Medicago denticulata* Willd. Sparingly from plains to 5000'
177. " *lupulina* L. Sparingly from plains to 6000'
- melilotus parviflora
178. *Indigofera trifoliata* L. Plains to 4000' Galar Red Fls.
179. " *Gerardiana* Wall. Common, 5-7000'
- " *Dosua* Ham. Jabalchet ridges Hardly shrubby
180. " *atropurpurea* Buch.-Ham. fide Marten
181. " *hebeptala* Benth 6-7000' fide Dudgeon
- " *heterantha* Wall. Fruits 6" long + deflexed.
 2/3 which it is near
182. " *pulchella* Roxb. DD. One by Royle marked "Muss."
183. " *hirsuta* L. DD and Kalanga Hill, Rajpur, 5000'
- Milletia auriculata* Baker Rajpur, Junji
184. *Tephrosia purpurea* Pers. DD to above Rajpur, 4000'
185. *Astragalus trichocarpus* Grah. Apr.-June, 5-7000'
186. " *graveolens* Ham. Sparingly, 4-6000' Tall Large stipules
- " *chlorostachys* Lindl. Nag Tiba
187. " *leucocephalus* Grah. Common on gravelly slopes
 DD to 7000' Fls. May.
188. *Robinia pseudacacia* L. Commonly cult. 5-7000' sunny places
 From U.S.A.
189. *Sesbania aculeata* Pers. var *elatior* Prain. "Near M" Gollan
 DD Herb.
190. *Lespedeza sericea* Miq. Common, 3-7000'
191. " *eriocarpa* DC. Sept. 4-7000', sunny places
192. " *Gerardiana* Grah. Aug -Sept 5-7000'
193. " *stenocarpa* Maxim. Common, 4-7000'

194. *Zornia diphylla* Pers. Plains to 5500' Aug.-Sept. Rains ephemeral
195. *Smithia ciliata* Royle Common, 3-6500'
196. *Aeschynomene indica* L. Plains to 4000' in rice fields
Tall, branched
197. *Uraria neglecta* Prain Aug-Sept., 506000'
198. " *lagopus* DC. Sept, 5-6000'
199. *Alysicarpus vaginalis* DC. Dehra to 4000' Ju
200. " *rugosus* DC. Dehra to 4000' July-Sept.
201. *Ougeinia dalbergioides* Benth. Kempty, above Rajpur, DD
202. *Desmodium sambuense* DC. (*floribundum* G. Don) Common, dry
grassy slopes, Aug.-Sept., 5-7000'
203. " *laxiflorum* DC. DD to 6000' Aug-Sept.
204. " *concinnum* DC. Dehra to 6000' Aug.-Sept.
Blue, Toward Aglar in pine forest
205. " *latifolium* DC. Dehra Dun to 3500'
206. " *triflorum* DC. DD to 4000'
207. " *microphyllum* DC. (*parvifolium* Baker) DD to 6000'
Aug.-Sept
208. " *polycarpum* DC. var *trichocaulon* Baker. DD to
5500' July-Sept.
209. " *podocarpum* DC. Common, 4-7000'
210. " *gangeticum* DC. Common to 5000' Small form
D. maculatum DC. Muss, May 5 J

200. *Desmodium oxyphyllum* DC. "Muss, Sept. 1" Herb. D., Royle.
Parker thinks this to be a form of *podocarpum*.
201. " *tiliaefolium* G. Don V. Common, June-Sept, 3-7000'
202. " *gyrans* DC. Aug.-Sept, 3-5000' To a glau
203. " *pseudo-triquetrum* DC. DD to Rajpur
204. *Cicer arietinum* L. Gram Cult on plains to about 4000'
205. *Vicia hirsuta* Koch March-May, to 6500'
206. " *rigidula* Royle, fide Marten, Aug.-Sept.
207. " *sativa* L. var *angustifolia*. Plains to 6500' Feb.-May
208. " *tenera* Grah. Sparingly, Jherrapani, Duthie, April
209. *Lathyrus sphaericus* Retz., Duthie, April, 5-6000' Herb. D
210. " *sativus* L. Occ. cult to 5000'
211. *Shuteria vestita* W and A., Sparingly, Nov. 3-7000' Like *Flemingia vestita* note bracts.
212. *Dumasia villosa* DC. Occasional, Aug.-Sept., 3-7000'
213. *Butea frondosa* Roxb. DD to 4000' April-May
214. *Pueraria tuberosa* DC. DD to 3500' Mar.-April
Erythrina Blake Hart Cult. occas. to 7,000' + *E. suberosa* Roxb. var. *glabrescens* (Grain) to 4,000'
215. *Phaseolus calcaratus* Roxb. Common, Aug.-Sept. Wild. to 7000'
216. *Vigna vexillata* Benth. Common, Aug.-Sept in grassy openings in the forest. DD to 7000' "Wild sweet pea"
Abrus pulchellus Wall. Dehra. Larger leaflets than in *A. precatorius*.
217. *Dolichos biflorus* L. "Muss" Duthie, Herb. D

219. *Dolichos falcatus* Klein. Benog, 6500' Aug.-Sept.
 = *Cantharospermum molle* ~~Her~~ Th Taub.
 Flos. large 1" yellow
220. *Atylosia mollis* Benth, Dehra to 6000'
221. " *scarabaeoides* Benth, fide Marten, not in Herb. D
222. *Rhynchosia himalensis* Benth, Sparingly, 3-6000' Aqlar to Deolsari
223. " *sericea* Span. July-Sept. to 7000'
224. *Flemingia fruticulosa* Wall, Common, Aug-Oct., 4-7000' leaves ovate
225. " *bracteata* Wight, Mussa, Jameson, Herb. D
 Leaves larger and acuminate
226. " *vestita* Benth., Aug.-Sept., Rather common, 6-7000'
 Brownish-red & red.
227. " *macrophylla* O. Kze. (*semialata* Roxb.) Dehra to
 5000' Apr-Aug.
228. *Dalbergia sericea* G. Don, Fairly common, 4-5000', Apr.-May
229. *Mucuna imbricata* DC. Brewery Rd. below Mussa Duthie, Herb D.
 Sub-family Caesalpinoideae. Prickly hairs on pod.
230. *Caesalpinia sepiaria* Roxb. DD to 5000' Mar.-June large
 Flos. yellow Pods smooth.
231. *Cassia Fistula* L. DD to 4000' Apr.-July Amaltas
232. " *absus* L. DD to 4000'? Aug.-Sept. Peculiar reddish flowers.
233. " *obtusifolia* L. Common at end of rains, DD to 4000'
 Tora L.
234. " *occidentalis* L. Common at end of rains, DD to 5000'
 Aqlar, pods flat
235. " *Leschenaultiana* DC. Dehra Dun to 4000'
236. " *dimidiata* Roxb. Dehra to 6000' Aug.-Sept.

247. *Bauhinia retusa* Roxb. DD to 4500' Sept.-Nov. Common below oak zone
248. " *Vahlii* W and A. DD to 4000' Apr.-June White fls. v large vine
249. " *variegata* L. DD to 4500' Feb.-April Tree
250. *Mimosa himalayana* Gamble (*rubicaulis* Lam.) DD-5000' Jy-Spt.
251. " *pubica* L. DD to 3500' July Sept.
252. *Acacia Catechu* Willd. DD to 4000' May-July
253. " *pennata* Wild. DD to 3500' June-Sept.
254. *Albizia* ^{= *mollis*} (*Julibrissin* Durazz) (*mollis* Boiv.) Up to 6500' April-June
255. " *stipulata* Boiv. DD to 4500'
256. " *Lebbek* Benth DD to 4000' ?

ROSACEAE

257. *Prunus cerasioides* D. Don 2-6500' Common, Oct.-Nov.
258. " *persica* Stokes DD to 7000' Jan.-May Cult or escape Peach
259. " *armeniaca* L. DD to 7000' Jan.-May Apricot
260. " *Cerasus* L. or *Avium* L. Cult--cherry
261. " *cerasifera* Ehr. DD to 7000' Cult.? Plum
262. *Prinsepia utilis* Royle Common 4-7000' H.-May
Spiny bush 3-6 ft

263. *Spiraea cantoniensis* Lour. Commonly cult. DD to 7000'
March-April or later
F.F. seems to call it *S. corymbosa* Roxb.
264. " *vaccinifolia* D. Don, 4-7000' May-July. Dry, exposed places
265. " *canescens* Don 6-7000' June-July. Jabbarkhet ridges
266. " *Lindleyana* Wall., 7000' Sparingly, May-June
267. " *bella* Sims 7000', sparingly in April and May
268. *Rubus paniculatus* Smith Common, 3-6500' April-June
Leaves undivided--a large climber
269. " *macilentus* Camb. Fairly common, 5-7000' April, June
270. " *ellipticus* Sm. Common 3-6500' Feb.-March Hairs red
271. " *fasciculatus* Duthie Like above, less common; in rich damp, shady places. 5000' March, April
" *lasiocarpus* Sm. Common D.D. to 7,000' apr.-may in hills "Anchu" Black caps.
272. *Geum urbanum* L. Sparingly, 6-7000' May-July
Fls yellow as in *Potentilla* but hooked pickles on fruit
273. *Fragaria vesca* L. 5-7000' April-June White
274. " *indica* Andr. Common, 4-7000' April-Aug. Yellow
275. *Potentilla fulgens* Wall. 6-7000' Aug.-Oct. Jabbarkhet ridge
276. " *nepalensis* Hook. 6-7000' July-Aug. Red, leaflets 5
277. " *argyrophylla* Wall. Rd. to Municipal Gardens, Sept. fide Marten 3 leaflets.
278. " *atrosanguinea* Lodd., "Muss" Jameson ?
279. " *fragarioides* L. 4-7000' June-Aug.

280. *Potentilla Kleiniana* W and A. DD to 6500' May-Oct.
281. *Agrimonia Eupatorium* L. Common, 4-7000' July-Aug.
282. *Rosa involucrata* Roxb. "Muss" 1845 Jameson
283. " *macrophylla* Lindl., 4-7000' May
284. " *moschata* Mill., Very common, April-June from 4-7000'
Large climber making thickets.
285. " *sericea* Lindl. 7000' May, June Upper Circular Rd. shade
Jameson; Mar. Dushie May.
286. *Pyrus Pashia* Ham., Very common, DD to 7000' March-April
Medlar
287. " *Malus* L. Cultivated to 7000' March-May Apple
288. " *communis* L., Cult. from DD to . March-April Pear
289. *foliolosa* Wall. Jabbarkhet, April, fide, Marten
290. *Crataegus crenulata* Roxb. DD to 6500' April, May
Hawthorn, red berries ornamental. v.c. Deesai
291. *Cotoneaster bacillaris* Wall. 5?-7000' April-June
Sageat
292. " *microphylla* Wall. Common at 7000' Prostrate
small red berries April-June
293. " *acuminata* Lindl. Rare, 7000' North slope, Landour
294. *Eriobotrya japonica* Lindl. Occasionally cult. to 7000'
Loquat Nov.-Dec.

SAXIFRAGACEAE

295. *Astilbe rivularis* Ham. 6-7000' Aug.-Sept. Shady forest
Talherkhet
296. *Saxifraga ciliata* Royal, 6-7000', common, banks and rocks
March-April
297. " *parnassifolia* Wall. 7000' Aug.-Sept.
yellow, erect, grassy hillsides
298. *Parnassia nubicola* Wall. 6-7000' Aug.-Sept. *white, erect*
solitary flos.
299. *Hydrangea altissima* Wall 5?-7000' Damp forests, May, June
near Spring House Jabarkhet *large large vine on trees*
300. " *hortensis* Sieb. Commonly cultivated
301. *Deutzia staminea* R. Brown 5-7000' April-May Common
302. " *corymbosa* R. Brown 6-7000' May-June
303. *Itea nutans* Royle Above Rajpur F.F.

- CRASSULACEAE

Usually fleshy leaves & grow on rocks.

304. *Tillaea pentandra* Royle, on rocks, walls, 3-7000' Aug-Sept.
305. *Kalanchoe spathulata* DC. Rājpur to 5000' Sept.-Nov.
Yellow, common Chor Vy.
306. *Sedum trifidum* Wall. Common epiphyte and lithophyte
6-7000' Aug.-Sept. Flowers white
307. " *linearifolium* Royle, Rocks, 5th mile, Tehri Rd. 6500'
308. " *rosulatum* Edgew. Rocks and walls, 5-7000' May 4, 2
309. " *adenotrichum* Wall. " " 3-7000' April-May
petals acute
calyx of 5 glandular

310. *Sedum multicaule* Wall. Rocks and walls, 4-7000' July-Sept.
Yellow

311. *Crassula indica* DC. Sparingly, 4-7000' Aug.-Sept. Pink
char. by. = *Sedum indicum* (Dene) Hemmet Aglar to 4500'

DROSERACEAE

312. *Drosera lunata* Buch-Ham. Common, 5-7000', dry, gravel slope
often with *Pedicularis carnea* ^{= *Drosera peltata* Smith}

MELASTOMACEAE

313. *Sonerila tenera* Royle Kalanga Hill, Rajpur, 3000' Aug-Spt

314. *Osbeckia stellata* Wall, 4-5500' Aug.-Sept. Very fine
flowers

LYTHRACEAE

315. *Woodfordia floribunda* Salisb. 3-5500' Feb.-April

316. *Punica Granatum* L. 3-5000' Apr.-May Pomegranate To Aglar

317. *Ammania pentandra* Roxb. Aglar Valley, 4000'

ONAGRACEAE

318. *Oenothera rosea* ^{= *Hartmanmia rosea*} Sims, Common, April-Sept. To 7000'

319. " sp. One or two species of large, yellow Evening
Primroses are found as escapes

320. *Epilobium roseum* C.B.C. (*Royleanum* Hausskn.) 7000'
Aug.-Sept.

321. " *brevifolium* Don, Hugel fide Hausskn. & Necht.

322. *Circaea alpina* L. Jabbarkhet, 7000' July-Sept.

CUCURBITACEAE

323. *Zehneria umbellata* Thw. (*Melothria heterophylla* Cogn.),
Common to 7000'

324. *Momordica dioica* Roxb., Aglar Valley, 4000'
" *charantia* Raipur

325. *Herpetospermum caudigerum* Wall.

326. *Trichosanthes palmata* Roxb. To 5500' June-Sept.
Luffa cylindrica Roem To 5500' Londcur

327. *Luffa cylindrica* Roem to 5500'

BEGONIACEAE

328. *Begonia amoena* Wall. 5-7000' Common, July-Aug Leaves
smooth

329. " *picta* Smith DD to 6500' Common, Jy-Aug. Hairy l

FICOIDEAE

330. *Mollugo pentaphylla* L. (*stricta* L.) 3-5000' Aug.-Sept.

331. " *nudicaulis* Lamk.

UMBELLIFERAE

332. *Hydrocotyle javanica* Thunb. var *nepalensis* Hook. Wet
places, 2-7000', July-Oct.

333. " *asiatica* L. (*Centella asiatica* Urb) DD to
6000' April-Sept.

334. " *rotundifolia* Roxb. "Weed in Muss. Bot. Garden
June, 1877 Herb. D

335. *Sanicula europaea* L. var *elata* Ham. Shady places, 4-7000'
June-Sept.

336. *Vicatia conifolia* DC. "Junna near Muss." Brandis ?

- Yellow, undivided leaves, often ²² linear in *Bupleurum*
337. *Bupleurum falcatum* L. Jabbarkhet, 7000' July, Aug.
338. " var *marginata*, 5000' above Halfway House
339. " var *nigrocarpa* fide Wolff. Duthie's spec. in DD Herb. 18-8-1879
340. " *lanceolatum* Wall. May-Sept., 4-7000' ^{Nag Tiba.}
Lower and middle cauline leaves broad
341. " *Candollii* Wall. 7000' "Muss" Herb. DD July-Sept
Fract. large.
342. " *tenue* Don, Common, 5-7000' July-Sept.
343. " *Maddeni* C.B.C. ^{"Muss"} Shady places, 5-7000' July-Sept. ^{Aug.}
<sub>leaves more acuminate
3 vertic. in valleys of fruit.</sub>
344. *Pimpinella acuminata* C.B.C. Shady places, 4-7000' July-Sept
345. " *diversifolia* DC., 4-7000' July-Sept.
346. " (*Acronema*) *tenera* Benth. "On oak, Muss" Falconer;
also found near Muss in Tehri at Nag Tiba and Deolagri
347. *Trachyspermum Falconeri* Folff. (*Carum Falconeri*) C.B.C.
In grass in pine forest, 6-7000' Sept.
_{filiform leaflets}
348. *Ligusticum elatum* C.B.C. Camel's Back Road
349. *Selinum tenuifolium* Wall, var. *elata*, C.B.C., 6-7000'
July-Oct.
350. *Anthriscus nemerosa* Spr. "Muss" Royle
351. *Oenanthe stolonifera* Wall. Wet places to 5000' June-Aug.
_{leaves twice pinnate}
352. *Heracleum cachemiricum* C.B.C. "Muss" Royle
353. " *candicans* Wall., 5-7000' May-Aug. <sub>Large leaves
white below.</sub>
354. " *canescens* Lindl. 6-7000' Aug.-Sept.
355. *Caucalis Anthriscus* Scop. Common-weedy places. 3-7000'
June-Aug.
356. *Eriocycla Stewartii* (Dunn) Wolff? 4000' Sept.-Oct. Rajpur Rd
Coriandrum sativum L. _{occ. escape}

Foeniculum vulgare Cult. yellow fil. form leaflets
23

ARALIACEAE

357. *Brassaiopsis aculeata* Seem. Arnigadh, Mossy F. Rare 5500'
358. *Hedera helix* = *H. nepalensis* L. Very common, 6-700'
Small branches prickly, horse-chestnut-like leaf.
359. *Pentapanax parasiticum* Seem. "Very scarce, Muss Hills" FF
seems to be found once by Mackinnon on a tree at
Jabarkhet in Oct.
360. *Heptapleurum venulosum* Seem. Kempty Falls, 4000'

361. *Aralia cachemirica* Don., Aug.-Sept, fide Marten Thavault.

CORNACEAE

- ^{alanguum}
362. *Marlea chinensis* (Lour) Parker (*begoniaefolia* Roxb), DD to
5000', Kempty, Aglar Valley, March-May
363. *Cornus macrophylla* Wall., Very common, 4-7000' April-June
364. " *oblonga* Wall., 3-7000' Sept.-Dec. Pale below
Hairy on both sides.
365. " *capitata* Wall., Common, 3500-7000' April-June

CAPRIFOLIACEAE

366. *Viburnum cotinifolium* Don. Very Common, tree-like at times
5-7000' April-May
367. " *stellulatum* Wall. Common, 6-7000' July-Aug.
368. " *coriaceum* Blume, Common 4-7000' May-June
^{*V. cylindricum* Ham.}
Surface of leaf varnished, glabrous
369. *Abelia triflora* R. Br. 5-7000' May-June leaves may be lobed.
370. *Lonicera angustifolia* Wall. 8000' uncommon, May-June
Thavault
371. " *quinquelocularis* Hardw., Very common, 5-7000'
April-June. Sometimes a tree
372. *Leycesteria formosa* Wall. Not common. 5-7000' June-July
Shady forests

RUBIACEAE

373. *Wendlandia exserta* DC. above Rajpur, 4000' Mar.-April
374. " *puberula* DC. "Kempty Bridge, Simla Rd." 4000'
May-June
375. *Clarkella nana* Hk. Rare, in rock crevices, 5-6000' Aug.-Sep.
sort of cliff Dry. crenata grows on dwarf white.
376. *Randia tetrasperma* Roxb., Common to 6500' April-June
377. *Hymenodictyon excelsum* Wall., DD to June-July
378. *Argostemma verticillatum* Wall., Commonly epiphytic,
2-6000' July-Aug.
379. " *sarmentosum* Wall., DD to 6000' July-Aug.
Broader leaves & larger flowers. Shady rocks white "
380. *Hedyotis stipulata* Br. 4-6000' July-Oct. decumbent, creeping
white
381. " *hispida* Retz. To be expected
382. *Oldenlandia corymbosa* L. 3-7000' Aug., -Sept. leaves linear.
383. *Oldenlandia coccinea* Royle, 4-7000' Open, grass ^{Bright red.} Aug.-Sept
384. " *nudicaulis* Roth. ^{Leaves 4 in a whorl unequal.} Kalanga Hill, Rajpur, 3000'
385. " *paniculata* L. ? or *biflora* L. ^{Leaves much wider.}
386. *Pavetta indica* L., Rajpur, Jameson, June, 1943 Herb DD
^{var. tomentosa Roxb. 3000'}
387. *Hymenopogon parasiticus* Wall., Jabarkhet, 7000' July-Aug.
^{See F.F. Jabarkhet on base of old tree.}
388. *Hamiltonia suaveolens* Roxb. Common DD to 6500' Sept.-Dec.
^{Bad smell when drying}

389. *Leptodermis lanceolata* Wall., Very common 3-7000' June-Sept

390. *Ophiorhiza fasciculata* Don, DD Herb. one marked "Muss".
Fascicles of flos. aggregated

391. *Anotis calycina* Wall., Sparingly, 3-7000' Aug.-Oct.
Ephemeral weed
Below Arnigadh Flowers white.

392. *Borreria stricta* G.W.F. Mey. (*Spermocoe stricta* L.)
To 6000' June-Oct.

393. " *hispidia* Mey. DD to 4000' June-Oct.

394. *Rubia cordifolia* L. Both red and white forms very common.
Common climbing Tehri Pt. Wadhwa July-Oct., up to 7000'
Jabarkhet Spring Sept. 23, 1950 Nilm

395. *Galium elegans* Wall. (*rotundifolium* L.), Common 4-7000'
July-Aug.

396. " *asperuloides* Edgew. (*triflorum* Michx.) May-June
Flos. red or white. 6-7000'

397. " *Aparine* L. Plains to 7000' sparingly

398. " *asperifolium* Wall, very common, 5-7000' June-Sept.

399. " *acutum* Edgew. fide Marten

VALERIANACEAE

400. *Valeriana Wallichii* DC., Common, 6-7000' March-May runner
Leaves simple

401. " *Hardwickii* Wall, 4-7000' July-Sept. leaves divided.
Pine forest above Agla

Dipsacaceae

402. *Morina persica* L. 6-7000' May-June (Benag) Below Chiders
Nag Tibo white + pink.

403. *Dipsacus inermis* Wall. Common, 6-7000' July-Oct.
Teasel

404. *Scabiosa Candolliana* Wall., 7000' B.L. Gupta Herb. DD
Native?

405 *Scabiosa speciosa* Royle 7000' Planted?

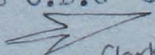
COMPOSITAE

- 406 *Adenostemma lavenia* O. Kze. (*viscosum* Forst.) Aug.-Oct. 5000'
Du var latifolia "
- 407 ~~Vernonia~~ *Vernonia cinerea* Less., DD to 6000' Aug.-Sept.
uplan
- 408 *Ageratum conyzoides* L. Common to 5000' May-Nov.
above Aglar
- 409 *Eupatorium Reevesii* Wall., 2-6000' Rare, Aug.-Oct.
- 410 *Solidago Virga-aurea* L. Common, 5-7000' June-Nov.
Golden Road
- 411 *Dichrocephala latifolia* DC., DD to 7000' June-Sept. Common
- 412 " *chrysanthemifolia* DC., 6-7000' July-Oct. Spar.
- 413 *Myriactis Wallichii* Less. Common, June-Sept, 4-7000'
Common rayed weed resembling Aster
- 414 " *nepalensis* Less. Bigger leaves, rounder heads.
- 415 *Rhynchospermum verticillatum* Reinw. 5-6000' July-Oct.
Heads on straight br. almost at right angles to main axis. Achenes peculiar.
- 416 *Tridax procumbens* L. DD to 5000' May-Sept.
Common near Aglar
- 417 *Chrysanthemum leucanthemum* Commonly cult. ^{occ.} escape 6-7000'
Daisy
- 418 *Aster molliusculus* Wall., Common in dry places, 5-7000'
 May-June
- 419 " *asperulus* Nees. Common, Aug.-Nov. 5-7000' Nag Tiba
 5000
 = *E. crispus* Tauer
- 420 *Erigeron linifolius* Willd. Plains to 7000' in weedy places
 May--Nov.
- 421 " *multicaulis* DC., 5-7000' Common-grassy. May-Oct.

- 422 *Erigeron canadense* L. Plains to 7000'
- 423 { " *mucronatum* DC. Escape Perennial white. Mussoorie Common.
" *mucronatum* DC. Escape. White Common in Mussoorie
- 424 " *annuus* Pers. Mussoorie Introduced weed
- 425 *Conyza japonica* Less., May-Nov. Along roads
- 426 " *stricta* Willd., Common, 0 to 7000' Aug.-Sept.
on rocks Jabburhit Yellow
- 427 " *rufa* Wall. Oct. 10, 1845 Jameson
- 428 *Blumea aromatica* DC., Rajpur, 3000' to 5500'
- 429 *Anaphalis adnata* DC., 4-7000' Aug-Sept.
Thick woolly leaves
- 430 " *araneosa* DC., 5-7000' Aug.-Sept. ^{= a. busua (Ham.) Handl. May.} ~~Narrow~~ leaves
say 2-3 in. long.
- 431 " *cinnamomea* C.B.C. 5-7000' " Lasting till Nov.
White Everlasting
- 432 " *triplinervis* C.B.C. fide Dudgeon ^{possibly} *adnata*?
widest leaves Dhanaulti
- 433 *Gnaphalium hypoleucum* DC., 3-7000' Sept-Oct.
Yellow
- 434 " *luteo-album* L. 0 to 7000' June-Aug.
- 435 *Laggera alata* Schultz-Bip. Sept.-Oct., fide Marten
- 436 *Inula cuspidata* C.B.C., 4-7000' Sept.-Nov. leaves green below.
- 437 " *Cappa* DC., Common, 4-7000' in Spet-Nov. " white " "
- 438 " *nervosa* Wall. Common, Spet, 6-7000'. Mistaken for
Rocks toward Liakoli an aster--white.

- 439 *Inula rubricaulis* C.B.C. Rare, 4500-6000' Ravine below
D.D. Herb. Arnigadh.
- 440 " *vestita* Wall., (*Vicoa vestita* Benth) 0 to 4000'
- 441 " *indica* DC. (*Vicoa auriculata* Cass.) 0 to 5000'
near Aglar
- 442 *Carpesium cernuum* L. 6-7000' Aug.-Oct.
- 443 " *trachelifolium* Less., 4-6500' Aug.-Sept
- 444 " *abrotanoides* L., to be expected N. Slope, Landour.
- 445 *Xanthium Strumarium* L., 0 to 6000' April to Nov. Cockleburs
Aglar V.
- 446 *Siegesbeckia orientalis* L. DD to 4000' Aug.-Oct.
Chor V. yellow Note glandular outgrowths on involucres.
- 447 *Eclipta alba* Hassk., DD to 4000' Aug.-Sept.
Chor V.
- 448 *Sclerocarpus africanus* Jacq. DD to 5000' July-Sept.
To Aglar
- 449 *Dahlia rosea* Cav. Common escape at 6-7000' July-Sept.
- 450 " *Juarèzii* Hort. Tree Dahlia Nov.
- 451 *Bidens Wallichii* DC., Very common. DD to 7000' Aug.-Sept.
small yellow flos.
- 452 " *pilosa* L., DD to 6000' Aug.-Oct. Flowers white
much larger; 3 parted leaves.
- 453 *Galinsoga parviflora* Cav., 4-7000' Very common on roads
- 454 *Cosmos bipinnatus* Cav., Commonly cult.. Sept.-Nov.
- 455 *Chrysanthellum indicum* DC., (*Jerrapani* - Royle)
DD to 4000' Aug.-Sept.
- 456 *Tagetes patula* L., cult. up to 7000' Marigold

- 457 *Gynura angulosa* DC., Landour Dhobi Ghat, 6500' Aug.-Sept.
- 458 *Emilia sonchifolia* DC. DD to 4000' Aug.-Sept. Pink
To aqlor
- 459 *Achillea millefolium* L. Not common. April-Oct. 6-7000'
Yarrow
- 460 *Artemisia parviflora* Roxb. 3-7000' Sept.-Oct. Wornwood
- 461 " *scoparia* Waldst. 0 to 65000' Aug.-Oct. Linear leaves
- 462 { " *vulgaris* L. sens lat. common
" [*Roxburghiana* Besser] 3500-7000' Very common.
Aug.-Oct. cf *A. vulgaris* L.
Another near Aqlor
- 463 " *vestita* Wall. Deosari
- 464 *Senecio chrysanthemoides* DC., Deolāri, 7000' ^{E. of Jabbarkhet}
^ yellow ^{Deosari trap}
- 465 " *nudicaulis* Buch-Ham., 5-7000' Dry banks, May, June
Young leaves red below
- 466 " *rufinervis* DC., 6-7000' Aug.-Nov.
In shady forest, leaves large, white below
- 467 *Echinops niveus* Wall. 4-7000' Aug.-Nov. Oct.
Globe Thistle
- 468 *Echinops echinatus* DC. DD. Kempty?
Lower levels, smaller heads
- 469 *Carduus nutans* L. Red flowered Thistle
- 470 *Cnicus Wallichii* DC., 3-7000' July-Oct. White or Pink Thistle
- 471 *Saussurea candicans* C.B.C. to 7,000'
- 472 " *albescens* H and T., 5-7000' Top of Benog
- 473 *Serratula pallida* DC., 5-7000' Sunny hillsides. May, June
Pink
- 474 *Catamixis baccharoides* Thoms., "Muss" fide Royle (Swaliks)

- 474 A *Ainsliaea aptera* DC., Common, 6-7000' in forest Mar.-Apr.
Aaron's Reed
- 474 B " *pteropoda* DC. Common 5-7000' " "
Petioles winged
- 474 C *Gerbera lanuginosa* Beth. Very common, steep banks. May-
Wool used for timber Nov.
- 474 D *Picris hieracioides* L., 6-7000' April-Sept.
Stems ± prickly, flos. yellow
- 474 E *Cichorium Intybus* L. Not common. To 6000' July-Sept.
Flos. blue, Chicory
- 474 F *Crepis japonica* Benth., to 67000' March-July *Lactuca like*
- 474 G *Pterotheca Falconeri* Hook. To 7,000' *small yellow flos in spring*
- 474 H " *foetida* L. "Fields below Muss" Marten. None at DI
Herb.
- 474 I *Hieracium vulgatum* Koch. Not common. 6-7000' May-Sept.
Weedy, yellow slightly prickly stems
- 474 J *Taraxacum officinale* Wigg. Plains to 7000' Mar.-Nov.
Dandelion
- 474 K *Lactuca longifolia* DC., 4-7000' Sept-Oct.
Wild lettuce
- 474 L " *dissecta* Don. 4-7000' April-Sept. *Small blue*
- 474 M " *macrorhiza* H. Very common, banks. 6-7000'
Aug.-Sept.
- 474 N " *sagittarioides* C.B.C 3-6000' May-June?
In pine forest  Clarke.
- 474 O (*Prenanthes*) *Brunoniana* (Wall.) 6-7000' Shady forest. Sept.
Seeds wanted by Dr. Babcock.
- 474 P *Sonchus asper* Vill. 0 to 7000' Roadside weed. May, June
Saw Thistles
- 474 Q " *oleraceus* L. Common 0 to 7000' May-Oct.
- 474 R " *arvensis* L. Common " May-Oct.

- 475 *Launaea nudicaulis* Less. 0 to 4000' April-June
 476 " *secunda* C.B.C. Charleville, Duthie, 65000'
 477 *Leucomeris spectabilis* Don. Above Rajpur, 45000' Large shrub
 478 *Tragapogon gracile* Don. 6-7000' Apr.-Oct. leaves linear; in grass
 479 *Tithonia diversifolia* Gray. Cult, DD to Rajpur

COMPANULACEAE

Blue bell Family

- 480 *Campanula colorata* Wall. 0 to 7000' Common, May-October

In Flora Simlensis, Collett unites canescens and cana with this. More study is needed to discover whether there is more than one good species here or not. If there are three forms, all are probably found in Muss.

- 481 " *latifolia* L. Vincent Hill fide Dudgeon, Jameson Escape?
 482 " *argyrotricha* Wall. Sept. On rocks, fide Marten
as 7 miles on Dhanaulti Rd
Kobelia triolata (Buch.) Ham. Rajpur Road.

ERICACEAE

- 483 *Pieris ovalifolia* D. Don. Common in forest. 5-7000' May

- 484 *Rhododendron arboreum* Smith. V common, 6-7000' May-May

- 485 *Monotropa uniflora* *Indian Pipe* *above Lintar on 1st shortest towards Nag Tiba sept 2, 1944*
 MENTRUPACEAE
 PLUMBAGINACEAE

- 486 *Plumbago zeylanica* L. DD to 4000' Cult June-July
white. Char Valley. Long glands on calyx
 PRIMULACEAE

- 487 *Primula petiolaris* Wall. Landour fide Dudgeon Apr.-May

- 488 " *floribunda* Wall. Common in damp places, 3-65000'
yellow Flowers found from Jan. to Dec.

- 489 " *denticulata* Smith. Near Dhanaulti. None DD Herb.
Purple

- 490 *Androsace rotundifolia* Hard. 5-7000' April-Aug.
- 491 " *langginosa* Wall. Common, 6-7000' April-Aug.
- 492 " *umbellata* (Lour) Merrill (*saxifragaefolia*
DD to 4000' *Early Spring*)
- 493 *Lysimachia japonica* Thunb. 3-7000' June-Aug. *Yellow*
- 494 " *alternifolia* Wall. 2-7000' June-Sept.
- 495 " *lobelioides* Wall 4-7000' May-Aug. Sparingly
- 496 " *evalvis* Wall. 5-7000' July-Dec.
- 497 " *pyramidalis* Wall. 4-7000' June-Oct.
- 498 " *chenopodiodes* Watt. 5000' between Muss and
Chajuri 31-711879 Duthie
- 499 *Anagallis arvensis* L. 0 to 7000' in fields. May-Oct.
red and blue forms
- 500 *Centunculus tenellus* Duby. Bleeker's Hill, south side.
Oct 20, 1879 Duthie. Herb DD

MYRSINACEAE

501. *Myrsine africana* L. Common, 3-7000' March-May
502. " *semiserrata* Wall. 3-7000' Jan-May
503. *Maesa indica* Wall. Kempty, 45000' Jan.-April
504. " *argentea* Wall. Sparingly, Mossy Falls, Jabbarkhet
4-6000' April
505. *Ardisia florabunda* Wall. Muss. Jameson 4.5.1845. Leaves oleander-
shaped, but larger. Also Dehra.

STYRACEAE

STYRACEAE

506. *Symplocos crataegoides* Buch-Ham. 3-7000' Common, May-June

EBENACEAE

(including *D. Kanjilali* Duthie)

507. *Diospyros montana* Roxb. 3-4000' April, May

OLEACEAE

508. *Jasminum dispersum* Wall. DD to 6500' April ^{Common in valleys below Dho. Ghat}

509. " *officinale*. Deosari and Dharassu 7000'

510. " *pubigerum* D. Don DD to 7000' May-June

511. " *humile* L. Very Common, 4-7000' April-June

512. " *officinale* L. Dhanauli; above Carneville app. Cult.

513. *Nyctanthes arbor-tristis* L. 4000' Above Rajpur, Kempty Aug.-Oct.

514. *Olea glandulifera* Wall 2500-6000' Apr.-May Mossy Falls

515. " *cuspidata* Wall. -25- 3-6000' April-May ^{Bhat Sanyal}
Wied. Blume

516. *Osmanthus fragrans* Lour. Occ. cult. Dehra to 7000'

517. *Ligustrum compactum* H. and T. DD to 6500' Cultivated

518. " *vulgare* L. The Mall Cult. 6500'

519. *Fraxinus floribunda* Wall.? Jabarkhet, 7000' ^{To Dhanauli 10 mi. out.}
Ash

APOCYNACEAE ^{all milky juice}

520. *Carissa opaca* Staff. Above Rajpur, 4000' April-June

521. *Vinca major* L., cult. escape. Landour ^{Periwinkle}

522. *Holarrhena antidysenterica* Wall. DD to 3500' May-June

513. *Tabernaemontana divaricata* (L.) R.Br. (*T. coronaria* Br.)
Above Rajpur, 3500' May-Aug.
524. *Trachelospermum fragrans* Hk. 3-6000' Moist shad. Apr.-Jun
525. *Vallaris Heynei* Spring Kempt, Falls ?
- ASCLEPIADACEAE Milkweed Family
526. *Cryptolepis Buchanani* Rand S. DD to 5000' May-June
Shiny leaves, paler below.
527. *Asclepias curassavica* L. DD to 5000' Chou Valley, by water
528. *Periploca calophylla* Falc. 4-6500' narrow shiny leaves.
Toward Aglar
529. *Marsdenia Roylei* Wight. Common, 3-7000' May*June Orange
fls.
530. *Heterostemma alatum* Wight. Scarce. Arnigadh, Mar, 1904
Kempty Duthie
531. *Dregea volubilis* Benth. 7000' Herb. D Deosari
532. *Telosma pallida* Craib (*Pergularia pallida* W. and A.)
@ to 5000' Aglar Valley July-Aug.
533. *Tylophora Giovanni* Dcne. 7000' Jabarkhet July Erect
Dark bl. red.
534. " *hirsuta* Wight. Mackinnon 30-7-1989 To 5000'
535. " *tenerrima* Wight 3-6000' July-Aug. Fls. dark purple
leaves narrowly linear.
536. *Hoya longifolia* Wall. 4500' July-Aug. Kempty, Aglar
Leaves very thick; a vine
look for fruit Hanging on cliff
537. *Ceropegia longifolia* "Edow Muss" Harbukh, Aug. 1900
538. " *Wallichii* Wight. The Park, Muss. 7000' Gamble
- LOGANIACEAE
539. *Buddleia paniculata* Wall. 4-7000' Apr.-May Deosari
540. *Gardneria augustifolia* Wall. Rare, 6-7000' May-June

GENTIANACEAE

540. *Exacum tetragonum* Roxb. Rare, DD to 5000' Sept.-Oct.
541. *Gentiana argentea* Royle. 7000' Landour, April-May
543. " *pedicellata* Wall. (*quadrifaria* Blume) to 5000' Apr.-July
544. " *decemfida* Ham. (*aprica* Dcne.), to ' Mar.-Apr.
545. *capitata* Ham. 6-7000' Aug-Oct. Duthie: Apr. ?
546. " *Kurroo* Royle 6-7000' Sept.-Oct. Largest, blue
547. Check " *stipitata* edgew. = *g. cachemirica* Clarke Miss. Aug. 5, 1844.
548. *Swertia purpurascens* Wall 5-7000' Sept. late Aug.
549. " *paniculata* Wall. Common, 5-7000' Sept-Nov.
550. " *cordata* Wall. 4-7,000' Aug.-Oct.
551. " *chirata* Ham. 5-7000' Sept.-Dec. Near Dhobi Ghat.
552. " *lurida* Royle, 6?7000' Sept.-Oct. Jabarkhet.
553. " *alata* Royle 4-6,500' Sept winged stems. Color like ④
554. " *angustifolia* Ham, var. *Wallichii* 4?-7000'
555. *Crawfordia japonica* S and Z. var *luteo-viridis* C.B.C.
Only one in Herb. D "Muss. Apr. 14, 1846"

*climbing
Crawfordia gentiana*

BORAGINACEAE

556. *Ehretia* (*acuminata* R. Br.) *serrata* Roxb., to 5000' May. Kempt.
557. " *laevis* Roxb. 0-4000' fide Marten, not at DD
558. *Cynoglossum zeylanicum* Thunb. (*furcatum* Wall.) to 7000'
Fairly common, July-Sept.
Pale fls Small nullet without margin.

539. *Cynoglossum lanceolatum* Forsk. (*micranthum* Deaf.)
0 to 7000' June-Aug. Small outlets.
560. " *microglochin* Benth. 6-7000' July-Oct.
Flos. deeper blue Calyx larger
561. " *Wallichii* G. Don, including *C. denticulatum* A. Dc.
larger blue flos.
- CONVOLVULACEAE *Morning glories*
562. *Ipomoea hederacea* Jacq., 0 to 6000' Aug.-Sept. Leaves lobed
Escape
563. *Ipomoea purpurea* Lam. Common-0-7000' Common cult. White
form with smaller flowers, Jabarkhet
564. " *hispida* R and S. (*eriocarpa* R. Br.) to 4500' Aug-Sept
Small flos.
565. " *pes-tigridis* L. 0-4500' Aglar Valley Sept.-
566. " *pilosa* Sweet. Gollan, "near Mus". Leaves very pale
below
567. " *coccinea* L., DD to Rajpur, 3500' Aug.-Sept. *Escape*
Bright red
568. *Convolvulus arvensis* L. Common, 0-7000' Apr.-Oct.
and Bindweed
569. *Porana peniculata* Roxb. DD to 4000' Oct-Dec.
570. " *racemosa* Roxb., Rare, "Muss" Valley west of Benog, Oc
Oct. 1899, Duthie, Aglar, 4-5000'
571. *Lettsonia Thomsoni* C.B.C. Rare to 4500' Aglar Aug.-Oct.
572. *Cuscuta reflexa* Roxb. DD to 6500' July-Oct. *Dodder*
573. *Evolvulus alsinoides* L. DD to 4000'? Mar.-Oct. *Blue*

SOLANACEAE

574. *Solanum nigrum* L. Common weed to 7000' June-Oct. nightshade
 " *tuberosum* L. cult. Potato
575. " *verbascifolium* L. DD to 4000'? Sept.-Oct. Shrub
576. " *pseudo-capsicum* L. "Jerusalem Cherry" Escape-
 to 6000' C. America
577. " *hispidum* RERS. Recent Mexican escape. Rajpur to
sprang 5500' Aug? -Dec.
578. *indicum* L. DD to 5000' a;; not common. May-Oct.
579. { " *surattense*
 " *xanthocarpum* Schrad., DD to 6000'
 = *surattense*
580. " *jasminoides* Part.
~~*seforthianum*~~ Andr. Cult. in Mussoorie A vine from
 S. Am. Fls. white.
581. *Nicandra physaloides* Gaerth. Common weed. 3-7000' July-
 From 2" to 8' tall blue
582. *Datura Stramonium* L. 3-7000' Waste places, June-Oct. White
583. *Physalis peruviana* L. An escape to 6500' Cape goosberry
584. " *minima* L. 0-7000' Field weed. July-Nov.
585. *Nicotiana plumbaginifolia* Viv. Rajpur
586. " *tabacum* L. Fls. pink. Occ. escape.
587. " *rustica* *yellow* To Deosau
588. *Lycopersicum esculentum* to 7000' Escape Tomato
589. *Cestrum nocturnum* L. Escape in Landour
590. " *Parqui* L. Herit. Cult. D.D. & Mussoorie *vide F.F.*
591. " *aurantiacum* Lindley Escape, Arnigadh Sept-Nov.
 Ashton Court Orange. Bloomed in May, 1944
592. *Capsicum* *chullis* To Aglar

Wulfenia Amherstiana Benth

leaf dark green above, bright purple below

Collett p. 352

Bank Road Aug. 17, 1950 fide Mehra

SCROPHULARIACEAE

593. *Verbascum Thapsus* L. 5-7000' Abandoned fields May-Sept.
Muller
594. *Scrophularia himalensis* Royle Weedy places near houses.
4-7000' June-Sept.
595. *Mazus rugosus* Lour. DD t 6000' May-Oct.
Kenilworth Ivy Cult. & occ escape Woodstock
596. " *surculosus* Don. 5-7000' Aug.-Oct. Creeping, blue and
white. End of rains, quite common.
Creeping blue & white
- 597
598. *Lindenbergia urticaefolia* Lehm. Common on banks and walls
to 7000' Apr.-Oct. Yellow
598. *Torenia cordifolia* Roxb. to 7000' July-Sept. Blue To Aglan
599. *Lindernia ^rcustacea* F. Muell (*Vandellia crustacea* Benth),
^ to 4000' Sept.-Oct.
600. " *nummularifolia* Wettst. (*Vandellia nummularifolia*
Don) DD to 7000'
601. *Bonnaya brachiata* Link and Otto, DD to 5000'. July-Oct.
602. # *veronicaefolia* Spreng. DD, Deolsari Aug.-Sept.
603. *Veronica persica* Poir Common -7000' May-Dec.
604. " *javanica* Blume 6-7,000'
605. " *agrestis* L. to 6000' March-Oct.
606. " *serphillifolia* L. reported by Royle only
607. " *undulata* (under *V. anagallis* L. In F.B.I.),
to 7000' in wet places. March-Oct.
608. *Buchnera hispida* Ham. to 7000' in grass. July-Oct.
609. "

610. *striga lutea* ^{= asiatica (L.)} Lour. to 7000' May-Sept. In grass. To *Aglae*
Root parasite
611. *Sopubia trifida* Ham to 7000' Grassy slopes. Kempty, Benog
Habarkhat, June-Oct. Yellow
612. *Leptorhabdos Benthamiana* Walp. 5-7000' ^{late} Aug.-Oct.
613. *Pedicularis gracilis* Wall. 6-7000' Aug.-Oct. rare
614. " *carnosa* Wall. Common, 5-7000' Aug.-Sept.
615. " " " " " " Yellow Nag Tiba
616. *Calceolaria gracilis* An escape on walls, Landour to 7000'

OROBANCHACEAE

617. *Aeginetia indica* Roxb. DD and Rajpur, Aug.-Sept. Blue

LENTIBULARIACEAE

618. *Utricularis orbiculata* Wall? Wall at Halfway House
tiniest herb - Seakole to Nagri

BESNERACEAE

619. *Didissandra lanuginosa* C.B.C. 4-6000' Sparingly. Aug. & Sept.
Rocks Kempty to Sampi, also above
620. *Didymocarpus pedicellata* R.Br. 4-6000' Aug.-Sept. ^{Reddish}
tubes
621. " *subalternans* Wall. Landour, E, Tehri Rd. 6500'
622. *Platystemma violoides* Wall. Common Tehri Rd. On rocks 7000'
August. Blue
623. *Chirita bifolia* Don. 5-6000' August, Sept.
624. " *pumila* Don. to 6000' July-Sept.
625. *Rhynchoglossum obliquum* Bl., 4-6000' Aug.-Sept. Blue

BIGNONIACEAE

626. *Amphicome emodi* Lindl. Deo Ka Tiba ("Pepper Pot")
 627. *Jacaranda ovalifolia* R. Br. A few cult to 5500'

ACANTHACEAE

628. *Daedalacanthus nervosus* T. Anders. DD Kempty 4500'
 Muss. Duthie Mar.-June
 629. " *purpurascens* T. Anders. fide F.F.
630. *Hemigraphis latebrosa* Nees. DD; "Muss, 5-5-1845" Jameson
631. *Aechmanthera tomentosa* Nees, Common, 3-6000' Aug.-Oct.
632. *Strobilanthes pentstemonoides* T. Anders. Rare to 6000' cult.
 Muss., FF. in rainy season.
633. " *dalhousianus* C.B.C. Common, 6-7000' July-Se
 Flos. aggregated
634. " *alatus* Nes, 6-7000' Aug.-Oct. Dhanakiti
 leaf base cordate; petiole winged.
635. " *glutinosus* Nees. 3-6000' Oct-Feb.-Apr.
 large flos., in winter.
636. " *angustifrons* C.B.C. DD to 6500' Nov.-March
 also in winter
637. *Barleria cristata* L. to 6000' July-Oct. larger flowers than in
 Kashmir.
 Blue purple, common to Deolsar.
638. *Justicia pubigera* Wall 4-7000' Aug. & Oct. often mixed with
Dicliptera. flos. larger.
639. " *simplex* Don Common 3-7000' June-Oct.
640. *Lepidagathis cuspidata* Nees, DD to 4000' Nov-Mar.
641. " *incurva* D. Don (*hyalina* Nees), to 4000' above
 Rajpur Feb.-March
642. *Asystasia macrocarpa* Nees, "near Muss", R.Lal, a low plant
643. *Adhatoda vasica* Nees, 0 to 4000' Dec.-Apr. and other times
 near Aglar

644. *Dicliptera bupleuroides* Nees, 0 to 7000' Very common
May-Dec.

645. *Rungia parviflora* Nees. Govind, 4000', Feb., 1904

646. *Peristrophe bicalyculata* Nees. "Muss" Gammie, Oct. 1891

647. *Phlogacanthus thyrsoiflorus* Nees. D.D. to 4000' F.F.

VERBENACEAE

648. *Vitex Negundo* L. DD to 5000' Mar.-June Blue

649. *Lippia nodiflora* Rich above Rajpur in wet place.

650. *Verbena officinalis* L. DD to 7000' April-July

651. " *bonariensis* L. DD to 5000' June-Sept.

652. *Callicarpa macrophylla* Vahl. DD to 4500' July-Nov.

653. *Clerodendron serratum* Spreng. "Muss" 1878. Nag Tiba
about 3-5000' May-Aug.

654. *Premna barbata* Wall. DD to 5000' April-May

655. *Caryopteris Wallichiana* Schauer, to 5000' March-April

656. " *grata* Benth. 4-6500' Jan.-April

657. *Lantana camara* L. Rajpur?

LABIATAE Mints

658. *Plectranthus Coetsa* Ham. Common, 3-7000' Sept.-Nov.

659. " *rugosus* Wall 3-6000' Sunny slopes Mar.-Oct.

660. " *Gerardianus* Benth 3-7000' Aug.-Oct.

661. " *striatus* Benth. 4-7000' Aug.-Oct.

662. " *maddeni* Benth. Nag Tiba Oct. 1877 Duthie

663. *Ocimum basilicum* L. to 5500' Sept.-Dec.?
664. *Geniosperum strobiliferum* Wall. Kalanga Hill, ^{Near} Rajpur.
Sept., 3200'
665. *Coleus barbatus* Benth. Rare to 5000' Sept. *Charvy 5000'*
666. *Pogostemon plectranthoides* Desf. to 5000' Apr.-Oct. OGrove
667. *Colebrookea oppositifolia* Sm. To 5000' Fl in winter
668. *Elsholtzia polystachya* Benth. 6-7000' Sept.-Oct.
669. " *flava* Benth. One in Herb. DD April, 1846
670. " *strobilifera* Benth 5-7000' June Oct.
671. " *cristata* Willd. One by Jameson, 17-9-1844
672. " *pilosa* Benth.
673. *Perilla ocimoides* Benth. DD to 4500' Apr-Oct. Sparingly
674. *Mosla dianthera* Maxim "Muss" Sept 10, 1846 Jameson
675. *Mentha sylvestris* L. 4-7000' July-)ct, wet places
676. " *viridis* L. *Sainqi one?*
677. *Origanum vulgare* L. Common drier slopes, 4-7000' Aug.-Nov.
678. *Micromeria biflora* Benth V.common 0 to 7000' Apr.-Oct.
679. *Calamintha umbrosa* Benth. V common DD to 7000' July-Sept.
School - Phanath
680. " *longicaulis* Benth Gupta, 7000' Sept, '27, HerbDD
taller
681. *Melissa parviflora* Benth. Whady places, 55-7000' July-Sept
682. " *flava* Benth
683. *Salvia pseudococcinea* Jacq. From Tropical America.

684. *Salvia glutinosa* L. Not common, 6-7000' Phedi
685. " *lanata* Roxb. Common, dry slopes, Apr.-Aug 5-7000'
686. *Nepeta distans* Benth. Muss, fide F.B.I. Vol 4, p. 660
Like next but more hairy Apr. 20, 1850 Jameson.
687. " *spicata* Benth. Muss, fide Jameson, 1850, Hills
beyond Muss." Duthie, Oct. 1877
688. " *ciliaris* Benth, "muss." fide, Gammie
689. " *ruderalis* Ham. DD to 4000' July-Oct.
690. " *graciliflora* Benth. Batta?
691. " *leucophylla* Benth, Common, paths, 4-7000' Aug.-Oct.
692. " *Govaniana* Benth. Sept. 1844 Jameson and Marten
693. *Scutellaria angulosa* Benth Common, April-July, 4-7000'
white or
694. # *grossa* Wall. 4-7000' June-Oct Blue Common.
695. " *repens* Ham. fide?
696. *Brunella vulgaris* L. Not Common, Mar-Oct. 6-7000' blue, purple
Dezani, Dhanaulti
697. *Craniotome versicolor* Reichb. Late Aug, *Oct. 5-7000'
698. *Anisomeles ovata* R.Br., DD to 5000' Aug.-Oct. To Aglar
699. *Stachys sericea* Wall Common, dry hillsides, 6-7000' May-Oct
700. " *melissaefolia* Benth. May-July
Like above but calyx teeth Δ , acute.
701. *Leonurus Cardiaca* L. Not common. 6-7000'
702. Motherwort

... to the learner
... of Measles (midgut) at the
... to the alimentary canal at the
... 65-80 Malpighian tubules per
... metamorphosis :-

703. *Lamium album* L. 5-7000' April-Oct. Pink below Jab. May, '31
704. *Roylea clypeata* Briq. (*elegans* Wall.) DD to 5500' May-Oct.
Chor Vy.
705. *Leucas lanata* Benth, Common, dry ridges, 4?-7000' May-Oct.
706. " *Cephalotes* Spreng. DD to 6000' A field weed, July-Oct
707. " *linifolia* Spring., "Muss" Oct. 4, 1846, Jameson
708. " *pilosa* var. *pubescens* Benth. DD to 3500'
709. *Teucrium Royleanum* Wall. 3-6000' May-June, dry woods
710. " *quadrifarium* Ham. Common ^{in forest} ~~wilds~~, Aug.*Oct. 4-7000'
711. *Ajuga bracteosa* Wall. DD to 5000' Apr.-Oct.
712. " *parviflora* Benth DD to 67000' Mar.-Oct.
713. " *decumbens* (Thun?) Wall. var. *vestita* Train. Adventive
714. *Colquhounia coccinea* PLANTAGINACEAE
715. *Plantago major* L. Common, 4-7000'
716. " *asiatica* L. var *densiuscula* Pilger, DD to 6000'

NYCTAGINACEAE

717. *Mirabilis Jalapa* L. Common escape, DD to 6500'. 14 o'clock
Marvel of Peru Below Dhobi Ghat, several colors
718. *Boerhaavia diffusa* L. (*repens* L. DD to 4000' Jan.-Dec.
Chor Vy.

AMARANTHACEAE

719. *Deeringia celosioides* Moq. DD to 5000' July-Oct. To Aglar
720. Vr *Celosia argentea* L. DD to 4000' Field weed. May-Oct.

711. *Bosea Amherstiana* Hook 4-6500' May-Oct.
712. *Cyathula tomentosa* Moq. Very common weed to 7000' Aug.-Oct.
713. " *capitata* Moq., Jabarkhet, Aug.- Sept. 6-7000'
714. *Aerua scandens* Wall. DD to 5000' July-Oct.
715. *Achyranthes bidentata* Bl. Common weed 4-7000' Aug.-Sept.
Reversed Spines
716. " *aspera* L. DD to 5000'? May-Oct.
717. *Alternanthera sessilis* R.Br., DD to 4000' Damp places, July
-Oct.
718. ~~*Amaranthus*~~ *spinosus* L. DD to 5000'
719. " *viridis* L. 0 to 7000'
720. " *paniculatus* *Cult in fields*
720. CHENOPODIACEAE
731. ~~check~~ *Chenopodium album* L. Common, 0-7000' May-Oct.
732. " *opulifolium* Schrad. to 7000' May-Oct.
often mistaken for album
733. " *ambrosioides* Common, Rajpur to 6500'
strongly pectinate
734. PHYTOLOCCACEAE
734. *Phytolacca acinosa* Roxb. *Reported as cult in mus. Bot. Gardens.*
- POLYGONACEAE
735. *Polygonum recumbens* Royle Common, 4-7000' July-Sept
736. " *chinense* L. Chady banks, 6-7000' Sept.*Oct.
Has bulbils which change color, white-blue as
they ripen. Largest

737. *Polygonum amplexicaule* Don. Common, red and white
6-7000' June-Oct.
738. " *nepalense* Meissn. (*alatum* Ham.) Very common weed
in unused fields 4-700' All year.
" var *Metziana* smaller.
739. " *capitatum* Ham. 6-7000' June-Nov. Fine rock plant
740. " *hydropiper* L. 0 to 7000' Sparingly, July-Oct.
741. " *serrulatum* Lagasc. (nive Schrenk)
742. " *lapathifolium* L var *nodosa* Muss fide?
743. " *plebejum* Br. fide?
744. " *lanigerum* Br. fide?
745. " *pterocarpum* Wall. 4-7000' June-Oct.
Climbing one near Tabarkhet
746. *Rumex hastatus* Don. V common. 0-7000' May-Dec.
747. " *nepalensis* Spreng. Common, waste spots, 4-7000' May-Oct.
748. *Fagopyrum cymosum* Meissn. Common 5-7000' July-Sept.
wild buckwheat
749. " *esculentum* Moench. Occas. escape about villages.

PIPERACEAE

750. *Piper Nepalense* Miq. Rare, Muss. Mackinnon and Jameson
751. " *brachystachyum* Wall Spar. Kempty, Mossy Falls
752. *Peperomia reflexa* Dietr. Sparing. Aglar, Duthie;
Arnigadh on trees in ravine, 4-5000'
Dorsari, round very thick fleshy leaves

LAURACEAE

753. *Cinnamomum Tamala* Nees Rare, ravines, 3-6000' Feb-May
754. " *Machilus orodatissima* Nees Common, ravines,
3-6500' April
755. " *Gamblei* King, A Doon tree
756. " *Duthiei* King, ex Hook Common, 5-7000' Apr.-May
757. *Phoebe pallida* Nees / handour. not lanceolata app.
758. ? *Phoebe lanceolata* Nees. 3-6000' Spar. Feb.-June
759. *Litsaea lanuginosa* Nees. Spar. usually 2-4000' Feb.-Mar.
760. " *elongata* Wall. Shady ravines, 5-7000' Mar.-Apr.
761. " *umbrosa* Nees. (consimilis Nees) 4-7000' Mar.-May

PROTEACEAE

762. *Grevillea robusta* A Curr. Occ. cult. to 6000'

Thymeleaceae

763. *Daphne (canhabina)* Wall.) Common undergrowth, 5-7000' Mar-Apr.
Nov.
764. " *papyracea* Dcne.

765. *Wikstroemia canescens* Meissn. Dry ridges, 4-7000' Apr.-Aug

ELAEAGNACEAE

766. *Elaeagnus umbellata* Thumb. Deosari
- omit. " *latifolia* L. "Muss" a forestry student

LORANTHACEAE

767. *Loranthus vestitus* Wall. 4-7000' On oak Woodstock, was host to *Viscum articulatum* which bore *Eria alba*, an orchid. Flowers usually in Oct-Jan.
768. " *longiflorus* Desr. DD to 7000' Nov.-June
769. *Viscum album* L. Sold by coolies at Christmas. None in DD
770. " *articulatum* Burm. Collected once in Landour, 6000'
771. " *japonicum* Thunb. Common on *Quercus incana* to 6500' May-July

SANTALACEAE

772. *Osyris arborea* Wall. 3-6000' Flowers most of the year

EUPHORBIACEAE

773. *Euphorbia hypericifolia* L. 0 to 6000' Apr.-Oct.
774. " *Royleana* Boiss. Sunny slopes, 3-4500' June-July
Caetuo like Tree
775. " *cognata*
776. " *pilosa* L. Common, 4-7000' May-June-July
777. " *Helioscopia* L. *to be expected*
778. " *hirta* L. 0 to 4000'
779. " *geniculata* Kl and Garcke DD to 5000'
~~*Sikkimensis*~~ (*Same as 3?*)
780. " *Sikkimensis*
781. *Sarcococca saligna* Nuell. Common in oak forests, 5-7000' Flowers most of the year

782. *Bridelia montana* Willd. to 4000' April-May

783. *Andrachne cordifolia* Muell Common 5-7000' May-Sept.
784. *Buxus Walliciana* Baill. Few seem to be cultivated
A grove at Talki
785. *Phyllanthus parvifolius* Ham Common in forest, 5-7000' Aug
-Oct.
786. " *Emblica* L. Spar. to 4000' dry forest, Mar.-May
Amla
787. " *niruri* L. Weed on rains
788. " *urinaria* L. Weed in rains
789. *Bridelia montana* W. & A. above Rajpur to 4,000'
790. *Glochidium velutinum* Wight. Spar. to 5000' May-June
791. *Flueggea microcarpa* Blume Aglar to 4500' May-July
792. *Putranjiva Roxburghii* Wall "Lower valleys about Muss" Marten
793. *Acalypha brachystachya* Hornem., 4-7000' near houses July-0
794. " *ciliata* Fossk., to 4500' ? July-Oct.
795. *Mallothus philippinensis* Muell. to 4500' Sept.-Jan.
796. *Sapium insigne* Benth to 5000' Dec.-Mar. outer hills
To Aglar
797. *Daphniphyllum himalayense* Muell, Shady ravines, April-May
Below Hostel 4-6000'
798. *Jatropha Curcas* L. DD to 4000' In fruit or fl all year
799. *Ricinus communis* L. 0 to 4000' Frequently self sown
Castor Oil

URTICACEAE

- check. *Ulmus laevigata* Royle Rare, 4-6000' Feb.-March
- 801 " *Wallichiana* Blanch ?
- 802 *Celtis eriocarpa* Dcne , 3-6000' Spar Feb.-March
- 803 " *tetrandra* Roxb. Spar.-0 to 6000' March
- 804 *Trema politoria* Planch., to 4000' April-June
- 805 *Cannabis sativa* L. Common weed to 7000' July-Aug.
Marihuana Indian Hemp
- 806 *Morus serrata* Roxb. 4-7000' Spar. April-May *Mulberry*
- 807 *Morus Alba* L. Plains to "
- 808 " *indica* L. Plains to 6000' Feb.-March
- 809 *Ficus clavata* Wall. Kempty, 4500' Fruit-March-June
- 810 " *foveolata* Wall DD to 7000' Fr. June-Oct.
- 811 " *palmata* Forks 0 to 7000' Fr. June-Oct.
- 812 " *Cunia* Ham. DD to 4000' Fr. usually Aug. pSept-
- 813 " *nemorialis* Wall 3-7000' Fairly common. Fr. Aug.-Nov.
- 814 " *Roxburghii* Wall 3-5500' Fr. March, April and Aug.
- 815 " *religiosa* L. 0 to 4000' Usually planted. Fr. Apr.-May
- 816 " *benghalensis* L. Rajpur, 3500' Fr. Apr.-May
- 817 " *Rumphii* Blume Above Rajpur, 3500' *Sainji*

818. *Urtica dioica* L. Very common, 6-7000' Aug.
819. *Girardinia heterophylla* Dcne., V. Common, 7000' Aug.-Sep
820. *Pilea umbrosa* Wedd. Common in shady places, 4-7000' Ju-Se
821. " *scripta* Wedd. Less c m, shady places " June-Se
822. *Lecanthus Wightii* Wedd. Common, also epiphytic to 7000'
Woodstock School Covered Way July-Sept.
Sept. 1950
823. " *Wallichii* Wedd. Common in wet places to 7000'
Stream Bed - Sept. 1950
824. *Elatostemma sessile* Forst. 4-7000' Wet places, June-Se t
825. *Boehmeria platyphylla* Don var *scabrella* Wedd. Common,
DD to 6000' Apr.-Aug.
826. " *rugulosa* Wedd. Rajpur to 6000' Kincaig
Aug.-Sept.
827. " *macrophylla* Don Above Rajpur, Kanji Lal
828. *Gonostegia (Pouzolzia) hirta* Miq. Fairly common to 7000'
June-Sept.
829. *Pouzolzia indica* Gaud. Below 5000' June-Sept.
830. *Villebrunea frutescens* Bluem. DD to 5000' April-May
831. *Debregeasia hypoleuca* Wedd. V. common Dun to 7000' Mary-
April
832. " *velutina* Gaud. Above Rajpur to 4500' July-Aug

52
JUGLANDACEAE

837. Englehardtia Colebrokiana Lindl 4 -6000' March-April

838. Jugland regia L. 4-7000' Usually planted. Feb.-April
Walnut

MYRICACEAE

839. Myrica esculenta Ham. ex D. Don 4-6000' Sept.-Dec.
Kaiphul

CUPULIFERAE

836. Alnus nepalensis Don Upper chakkar. Landour, 7500' Sept-
alder Dec

837. Betula alnoides Ham & Dhanaulti
Beech

838. Quercus dilatata Lindl., Spar Landour, 6-7000' Apr-May
Dhanaulti = common.

839. " incana Roxb. Commonest tree April-May

840. " semecarpifolia Sm. Nag Tiba

841. " glauca Thunb. 3-5000' Kempty Falls Rd. Mar.-June

842. " serrata Thunb. Cult. fide F.F.

843. Corylus colurna L. A few cult. 6-7000' Mar-Apr.
Hazel

844. Carpinus viminea Lindl. Fairly common, 5-7000' Mar-Apr.
Hornbeam

845. " faginea Lindl. 55---7000' North slope, Landour
March-April

846. Castanea sativa Mill. A few planted, to 7000' Deolam
Chestnut

SALICACEAE

847. Salix elegans Wall. Rare Jabbarkhet, 7000' Common Dhanaulti

848. " Wallichiana Anders. 6-7000' Mar.-April

849. " babylonica L. Planted to 7000' Weeping Willow

850. " daphnoides Vill fide Dudgeon

851. " tetrasperma Roxb. DD to 7000' Feb.- April

- 452 Salix alba L. Fide Marten
 453, " acmophylla Boiss Mackinnon 10.4.1899
 454. Populus ciliata Wall 6-7000' Spar. March-April *Poplar*

CONIFERAE

455. Cupressus torulosa Don. 6-7000' Cult. Dec.-Feb. Cypress
 456. " funebris Endl. Occas. cult. 5-7000' Funereal C
 457. Thuja orientalis L. Cult. 0 to 7000' Arbor vitae
 458 Juniperus communis L. Cult. 6-7000' Juniper
 459. Taxus baccata L. 7000', Few probably planted Yew Oakville
 460 Pinus excelsa Wall. Some planted. 7000' Blue pine
 461. " longifolia Roxb. V. common to about 7000' on dry
 slopes Feb.-Apr
 462. Cedrus (Libani Barrel var Deodara Hook.) deodara, Loudon
 Common, 6500-7500'
 463. Picea Morinda Link. Occas. probably planted, 65-7500_
 Spruce
 464 Abies Pindrow Spach " " Fir
 465. Cryptomeria japonica Musc. Bot. Gardens
 466. Ginkgo biloba " " "

54
ORCHIDACEAE

86. *Oberonia pachyrachis* Reichb. On trees DD to 4000' Fl winter
87. *Microstylis Wallichii* Lindl. 4-7000' F. common, July-Aug.
= *Malaxis acuminata* Don.
88. " *cylindrostachya* Reichb. 6-7000' July-Sept.
one leaf.
89. " *Mackinnoni* Duthie Rare, 3-6000' 2 ovate leaves
near base Nag Tiba Small v. small 2 leaves
(*Malaxis*) *muscifera* Dhamult.
90. *Liparis glossula* Reichb. 5-7000' Forest humus. Aug.
91. " *rostrata* Reichb. 6-7000' July-Aug.
92. " *paradoxa* Reichb. Muss., 2-8-1899 Mackin. Nag Tiba
93. *Oreorchis indica* Hook Muss, 1842 Herb BB Nag Tiba May-Aug.
94. " *Rolfii* Duthie Nag Tiba June 3000'
95. *Spiranthes sinensis* Ames (*australis* Lindl) Spar. 7000'
Jabarkhet, Aug.-Sept. Cemetery
Pillar marker Chir spot Flowers pink.
2.5 mi. east from W. on
higher Jabarkhet ridges in sunny grass.
Oct. Christopher Base 1944.
96. *Dendrobium alpestre* Royle near Muss Sept, 1899 Mack.
RRS Jabarkhet
97. *D. bicameratum* Lindl. 4,000' Aug. Mackinnon
98. " *amoenum* Wall near Muss 4000' Macki. June
99. " *crepidatum* Lindl. 305000' April Gollan
- check 12. *normale* Falc. 4-5000' Shady ravines on south.
Mackinnon. slopes
100. *Neottia listeroides* Lindl. Jabarkhet, 7000' Sept. 1936
white
- check. *Listera microglottis* Duthie 5-6,000' Aug. white
- Shaw
101. *Listera microglottis*, Duthie 5-6000' August
102. *Bulbophyllum polyrhizum* Lindl. 4000' near Muss. Apr.
Mackin.

Coelogyne ochracea "Bethel's Orchid"

Mar. - Apr. Cinnamon Tree - on overhanging
rocks

R.L.F.

86. *Goodyera biflora* Hool. 6000 6-7000' July, 1901 Mackin.
87. " *cordata* Benth. Near Muss.
88. " *foliosa* Venth. 5500' Oak forest. Aug. 1901
Mackin.
89. *Goodyera repens* R. Br. Castle Hill, Jabh. Aug.
65-7000'
90. *Pachystoma sessile* Reichb. A DD plant but one labeled Muss.
91. *Cephalanthera ensifolia* Rich. 6 -7000' May-Aug.
92. *Epipactis latifolia* All. var *herbacea* Hook. Common
6 -7000' July-Aug.
93. " *veratrifolia* Boiss (*consimilis* Wall. nom. nudum)
"Below Muss." Feb.-March
94. *Phaius albus* Lindl. "Muss" Aug. 1845 Herb. DD
95. *Pholidota articulata* Lindl. 4000' near Muss, July, 1898
Mackin.
96. " *imbricata* Lindl. Near "Muss". 1900
97. *Calanthe tricarinata* Lindl. One spec. in Herb. DD Aug. 1843
98. " *alismaefolia* Lindl, near Muss, Aug. 1900 Fairweath
er
99. " *pachystalix* Reichb. 6000' Mackinon July, 1898
100. " *plantaginea* Lindl. Mar. 6000' North slope, Landour
101. *Herminium angustifolium* Benth. V. Common in grass; epiphyt
July-Sept.
102. " *gramineum* Lindl. On rocks, 6-7000' July

903. *Herminium Mackinnoni* Duthie Rare, 6-7000' Aug.
904. *Habenaria Elizabethae* Duthie Usually epiphytic, 6-7000'
July-Aug. Green 1-3 leaves.
905. " *intermedia* Don, Common, July-Aug. 6-7000'
Grassy slopes "Reindeer
Orchid"
906. " *pubescens* Lindl 4000'
907. " *densa* Wall. Near Muss. Mackinnon
908. " *furcifera* Lindl. 55-5600' DD to 7000' July-Aug. ^{Mag Tiba} ^{above} ^{Deolsari}
~~Sept.-Oct.~~
909. " *stenopetala* Lindl. 55-6500' Sept.-Oct.
910. " *Susannae* Lindl. Rare, 4-6000' Sept. largest flos.
911. " *pectinata* Don (non F.B.I.) 6-7000' Aug. Reindeer
prong but smaller
912. " *marginata* Coleb. 6-7000' Rare, Aug. ^{Mag Tiba 4-6000'}
Subscapigerous - 2-3 leaves near
ground. ^{only 2-3 bracteal leaves}
^{above.}
913. " *Aitchisoni* Reichb. 6-7000' Aug. ^{2 basal leaves.}
Flos. green
914. " *latilabris* Hook. Common grassy banks, 6-7000'
Spurs erect; bright July-Aug.
yellow petals.
915. " *acuminata* Lindl. V common, grassy banks, July-Aug
916. " *arcuta* Hk, f. "Muss range" DD Herb
917. *goodyerioides* Don, DD to 6000' Aug. ^{Big plant short, rounded spur} Bhatnagi
918. " " var *affinis* Lindl 6000' July, 1898 Mackin.
^{smaller. Flos. white}
919. " *galeandra* Benth. Rare 55-6000' Aug. ^{Pink} ^{Jabarkhet} Sanji

930. *Cymbidium macrorhizon* Lindl. Benog 6,500' 24.7.99
 Mak.
931. " *cyperifolium* Wall. 6-7,000 Apr Mak.
932. " *Mackinnoni* Duthie 6,000 Jan.-Feb.

920. *Habenaria Griffithii* Hook f. 6-7000' March-Apr.
921. " *graveolens* Duthie. Rare, DD to 6000' July Mackin.
922. ^{check} " *plantaginea* Lindl. Kalanga Hill Mackinnon 10-10-01
923. ~~*Eria alba* Lindl.~~ Rocks and trees, 5-7000' June-Sept
Dendrobium alpestre
924. *Hemipilia cordifolia* Lindl. 6-7000' in forest July-Aug.
One basal leaf Red
925. ~~*Satyrium nepalense* Don.~~ Common grass, 6-7000' Aug.-Sept.
Satyrium
926. *Eulophia herbacea* Lindl. Badraj, Mackinnon June-July
927. " *Mackinnoni* Duthie DD. One marked Muss. DD Herb.
928. " *Hermusci* Duthie 6,000' Mack. 23-3-99 Oct. 1942
929. " *campestris* L. Nag Tiba. 9-10,000' 3-6-81 Pollan.
930. *Vanda cristata* Lindl. Near Muss. 4000' June, 1898
^{look up}
931. *Ornithochilus fuscus* Wall. "Below Muss" July, 1900 Mackin.
932. *Galeola Falconeri* Hook, "Muss" July, 1899 also 1900 DD Herb.
933. *Apophyllorchis Gallani* Duthie - Nag Tiba 9-10,000'
937. *Nervilia Aragoana* Gaud (*Pogonia flabelliformis* Lindl.)
In forest, 5-7000' June, July
936. *Pogonia Gammieana* Hook. 3000' June, 1899 Mackin.
939. " *Mackinnoni* Duthie, 55-6000' June-July, Mackinnon
940. ^{check} *Aerides affine* ^(multiflorum) 3-4000' Marten
941. ^{check} *Anoectochilus Roxburghii* Lindl. Landour Shady ravine
942. *Orchis latifolia* L. Muss, 1880 Herb. D
943. " *Chosua* Don. "Near Muss." King
944. *Cypripedium cordigerum* Nag Tiba 9000' June.

SCITAMINEAE

945. *Globba racemosa* Smith. DD to 5000' Aug.-Sept. Orange
946. *Roscoea alpina* Royle Rare, 7000' Jabarkhet ridges
947. " *procera* Wall. V. common, 5-7000' July-Sept. Peach
948. *Cautleya lutea* Royle, often epiphytic, 6-7000' July-Aug.
949. " *petiolata* Baker Aug. 15, 1942
950. " *spicata* Baker *Dhanaditti*
951. *Curcuma angustifolia* Roxb. Aglar, 3-4000'
952. " ? Aglar, Se t. 1895 Mackinnon
953. " *longa* L. "Haldi" Tumeric Cult. up to 5000'
954. *Zingiber chrysanthum* Rose. Kempty Falls

955. *Costus speciosus* Smith DD to above Rajpur

956. *Hedychium acuminatum* Wall 6-7000' Aug.-Sept. ^{" Wild} _{ginger.}
Common on steep slopes pale yellow
957. " *coccineum* Ham. Muss. Aug., 1843 Herb. D Chajuri
958. " *angustifolium* Roscoe

HAEMODORACEAE

959. *Mondo (Ophiogonon) intermedium* Bailey 5-7000' Often
June-July
960. " *Wallichianum* Bailey, 6-7000' Aug. Forest humus
Bracts longer, ~~longer~~ linear. Flor. small.
961. " *planiscapum* Bailey 6-7000' July-Aug.

HYPOXIDACEAE

962. *HYPOXIS AUREA* Lour. Common in grass 5-7000' June-Aug.
yellow
963. *Curculigo orchidoides* Gaertn. "Below Muss" Harsukh, DD He.
Woodslock College

IRIDACEAE

964. *Iris nepalensis* Don, 6-7000' Ridges, April-June Fleshy
No thick rhizome. roots

DISOCOREACEAE

965. *Dioscorea deltoidea* Wall. 6-7000' May-July Spar
May-July
966. " *bulbifera* L. (*sativa* L.) DD to 6000' July-Aug.
967. " *melanophyma* Prain ex Burkill, 4-7000' Curious bulb-ils
Aug.-Sept
968. " (*daemona* Roxb.) *pentaphylla* L. DD to 4000' Sept.
969. " *belophylla* Voigt. DD to 5000' Sept.-Oct.

AMARYLLIDACEAE

970. *Zephyranthes* ^{*macrosiphon* Baker?} Rosy and white ones cult. and escapes
971. *Hemerocallis fulva* "Day Lily", cult. July-Aug.
972. *Agave cantala* ^{*wrightii* A. Americana.}

LILIACEAE

973. *Smilax parvifolia* Wall. Common, 4-7000' April-May
974. " *aspera* L. Common, dry shrubby places 3?-7000'
Sept.-Nov. Fruit red in Aug.
975. " *prolifera* Roxb. (*Wallichii* A. DC.) Kempt, 4500'
976. " *indica* (Vitm) A DC to 5000'
977. " *indica* (Vitm. ADC to 5000' Replaces *achreata*?
978. " *ochreata* DC (*Roxburghiana* Wall.) DD to 5000'
979. " *vaginata* Desc *Dhanaulti* in forest.
970. *Asparagus adscendens* Roxb DD to 4?000' Nov.
981. " *Curillus* Ham. 2-6000' Com. pines, north slope,
Landour. July
982. " *filicinus* Ham. Rare, 6-7000' June

984. *Polygonatum multiflorum* All., to be expected ^{colony Top Tea 1946}
986. " *verticillatum* All., 6-7000' Spar. June-July
987. " *cirrifolium* Royle, 5-7000' June Note leaf tips
988. *Allium lilacinum* ^{onion} & *Bieb.* Rocky hills and in rainy season ^{near Charville}
6-7000' Larger bulbs than *Kash. rubellum*
989. *Gagea lutea* Schult "Muss" April, 1845 Jameson
990. *Lilium polyphyllum* Don, N. slopes in rains Marten
991. " *giganteum* Wall. 3 1/2 miles out - beyond Jabarkhet.
992. " *Thomsonianum* Royle, includ. *roseum* Wall 4-6500' OG
Mar.-April
993. *Disporum* ^{cantonense Merrill} *pullum* Salisb 5-7000' Shade in dense forests.
994. " *cantonense* (Lour) Merrill in Philip. J. Sci. 15:22
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995. *Paris polyphylla* Smith N slope, Landour, 6000' Dudgeon
April-May
996. *Gloriosa suberba* L. DD to 7000' In grass. Aug.-Sept.
997. *Iphigenia indica* Kunth. Dry slopes, 5?-7000' June-Aug.
"Wax fountain" Black
998. *Yucca* Cult. escape. July-Aug.

COMMELINACEAE

999. *Commelina obliqua* Ham. Common, 0 to 7000' July-Aug.
1000. " *bengalensis* L. Common, DD to 5000' July-Oct.
1001. " *coelestis* Willd. Common esc. 6?-7000' July-Sept
Tallest, blue, erect.

1002. *Aneilema divergens* C.B.C. Common in grass ridge to 7000'
1003. " *nudiflorum* R. Br. ^{Cymes 1-3 flowered axillary. Tiny flowers.} DD to 5000' July-Sept.
1004. " *scapiflorum* Wight, ^{Large fleshy roots} DD to 3500' Sept.?
1005. " *spiratum* R. Br. ^{Flowers in corymb or panicle.} DD to 3500'? Sept.
1006. *Cyanotis cristata* Schult. DD to 5000' July-Sept.
1007. " *barbata* Don 5?-7000' Common July-Sept.
1008. *Tinantia erecta* Schl. Trop Am. around houses, 6-7000'
^{Flowers reddish. Late Aug.-Oct. Fern Oaks July 15, 1947}

PONTEDERIACEAE

1009. *Monochoria vaginalis* resl. var *plantaginea* Solms. Aglar
Deosari

Juncaceae

1010. *Juncus elegans* Samuelson (*concinus* Don in Collett)
 1010. V common, open hills, July-Sept. "Sparklers"
1011. " *glaucus* Ehrh. Kempty stream May-Sept.
1012. " *bufonius* L. ^{Small annual. Flowers green, inconspicuous}

ARACEAE

1013. *Arisaema Jacquemontii* Bl. Rare, Landour, 7000' June-July
1014. " *flavum* Schott Rare "
1015. " *helleborifolium* Schott V. common, 4?-7000' May-Jul
1016. " *curbatum* Kunth 4-7000' in drier places July-Aug.
 Narrower leaflets
1017. *Sauromatum guttatum* Schott, 4-7000' April-May
^{leaves after large strap-shaped spathe.}

- 1014 *Typhonium diversifolium* Schott. Common, 6-7000' July-Aug.
in grass.
- 1014 *Remusatia Hookeriana* Schottt 6?-7000' May. Small flowers before
the leaves.
- 1020 " *vivipara* Schottt Rajpur?
- 1021 *Gonatanthus sarmentosus* Klotzsch Common on trees, walls.
5-7000' June-July? Leaves purplish below
Flowers yellow
= *pumilus* (D. Don) Engl. & Krauss?
- 1022 *Acorus calamus* L. "Streams below Muss." Marten
- 1023 *Colocasia antiquorum* Schott Cult to 5000'
= *C. esculenta* var. *antiquorum* Hubbard & Rehder
- 1024 *Rhabdiphora (Scindapsus) glauca* Schott, Kempt and Rajpur
May

MUSACEAE

- 1025 *Musa sapientum* Cult to 5000'

LEMNACEAE

- 1026 *Lemna minor* L. Aglar, 5000'

Cyperaceae

- 1027 *Kyllinga squamulata* Vahl to
- 1028 " *brevifolia* Rottb. DD to
- 1029 " *cylindrica* Nees Deolsari
- 1030 *Pycneus sanguinolentus* Nees
- 1031 " *nitens* Nees
- 1032 *Cyperus uncinatus* Poir

1033. *Cyperus niveus* Retz. V. common, dry hills DD to 7000'
1034. " *Iria* L DD to 5000' in rice fields and damp places
1035. " *aristatus* Rottb. 0 to 7000'
1036. " *tegetum* Roxb.
1037. " *difformis* L Plains to Deolsari
1038. " *nutans* Vahl Aglar
1039. " *globosus* All
1040. *Mariscus cyperinus* Vahl to 6000'
1041. " *Sieberianus* Nees. V common to 7000' Fruits in rains
1042. " *compactus* Retz. Muss. fide F.B.I
1043. *Fimbristylis squarrosa* Vahl to 6000'
1044. " *annua* R and S (*diphylla* Vahl) to 6000'
1045. " *dichotoma* Vahe
1046. *Bulbostylis barbata* Kunth Aglar, 4500' Aug.
1047. " *capillaris* Kunth
1048. *Scirpus setaceus* L. Fairly common to to 7000'
1049. " *squarrosus* L.
1050. " *mucronatus* L

Sub and fruit all are good to the

1051. *Eriophorum comosum* Wall. V common on cliffs to 7000'

1052. *Carex nubigena* D. Don, 5-7000' Fairly common

1053. " *foliosa* D. Don 6-7000' top of Benog

1054. " *remota* L.

1055. " *cruciata* Wahlenk

1056. " *brunnea* Thunb.

1057. " *myosuroides* Nees. to 6,000'

1058. " *longicaulis* Nees.

fusiformis Nees. *Muss. Royle.*

1059. " *condensata* Nees.

1060. " *meiogyne* Strachey V. common to 7000'

1061. " *setigera* (Don)

1062. " *setigera* Don, *Muss. east F.B.I. Vol. 6, 743*

1063. " *breviculmis* Clard

1064. " *cardiopsis* Nees.

1065. " *ligulata* (Nees) GRAMINEAE

Paspalum distichum L. Plains to 6000'

" *dilatatum* Poir. Occas. near cult. Caineville

" *strobilatum* L.

Panicum psilopodium

Herb. DD

" *trypherum*

Digitaria sanguinalis (L) Heist.

" *chinense* Merrill 11,468a

" *pedicellaris* Prain, Kalanga Hill near Rajpur

" *Royleana* (Nees) Prain, sometimes very tiny with black seeds. Up to Batta and Landour

" *bifasciculata* (Trin) H enr. largest of the gr up
Common up to 7000'

Echinochloa frumentacea Link to 5000'

Urochloa reptans Sta f. 15,371 Kotli app.

Paspalidium flavidum Stapf. Wet places to 3500' Above Rajpur

Brachyaria coccosperma Stapf.

" *panicoides* DD

Panicum miliaceum L. cult. occas.

Echinochloa frumentacea Link Kempty Falls

" *crusgalli* L. To be expected

Thysanolaena procera (Retz) Mez, DD to 4000'

Alloteropsis cimicina Stapf, to 5000'

Oplismenus undulatifolius Beauv.

" *compositus* Beauv. from DD to 7000'?

" *Burmannii* Beauv., to 4000' above Rajpur

Arundinella hispida Hack. (nepalensis Trin.) DD to 7000'

" *setosa* Trin., DD to 7000'

" *tenella* Nees. Dwarf on banks, walls at end of rains

" *Wallichii* Nees, DD to Kalanga Hill near Rajpur
and maybe up to 5000'

Setaria italica Heauv., occas. cult.

Setaria glauca Beauv. Common, DD to 7000'

Setaria intermedia R. and S. DD to 7000'

" *homonyma* Chiov. (*rhachitricha* Hochst.) DD to 5000'

" *palmaefolia* Stapf, DD to 5000'

Pennisetum flaccidum Griseb., 6-7000'

" *orientale* Rich. Sometimes very large to 7000'

Oryza sativa L. Cult.

Zea Mays L. Cult. to 7000'

Imperata arundinacea Cyrill

Miscanthus nepalensis Hack. Usually fine golden color, to 7000'

Spodiopogon dubius Hack, rare 6-7000'

Pollinia quadrinervis Hack. Muss, fide Jameson ?

" *hirtifolia* Hack., 6-7000'

" *mollis* Hack. (*Eulalia mollis* Kze.) 5-7000'

" *argentea* Trin. DD to 5000'

" *ciliata* Trin., "

Microstegium imberme A. Camus (*Pollinia*), Gamble, 6500'

" *nudum* " " DD to 7000'

Saccharum fulvus (Nees) ⁶⁷ 5-7000'

" filifolius (Nees)

" versicolor (Nees) 5-7000'

" spontaneum L. DD to 4000'

Pogonatherum paniceum Hack. Fairly common to 5000'

Arthraxon lanceolatus Hochst. 5-7000'

" lancifolius " Dwarf annual on banks, walls like
Arundinella tenella, 4-7000'

Apluda aristata L. V common to 7000'

Phacelurus speciosus (hack) Hubbard 5-7000' imfl. simple or
branched

Mnesithea laevis Kunth, 14,444 4500' check.

Hackelochloa granularis O. Kze. DD to 5000'

Andropogon tristis Nees, 6-7000'

Amphilophis intermedia var punctata Stapf. to

Capillipedium parviflorum Stapf. 4-7000'

" glaucopsis Stapf. DD to 5000'

Sorghum halepense Pers. DD to

Chrysopogon echimulatus Stapf. Fairly common, sunny hillside
4-7000'

" serrulatus Trin., DD to 4000' ?

Heteropogon contortus (L) Beauv., DD to 7000'

Cymbopogon distans (Nees) Duthie 4-7000'

" *Jwarancusa* Schult. Below Muss ?

" *Martini* Stapf to 6000'

Themeda anathera Hack. 2-7000'

Anthoxanthum odoratum L.

Aristida cyanantha Steud., 3-6000'

Stipa Jacquemontii R. and S. 6-7000'

Oryzopsis aequiglumis Duthie 6-7000'

" *lateralis* Stapf. 6-7000'

Polypogon monspeliensis Desf. Ddhra to 6000'

Polypogon littoralis Sm. (*lutosus* Poir) Hitchcock

Sporobolus diander Beauv. DD to 7000'

" *indicus* Br. Plains to 7000'

Muehlenbergia (sylvatica Torrey and Gray) Duthieana Hack.
6-7000'

" *Himalayensis* Hack.

" *Huegelii* Trin., 3-7000'

Calamagrostis littorea D.C. 6-7000'

" *emodensis* Griseb. 6-7000' Duthie

" *pilosula* Hook f. Common, 6-7000'

Avena aspera Munro, 6-7000' Rare

" *fatua* L. or *sativa* L.

Tripsogon filiformis Nees. Common, 4-7000' Epiphytic on
rocks and walls

Cynodon dactylon Pers. DD to 7000'

Eleusine indica Gaertn. Plains to 6000'

" *corocana* Gaertn .

Arundo Donax L. Arnigadh, 5000'

Phragmites communis Trin, Above 3000' Kanji Lal

Neyraudia madagascarensis Hk, F. to 5000' Rare

Koeleria gracilis Pers. (*crinata* Pers.) April-May

Eragrostis nardoides Trin., DD to 3500'

" *unioloides* Nees., DD to 5-6000'

" *minor* Host *E. poaevidēs*

" *major* Host

" *nigra* Nees. Common, 6-7000'

Eragrostis abyssinica Hochst. - Arnigadh, cult. or escape.

Dactylis glomerata L. App not common

"

aegyptiacum DD

Poa annua L. Common about houses

Poa pratensis L.

Festuca modsta Steud. One in DD Herb.

" *gigantea* Vill Common, 6-7000'

Bromus unioloides H.B.K. seems to be becoming naturalized
6-7000'

Brachypodium sylvaticum Beauv. 6-7000'

Lolium perenne L? 6500' Landour

Triticum vulgare Vill. Cult. wheat

Agropyron longe-aristatum Bois .

" *semicostatum* Nees Might be *Brachypodium*

Hordeum vulgare L. Barley, probably cult.

Arundinaria Falconeri Benth

" *falcata* Nees. "Ringal" Common on damper slopes

Dendrocalamus Nees and Arn. "Kaghzi bans" to 4000'

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