



*Ardisiandra Sibthorpioides* H.F.

Memorandum on a presumed case of Parthenogenesis in *Zanthoxylum alatum*, Roxb. By DANIEL HANBURY, Esq., F.L.S.

[Read Nov. 19, 1863.]

IN January last Dr. Anderson brought under the notice of the Linnean Society a presumed case of parthenogenesis in a species of *Aberia*, a shrub of which, in the Botanic Gardens of Calcutta, bore a large crop of well-ripened fruits containing fertile seeds, though only pistilliferous flowers could be detected at the time of flowering.

A case of similar character has come under my own notice: an Indian species of *Zanthoxylum*, the *Z. alatum* of Roxburgh, a diœcious plant, flowered in my father's garden at Clapham in the spring of 1862. As I had examined the flowers without being able to detect stamens, and knew that no other plant of the same genus grew near, I was not a little surprised to find the ovaries swell and the berries attain their full development,—and still more so when, having carelessly placed three or four seeds in a pot of earth, a seedling *Zanthoxylum* made its appearance.

In the spring of this year the shrub, now removed from the conservatory to the open border, again flowered, and though subjected to a much more careful scrutiny than previously, I failed to discover upon it any other than pistilliferous flowers. Still the ovaries became enlarged, and the shrub again bears mature berries, some of which I now exhibit to the Society.

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On the Plants of the Temperate Regions of the Cameroons Mountains and Islands in the Bight of Benin; collected by Mr. GUSTAV MANN, Government Botanist. By J. D. HOOKER, M.D., V.P.R.S. & L.S.

[PLATE I.]

[Read Nov. 5, 1863.]

THE last few years have been fruitful in contributions to our knowledge of the botany of the least known, and in the present state of science, most interesting portion of the globe, namely the interior and mountains of tropical Africa. The collections of

Welwitsch in Loanda; of Kirk and Meller during Livingstone's Expedition, of Vogel and Petherick in the White Nile region and Nubia, of Baikie and Barter in the Niger Valley, of Speke and Grant in their arduous journey through Eastern tropical Africa, and lastly of Gustav Mann on the shores, islands, and mountains of the Bight of Benin, are all of great extent, and abound in novelty and interest.

It is with the highest satisfaction that we have lately welcomed amongst us the first-named of these adventurous explorers, Dr. Welwitsch, who is charged by the King of Portugal with a mission to this country for the purpose of preparing his collections for publication; and it only remains for us to hope that the exertions now being made by Sir W. Hooker to induce the British Government to follow the example of His Majesty of Portugal, in securing the publication of our own collections, will be successful, and that the botanical results of so many expeditions, brought together at such great cost and at so great a sacrifice of life, may not be doomed to lie unpublished in our museums for want of the trifling sum requisite for rendering them available to science.

It is with the collections of Mr. Mann that I now propose to occupy the attention of the Society; and with but a small portion of them; for the general collection, amounting to several thousand species, would take many months of continuous labour to investigate fully and report upon. The whole of these, however, having been transmitted to Kew, partly by Earl Russell as Chief Secretary for Foreign Affairs, under whose auspices Mr. Mann first went to Africa, and partly by the Lords of the Admiralty, under whom his latter explorations were conducted,—I have felt it to be my duty to lay before this Society, with the least possible delay, an account of those portions of them which are most novel and interesting. These are, the forms of the temperate mountain-regions explored.

In the sixth volume of our Journal, the Society printed a brief account of the collections made by Mr. Mann in the upper regions of the lofty peak (Clarence Peak) which crowns the Island of Fernando Po, which I had the honour of laying before them. The very great interest of that Florula rendered it in the highest degree desirable that Mr. Mann should completely explore all those mountains of the Bight of Biafra, both insular and continental, which rise into the temperate region, and especially the Cameroons Peaks, which had never been ascended by any Eu-

ropean, and which Mr. Mann, from the period of his first arriving on the coast of Africa, had resolved to scale at all hazards. The great scientific importance of the expedition having been represented by Sir W. Hooker to the Duke of Somerset, First Lord of the Admiralty (to which department of the Public Service Mr. Mann had then been transferred), thanks to that nobleman's enlightened views and to the late lamented Admiral Washington's recommendations, the necessary funds were provided; and in this as in his other expeditions Mr. Mann's exertions have been crowned with far greater success than has been the lot of any previous explorer of the West-African coast, Dr. Welwitsch alone excepted. It is not my purpose here to enter into any detail of the many difficulties and dangers, the privations, and all but fatal fevers that Mr. Mann, in common with every other explorer of the shores of the Bights of Benin and Biafra, has encountered; by prudence, temperance, and energy all have been successfully combated; and he has returned to this country, after upwards of three years' continuous journeyings in the most fatal climates in the world, in excellent health, and with the finest collections, whether as regards extent, or interest, or excellent preservation, that have ever been made in those regions.

Before proceeding to an account of the mountain plants collected, it is expedient to enumerate the localities and their elevations, and to record the dates, &c. of the several expeditions during which they were gathered.

*Peak of Fernando*, elevation 9469 ft. First ascent attempted on the east side, February 21st, 1860; reached 2000 ft. and was driven back by the natives. Second ascent, from the north side, commenced March 22nd; reached the summit April 3rd; descended April 13th. November 7th, attempted a third ascent; but on the 23rd, being deserted by his servants, descended. December 7th, made a fourth attempt, and reached the summit for the second time on the 5th; descended on the 21st. March 19th, 1862, started for the fifth time to ascend the Peak, reaching the summit for the third time; returned on the 25th March, after measuring the depth of the great crater on the summit (515 ft.). April 12th, 1862, made the sixth ascent; reached the summit on the 16th, and descended on the 23rd. March 5th, 1863, made the seventh ascent, reached the summit on the 8th, and descended on the 13th.

*St. Thomas's Island* was visited August 5th, 1861. On the 13th

commenced the ascent of the Peak, whose summit (alt. 7500 ft., according to the Admiralty charts) was reached on the 22nd; left on the 26th. The loftiest part of the island consists of a very narrow ridge, and is accessible with great difficulty from the east side, from which side Mr. Mann attempted it. A species of *Podocarpus* was the most remarkable discovery. Robert Brown having long ago remarked the absence of Coniferæ in West tropical Africa, this discovery was of especial interest. The species is very nearly allied both to a Cape and to an Abyssinian one. Here also the magnificent *Musa Sapientum* var. *vittata* was discovered in a cultivated state, and living specimens sent to Kew (see Bot. Mag. t. 1510–1513). It is, according to Mr. Mann, a native of the Gaboon.

*Prince's Island* was visited on September 22nd, and left on October 26th.

*Cameroons Mountains.*—This noble group attains 13,100 ft. of elevation, and consists of many peaks, all of volcanic origin, crowning an irregular short littoral range. Some of the physical characters of the group have been described in a memorandum transmitted to the Secretary of State for Foreign Affairs by Consul Burton, who accompanied Mr. Mann on his second visit to this group. The account there given of this adventurous expedition seeming to imply that it was one planned and conducted by Consul Burton, to which Mr. Mann had attached himself, I have been desired by Mr. Mann to publish the accompanying statement of the facts of the case as communicated by himself:—

“January 7th, 1861.—Having been instructed to use every exertion to explore the Cameroons Mountains, I arrived at Ambas Bay\* (the foot of the range), on a reconnoitring expedition, hoping to ascend if possible, but chiefly with the view of making arrangements for ascending at an earlier period during the following season. February 10th, ascended the mountains to the highest villages, Makunda and Bando; elevation about 2500 ft.; but being under orders to repair to the Bagroo River, to report on its timbers for the Admiralty, before the wet season set in, I was obliged to descend, having arranged to revisit the mountain in the ensuing season.

“December 13th, 1861, I left Victoria, the Baptist Missionary station, in Ambas Bay, and reached Bassumba, alt. 1119 ft. On the 15th arrived at Mapanya, alt. 2748 ft.; on the 17th

\* “This was nine months before Consul Burton arrived on the coast of Africa.”

camped at a spring at the base of the Peaks, above the forest, at 7376 ft. On the 18th ascended to the summit of one of the highest peaks (Mount Helen), alt. 9290 ft., and returned to Mapanya, where I was met on the following day by Mr. Saker, Signor Calvo, and Consul Burton, who, having followed me up the mountain, now joined my expedition. December 24th, again visited Mount Helen. January 3rd, 1862, reached the summit of the Cameroons Mountains—Mount Albert, alt. 13,100 ft., which had never before been visited by a European; was taken ill on the descent, and had to be carried down to Victoria. January 24th, again left Victoria for the mountains, and reached the top of Mount Victoria, alt. 12,861 ft., on the 29th, Mount Albert (my second visit), and Mount Hooker. On January 31st, Consul Burton descended, leaving me: I continued my explorations till February 18th.

“ November 8th, 1862, left Victoria for a third expedition on the mountains, visited the summit twice, and returned to Victoria December 15th. On this occasion I examined the ‘ Burning Field ’ described by Consul Burton in his Report printed by the Foreign Office, and found the appearance to be caused by steam issuing from the ground, at an elevation of 12,967 ft. above the sea. December 30th, ascended Mount Etindet, alt. 5309 ft.”

From Mr. Mann’s descriptions, the Cameroons Mountains present a dense forest-region up to about 7000 ft., when open grassy fields succeed, with bushes of *Hypericum*, *Pittosporum*, *Adenocarpus*, *Pygeum*, *Leucothoë*, *Ericinella*, *Myrica*, and various herbaceous plants. The many peaks which rise above this elevation are either stony and barren (being all formed of lava scorix or basalt), or are dotted with tufts of grass and a few other herbaceous plants.

The most interesting plants from the highest summits are, *Umbilicus pendulinus*, *Silene*, *Trifolium*, *Galium Aparine* and *G. rotundifolium*, *Scabiosa succisa*, *Helichrysa*, *Veronica*, *Bartsia*, *Stachys*, *Trichonema* *Bulbocodium*, *Deschampsia cæspitosa*, *Poa nemoralis*, *Kæleria cristata*, and various other European and even British plants.

*Sierra del Crystal*.—This appears to be a low range of hills, nowhere exceeding 2000 ft. elevation, whose importance and altitude have, according to Mr. Mann, been much overrated by M. du Chaillu. On June 7th, 1862, Mr. Mann reached the Gaboon River, and on the 12th arrived at Corisco Bay (Ilobi Island). On the 4th July left Corisco for the interior hills; on the 13th reached

the summit of Mount Maveya, alt. 1668 ft., erroneously supposed to be 5000 ft. high and the summit of the chain. The true summit is Mount Shomba, alt. 1767 ft. On the 28th, having crossed the Sierra, he reached the village of Mangetsi, about eighty miles in a straight line from the coast.

Mr. Mann desires publicly to express his great obligations to the various Spanish and Portuguese officials on the coast, and especially to Consul Hutchinson at Fernando Po, and to the Missionaries at Victoria (Ambas Bay), the Revs. Messrs. Saker and Smith, but for whose cordial aid the Cameroons Mountains could not have been successfully explored by any European at the time of his visit. At Corisco he was much indebted to Mr. Mackey of the American Mission, who rendered him active and essential service.

The number of plants collected during these and Mr. Mann's other expeditions on the coast, amounts to probably 3000 flowering species, of which 237, found at elevations above 5000 ft., are those with which I propose to deal in the present paper. Nearly half of this number (viz. 112) are new species, and upwards of half are from the Cameroons Peaks.

Excluding the few peculiar to St. Thomas's and Prince's Islands, we have on the Cameroons Mountains, at elevations above 5000 ft., 203 species, and on Fernando Po Peak 102, of which 68 are common to both localities. The Monocotyledons bear a larger proportion to the Dicotyledons on the Cameroons (1:2·3) than on Fernando Po Peak (1:3·2). The proportion of nondescript to the previously known species was nearly the same on the Cameroons (1:2·2) as on Fernando Po (1:2·3); but of the plants common to both localities the proportion of novelty is much smaller (1:2·8).

I have adopted the above-mentioned altitude of 5000 ft. as the lower limit of the Temperate Flora, because both on Fernando Po and the Cameroons Mountains the temperate forms preponderate largely at that elevation. In these mountains, however, as in all other tropical ones, on the one hand tropical genera and species ascend to this and to much greater elevations, and on the other some temperate forms descend considerably lower, than their respective temperatures would lead us to expect. This is partly owing to the very varied conditions of exposure, humidity, and temperature which may be found at the same elevation in a mountain-region traversed by gorges and ridges, and still more to the equable annual temperature favouring both the ascent

of the tropical forms and the descent of the temperate. Thus we have—

1. Plants of purely tropical forms, ascending up to and above 5000 ft., but whose normal limit is below it. The most remarkable cases are—

	feet.		feet.
Stephania . . . . .	to 7,000	Gynura . . . . .	to 8,500
Drynaria . . . . .	,, 7,000	Cephalostigma . . . . .	,, 7,000
Clausena . . . . .	,, 7,500	Anthocleista . . . . .	,, 7,000
Brucea . . . . .	,, 7,500	Alectra . . . . .	,, 7,000
Gomphia . . . . .	,, 5,000	Sopubia . . . . .	,, 7,000
Schmidelia . . . . .	,, 7,500	Coleus . . . . .	,, 7,000
Desmodium . . . . .	,, 7,000	Leucas . . . . .	,, 8,000
Shuteria . . . . .	,, 7,000	Achyranthes . . . . .	,, 7,000
Dalbergia . . . . .	,, 5,000	Cyathula . . . . .	,, 10,000
Kalanchoë . . . . .	,, 7,000	Phyllanthus . . . . .	,, 7,000
Mukia . . . . .	,, 7,000	Urera . . . . .	,, 5,000
Loranthus . . . . .	,, 8,000	Peperomia . . . . .	,, 8,000
Ixora . . . . .	,, 5,000	Bolbophyllum . . . . .	,, 6,000
Mikania . . . . .	,, 7,000	Angræcum . . . . .	,, 6,000
Microglossa . . . . .	,, 7,000	Polystachya . . . . .	,, 6,000
Dichrocephala . . . . .	,, 10,700	Calanthe . . . . .	,, 5,000
Blumea . . . . .	,, 8,000	Commelyna . . . . .	,, 7,000

I have excluded here the annuals, which so often owe their upward extension to local circumstances that do not annually recur; as also all the Panicoid and Andropogonoid grasses. Also many genera which have almost equal claim to rank as temperate and as tropical, as *Pittosporum*, *Impatiens*, *Ilex*, *Vernonia*, *Celsia*, &c. &c.

From a tabulation of these, I find that there are, at elevations above 5000 ft.,—

	Genera.	Species.
Truly temperate forms . . . . .	80	112
Temperate and tropical, or intermediate	36	60
Truly tropical . . . . .	46	65

2. The temperate forms that descend below 5000 ft. are comparatively few. The principal are:—

	feet.		feet.
Clematis . . . . .	to 4000	Adenostemma . . . . .	to 2000
Hypericum . . . . .	,, 4000	Senecio . . . . .	,, 2500
Rubus . . . . .	,, 4000	Leucothoë . . . . .	,, 4000
Sanicula . . . . .	,, 4000	Ericinella . . . . .	,, 4000
Anthriscus . . . . .	,, 4000		



3. The following species are common to the Himalaya and mountains of Biafra :—

	feet.		feet.
<i>Cardamine hirsuta</i> . . . . .	7-10,000	<i>Sibthorpia Europæa</i> . . . . .	7-7,500
— <i>Africana</i> . . . . .	7,500	<i>Solanum nigrum</i> . . . . .	7-11,000
<i>Cerastium vulgatum</i> . . . . .	8,000	— <i>Indicum</i> . . . . .	6-7,000
<i>Drynaria cordata</i> . . . . .	7,000	<i>Utricularia orbiculata</i> . . . . .	5,000
<i>Oxalis corniculata</i> . . . . .	7-8,500	<i>Rumex obtusifolius</i> . . . . .	7,000
<i>Tillæa pentandra</i> . . . . .	8,000	<i>Polygonum Nepalense</i> . . . . .	7,500
<i>Sanicula Europæa</i> . . . . .	4-7,500	<i>Achyranthes argentea</i> . . . . .	7,000
<i>Galium Aparine</i> . . . . .	7-10,000	<i>Parietaria Mauritanica</i> . . . . .	7-8,000
— <i>rotundifolium</i> . . . . .	7-12,000	<i>Loranthus Wightii</i> . . . . .	7,500
<i>Scabiosa succisa</i> . . . . .	10,500	<i>Luzula campestris</i> . . . . .	8-10,000
<i>Adenostemma viscosum</i> . . . . .	2-1,000	<i>Isolepis capillaris</i> . . . . .	8-10,500
<i>Mikania chenopodiifolia</i> . . . . .	4-7,000	<i>Microchloa setacea</i> . . . . .	7,000
<i>Dichrocephala latifolia</i> . . . . .	7,000	<i>Deschampsia cæspitosa</i> . . . . .	9-12,000
— <i>chrysanthemifolia</i> . . . . .	7,000	<i>Aira caryophyllea</i> . . . . .	7-8,000
<i>Blumea alata</i> . . . . .	7-8,000	<i>Poa nemoralis</i> . . . . .	7-10,000
<i>Cephalostigma Perrotetii</i> . . . . .	7,000	<i>Koeleria cristata</i> . . . . .	8-12,000
<i>Mæsa Indica</i> . . . . .	5-7,000	<i>Vulpia bromoides</i> . . . . .	7-10,000
<i>Cynoglossum micranthum</i> . . . . .	7-8,000	<i>Brachypodium sylvaticum</i> . . . . .	7,000
<i>Myosotis stricta</i> . . . . .	8-10,000	<i>Andropogon distachyus</i> . . . . .	7,000
<i>Limosella aquatica</i> . . . . .	9-10,000		

In this list twenty-two out of the thirty-nine are European and for the most part British.

4. Genera and species found at elevations above 9000 feet :—

<i>Thalictrum rhynocharpum</i> .	<i>Scabiosa succisa</i> .
<i>Cardamine hirsuta</i> .	<i>Dichrocephala oblonga</i> .
<i>Silene Biafræ</i> , n. sp.	<i>Helichrysum Mannii</i> , n. sp.
<i>Arenaria Africana</i> , n. sp.	— <i>foetidum</i> .
<i>Sagina Abyssinica</i> .	— <i>chrysocoma</i> .
<i>Hypericum angustifolium</i> .	— <i>globosum</i> .
<i>Adenocarpus Mannii</i> , n. sp.	<i>Senecio Barterii</i> .
<i>Trifolium subrotundum</i> .	— <i>Clarenceana</i> , n. sp.
<i>Rubus apetalus</i> .	<i>Anisorhamphus hypochæroides</i> ?
<i>Umbilicus pendulinus</i> .	<i>Wahlenbergia arguta</i> .
<i>Crassula Mannii</i> , n. sp.	<i>Lobelia acutidens</i> , n. sp.
<i>Pimpinella oreophila</i> , n. sp.	<i>Leucothoë angustifolia</i> $\beta$ .
<i>Peucedanum Petitianum</i> .	<i>Blæria spicata</i> .
<i>Vignaldia occidentalis</i> , n. sp.	<i>Ericinella Mannii</i> , n. sp.
<i>Anthospermum asperuloides</i> , n. sp.	<i>Sebæa brachyphylla</i> .
<i>Galium Aparine</i> .	<i>Swertia pumila</i> .
— <i>rotundifolium</i> .	— <i>Clarenceana</i> , n. sp.
	<i>Myosotis stricta</i> .

OF THE CAMEROONS MOUNTAINS, ETC.

<i>Limosella aquatica.</i>	<i>Isolepis capillaris.</i>
<i>Veronica Mannii, n. sp.</i>	— <i>schoenoides.</i>
<i>Bartsia Abyssinica.</i>	<i>Carex Æthiopica.</i>
<i>Micromeria punctata.</i>	<i>Vilfa montana, n. sp.</i>
<i>Calamintha Simensis.</i>	<i>Deyeuxia Mannii, n. sp.</i>
<i>Stachys aculeolata, n. sp.</i>	<i>Deschampsia cæspitosa.</i>
<i>Solanum nigrum.</i>	<i>Aira caryophyllea.</i>
<i>Cyathula cylindrica.</i>	— <i>pictigluma.</i>
<i>Thesium tenuissimum, n. sp.</i>	<i>Avena lachnantha.</i>
<i>Habenaria præalta.</i>	<i>Poa nemoralis.</i>
<i>Trichonema Bulbocodium.</i>	<i>Kœleria cristata.</i>
<i>Geissorhiza alpina, n. sp.</i>	<i>Vulpia bromoides.</i>
<i>Melanthium tenue, n. sp.</i>	<i>Festuca Schimperiana.</i>
<i>Cyanotis Abyssinica.</i>	<i>Andropogon Mannii.</i>
<i>Luzula campestris.</i>	

Total genera . . . . 56	{	British . . . . .	38
		Other European . . . . .	5
		Peculiar to Cape . . . . .	1
		— to Abyssinia . . . . .	1
		Chiefly tropical . . . . .	4

5. The European species found on the mountains of Biafra are the following. I have appended to each any real or apparent facility for aërial or casual transport which it possesses.

- Ranunculus pinnatus*, 8000 ft. (Achenes with hooked styles.)
- Cardamine hirsuta*, 7000–10,000 ft. (Seeds very minute.)
- Cerastium vulgatum*, 8000 ft.? (Ditto.)
- Radiola Millegrana*, 7000 ft. (Ditto.)
- Oxalis corniculata*, 7000–8500 ft. (Ditto.)
- Umbilicus pendulinus*, 7000–10,000 ft. (Ditto.)
- Sanicula Europæa*, 4000–7500 ft. (Carpels with hooked bristles.)
- Galium rotundifolium*, 7000–12,000 ft. (Leaves and stems with hooked bristles.)
- *Aparine*, 7000–10,000 ft. (Ditto ditto and fruit.)
- Scabiosa succisa*, 10,500 ft.
- Myosotis stricta*, 8000–10,000 ft. (Hooked hairs on calyx.)
- Limosella aquatica*, 9000–10,000 ft. (Aquatic.)
- Sibthorpia Europæa*, 7000–7500 ft. (Minute seeds.)
- Solanum nigrum*, 7000–11,000 ft. (Seeds with great powers of vitality.)
- Rumex obtusifolius*, 7000 ft. (Hooks on fruiting perianth.)
- Parietaria Mauritanica*, 7000–8000 ft. (Minute seeds.)
- Trichonema Bulbocodium*, 7000–9000 ft. (Ditto.)
- Juncus capitatus*, 7000 ft. (Ditto.)
- Luzula campestris*, 8000–10,000 ft. (Ditto.)
- Deschampsia cæspitosa*, 9000–12,000 ft. (Ditto.)
- Aira caryophyllea*, 7000–8000 ft. (Ditto.)

<i>Poa nemoralis</i> , 7000–10,000 ft.	(Minute seeds.)
<i>Koeleria cristata</i> , 8000–12,000 ft.	(Ditto.)
<i>Vulpia bromoides</i> , 7000–10,000 ft.	(Ditto.)
<i>Festuca gigantea</i> , 8500 ft.	(Ditto.)
<i>Brachypodium sylvaticum</i> , 7000 ft.	(Ditto.)
<i>Andropogon distachyus</i> , 7000 ft.	(Ditto.)

Of these 27, all but the *Radiola*, *Juncus*, and *Festuca* are Abyssinian, and these latter are for the most part West-European forms.

The most remarkable features of the Temperate vegetation of these mountains are—

1. The poverty of the flora.
2. The preponderance of Abyssinian genera and species.
3. The considerable proportion of European plants.
4. The paucity of South-African genera and species.
5. The great rarity of new genera.
6. The absence of St. Helena types.

Upon each of these propositions I have a few general remarks to offer.

1. In the poverty of its flora the Cameroons range, &c. seems to partake of the characteristics of the Abyssinian Alps. We know far too little of the physical geography of either of these districts to hazard many conjectures upon this point, which must to a certain extent be dependent on the arid volcanic nature of the soil and the limited area of the temperate region. Mr. Mann spent many weeks, and at various seasons, in his explorations, and yet 237 flowering plants were all that rewarded his toil. Geological causes have probably had, in the case of the Cameroons Mountains, much to do with the dearth of species, some parts of the range even now presenting evidence of subterranean heat.

2. The preponderance of Abyssinian forms is proved by almost all of the genera and half the species being natives of Abyssinia, and by many other species being very closely related to, or obvious representatives of, plants of that country. There are, further, several of the genera and many of the species peculiar to Abyssinia and the peaks of Biafra.

3. The number of European genera amounts to 43, and species to 27, by far the greater part of which are British; and a few of them, as *Radiola Millegrana*, have not been found previously anywhere in the African continent\*. Very few of them extend into South Africa. The greater part are Abyssinian; the remarkable exceptions being *Radiola*, *Scabiosa succisa*, *Luzula campestris*, and

\* Since this Paper was read, I have been informed by Mr. Munby that he has found *Radiola Millegrana* in one spot in Algeria.

*Festuca gigantea*, all of which, however, may have been hitherto overlooked in Abyssinia.

Considering the total isolation of these tropical African mountains from the European regions by hot, low deserts, the existence of these plants in common is most singular, and explicable under two hypotheses: 1st, Mr. Darwin's theory, which assumes that during the glacial epoch the plants of the northern zones were driven southwards into the tropics, and on the return of warmth they both retreated northwards and ascended the intertropical mountains; and 2nd, transport by aërial currents and birds—in favour of which is to be urged that, of the whole, six present structural adaptations for clinging to the plumage of birds, and all the rest have small or very minute seeds, likely to be transported in mud on the feet of birds. *Solanum nigrum* has rather larger seeds, but with remarkable power of retaining their vitality, and, further, is found in North Africa and many intermediate countries, as are several of the others.

4. The paucity of South-African types was alluded to in discussing the 76 species of the Fernando Po mountain. The great accession of species from the Cameroons has added but few Cape forms; the principal are, *Anthospermum*, *Anisorhamphus* (perhaps referable to *Hieracium*), a species of *Ilex*, *Lasiosiphon*, *Peddiea*, *Geissorhiza*, *Hypoxis*, and a few others.

5. Only one new genus has been found, *Ardisiandra* (see Plate I.)—a very well marked new form of Primulaceæ, not indicating an affinity with any other flora.

6. Of the peculiar genera and species of St. Helena not one has been found; and what genera are common to that island and these mountains are also natives of the Cape region, and far more abundant there.

*Florula of the Peaks of Biafra at and above 5000 feet elevation.*

I. RANUNCULACEÆ.

1. CLEMATIS SIMENSIS, Fresen. (*ante*, vi. 4).

*Hab.* Fernando Po and Cameroons Mountains, alt. 4000–8000 feet. (Fl. and frt. Dec.–Jan.)

Fruiting specimens are identical with Abyssinian. The Cameroons Mountains' individuals have the flowers as large as the Abyssinian.

2. THALICTRUM RHYNCHOCARPUM, A. Rich (*ante*, vi. 4).

*Hab.* Fernando Po, alt. 10,000 feet. Cameroons Mountains, alt. 7000 feet. (Fl. and frt. Nov.)

3. *RANUNCULUS PINNATUS*, Poir., var. *extensa*. Carpellis lævibus (ante, vi. 5).

*Hab.* Fernando Po, alt. 8000 feet. (Fl. Dec.)

## 2. MENISPERMACEÆ.

1. *STEPHANIA HERNANDIFOLIA*, Wall. (ante, vi. 5).

*Hab.* Fernando Po, alt. 3000–5000 feet. Cameroons Mountains, alt. 7000 feet. (Fl. and frt. Dec.)

## 3. CRUCIFERÆ.

1. *CARDAMINE HIRSUTA*, L., var. *Simensis*. *C. Simensis*, Hochst.

*Hab.* Fernando Po, alt. 7500–8500 feet. Cameroons Mountains, alt. 8000–10,000 feet. (Fl. Nov.)

2. *CARDAMINE AFRICANA*, Thunb., var. *pubescens*.

*Hab.* Fernando Po, alt. 7500 feet.

## 4. VIOLARIÆ.

1. *VIOLA ABYSSINICA*, Steud., var. *impunctata* (ante, vi. 5).

*Hab.* Fernando Po, alt. 10,000 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Jan.)

## 5. PITTOSPOREÆ.

1. *PITTOSPORUM MANNII*, H. f. (ante, vi. 5).

*Hab.* Fernando Po, alt. 8500 feet. Cameroons Mountains, alt. 4000–7500 feet. (Fl. Dec.; frt. Jan.)

The Cameroons specimens contain excellent fruit, from which I learn that the small capsules alluded to in the Fernando Po plant were imperfectly developed; those now sent are very similar to *P. Senacia* of Mauritius, from which, however, as before observed, the species differs widely in the inflorescence and small flowers.

## 6. POLYGALEÆ.

1. *POLYGALA TENUICAULIS*, H. f., n. sp. Annuæ, patentim pilosa, caule gracili simpliciusculo elongato, foliis anguste lineari-lanceolatis, racemis multifloris secundis, bracteis bracteolisque minutis, floribus breviter pedicellatis, sepalis pilosis exterioribus late oblongis alis late obovatis triente brevioribus, carinæ crista brevi bilamellata, capsula obcordata emarginata pilosa.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov. and Dec.)

*Herba* spithamæa ad pedalem, ubique pilis patentibus tomentella v. hispida, caule gracili teretiusculo debili superne sæpius diviso. *Folia*  $\frac{1}{2}$ –1" longa, marginibus siccitate recurvis. *Racemi* 2–3" long. *Flores* rubicundi (siccitate flavo-virescentes), nutantes,  $\frac{1}{5}$ " longi. *Alæ* venosæ. *Carinæ* crista inclusa. *Capsula* membranacea, inclusa.

## 7. CARYOPHYLLÆ.

1. *SILENE BIAFRÆ*, *H. f.*, n. sp. Erecta, pubescenti-tomentosa, foliis anguste linearibus, floribus suberectis, calyce anguste oblongo-campulato atro-pubescente, lobis anguste oblongis subacutis, costis crassis atris, petalis calyce paulo longioribus pubescentibus, lamina parva ad medium 2-loba carnosae basi appendicibus 2 carnosis coronata, thecaphoro capsula triente brevior.

*Hab.* Cameroons Mountains, alt. 8000-10,000 feet. (Fl. Nov.)

*Herba* 1-3-pedalis, parce ramosa, ramis teretibus. *Folia* pollicaria et ultra, anguste linearia. *Racemi* 4-8-flori. *Flores* nutantes v. erecti, breviter pedicellati,  $\frac{1}{2}$  unc. longi.

Very nearly allied to the North-African and Abyssinian *S. bipartita*, Desf. (to which the Cape *S. Burchellii* is too nearly allied), but differing in its great size, the less contracted base of the calyx, small fleshy lamina of the petals, and the corona reduced to two prominent fleshy lobes. It is probable that these are all states of one species, of which the present, from the most tropical and humid locality, has much more highly developed vegetative organs and correspondingly reduced reproductive ones. I cannot determine whether it is annual or perennial.

2. *CERASTIUM VULGATUM*, *L.*, var. *glomeratum*, Thuil. *C. viscosum*, Fries.

*Hab.* Cameroons Mountains (no elevation given).

The leaves are more uniformly acute than in the common European states. It is also an Abyssinian plant, *C. Simense*, Hochst., in no way differing from the European form.

3. *STELLARIA MANNII*, *H. f.*, n. sp. Caule procumbente diffuse ramoso tenui glaberrimo, apicibus ramorum et inflorescentia glanduloso-pilosis, foliis petiolatis ovatis acutissimis, floribus laxè paniculatis, sepalis ovato-lanceolatis acuminatis, petalis sepala subæquantibus ad medium 2-fidis, stylis 3, capsula 4-valvi 1-sperma.

*Hab.* Cameroons Mountains, alt. 7000 feet.

*Caules* 1-2-pedales, flaccidi, ramis adscendentibus. *Folia* longe petiolata,  $\frac{2}{3}$ -1 unc. longa, læte viridia, tenuiter membranacea, margine subcrispato, petiolo  $\frac{1}{4}$ - $\frac{3}{4}$  unc. longo. *Flores* ad apices ramorum laxè paniculati, graciliter pedicellati,  $\frac{1}{3}$  unc. lati, bracteis lanceolatis acuminatis. *Sepala* viridia, herbacea, carinata. *Petala* tenerrima, lobis falcatis apicibus conniventibus. *Ovarium* parvulum, 5-6-ovulatum. *Capsula* parvula, glaberrima. *Semen* (morbidum?) magnum, testa pilloso-granulosa.

Very closely allied to the Cingalese *S. drymarioides*, Thw., and Himalayan *S. monosperma*, Ham., but differing from both in the foliage and larger flowers.

4. *ARENARIA AFRICANA*, *H. f.*, n. sp. Tota (superne præcipue) glanduloso-pilosula v. pubescens, caulibus gracilibus prostratis, foliis distantibus sessilibus lanceolatis acutissimis membranaceis, floribus ad apices ramorum paucis laxè paniculatis, sepalis oblongis subacutis anguste marginatis, petalis angustis retusis v. breviter 2-lobis, stylis 5, capsula oblonga 5-valvi, seminibus aurantiacis granulatis.

*Hab.* Cameroons Mountains, alt. 7000–10,000 feet. (Fl. Dec.)

*Caules*  $\frac{1}{4}$ –1-pedales, laxè ramosi, debiles, fragiles, internodiis 1–2 unc. longis. *Folia* patentia, plana, pollicaria, basi obtusa, utrinque glanduloso-pilosa. *Panicula* pauciflora, pedicellis  $\frac{1}{4}$ – $\frac{1}{2}$  unc. longis. *Flores*  $\frac{1}{3}$  unc. diam. *Sepala* viridia, planiuscula. *Petala* sepalis longiora, alba, tenuiter membranacea, sensim apicem versus latiora, apice rotundato retuso v. 2-fido. *Stamina* 10, filamentis tenuissimis. *Ovarium* lineari-oblongum. *Capsula* sepalis paulo longiora. *Semina* ad 10–12, compressa, opaca, cotyledonibus incumbentibus.

A flaccid slender species, much resembling some very weak shoots of the North-African *A. procumbens*; but the flowers are white, the leaves are very different, the cotyledons accumbent, and, as far as I can make out, the capsule is only 5-valved. I know of no very nearly allied species. The petals are sometimes as much bifid as in many *Stellarias*; they vary much, sometimes even in the same flower.

5. *SAGINA ABYSSINICA*, *Hochst.* (*ante*, vi. 6).

*Hab.* Fernando Po, alt. 8500 feet. Cameroons Mountains, alt. 9000–11,000 feet. (Fl. Nov.–Jan.)

Plant sometimes forming dense hard tufts with woody roots.

6. *DRYNARIA CORDATA*, *Willd.*

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec., Jan.)

## 8. HYPERICINEÆ.

1. *HYPERICUM ANGUSTIFOLIUM*, *Lamk.* (*ante*, vi. 6).

*Hab.* Fernando Po, alt. 7000–10,000 feet. Cameroons Mountains, alt. 4000–8000 feet. (Fl. Dec.)

The leaves of Cameroons specimens are as narrow as of Abyssinian, and as well as the calyx are copiously glandular, but have few black dots.

## 9. LINEÆ.

1. *RADIOLA MILLEGRANA*, *L.*

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

Absolutely identical in every particular with the European

plant, which ranges from Scandinavia to Spain and from Madeira to Southern Russia, but has not hitherto been found in North Africa\*.

## 10. GERANIACEÆ.

1. GERANIUM EMIRNENSE, *Hils. & Boj. MSS. in Hb. Hook.*

*Hab.* Fernando Po, alt. 8500 feet.

2. GERANIUM SIMENSE, *Hochst. (ante, vi. 6).*

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov.-Jan.)

The same as Hochstetter's plant, except in the sepals being rather more gradually acuminate and the stipules rather narrower. It differs from the Fernando Po and Madagascar *G. Emirnense*, *Hils. & Boj.*, with which it is confounded in the Fernando Po florula, in wanting the spreading hairs. In Abyssinia it inhabits the middle region of Mount Silke.

3. GERANIUM FAVOSUM, *Hochst.*

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)—Herbacea, 4-pedalis.

Except in the rather smaller size of all its parts, and the lobing of the leaf hardly being carried below the middle, this is identical with the very remarkable Abyssinian species of Hochstetter. It is readily distinguished by the slender habit, copious spreading glandular hairs in all its parts, membranous foliage with acutely lacinate lobes, very short peduncles—often so short that the pedicels appear in pairs in the axils of the leaves, and the rugose carpels. In Abyssinia it is found at 5500 feet elevation, in the province of Agow.

4. OXALIS CORNICULATA, *L. (ante, vi. 8).*

*Hab.* Fernando Po, alt. 8500 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

## IMPATIENS.

I have here described all the species of this beautiful genus which have been discovered by Mr. Mann in the Islands of Biafra, Cameroons Mountains, and Sierra del Crystal.

1. VERTICILLATÆ. *Folia* verticillata v. opposita. *Flores* subumbellati v. in racemos longe pedunculatos breviter pedicellati.

1. IMPATIENS SAKERIANA, *H. f.*, n. sp. *Caule* erecto, *foliis* verticillatis

\* See footnote at p. 181.



graciliter petiolatis oblongo-lanceolatis acuminatis cuspidato-serratis, pedunculis folio longioribus, floribus breviter racemosis, sepalis late ovatis, vexillo galeato, labello infundibuliformi in calcar robustum apice inflatum contracto, alis parvis.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov.–Jan.)

Species pulcherrima, elata, 8-pedalis, ramosa?, inferne glabra, apicibus ramorum petiolis pedunculis basi foliisque junioribus subvillosis. *Folia* 1–4 unc. longa, in verticillo 3–6, petiolis  $\frac{1}{2}$ –3 unc. long., patentia, membranacea, glaberrima v. pilosula, crenato-serrata, crenis apice v. prope apicem setosis. *Pedunculi* validi, valde elongati, rigidi, 4–10-flori. *Bracteæ* ovatae, acuminatae, herbaceae, persistentes. *Pedicelli*  $\frac{1}{4}$ –1 unc. longi. *Flores* coccinei? *Sepala* bracteis similia, viridia, herbacea. *Vexillum* tumidum, valde concavum, obtusum, dorso apiculatum, lateribus productis. *Labellum* cum calcar  $\frac{3}{4}$  unc. long., calcar in apicem pyriformem 2-lobum tumente. *Alæ* lineares, vexillo vix longiores, porrectae, flavo et purpureo ut videtur coloratae. *Capsula*  $\frac{2}{3}$  unc. longa, ovalis, medio turgida, utrinque attenuata.

Named in compliment to the Rev. Mr. Saker, Mr. Mann's companion in his ascent of the Cameroons Mountains, and to whom he is much indebted for the success of his enterprising journey.

2. UMBELLATÆ. *Folia* alterna. *Flores* ad apicem pedunculi elongati, subumbellati.

2. IMPATIENS FILICORNU, *H. f.* (*ante*, vi. 6).

*Hab.* Fernando Po, alt. 4000–5000 feet. Sierra del Crystal. (Fl. Dec.)

3. IMPATIENS MACROPTERA, *H. f.*, n. sp. Glaberrima, caule crasso erecto nodoso, foliis apicem versus caulis alternis petiolatis ovatis acuminatis grosse crenatis inter crenas setiferis, pedunculis axillaribus elongatis erectis 2–4-floris, bracteis sepalisque ovatis acutis, pedicellis breviusculis, floribus magnis, vexillo parvo orbiculato purpureo, labello late oblique conico, calcar brevi incurvo, alis maximis pendulis oblongis obtusis.

*Hab.* Fernando Po, alt. 4500 feet. (Fl. April.)

*Herba* 2–4-pedalis. *Caulis* nodosus. *Folia* (cum petiolo glaberrimo) 3–4" longa, superne sub lente fasciculis subcutaneis raphidum notata. *Pedunculi* folia superantes. *Bracteæ* et *sepala* consimilia,  $\frac{1}{5}$ " longa. *Pedicelli* 1" longi. *Flores* 2–2 $\frac{1}{2}$ " longi, albi et virescentes (*ex Mannio*). *Vexillum* ut videtur ex sicco violaceum.

4. IMPATIENS PALPEBRATA, *H. f.*, n. sp. Parvula, pilosula, caule simplici paucifoliato, foliis graciliter petiolatis anguste oblongo-ovatis cordatis grosse crenatis crenis infimis longissime ciliolatis, scapo longissimo tenui apice florifero, bracteis minutis, pedunculis breviusculis, sepalis majusculis, vexillo breviusculo, alis elongatis stipitatis,

labello brevi in calcar crassum basi abrupte incurvum acutum repente contracto.

*Hab.* Sierra del Crystal. (Fl. July.)

*Spithamæa.* *Folia*  $\frac{3}{4}$ –1 unc. longa, membranacea, profunde crenatolobulata, ciliis basi rigidis fere  $\frac{1}{4}$  unc. longis; petiolo laminæ subæquilongo. *Scapus* 3 unc. longus, gracilis, apice 3–5-florus, pedicellis  $\frac{1}{4}$  unc. longis. *Flores*  $\frac{1}{2}$  unc. diam. *Vexillum*  $\frac{1}{8}$  unc. latum, sepalis æquilongum. *Alæ* divaricatæ,  $\frac{1}{3}$  unc. longæ, dimidiato-oblongæ, purpureæ. *Labellum*  $\frac{1}{4}$  unc. longum, ore oblongo, acuto, purpureo et viridi striato.

3. UNIFLORÆ. *Folia* alterna. *Pedunculi* axillares, sæpissime solitarii v. bini, uniflores.

5. IMPATIENS MANNII, *H. f.* (*ante*, vi. 7).

*Hab.* Fernando Po, alt. 4000 feet. Cameroons Mountains, alt. 2500–3000 feet. (Fl. April–Dec.)

In exemplaribus e mont. Cameroons, nervi foliorum subtus pedunculique pubescentes evadunt, et vexillum latius.

6. IMPATIENS BICOLOR, *H. f.* (*ante*, vi. 7), *Hook. Bot. Mag.* t. 5366.

*Hab.* Fernando Po, alt. 4000 feet. Cameroons Mountains, alt. 3500 feet. (Fl. Dec.–Feb.)

7. IMPATIENS BURTONI, *H. f.*, n. sp. Caule gracili erecto superne foliisque junioribus pilis mollibus subvillosis, foliis alternis graciliter petiolatis ovato- v. oblongo-lanceolatis acuminatis crenatis membranaceis utrinque sparse pilosulis, pedunculis solitariis axillaribus 1-floris gracilibus, sepalis lineari-lanceolatis acuminatis, vexillo bilobo dorso carinato piloso cornuto, labello late infundibuliformi, calcar tenui lente curvo, alis amplis.

*Hab.* Cameroons Mountains, alt. 2500–3000 feet. (Fl. Dec., Jan.)

*Herba* 2–3-pedalis. *Caulis* inferne glaber, siccitate sulcatus. *Folia* 3–4 unc. long., in petiolum attenuata, sinibus crenarum setulosis. *Pedunculi* petiolis longiores, erecti v. patentes. *Flores* flavi?, 1 unc. longi. *Vexillum* alis dimidio minus, late quadratum. *Calcar* vexillo vix longius, lente curvum. *Alæ* rhombeo-triangulares, patentes, angulis rotundatis. *Capsula* late elliptica, glaberrima.

4. LATERIFLORÆ. *Folia* alterna. *Pedunculi* axillares, solitarii, sæpissime 2–4-flores.

8. IMPATIENS HIANIS, *H. f.* (*ante*, vi. 7).

*Hab.* Fernando Po, alt. 2000 feet.

9. IMPATIENS BUCCINALIS, *H. f.*, n. sp. Glaberrima, caule ramoso, ramis geniculatim flexuosis apices versus foliatis, foliis petiolatis oblongo-lanceolatis acuminatis crenatis inter crenas setiferis, petiolis setis crassis glanduliferis sparsis, racemis brevibus 2–4-floris, bracteis late ovatis mucronatis, pedunculo brevi, pedicellis gracilibus flore

brevioribus, sepalis late ovatis cuspidatis, vexillo cucullato dorso late alato, labello crasso elongato cylindrico in calcar crassum circinatum intus gibbum contracto, alis parvis inclusis.

*Hab.* St. Thomas's Island, alt. 4000 feet.

*Herba* frutescens 12–15-pedalis (*G. Mann*), ramis ad axillas foliorum glandula depressa orbiculari auctis. *Folia* 4–6" long., membranacea, nervis arcuatis, petiolo setis crassis glanduligeris sparsis. *Flores* 2" longi, 1½" diametr. (ut videtur ex sicco rubri). *Vexillum* profunde concavum et dorso late alatum. *Labellum* ore acuminato, crassum, curvum, ad apicem in calcar circinatum abrupte attenuatum, latere incurvo ad basin calcaris abrupte gibbo inflato; calcari crassi, brevi, apice obtuso. *Alæ* parvæ, 2-lobæ, obtusæ, vexillo æquilongæ, os labelli non excedentes.

10. *IMPATIENS MACKAYANA*, *H. f.*, n. sp. Elata, robusta, glaberrima; caule crasso, foliis ad apicem caulis confertis alternis petiolatis elongato-lanceolatis, setoso-serratis, pedunculis axillaribus brevibus 2–3-floris, floribus maximis, vexillo amplo latissime ovato, alis stipitatis amplissimis, labello brevi late conico v. scaphæformi in calcar tenue inflexum repente contracto.

*Hab.* Sierra del Crystal, on rocks. (Fl. July.)

Species omnium fere speciosissima. *Caulis* 1–2-pedalis, succulentus. *Folia* 4–10 unc. longa, petiolis 1–3 unc. longis, sparse glandulosis v. setosis. *Pedunculi* cum pedicellis 1–3 unc. longi; bracteis minutis. *Flores* læte purpurei, 2–3 unc. diametr. *Sepala* ¼–⅓ unc. longa, oblique oblonga, acuminata. *Vexillum* 1 unc. latum, obtusum, membranaceum, multo latius quam longum. *Alæ* 2 unc. longæ, patentes, 2-lobæ, lobo inferiore laterali subrotundato quam terminalis obovatus multo minore. *Labellum* breve, ore oblongo 1 unc. diametr. longiore; calcari ⅓ unc. longo. *Capsula* ⅓ unc. longa, oblique oblonga, utrinque attenuata. *Semina* perplurima, minuta, obovoidea, rufa, papillosa.

## 11. RUTACEÆ.

### Trib. AURANTIACEÆ.

1. *CLAUSENA INÆQUALIS*, *Benth. in Fl. Nigrit.* 257.

*Hab.* Cameroons Mountains, alt. 7000–7500 feet. (Fl. Dec.–Feb.) (Tree 10 feet).

Professor Oliver, who has kindly examined these specimens, finds no difference, beyond the more luxuriant habit, between them and others from South Africa, where it abounds from Uitenhage to Macalisburg. He further identifies it with *C. anisata* of Cape Coast, and considers it scarcely distinguishable from *C. Willdenovii* of India, except by the collateral insertion of the ovules.

## 12. SIMARUBEÆ.

1. BRUCEA ANTIDYSENTERICA, *Miller*.

*Hab.* Cameroons Mountains, alt. 7000–7500 feet. (Fl. Dec.–Feb.)

Mann's plant seems identical with the Abyssinian. It grows 20 feet high.

## 13. OCHNACEÆ.

1. GOMPHIA MICRANTHA, *H. f.* (*ante*, vi. 8).

*Hab.* Fernando Po, alt. 5000 feet. (Fl. Nov.)

## 14. ILICINEÆ.

1. ILEX CAPENSIS, *Sond. & Harv. Fl. Cap.* i. 473.

*Hab.* Cameroons Mountains, alt. 4000–7500 feet. (Fl. Feb.)

Apparently a very common South-African plant, found from the vicinity of Cape Town to Macalisburg. It attains 40 feet high on the Cameroons.

## 15. AMPELIDEÆ.

1. VITIS (CISSUS) CYPHOPETALA, *Fres.; A. Rich. Fl. Abyss.* i. 110.

Var. *occidentalis*, foliolis glabratis acutius serratis.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov.)

Very near indeed to the Abyssinian plant, but differing in the rather narrower, more acuminate leaflets with sharper serratures, and in being everywhere less pubescent; the structure of the remarkable flowers is identical. The leaves show a tendency to become digitate.

## 16. SAPINDACEÆ.

1. SCHMIDELIA ABYSSINICA, *Hochst. in Pl. Schimp. S. Africana, DC. ex A. Rich., Flor. Abyss.* i. 102, sed vix.

*Hab.* Cameroons Mountains, alt. 7000–7500 feet. (Fl. Dec.)

The ripe carpels of the Cameroons specimens are rather larger than those of the Abyssinian (*S. Abyssinica*, Hochst.), and more distinctly pedicellate. Our specimens are from a tree 30–40 feet high. Schimper describes it as "arbor altissima," and says it grows in the mountain-region of Semajata. A. Richard unites the Abyssinian plant with the Oware one of Palisot; but they differ so much in the size of the flowers, that they seem scarcely the same specifically.

## 17. LEGUMINOSÆ.

1. ADENOCARPUS MANNII, *H. f.* *Cytisus Mannii* (*ante*, vi. 8).

*Hab.* Fernando Po, alt. 9000 feet. Cameroons Mountains, alt. 7000–12,000 feet. (Fl. Dec.)

The flowers of the Cameroons Mountains' specimens are con-

siderably larger than the Fernando Po ones, and the pods prove it to be a true *Adenocarpus*.

2. TRIFOLIUM SUBROTUNDUM, *Steud. & Hochst.*; *var. stipulis majoribus* (*ante*, vi. 8).

*Hab.* Fernando Po, alt. 9000 feet. (Fl. Dec.)

3. TRIFOLIUM SIMENSE, *Fresen.* (*ante*, vi. 9).

*Hab.* Fernando Po, alt. 8500 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Nov., Dec.)

4. INDIGOFERA ATRICEPS, *Hook.*, n. sp. Fruticulus gracilis, hispidosetulosus, foliis imparipinnatis, foliolis 9-13 obovatis v. obovato-oblongis apiculatis utrinque petiolisque hispidulis, pedunculis axillaribus foliis longioribus racemisque brevibus atro-pilosulis, calycis tubo brevi turbinato lobis longe subulatis, ovario 5-8-spermo, legumine hispido-piloso stylo filiformi persistente terminato.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov.-Jan.)

*Fruticulus* ramosus, 2-3-pedalis, ramis teretiusculis, partibus novellis setis patentibus deciduis glandulosis sparsis, ramulis ultimis pedunculis calycibusque atris. *Folia*  $\frac{3}{4}$ -1 $\frac{1}{2}$  unc. longa, petiolo gracili; foliola petiolulata, plana, enervia,  $\frac{1}{3}$ - $\frac{1}{2}$ " longa; stipulæ filiformes. *Flores*  $\frac{1}{4}$  unc. longi, purpurei, breviter pedicellati, conferti, subsecundi; bracteolæ subulatae. *Calycis* lobi stamina æquantes. *Vexillum* late oblongum, apice rotundatum, reflexum, dorso hispido-pilosum. *Alæ* spathulatae, obtusæ, carinam æquantes, apices versus extus hispidulæ. *Antheræ* longe mucronatae. *Legumen* teretiusculum,  $\frac{1}{3}$  unc. long., setulis atris bifurcatis hispidulum, pilisque pallidis glanduliferis patentibus sparsis deciduis onustum. *Ovarium* pilosum, septis spuris locellatum, 6-8-spermum. *Semina* parva, immatura.

5. DESMODIUM STRANGULATUM, *Wight & Arn.*

*Hab.* Cameroons Mountains, alt. 2000-7000 feet. (Fl. Jan.)

A variety with obtuse leaves (so far as I can judge without ripe fruit) of the common tropical Indian and African weed, which varies with leaflets acuminate and obtuse.

6. SHUTERIA AFRICANA, *H. f.*, n. sp. Molliter retrorsum sericeo-pilosa, stipulis bracteisque lineari-oblongis scariosis multistriatis, foliolis late ovato-oblongis ovatisve longe apiculatis membranaceis superne pilosis subtus sericeo-pilosis, racemis elongatis, floribus graciliter pedicellatis, calycis tubo cylindræo-campanulato lobis subulatis duplo longiore, leguminibus lineari-ensiformibus undulatis compressissimis marginatis.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov.)

*Caulis* gracilis, volubilis, 10-12-pedalis. *Petioli* graciles, 2 unc. longi.

*Foliola* 2 unc. longa, lateralia basi stipellis filiformibus aucta. *Stipulæ*

$\frac{1}{3}$  unc. longæ. *Racemi* 3–4 unc. longi, multiflori; *bracteæ*  $\frac{1}{4}$ – $\frac{1}{3}$  unc., *pedicellis* longiores. *Flores*  $\frac{1}{2}$  unc. long. *Calyx* ebracteolatus, parce pilosus. *Corolla* purpurea. *Vexillum* obovatum, anguste biauriculatum. *Stamen* vexillare, liberum. *Stigma* capitatum. *Legumen* subsericeum,  $\frac{1}{2}$ –1 unc. longum,  $\frac{1}{8}$  unc. latum, utrinque oblique acutatum, apice rostratum, 2–4-spermun, intus continuum. *Semina* reniformia, marmorata,  $\frac{1}{8}$  unc. lata.

This is identical with an Abyssinian species collected by Dr. Roth near Ankobar.

#### 7. DALBERGIA, sp.

*Hab.* Cameroons Mountains, alt. 5000 feet. (Fl. Dec.)

A tropical, glabrous, and apparently new species, of which I have no fruit. The leaflets are 3–4-jugate, petiolulate, lanceolate, with attenuate retuse apices, coriaceous. Flowers on short, branched, nearly glabrous panicles.

### 18. ROSACEÆ.

#### 1. RUBUS APETALUS, Poir. (*ante*, vi. 9).

*Hab.* Fernando Po, alt. 7000 feet. Cameroons Mountains, alt. 4000–9000 feet. (Fl. Nov.)

Some of the Cameroons Mountains' specimens are apetalous, like the East African; and Mr. Mann observes that the fruit is eatable.

#### 2. ALCHEMILLA TENUICAULIS, H. f., n. sp. Parvula, laxè molliter patentim villosa, caulibus elongatis prostratis, foliis orbiculari-reniformibus 5–7-lobis, lobis obtusis crenulato-serratis, foliis floralibus cuneatis 3-lobis, calycis lobis brevibus ovatis, acheniis 2–4 glabris.

*Hab.* Fernando Po, alt. 7500 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

*Caules* 6–12 unc. longi, tenues. *Folia* radicalia conferta,  $\frac{1}{2}$ – $\frac{3}{4}$  unc. lata, utrinque sericeo-pilosa, fere ad tertiam partem 5–7-loba. *Stipulæ* membranaceæ v. herbaceæ, profundè dentatæ. *Flores* in axillis foliorum floralium, laxè spicatæ, parvæ, sessiles. *Calycis* tubus glabriusculus, lobis parvis ovatis acutis. *Stamina* imperfecta 3 tantum visa. *Achenia* matura 2–4, stipitata, minuta, glabra.

Very similar in many respects to the *A. Capensis*, Th., but smaller in all its parts, with smaller calyx-lobes, and several much smaller achenia. The Abyssinian *A. pedata*, Hochst., has deeper-cleft leaves.

#### 3. PYGEUM AFRICANUM, H. f., n. sp. Glaberrimum, foliis longe petiolatis elliptico-oblongis obtuse acuminatis et serratis, racemis multifloris, calycis 5-lobi tubo lato intus piloso, petalis parvis fimbriatis.

*Hab.* Cameroons Mountains, alt. 7000–7500 feet. (Fl. Dec., Jan.)

*Arbor* 30–40-pedalis. *Folia* 4 unc. longa, submembranacea, læte viridia, glaberrima, eglandulosa, reticulatim venosa, petiolo gracili  $\frac{1}{2}$  unc. longo.

*Stipulæ* parvæ, deciduæ. *Racemi* pollicares et ultra, 12-20-flori, patentes. *Pedicelli* patentes v. decurvi,  $\frac{1}{4}$  unc. longi, ebracteati. *Calycis* tubus hemisphærico-campanulatus, lobis brevibus latis obtusis. *Petala* parva, alba. *Stamina* 20-30, filamentis brevibus subulatis. *Antheræ* oblongæ. *Ovarium* oblique ovoideum, in stylum crassum brevem subangustatum, stigmatem magno, obliquo.

Apparently identical with a species gathered in tropical Eastern Africa by Dr. Kirk (Livingstone's Expedition), at an elevation of 3000 feet, at the foot of Mount Tshiradzuri and near Mungazi, of which I have fruit only. The latter is a much depressed sphere, near  $\frac{1}{2}$  inch in longest diameter, coriaceous and 1-seeded. The leaves are rather more deeply toothed in Mann's plant; but that is a most variable character amongst its allies.

### 19. CRASSULACEÆ.

1. *TILLÆA ALSINOIDES*, *H. f.*, n. sp. Herba foliosa, ramosa, glaberrima, annua?; foliis breviter petiolatis ovato-oblongis subacutis integerrimis subnerviis, petiolis basi in vaginam brevem ciliatam connatis, floribus axillaribus solitariis graciliter pedicellatis, calycis laciniis planiusculis acutis petala consimilia subæquantibus, squamulis hypogynis 0, capsula polysperma.

*Hab.* Fernando Po, alt. 7500 feet.

*Herba* habitu *Alsines mediæ*. *Caules* graciles, ramosi, ad nodos radicantes. *Folia*  $\frac{1}{3}$  unc. longa, obscure 3-nervia, crassiuscula. *Pedunculi* foliis longiores v. breviores. *Flores* albi,  $\frac{1}{3}$  unc. diametr. *Capsulæ* membranaceæ, sepalis æquilongæ. *Semina* oblonga, pallida.

This species has been gathered near Ankobar in Abyssinia by Dr. Roth.

2. *TILLÆA PHARNACEOIDES*, *Hochst. Pl. Abyss.* i. 104. *Combesia Abyssinica*, *A. Rich. Fl. Abyss.* i. 307. *Disporocarpa pharnaceoides*, *C. A. Mey.*

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov.)

Also an Abyssinian and N.W. Indian plant.

3. *TILLÆA PENTANDRA*, *Royle.*

*Hab.* Cameroons Mountains, alt. 8000 feet. (Fl. Nov.)

A Himalayan and Nilgherrie Mountains' plant; also found by Roth and Parkyns in Abyssinia.

4. *UMBILICUS PENDULINUS*, *DC.*

*Hab.* Cameroons Mountains, alt. 7000-10,000 feet. (Fl. Nov.)

Apparently the same as the European plant, but rather more fleshy in habit, of a deeper green colour, and with the bracts often but not always, foliaceous, and varying greatly in size and in form

from linear to oblong-spathulate. A. Richard's Abyssinian *U. botryoides* is the same plant. The range of *U. pendulinus* is from Britain to Mogadore in N.W. Africa, and from Madeira and the Canary Islands, throughout the Mediterranean Sea to the Greek Archipelago, and Abyssinia.

5. *CRASSULA* (*EUCRASSULA*, Harv. *Fl. Cap.*) *MANNII*, H. f. Herbacea, caule brevi crasso robusto simplici basi glabro superne minute papilloso, foliis oblongo- v. cordato- v. lineari-lanceolatis in vaginam elongatam connatis ovato-lanceolatis margine papillis fimbriatis, cymis ramosissimis densifloris, floribus parvis glaberrimis breviter pedicellatis, sepalis oblongo-ovatis obtusis, petalis oblongis obtusis eglandulosis basi subconnatis sepalis vix duplo longioribus, glandulis cuneato-quadratis.

*Hab.* Cameroons Mountains, alt. 6000–10,000 feet. (Fl. Dec.)

*Herba* 6–18 unc. alta, robusta, simplex, caule crassitie pennæ olorinæ et ultra, teres, foliosa. *Folia* valde varia, 1–4 unc. longa, interdum late ovato-subcordata, glaberrima, margine tenuiter fimbriato excepto. *Cymæ* dense congestæ, in corymbum amplum compositum 3 unc. latum dispositæ. *Bracteæ* foliaceæ, sensim minores. *Flores* sub  $\frac{1}{8}$  unc. diam.

Very nearly allied to *C. Abyssinica*, A. Richard; but the papillæ on the upper part of the plant are much shorter, the leaves less acute, the flowers considerably smaller, and both sepals and petals shorter, broader, and blunter.

6. *KALANCHOË ÆGYPTIACA*, DC. Glaberrima, foliis obovato-oblongis apice rotundatis in petiolum attenuatis grosse crenatis, paniculis amplis umbellatim cymosis multifloris, floribus  $\frac{1}{3}$  unc. longis, sepalis lanceolatis acuminatis, corolla calyce triplo longiore tubo 4-gono urceolato ore angusto lobis oblongis acuminatis.

*Hab.* Cameroons Mountains, alt. 3000–7000 feet. (Fl. Dec., Jan.)

*Herba* elata, 4–6-pedalis, glaberrima. *Caulis* teres, superne trichotome ramosus, floribundus. *Folia* 3–4 unc. longa, in petiolum 1–1 $\frac{1}{2}$  unc. long. attenuata, grosse crenata, siccitate venosa. *Cymæ* valde ramosæ, subumbellatæ, pedicellis gracilibus, bracteis bracteolisque anguste lanceolatis v. setaceis. *Flores* ut videtur aurantiaci. *Stamina* brevia. *Glandulæ* hypogynæ lineares. *Folliculi* membranacei, longe attenuati. *Semina* minuta, oblonga, flava.

So very nearly allied to *K. Ægyptiaca*, DC. Pl., Grasses, 64, that I hesitate to distinguish it specifically; but the leaves are coarsely crenate, and not toothed as represented in De Candolle's figure. That author, however, describes the leaves as crenate or sometimes entire. I have seen no authentic specimens of *K. Ægyptiaca*, which Forskahl describes (under the name of *Cotyle-*



*don deficiens*) as a native of Mount Melhan in Arabia (lat.  $14^{\circ} 40'$  N., long.  $44^{\circ}$  E.), and adds that the plant is cultivated in Egypt. De Candolle erroneously considers Mount Melhan to be in Egypt.

Hochstetter and Steudel refer an Abyssinian tomentose *Kalanchoë* (*Schimperiana*, A. Richard, Fl. Abyss. i. 310) to Forskahl's *Cotyledon deficiens*; but no doubt erroneously, as A. Richard suspects.

From the Botanical Magazine figure (tab. 1436, sub *Cotyledone*) of *K. crenata*, Haw. Synops. 109, Mann's plant differs solely in the absence of any hairs, and the apparently darker-coloured flowers, the leaves being identical. *K. crenata* is a native of Western tropical Africa. De Candolle does not describe *K. crenata* as at all hairy.

## 20. CUCURBITACEÆ.

### 1. MUKIA, sp.?

*Hab.* Fernando Po, alt. ? Cameroons Mountains, alt. 7000 feet. (Fl. Dec., Jan.) (Male fl. only.)

A similar and probably identical species is found in Abyssinia; it resembles a good deal the common Indian *M. scabrella*.

### 2. BRYONIA, sp.

*Hab.* Cameroons Mountains.

A very small-flowered species, not unlike *B. Americana* in habit.

## 21. UMBELLIFERÆ.

1. **HYDROCOTYLE MONTICOLA**, *H.f.*, n. sp. Pusilla, glaberrima, caule filiformi elongato, foliis breviuscule petiolatis peltatis orbiculatis basi bilobis 6-9-lobulatis, lobulis crenulatis, pedunculis brevissimis 2-4-floris, mericarpiis 1-costatis dorso acutis, stylis breviusculis.

*Hab.* Cameroons Mountains, alt. 8500 feet.

*Caules* tenuissimi, intertexti, 2-4 unc. longi. *Folia*  $\frac{1}{6}$ - $\frac{1}{3}$  unc. diam., sæpissime peltata, subtus interdum pilosula; *petiolo*  $\frac{1}{8}$ - $\frac{1}{2}$  unc. longo. *Pedunculus*  $\frac{1}{16}$ - $\frac{1}{12}$  unc. longus. *Fructus*  $\frac{1}{24}$  unc. latus.

2. **HYDROCOTYLE MANNII**, *H.f.*, n. sp. Pilosa, caule tenui elongato, foliis modice petiolatis orbiculatis basi ad medium bilobis sinu angustissimo ambitu 7-9-lobis, lobis brevibus obtusis crenatis, pedunculis petiolis subæquilongis hirsutis, capitulis globosis multifloris, fructibus minimis, mericarpiis 1-costatis dorso acutis, stylis elongatis.—An *H. rotundifoliæ* Roxb. var.?

*Hab.* Fernando Po, alt. 7000 feet.

*Caules* 6-10 unc. longi, pilosi, novellis hirsutis. *Folia*  $\frac{1}{3}$ - $\frac{2}{3}$  unc. lata, utrinque longe setuloso-pilosa; *petiolo*  $\frac{1}{2}$ - $1\frac{1}{2}$  unc. longo; *stipulis* latis, membranaceis. *Capitula*  $\frac{1}{10}$ - $\frac{1}{8}$  unc. diam. *Fructus*  $\frac{1}{30}$  unc. latus; *stylo* subæquilongo.—*H. rotundifoliæ* (Indiæ orientalis) proxima, sed *stipulis* amplis aliisque notis differt.

3. *SANICULA EUROPEA*, L. (*ante*, vi. 9).

*Hab.* Fernando Po, alt. 4000–7500 feet. Cameroons Mountains, alt. 4000–8500 feet. (Fl. Nov.–Feb.)

4. *AGROCHARIS MELANANTHA*, Hochst. in *Flora*, 1844, i. 19. *A. gracilis*, H. f. (*ante*, vi. 9).

*Hab.* Fernando Po, alt. 7000 feet. Cameroons Mountains, alt. 7000–8000 feet. (Fl. Dec., Jan.)

The Cameroons Mountains' specimens prove that my *A. gracilis* is not even a constant variety of the Abyssinian plant. It attains a height of 4–6 feet.

5. *PIMPINELLA OREOPHILA*, H. f., n. sp. (*Gymnosciadium?*, *ante*, vi. 10). Pubescenti-tomentosa, foliis imparipinnatis, foliolis 1–4-jugis subtus pilosis lateralibus rhombéo- v. rotundato-ovatis crenatis terminali cordato, involucro 0, involucelli foliolis paucis filiformibus pedicellos æquantibus, petalis lacinia inflexa, fructu glaberrimo, mericarpiis 9-jugis.

*Hab.* Fernando Po and Cameroons Mountains, alt. 10,000 feet.

*Herba* erecta, statura variabilis, 4–10 unc. alta. *Petioli* 2–4 unc. longi. *Foliola*  $\frac{1}{3}$ – $\frac{1}{2}$  unc. longa, subcoriacea. *Petioli* basi longe vaginantes. *Umbellæ* radii dense v. laxè tomentosi. *Flores* minuti. *Calycis* limbus obsoletus. *Fructus*  $\frac{1}{2}$ – $1\frac{1}{4}$  lin. longus, glaberrimus, jugis prominulis, vittis inter juga solitariis obscuris.

6. *PEUCEDANUM PETITIANUM*, A. Rich. *Fl. Abyss.*

*Hab.* Fernando Po, alt. 9000–9500 feet. (Fl. Dec.)

The stem is more slender and geniculate, and the rays of the umbel shorter than in Abyssinian specimens.

7. *ANTHRISCUS AFRICANUS*, H. f., n. sp. Elata, caule basi hispidopubescente superne divaricatim ramoso, ramis gracillimis, foliis 3-foliolatis rarius pinnatis v. 2-ternatis, foliolis inferiorum petiolulatis late ovato-cordatis grosse inæqualiter dentatis superiorum lineari-lanceolatis serratis petiolis superne retrorsum hispidis, involucris 0, umbellæ radiis 3–5 filiformibus, fructu glaberrimo.

*Hab.* Cameroons Mountains, alt. 4000–7000 feet. (Fl. Feb.)

*Herba* 3–4-pedalis; caule gracili tereti sulcato, basi hispidulo, superne glaberrimo, laxè graciliter dichotome ramoso. *Petioli* graciles, petiolulique plus minus retrorsum hispidopilosi; foliola membranacea, pilosula, 1–2 unc. longa, grosse inæqualiter dentata et sublobata. *Umbellæ* radii 3–4,  $1\frac{1}{2}$ –2 unc. longi, striati, gracillimi; umbellulæ radii 3–5, fructiferi fere pollicares. *Flores* parvi. *Calycis* limbus obsoletus. *Petala* lacinia brevi inflexa. *Fructus*  $\frac{1}{8}$  unc. longus, glaberrimus, anguste ovoideus, mericarpiis teretiusculis glaberrimis, jugis inconspicuis; stylopodiis elongatis; stylis recurvis, filiformibus.

## 22. ARALIACEÆ.

1. PARATROPIA MANNII, *H. f.* (*ante*, vi. 10).

*Hab.* Fernando Po, alt. 5000 feet. Cameroons Mountains, alt. 5000–7000 feet. (Fl. Dec.–Feb.)

2. PARATROPIA ELATA, *H. f.*, n. sp. Glaberrima, foliis 5-foliolatis, petiolis petiolulisque gracilibus, foliolis ovato-cordatis acuminatis subserratis nervis conspicuis lucidis, umbellulis 4–6-floris pedunculatis secus ramos simplices elongatos inflorescentiæ racemosis.

*Hab.* Cameroons Mountains, alt. 7500 feet. (Fl. Feb.)

*Arbor* 50–60-pedalis, ramis crassis, lignosis. *Petioles* teretes, spithamæi, sulcati; petiolulis 2–3-pollicaribus. *Foliola* 4–7 unc. longa, superne inter nervos reticulatim venosa. *Stipulæ* membranaceæ, subvaginantes, axillares, basi intus ad basin petioli connatæ, coriaceæ. *Inflorescentia* terminalis. Axis crassissimus; bracteis vaginantibus coriaceis pubescenti-tomentosis: rami elongati, curvi, divaricati, 6–8 unc. longi, umbellas pedunculatas racemosim gerentes, rhachi pedunculisque glaberrimis: pedunculi unciales, basi bracteolati, bracteolis linearibus deciduis lanuginosis. *Flores* parvi, pedicellique glaberrimi. *Calyx* turbinatus, limbo truncato. *Petala* 5, ovata, subacuta. *Stamina* 5, petalis æquilonga; antheræ subglobosæ. *Stylus* conicus, apice 4–5-lobus. *Ovarium* 4–5-loculare.

A noble species, very similar to *P. Mannii*, but at once distinguished by the cordate, nerved leaflets and umbellate flowers.

## 23. LORANTHACEÆ.

1. LORANTHUS (DENDROPHTHOË) OREOPHILUS, *Oliver*, n. sp. Glaber, foliis suboppositis petiolatis ovato-lanceolatis acutis coriaceis, umbellulis axillaribus pedunculatis ∞-floris, floribus pedicellatis bracteola parva oblique cupulari suffultis, corolla basi tumida, filamentis apice in connectivo continuis.—*Oliv. MSS.*

*Hab.* Cameroons Mountains, alt. 6000–8000 feet. (Fl. Dec.)

*Rami* 2–3-pedales, robusti. *Folia* interdum alterna v. subverticillata,  $2\frac{1}{2}$ –4 unc. longa,  $\frac{3}{4}$ – $1\frac{3}{4}$  lata, petiolo  $\frac{1}{3}$ – $\frac{1}{2}$  unc. longo. *Pedunculus* 3–10 unc. longus. *Corolla*  $\frac{1}{4}$  unc. longa, lobis denique revolutis.—*Oliv.*

## 24. RUBIACEÆ.

1. BACONIA MONTANA, *H. f.*, n. sp. Glaberrima, foliis ovato- v. obovato-lanceolatis in petiolum angustatis acuminatis, corymbis puberulis, calycis lobis oblongis obtusis.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

*Frutex* 6–8-pedalis. *Rami* teretes. *Folia* 4–6 unc. longa, lucida, petiolis  $\frac{1}{2}$ – $\frac{3}{4}$  unc. longis; stipulæ in cupulam brevem connatæ, abrupte subulatae. *Corymbi* breviter pedunculati, subterminales, multiflori, 1–2 unc. lati. *Pedicelli*  $\frac{1}{3}$  unc. longi. *Alabastra*  $\frac{1}{4}$ – $\frac{1}{3}$  unc. longa, glabra. *Calycis* tubus turbinato-campanulatus; limbi lobi subrecurvi,

tubo æquilongi, decidui. *Corollæ* tubus brevis, fauce intus villosa; lobi elongati, imbricati. *Stamina* 4, filamentis brevibus; antheris elongatis, connectivo apice producto. *Stylus* brevis, in stigma elongatum subclavatum angulatum bipartibile desinens. *Ovula* septo peltatim affixa. *Baccæ* parvæ. *Semina* orbiculata, peltata, conchoidea, ventre valde intruso, marginibus cartilagineis. *Albumen* non ruminatum.

Allied to *B. corymbosa*; but the flowers are smaller and the calyx-lobes much longer.

2. *IXORA*, sp.

*Hab.* Cameroons Mountains, alt. 5000 feet. (Fl. Dec.)

This genus has not hitherto been found in Abyssinia. The Cameroons species resembles, but is not identical with, a Madagascar one, and is probably a nondescript.

3. *VIGNALDIA OCCIDENTALIS*, *H. f.*, n. sp. Caule basi suffrutescente erecto cum foliis subtus et inflorescentia tomentosus, foliis ovato-lanceolatis superne pubescentibus breviter petiolatis, stipulis in setas 5-7 tomentosas dissectis, cymis corymbosis densifloris, calycis laciniis subulato-lanceolatis tubo corollæ dimidio brevioribus, corollæ tubo elongato pubescente intus subvillosus, lobis linearibus, staminibus exsertis.

*Hab.* Fernando Po, alt. 8500 feet. Cameroons Mountains, alt. 7000-9000 feet. (Fl. Nov.-Jan.)

*Frutex* 3-4-pedalis. *V. Schimperianæ* Abyssiniæ simillima, sed differt lobis calycinis (floriferis et fructiferis) longioribus, tubo gracili corollæ dimidio brevioribus.

4. *ANTHOSPERMUM ASPERULOIDES*, *H. f.* (*ante*, vi. 11).

*Hab.* Fernando Po, alt. 10,000 feet. Cameroons Mountains, alt. 12,000 feet. (Fl. Dec., Jan.)

5. *GALIUM ROTUNDIFOLIUM*, *L.* (*ante*, vi. 11).

*Hab.* Fernando Po, alt. 10,000 feet. Cameroons Mountains, alt. 7000-12,000 feet. (Fl. Dec., Jan.)

6. *GALIUM APARINE*, *L.*, var. *hamatum*, *H. f.* (*ante*, vi. 11).

*Hab.* Fernando Po, alt. 10,000 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Dec., Jan.)

25. *DIPSACEÆ*.

1. *SCABIOSA SUCCISA*, *L.*

*Hab.* Cameroons Mountains, alt. 10,500 feet. (Fl. Jan.)

A very robust form, but not otherwise to be distinguished from the European plant, which ranges from Iceland to Madeira and the Canary Islands, and from Spain to Asia Minor, the Caucasus, and Altai Mountains, but is nowhere found in Northern Africa.

## 26. COMPOSITÆ.

1. *VERNONIA* (*STROBOCALYX*) *MYRIANTHA*, *H. f.*, n. sp. Arborea, ramulis ultimis foliis subtus inflorescentiaque pubescentibus, foliis 8–10 unc. longis petiolatis lanceolatis eroso-dentatis acuminatis membranaceis, corymbis amplis ramosis polycephalis, capitulis 5-floris apices versus ramorum gracilium corymbi sessilibus subaggregatis, involucri squamis obtusis.

*Hab.* Fernando Po, alt. 4000–5000 feet. Cameroons Mountains, alt. 3000–7000 feet. (Fl. Dec.–Feb.)

*Arbor* parva, 20-pedalis. *Rami* crassi, læves. *Folia* superne glabra, subtus pubescentia, demum puberula v. glabrata, nervis utrinque plurimis. *Corymbi* valde ramosi, 6–10 unc. ampli, ramis gracilibus. *Capitula*  $\frac{1}{3}$  unc. longa. *Involucri* squamæ glabræ, concavæ, valde coriaceæ, apicibus rotundatis brunneis. *Receptaculum* nudum, papillosum. *Flores* involucri duplo longiores. *Pappi* setæ rigidæ, scaberrulæ. *Corolla* glaberrima. *Achenium* apicem versus pilosum.

2. *VERNONIA* (*LEPIDAPLOA*) *BLUMEOIDES*, *H. f.*, n. sp. Herbacea, dense griseo-pubescenti-tomentosa, ramis robustis simplicibus erectis, apice corymboso-ramoso, folioso, foliis 2–3 unc. long. densis erecto-patentibus subsessilibus lanceolatis acutis integerrimis supra scaberrulis subtus nervis prominulis, corymbis dense tomentosus ramosis, capitulis  $\frac{1}{2}$  unc. longis, involucri campanulato 20-floro, squamis ad 3–5-seriatis linearibus acutis 3-nerviis pubescentibus, pappi setis albis interioribus brevibus, achenio glaberrimo, receptaculo fimbrillifero.

*Hab.* Cameroons Mountains, alt. 4000–7000 feet. (Fl. Nov.–Jan.)

*Herba* 2–3-pedalis, subsimplex v. ramosa. *Folia* vix coriacea,  $\frac{1}{2}$  unc. lata, siccitate fusco-viridia. *Corymbi* ampli. *Capitula* pedunculata. *Flores* purpurei.

3. *VERNONIA*? (*LEPIDAPLOA*) *MANNII*, *H. f.*, n. sp. Herbacea, elata, ramosa, foliis caulinis e basi ovata profunde cordata amplexicauli elongato-lanceolatis subtus molliter albo-lanuginosis, corymbis multifloris, capitulis  $\frac{1}{2}$  unc. longis pedicellatis, involucri campanulati 30-flori squamis 3–4-seriatis lineari-lanceolatis longe ciliatis, pappi setis flavidis scabris 2-seriatis subæqualibus, acheniis glaberrimis, receptaculo lævi.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec., Jan.)

*Herba* 6–10-pedalis; caule robusto, sulcato, superne pubescente, basi glabrato. *Folium* infimum unicum tantum a Mannio collectum a caulinis valde diversum (an ejusdem speciei?), 2-pedale, membranaceum, spathulato-lanceolatum, in petiolum late sinuato-alatum decurrens, margine denticulato, subtus griseo-tomentosum. *Folia* caulina 6–8 unc. longa, obtusa, denticulata, supra pubescenti-pilosa, subtus dense albo-villosa. *Corymbi* ampli, multiflori. *Flores* purpurei?, glabri, exteriores tenuiores. *Antheræ* exsertæ, bicaudatæ. *Achenium* teretiusculum, nec basi nec apice incrassatum v. dilatatum.

4. *VERNONIA (LEPIDAPLOA) CLARENCEANA*, *H. f.* (*ante*, vi. 11).

*Hab.* Fernando Po, alt. 7500–8500 feet. (Fl. Dec.)

5. *STENGELIA CALVOANA*, *H. f.*, n. sp. Ramulis velutino-pubescentibus, foliis caulinis lanceolatis sessilibus deorsum longe attenuatis basi auriculato-bilobis membranaceis acute dentatis, corymbis laxe 8–10-floris, capitulis late hemisphærico-campanulatis, involucri foliolis extimis linearibus herbaceis intermediis in laminam maximam oblongam dilatatis intimis coriaceis obtusis, pappi setis multiseriatis compressis pilosis, acheniis teretibus glaberrimis, receptaculo amplo plano lævi.

*Hab.* Cameroons Mountains, alt. 2500–7000 feet. (Fl. Dec.)

*Suffrutex* 8–12-pedalis. *Caulis* robustus, ramosus, sulcatus. *Folia* inferiora ignota, caulina 6–10 unc. longa, membranacea, superne glaberrima, subtus ad nervos pubescentia. *Capitula* longe pedunculata, 2 unc. diametr. *Involucri* squamæ crasse coriaceæ v. herbaceæ, basi confluentes, extimæ subsquarrosæ; intermediæ lamina oblonga  $\frac{1}{2}$  unc. longa, colorata; intimæ  $\infty$ -seriatæ, lineari-oblongæ, concavæ, coriaceæ. *Pappus* subrufescens, nitens. *Corollæ* cyanæ; tubus gracilis, ore ampliato. *Stamina* exserta, antheris breviter caudatis.

A very fine species, allied to the following and to *S. Adoensis*, Schimp., but differing from both in the sessile cauline leaves with auriculate bases.

6. *STENGELIA INSIGNIS*, *H. f.*, n. sp. Ramulis robustis pubescentibus et glanduloso-pilosis, foliis graciliter petiolatis lanceolatis acuminatis basi anguste inæqualiter bilobis argute dentatis glaberrimis, corymbis laxe 10–12-floris, capitulis late hemisphærico-campanulatis, cæterum fere *S. Calvoanæ*.

*Hab.* Cameroons Mountains, alt. 3000–7000 feet. (Fl. Dec.)

A totally distinct species from *S. Calvoana*, differing in the glandular hairs of the stem and corymb, and the slender petioles of the much smaller leaves, which are attenuate at the base and there unequally bilobed. The capitula strongly resemble those of *S. Calvoana*; but the laminæ of the intermediate scales are smaller, shorter, and broader, and the innermost scales are less numerous, and have short, rather membranous appendages.

7. *ADENOSTEMMA VISCOSUM*, *Forst.* (*ante*, vi. 12).

*Hab.* Fernando Po, alt. 4000–8000 feet. Cameroons Mountains, alt. 7500 feet. (Fl. Dec.–Feb.)

8. *MIKANIA CHENOPODIIFOLIA*, *Willd.*

*Hab.* Cameroons Mountains, alt. 4000–7000 feet. (Fl. Dec.–Feb.)

A common tropical littoral plant on both coasts of Africa and in the Indian Archipelago.

9. *MICROGLOSSA DENSIFLORA*, *H. f.*, n. sp. Ramis teretibus, petiolis foliisque subtus glanduloso-pubescentibus, foliis 3-4 unc. long. petiolatis ovato-lanceolatis serratis longe acuminatis, corymbis densifloris, involucri campanulati squamis 3-4-seriatis obtusis marginibus ciliatis, floribus radii ligula elongata, pappo albido.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec., Jan.)

Alte scandens. *Caulis* robustus, sulcatus. *Folia* membranacea, superne scaberula, subtus pubescenti-tomentosa; petiolo glanduloso-piloso, subvillosa. *Corymbi* ampli, densiflori. *Involucra* campanulata. *Flores* radii ligula tubo fere æquilonga.

Manifestly a species of *Microglossa*, though differing from the generic character in the much longer ligula of the ray-flowers and white pappus.

10. *DICHROCEPHALA LATIFOLIA*, *DC.*

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Jan.)

11. *DICHROCEPHALA CHRYSANTHEMIFOLIA*, *DC.*

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Jan.)

This and the above are very common tropical weeds.

12. *DICHROCEPHALA OBLONGA*, *H. f.* (*ante*, vi. 12).

*Hab.* Fernando Po, alt. 10,700 feet. (Fl. Dec.)

Possibly a form of *D. chrysanthemifolia*; but if so, a very peculiar one.

13. *BLUMEA ALATA*, *DC.*, var. *Natalensis*.

*Hab.* Cameroons Mountains, alt. 7000-8000 feet. (Fl. Dec.-Feb.)

A widely distributed and very variable African and Asiatic plant.

14. *VERBESINA (PRESTINARIA) MONTICOLA*, *H. f.*, n. sp. Glaberrima, caule erecto subsimplici, foliis oppositis tripartitis lobis lanceolatis acuminatis inciso-serratis, capitulis graciliter pedunculatis, fl. radii amplis elongatis ∞-nerviis, acheniis planis lineari-oblongis margine et apice setosis, aristis 2 brevibus scabridis.

*Hab.* Cameroons Mountains, alt. 5000-7000 feet. (Fl. Nov.-Jan.)

*Herba* 1-3-pedalis. *Caulis* nodosus, crassitie pennæ corvinæ, rigidulus. *Folia* subcoriacea, cum petiolo 1½-2 unc. longa, 3-secta, lacinia media sæpe 3-fida. *Pedunculi* unciales et ultra. *Capitula* radio incluso 1½ unc. lata. *Involucrum* late hemisphæricum, squamis extimis linearibus foliaceis, interioribus late oblongis obtusis chartaceis nitidis, intimis sensim in paleas receptaculi lineares concavas floribus æquilongas strictas desinentes. *Fl. radii* fœminei, 1-seriales, ligula aurantiaca, ad 10-nerviis, tubo brevissimo piloso, achenio abortivo, stylo bifido. *Fl. disci* ∞, glaberrimi, achenio corollæ æquilongo, nitido,

compressissimo, interdum intus scaberulo, marginibus cartilagineis. Pappi aristæ scabræ, setis erectis.

15. TELEKIA AFRICANA, *H. f.*, n. sp. Tota pubescenti-tomentosa, caule apice corymbifero, foliis omnibus petiolatis hastatis obtusis grosse sinuato-crenatis utrinque pubescentibus, involucri squamis linearibus subacutis.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Jan.)

*Herba* erecta, 3-4-pedalis, caule robusto dense pubescenti-tomentoso. *Folia* alterna, 2-3 unc. longa, ad basin truncatam  $\frac{3}{4}$ -1 unc. lata, anguste oblongo-ovata, basi hastata, angulis obtusis v. in lobulum productis. *Corymbi* 5-10-flori. *Capitula* longe pedunculata, 1 $\frac{1}{2}$  unc. lata. *Involucri* late hemisphærici squamæ pubescentes, herbacæ. *Fl. radii* abortivi; corolla longe ligulata, aurantiaca, 6-8-nervis, apice integra v. dentata; styli rami subelongati. *Fl. disci* glaberrimi; antheræ breviter caudatæ; achenium glaberrimum, pappo brevi albo coroniformi dentato. *Receptaculum* conicum, squamis linearibus concavis flores amplectentibus.

Of the other three species of this genus, one ranges from Hungary to Southern Russia and the Caucasus, another is confined to Lombardy and the Tyrol, and a third to Asia Minor. The genus is, however, too nearly allied to *Bupthalmum* and *Asteriscus*, which have wider Mediterranean ranges.

16. HELICHRYSUM (XEROCHLÆNA) MANNII, *H. f.* (*ante*, vi. 12).

*Hab.* Fernando Po, alt. 10,000 feet. Cameroons Mountains, alt. 8000-13,000 feet. (Fl. Dec., Jan.)

Variat capitulis albis et aureis.

17. HELICHRYSUM (XEROCHLÆNA) FÆTIDUM, *Cass.* (*ante*, vi. 13).

*Hab.* Fernando Po, alt. 10,000 feet. Cameroons Mountains, alt. 4000-10,000 feet.

The Abyssinian *H. glutinosum*, A. Braun, seems to be a form of this species.

18. HELICHRYSUM (ACHYROCLINE) HOCHSTETTERI, *Schultz* (*ante*, vi. 13).

*Hab.* Fernando Po, alt. 8500 feet. Cameroons Mountains, alt. 7000-8000 feet.

19. HELICHRYSUM (CHIONOSTEMMA?) CHRYSOCOMA, *Schultz*, var. *angustifolium*, *H. f.* (*ante*, vi. 13).

*Hab.* Fernando Po, alt. 10,000 feet. Cameroons Mountains, alt. 7000-11,000 feet. (Fl. Nov.-April.)

20. HELICHRYSUM (CHIONOSTEMMA?) GLOBOSUM, *Schultz* (*ante*, vi. 13).

*Hab.* Fernando Po, alt. 10,000 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Nov.)



21. *HELICHRYSUM* (*STÆCHADINA*) *BIAFRANUM*, *H. f.*, n. sp. Caule erecto virgato alato 10-pedali, laxè araneoso, foliis 2-3-unc. lineari-lanceolatis longè acuminatis sessilibus late decurrentibus marginibus recurvis, corymbis amplis ramosis, ramulis tenuibus multifloris, capitulis  $\frac{1}{4}$  unc. longis aureis, involucri hemisphærico-campanulato, squamis 4-5-seriatis lineari-oblongis obtusis glaberrimis laxè imbricatis.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

*Herba* elata, ramosa, gracilis, ramis elongatis, floriferis crass. pennæ anatinæ. *Folia* caulina  $\frac{1}{3}$ - $\frac{1}{2}$  unc. lata, patentia, utrinque laxè araneosa, basi longè et late decurrente, marginibus subintegerrimis, nervis 3 obscuris. *Corymbus*  $\frac{1}{2}$ -pedalis et ultra, ramis gracilibus sub-laxè floriferis, pedicellis lanatis. *Involucri* squamæ ad 40, glaberrimæ, nitidæ, enerves, scariosæ, omnes exacte lineares, subacutæ. *Flores* ad 40. *Receptaculum* alveolatum. *Flores* radii tenues, ♀. *Pappi* pili tenues, scabruli.

22. *GYNURA* *VITELLINA*, *Benth.* (*ante*, vi. 14), var. *gracilis*. Caule gracili, foliis angustioribus, capitulis minoribus, involucri squamis paucioribus.

*Hab.* Fernando Po, alt. 2000-8500 feet. Cameroons Mountains, alt. 7000 feet. (Fl. June-Nov.)

Also an Abyssinian plant.

23. *SENECIO* (*OBÆJACA*) *CLARENCEANUS*, *H. f.* (*ante*, vi. 14), var.  $\beta$ . Capitulis majoribus rubris v. albis.

*Hab.* Fernando Po, alt. 9000 feet. Cameroons Mountains, alt. 7000-11,000 feet.  $\beta$ . Cameroons Mountains, alt. 11,000 feet. (Fl. Dec.)

24. *SENECIO* (*ARBOREÆ*) *MANNII*, *H. f.* (*ante*, vi. 14).

*Hab.* Fernando Po, alt. 6000 feet. Cameroons Mountains, alt. 2500-7500 feet.

25. *SENECIO* (*DISCOIDEI*) *BOJERI*, *DC.*

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Jan.)

Apparently the same as the Madagascar species.

26. *SENECIO* (*ECALYCVLATI*) *BURTONI*, *H. f.*, n. sp. Herbaceus, elatus, caule robusto folisque albo-araneosis, foliis caulinis lineari-oblongis v. elongato-oblongis acuminatis sessilibus basi decurrenti-auriculatis argute serrulatis, supremis ovato-lanceolatis, corymbis polycephalis glabratis, capitulis graciliter pedunculatis  $\frac{3}{4}$  unc. longis, involucri basi tomentosi squamis extimis paucis filiformibus, interioribus anguste linearibus acuminatis late membranaceo-marginatis, ligulis aurantiacis capitulo æquilongis.

*Hab.* Cameroons Mountains, alt. 8000-12,000 feet. (Fl. Dec., Jan.)

*Herba* robusta, 3-4-pedalis, ramosa, ramis validis canaliculatis. *Folia* caulina spithamæa et ultra, subtus nivea, laxè lanata, supra araneosa,

lineari-oblonga multinervia, obtusa, dentibus marginalibus parvis callosis. *Fl. disci* 30–40, glaberrimi, pappo albo. *Achenia* brevia, costata, glaberrima. *Receptaculum* planiusculum.

A fine species, very nearly allied to the Abyssinian *S. Steudelii*, Hochst.; but it has more minutely toothed and coriaceous leaves: also allied somewhat to *S. alpinus*, *auratus*, &c., but more branched and robust, with sessile, much larger, and differently shaped leaves.

27. *LACTUCA* (*SCARIOLOA*) *CAPENSIS*, Thunb., var. *integrifolia*, DC. *Prodr.* vii. 136.

*Hab.* Cameroons Mountains, alt. 5000–7500 feet. (Fl. Nov., Dec.)

Certainly identical with the South-African plant, which extends throughout the Cape Colony to Natal, ascending in the latter country to 5000 feet.

28. *LACTUCA* (*SCARIOLOA*) *GLANDULIFERA*, H. f., n. sp. Glandulosa, hispidula, caulibus angulatim flexuosis, ramis apice divaricatim paniculato-ramosissimis, foliis ultra medium ovato-hastatis acutis denticulatis infra medium in petiolum late alatum basi cordato-bilobum abrupte contractis, pedunculis gracilibus ebracteatis, capitulis 3–4-floris, achenio rostro suo paulo longiore.

*Hab.* Cameroons Mountains, alt. 7000–8000 feet. (Fl. Dec.–Feb.)

*Herba* gracilis, scandens, 8-pedalis, diffuse ramosa, ramis paniculisque setis glandulosis sparsis. *Folia* 1 unc. longa, membranacea, utrinque pilosula. *Capitula*  $\frac{1}{2}$  unc. longa, angusta, squamis extimis brevibus, interioribus e basi ovato-lanceolata longe linearibus apice incrassatis. *Pappus* albus. *Achenia* oblonga, acuta, utrinque medio longitudinaliter anguste 3–5-alata, rostro gracili.

Very near to the Abyssinian *L. paradoxa*, Schultz, in every respect but the glandular setæ of the stem and inflorescence.

29. *SONCHUS* *ANGUSTISSIMUS*, H. f., n. sp. Caule erecto robusto glauco foliisque glaberrimis, foliis e basi lanceolato-hastata anguste elongatis sensim attenuato-acuminatis margine revolutis retrorsum aculeolatis integris v. lobulis 1–2 lineari-elongatis recurvis auctis, corymbo umbellato, pedunculis nudis, capitulis setosis basi lanatis.

*Hab.* Cameroons Mountains, alt. 7000–8000 feet. (Fl. Nov.–Jan.)

*Herba* 4–6-pedalis. *Caulis* erectus, crassit. digiti, striatus, glaucus, simplex. *Folia* spithamæa ad pedalia, vix  $\frac{1}{3}$  unc. lata, subcoriacea, enervia, costa subtus prominula, lobis basi elongato-subulatis deflexis. *Corymbi* 8–12-cephali, pedunculis 1–3-cephalis, basi bracteis setaceis, glabris v. sublanatis, 1 unc. diametro. *Involucri* squamæ lineares, obtusæ, basi lana immersæ; exteriores setis subflexuosis hirsutæ. *Achenia* parva, oblonga, utrinque obtusa, lævia, brunnea, compressa, utrinque sub-6-costata, costis obscure transverse undulatis. *Pappus* albus.

A very distinct species, approaching *S. palustris* in habit. It is very nearly allied to a South African plant, of which I have seen only very bad specimens, and which wants the recurved aculei on the edges of the leaf.

30. ANISORAMPHUS HYPOCHÆROIDES, DC.?

*Hab.* Cameroons Mountains, alt. 7000–13,500 feet. (Fl. Dec., Jan.)

*Herbacea*, erecta. *Radix* perpendicularis, fusiformis, perennis. *Folia* radicalia spithamæa, sessilia, a basi ad apicem sensim dilatata, vix 1 unc. lata, membranacea, apice rotundata, eroso-dentata, dentibus retrorsis. *Scapus* pilosulus, simplex v. apicem versus divisus, nudus, folio ovato-lanceolato basi auriculato 2-lobo auctus. *Capitula*  $\frac{1}{2}$ – $\frac{3}{4}$  unc. lata, longe pedunculata, pedunculo bracteolis paucis filiformibus aucto. *Involucrum* turbinato-campanulatum, foliolis 3–4-seriatis lineari-lanceolatis cum pedunculis viscoso-puberulis. *Receptaculum* fimbriiferum. *Achenia* pappo pallide fusco æquilonga.

A remarkable plant, of which I have seen no original specimens (from South Africa); it is probably referable to *Hieracium*.

27. CAMPANULACEÆ.

1. WAHLENBERGIA POLYCLADA, H. f. (*ante*, vi. 15).

*Hab.* Fernando Po, alt. 9000 feet. Cameroons Mountains, alt. 7000–8000 feet. (Fl. Dec., Jan.)

2. WAHLENBERGIA ARGUTA, H. f. (*ante*, vi. 15).

*Hab.* Fernando Po, alt. 8500 feet. Cameroons Mountains, alt. 7000–9000 feet. (Fl. Dec.)

3. CEPHALOSTIGMA PERROTETII, A. DC. *Prodr.* vii. 420. *C. bahiense*, DC. *l. c.* 421.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov., Dec.)

Also found on the Niger river by Barter; the Gaboon by Mann; in Senegambia by Perrottet; in South America, at Bahia, by Salzmänn and Gardner; and at Tarapoto, Peru, by Spruce. It is clearly allied to the Abyssinian and Indian *C. hirsutum* (*Schimperi*, Hochst.), but differs in the calyx-lobes. Flowers blue.

4. LOBELIA (TUPA) COLUMNARIS, H. f. (*ante*, vi. 14).

*Hab.* Fernando Po. Cameroons Mountains, alt. 7000 feet. (Fl. Dec., Jan.)

*Herba* 6-pedalis.

5. LOBELIA ACUTIDENS, H. f., n. sp. Glaberrima, caulibus tenuibus prostratis, foliis petiolatis ovatis v. ovato-rotundatis acutis grosse acute

dentatis, pedunculis axillaribus solitariis 1-floris foliis longioribus, calycis setulosi lobis ovato-subulatis corolla triente brevioribus.

*Hab.* Fernando Po, alt. 9000 feet. (Fl. April.)

*L. Schimperii*, Hochst., affinis et ejusdem magnitudinis; sed folia latiora, argute dentata; flores minores, et calycis lobi breviores et latiores.

## 28. ERICEÆ.

1. *LEUCOTHOË ANGUSTIFOLIA*,  $\beta$ . *pyrifolia*, DC. (*ante*, vi. 15).

*Hab.* Fernando Po, alt. 9000 feet. Cameroons Mountains, alt. 4000–8000 feet. (Fl. Dec., Jan.)

2. *BLÆRIA SPICATA*, Hochst. (*ante*, vi. 15).

*Hab.* Fernando Po, alt. 10,700 feet. Cameroons Mountains, alt. 7000–10,000 feet. (Fl. Nov., Dec.)

3. *ERICINELLA MANNII*, H. f. (*ante*, vi. 16).

*Hab.* Fernando Po, alt. 10,000 feet. Cameroons Mountains, alt. 4000–11,000 feet. (Fl. Dec.)

## 29. PRIMULACEÆ.

*ARDISIANDRA*, H. f., gen. nov.

*Calyx* 5-partitus, laciniis triangulari-ovatis membranaceis acuminatis. *Corolla* calyce vix longior, campanulata, profunde 5-loba, tubo brevi, lobis oblongis ciliatis. *Stamina* 5, disco tenui annulari corollæ basi adhærente inserta, inclusa, filamentis brevibus subulatis; antheræ sagittato-ovatae, acuminatae. *Ovarium* superum, subglobosum; stylus gracilis, stigmatе capitulato; ovula  $\infty$ . *Capsula* calyce inclusa, basi cum eo adhærente, depresso-globosa, apice dentibus 5–8 cartilagineis dehiscens. *Semina*  $\infty$ , angulata, testa brunnea granulata. *Embryo* transversus.—*Herba* repens, tenella, molliter pilosa, pilis flexuosis, caulibus prostratis. *Folia* sparsa, graciliter petiolata, ovato-rotundata, 3–5-loba v. subangulata, basi profunde cordato-biloba, grosse acute dentata, utrinque pilosula, 1 poll. diametro. *Flores*  $\frac{1}{4}$  poll. lati, axillares, solitarii v. 2–3-ni, brevi-pedicellati; pedicellis basi bracteolatis, petiolo brevioribus, gracilibus; bracteolis setaceis. *Calyx* viridis, foliolis marginibus recurvis. *Corolla* alba, membranacea. *Capsula* pilosa, viridis, dentibus albis recurvis.

1. *ARDISIANDRA SIBTHORPIOIDES*, H. f. (Plate I.)

*Hab.* Fernando Po, alt. 7500 feet (fl. May). Cameroons Mountains, alt. 7000 feet (fl. Dec.).

Genus *Androsacæ* affine, differt habitu, antheris acuminatis, stylo elongato, capsula apice tantum dehiscente, et seminibus plurimis.

## 30. MYRSINÆ.

1. *MÆSA INDICA*, *A. DC.* (*ante*, vi. 16).

*Hab.* Fernando Po, alt. 5000 feet. Cameroons Mountains, alt. 7000 feet. (Fl. and frt. Nov., Dec.)

2. *MYRSINE MELANOPHLEOS*, *Br.*, *A. DC. Prodr.* viii. 97. An *M. Simensis*, *Hochst.*, *A. DC. l.c.?*

*Hab.* Cameroons Mountains, alt. 4000–7500 feet. (Fl. Dec., Jan.)

## 31. LOGANIACEÆ.

1. *ANTHOCLEISTA SCANDENS*, *H. f.* (*ante*, vi. 16).

*Hab.* Fernando Po, alt. 5000 feet. (Fl. Dec.)

2. *NUXIA CONGESTA*, *Br. D.C. Prodr.* x. 435.

*Hab.* Cameroons Mountains, alt. 7000–7500 feet. (Fl. Dec., Jan.)

*Arbor* 30–40-pedalis. *Folia* variant acuta et obtusa in eadem stirpe.

An Abyssinian mountain species.

## 32. GENTIANÆ.

1. *SEBÆA BRACHYPHYLLA*, *Griseb.* (*ante*, vi. 16).

*Hab.* Fernando Po, alt. 8500–10,000 feet. Cameroons Mountains, alt. 7000–8000 feet. (Fl. Nov., Dec.)

2. *SWERTIA PUMILA*, *Hochst.* Annuæ, glaberrima, caule erecto 4-gono angulis subcarinatis, foliis parvis obovatis v. obovato-spathulatis breviter petiolatis integerrimis obtusis, floribus longe pedicellatis 5-meris, sepalis oblongo-spathulatis obtusis corolla dimidio brevioribus, glandulis nectariferis 2 oblongis marginibus laxè setosis.

*Hab.* Cameroons Mountains, alt. 8000–10,000 feet. (Fl. Jan.)

*Herba* gracilis, spithamæa ad pedalem, subramosa. *Folia* parva,  $\frac{1}{3}$ – $\frac{2}{4}$  unc. longa, coriacea, crassiuscula; radicalia pauca. *Flores* subcorymbosi, longe graciliter pedicellati,  $\frac{1}{2}$  unc. diametro, flavi. *Sepala* late v. anguste oblonga. *Glandulæ* nectariferæ incrassatæ, tumidæ.

Mann's smaller specimens differ from the Abyssinian in no respect; nor do his larger ones, except in size.

3. *SWERTIA MANNII*, *H. f.*, n. sp. Gracilis, annua, glaberrima, caule obscure 4-carinato, foliis lineari-lanceolatis obtusiusculis, floribus graciliter pedicellatis 5-meris, sepalis linearibus corolla 4-plo brevioribus, corollæ lobis lineari-oblongis, foveis nectariferis oblongis, marginibus longe fimbriatis.

*Hab.* Cameroons Mountains, alt. 7000–8000 feet. (Fl. Nov.–Jan.)

*Spithamæa.* *Folia*  $\frac{1}{2}$ –1 unc. longa,  $\frac{1}{12}$  lata, crassiuscula. *Flores* fere  $\frac{1}{2}$  unc. diametro, flavi. *Sepala* lobique corollæ quam præcedentis angustiora.

It is remarkable that this genus should be common in tropical

mountainous Africa, but absent in South Africa: several Abyssinian species are described.

4. SWERTIA CLARENCEANA, *H. f.* (*ante*, vi. 16).

*Hab.* Fernando Po, alt. 8500–10,700 feet. Cameroons Mountains, alt. 6000–7000 feet. (Fl. Nov., Dec.)

The Cameroons Mountains specimens are much more slender than the Fernando Po ones, with rather larger flowers and smaller calyces, closely resembling *S. Abyssinica*, but the cauline leaves are not truncate at the base as in that plant. It may prove to be a form of *S. pumila*, which is extremely variable.

### 33. BORAGINEÆ.

1. CYNOGLOSSUM MICRANTHUM, *Desf.*, *A. DC. Prodr.* x. 149. An *C. furcatum*, *Forsk.*?

*Hab.* Cameroons Mountains, alt. 7000–8000 feet. (Fl. Dec.)

Apparently the same as the Abyssinian and Indian plant, which is also found at Cape Palmas and in South Africa (*Echinopspermum cynoglossoides*, *Lehm*, *Drège* in *Hb. Hk.*).

2. CYNOGLOSSUM LANCIFOLIUM, *H. f.*, n. sp. Caule ramoso cum foliis hispido-pilosis, foliis caulinis late oblongo- v. ovato-lanceolatis valde acuminatis basi in petiolum angustatis superne pilis basi albopustulatis, racemis basi bracteatis, pedicellis hispido-tomentosis, florentibus floribus longioribus, fructiferis elongatis decurvis, floribus majusculis, calycis lobis breviter ovatis subacutis corolla multo brevioribus, corollæ lobis obtusis appendicibus bilobis glandulosis, acheniis depressis ambitu breviter glochidiatis.

*Hab.* Cameroons Mountains, alt. 7000–8000 feet. (Fl. Dec.)

*Herba* 3–4-pedalis. *Folia* caulina 3–4 unc. longa, 2–2½ unc. lata, nervis subparallelis. *Racemi* elongati. *Flores* cærulei, ⅓–¼ unc. diametro. *Pedunculi* fructiferi fere unciales. *Achenia* subsolitaria, late ovato-orbiculata, ambitu glochidiata, glochidiis brevibus validis multiseriatis, facie superiore lævi leviter rugosa, inferiore glochidiata, cicatrice triangulari.

Allied to the Abyssinian *L. acutifolium*, *Steud.*; but the leaves are more lanceolate, long-acuminate, and the whole plant more hispid.

3. MYOSOTIS STRICTA, *Link.* *M. hispida*, *Schlecht.*

*Hab.* Fernando Po, alt. 8500 feet. Cameroons Mountains, alt. 8000–10,000 feet. (Fl. Dec.)

### 34. SCROPHULARINEÆ.

1. LIMOSELLA AQUATICA, *L.*, var. *tenuifolia* (*ante*, vi. 19).

*Hab.* Fernando Po, alt. 9000–10,000 feet. (Fl. Dec.)

2. *VERONICA* (*VERONICASTRUM*) *MANNII*, *H. f.* (*ante*, vi. 19).

*Hab.* Fernando Po, alt. 10,700 feet. Cameroons Mountains, alt. 7000–10,000 feet. (Fl. Dec.)

3. *VERONICA* (*CHAMÆDRYS*) *AFRICANA*, *H. f.*, n. sp. Pilosa, caule debili prostrato, foliis longe petiolatis ovatis obtusis grosse crenato-serratis, pedunculis folio subæquilongis 2-floris, sepalis oblongis obtusis pilosis capsula plano-compressa 2-loba pilosa longioribus.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

*Herba* habitu et facie *V. montanæ*. *Caules* debiles, 6–10 unc. longi, ubique pilosi. *Folia* pollicaria, utrinque pilosa, petiolo  $\frac{1}{2}$  unc. longo. *Pedunculi* graciles, axillares. *Pedicelli* filiformes,  $\frac{1}{4}$  unc. longi, bracteis linearibus. *Corolla*  $\frac{1}{2}$  unc. diam., lobis late oblongis obtusis. *Capsula* calyce inclusa latior quam longa. *Semina*  $\infty$ , parva, oblonga, compressa, pallida, testa granulata. *Stylus* capsulæ æquilongus.

A very European form, and similar to *V. montana*, from which it differs in the smaller, more turgid capsules. It is also closely allied to *V. Petitiana* and *Abyssinica*, both of Abyssinia, which have shorter petioles, and leaves abrupt or cordate at the base.

4. *SIBTHORPIA* *EUROPÆA*, *L.*, var. *Africana*. Flore purpureo.

*Hab.* Fernando Po, alt. 7500 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

The European *Sibthorpia* has flowers part rose-coloured and part yellow; the var. *Africana* is stated to be yellow-flowered; but Mr. Mann describes those of his plant as purple. The species ranges from England to the Azores and Balearic Islands, Madeira, Peru, and Mexico.

5. *CELSIA* *DENSIFOLIA*, *H. f.*, n. sp. Caule erecto foliisque subtus pubescenti-tomentosis, foliis confertis breviter petiolatis anguste oblongo-lanceolatis crenulatis subacutis superne puberulis, racemo simplici stricto elongato multifloro glanduloso-pubescente, bracteis ovatis acuminatis denticulatis pedunculos fructiferos subæquantibus, calycis lobis lanceolatis acuminatis capsula brevioribus.

*Hab.* Fernando Po, alt. 8500 feet. (Fl. April.)

*Caulis* basi ramosus, ramis strictis subrobustis. *Folia* patentia v. reflexa, subimbricata, 2 unc. longa, superiora sensim breviora et magis ovata, supra reticulatim venosa. *Racemus* 1–2-pedalis, strictus, simplex. *Pedunculi* floriferi  $\frac{1}{4}$  unc., fructiferi  $\frac{1}{2}$  unc. longi, patentes, robusti. *Calycis* laciniae  $\frac{1}{4}$  unc. longæ. *Corolla*  $\frac{1}{2}$ – $\frac{2}{3}$  unc. diametro. *Filamenta* omnia villosa, loculis antherarum majorum breviter decurrentibus. *Capsula* ovoidea, 1 unc. longa. *Semina* minuta, pallida, profunde sulcata.

6. *ALECTRA SENEGALENSIS*, Benth. in *A. DC. Prodr.* x. 339.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

Apparently the same as the Senegambian plant.

7. *BARTSIA ABYSSINICA*, Hochst., Benth. in *A. DC. Prodr.* x. 545.

*Hab.* Cameroons Mountains, alt. 7000–9000 feet. (Fl. Nov., Dec.)

Quite the same as the Abyssinian plant, in habit, flowers, and foliage. The capsules are linear-oblong, and pubescent, but vary greatly in shape, sometimes broadly oblong.

8. *SOPUBIA TRIFIDA*, Ham., var.  $\beta$ . *Madagascariensis*, Benth.? in *A. DC. Prodr.* x. 522.

*Hab.* Cameroons Mountains, alt. 6000–7000 feet. (Fl. Dec.)

Very similar to the Madagascar species, as also to the *S. Dregeana* of South Africa, *ramosa* of Abyssinia, and *filiformis* of Guinea, which may all belong to one species. It is, however, of a shorter and more robust habit than any of them—a difference possibly due to locality.

### 35. SOLANEEÆ.

1. *SOLANUM NIGRUM*, L. Forma robusta, caule flexuoso tenuiter alato, floribus majusculis.

*Hab.* Cameroons Mountains, alt. 7000–10,000 feet. (Fl. Dec., Jan.)

2. *SOLANUM INDICUM*, L.

*Hab.* Fernando Po, alt. 6000 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Nov.–Jan.)

The *S. Adoense*, Hochst., of Abyssinia, seems to be the same plant.

3. *DISCOPODIUM PENNINERVIUM*, Hochst., *A. DC. Prodr.* xiii. 478.

*Hab.* Fernando Po, alt. 4000 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Dec.–Feb.)

An Abyssinian mountain plant.

### 36. LENTIBULARINEÆ.

1. *UTRICULARIA ORBICULATA*, Wall. (*ante*, iii. 187).

*Hab.* Cameroons Mountains, alt. 5000 feet. (Fl. Nov.)

Professor Oliver, who has examined this (and the following) for me, pronounces it to be absolutely identical with the Indian species (which ranges from Nepal and the Khasia Mountains to Ceylon and Malacca), even to the structure of the glochidiate seeds.

2. *UTRICULARIA*, sp. Without flower.

*Hab.* Cameroons Mountains, alt. 4000–6000 feet. (Fl. Nov.)



A small, slender species, 2-5 inches long, with linear spathulate leaves  $1\frac{1}{2}$ -2 inches long, and emitting distinct utriculiferous fibres from the root. Scape 1-2-flowered. Calyx-lobes very unequal: lower smaller, oblong-ovate, emarginate; upper ovate-lanceolate, rather obtuse.—D. O.

## 37. LABIATÆ.

1. PLECTRANTHUS (COLEOIDES) GLANDULOSUS, *H. f.* (*ante*, vi. 17).  
*Hab.* Fernando Po and Cameroons Mountains, alt. 7000 feet. (Fl. Dec.-April.)

2. PLECTRANTHUS (GERMANEA) INSIGNIS, *H. f.*, n. sp. Elatus, ramosus, superne glanduloso-tomentosus, foliis amplis oblongo-lanceolatis membranaceis grosse dentatis, paniculis amplis, corollæ flavæ tubo basi gibbo, calyce post anthesin valde aucto.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

*Herba* 10-15-pedalis, aspectu *Salviæ* giganteæ. *Folia* pedalia, glabrata, superne secus nervos pubescentia, petiolo 1 unc. longo. *Paniculæ* late diffuse ramosæ, 2-pedales, ramis gracilibus glanduloso-pilosis et tomentosis. *Verticillastri* laxi. *Pedicelli*  $\frac{1}{4}$ - $\frac{3}{4}$  unc. longi. *Flores* magni. *Calyx florifer* parvus, tubo brevi cylindrico, lobis subulatis recurvis. *Corolla*, ut videtur ex exemplaribus siccis, aurea,  $\frac{1}{2}$ - $\frac{3}{4}$  unc. longa, tubo basi contracto gibbo repente ampliato, labiis amplis. *Calyx fructifer* fere uncialis, glanduloso-pubescentis, cylindricus, lente curvus, labio superiore ovato acuto marginibus recurvis; inferiore 4-fido, lobis lateralibus brevibus late ovato-subulatis, intermediis longe subulatis lente incurvis. *Nuces* magnæ, compressæ, late ovoideæ, glaberrimæ, læves.

A noble species, remarkable for its great size, Salvoid aspect, and golden flowers.

3. PLECTRANTHUS (ISODON) RAMOSISSIMUS, *H. f.* (*ante*, vi. 17).

*Hab.* Fernando Po, alt. 5000 feet. Cameroons Mountains, alt. 7000 feet.

4. PLECTRANTHUS (HETEROCALYX) DECUMBENS, *H. f.*, n. sp. Humilis, caule basi decumbente pubescenti-piloso, foliis  $\frac{1}{3}$  unc. longis petiolatis late ovatis obtusis grosse crenatis, racemo glanduloso-pubescente elongato simplici multifloro, verticillastri 8-10-floris, floribus breviter pedicellatis, calycibus parvis fructiferis hiantibus 2-lobis, pedicellis decurvis, corolla defracta calyce multo longiore.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov.)

*Herba* 1-2-pedalis, glanduloso-punctata, caule glanduloso-piloso. *Folia* subcoriacea, petiolo lamina brevior utrinque laxè piloso. *Racemi* 3-4 unc. longi, simplices, striati. *Verticillastri* subconferti, pedicellis  $\frac{1}{2}$  unc. longis, floriferis patentibus, fructiferis decurvis. *Calyx* fructifer,

parvus, tubo pubescente hemisphærico, limbi lobo superiore lato ovato obtuso recurvo, lateralibus parvis porrectis, inferiore adscendente oblongo obtuso superiori æquilongus apice retuso. *Corolla*  $\frac{1}{8}$  unc. longa, puberula, tubo brevi basi modice defracto, lobo superiore brevi, inferiore elongato anguste cymbiformi punctato. *Stamina libera.*

A small species, closely allied to *P. Palisoti*, but much smaller, the flowers more numerous, the lateral calyx-lobes larger, the lower one not biaristate, and the corolla is very many times the length of the calyx.

5. *COLEUS (AROMARIA) GLANDULOSUS*, *H. f.*, n. sp. 2–3-pedalis, laxe glanduloso-pilosus, foliis subsessilibus  $1\frac{1}{2}$ –2 unc. longis ovatis subacutis grosse serratis, racemis simplicibus elongatis, verticillastris remotis dense 8–10-floris, floribus breviter pedicellatis, calycibus fructiferis pendulis, corollæ tubo gracili modice defracto limbo subæqualiter bilabiato longiore.

*Hab.* Cameroons Mountains, alt. 2500–7000 feet. (Fl. Nov., Dec.)

*Caulis* gracilis, laxe ramosus, pilis mollibus laxis. *Folia* nunc sessilia, nunc breviter petiolata, utrinque pilosa. *Racemi* floriferi 2–3-, fructiferi 8–10-pollicares, graciles, erecti. *Calyx* fructiferus clausus, deflexus, intus nudus,  $\frac{1}{4}$  unc. longus, labio superiore lente recurvo ovato acuminato, inferiore 3-fido, dentibus subulatis. *Corolla*  $\frac{1}{4}$ – $\frac{1}{3}$  unc. longa. *Filamenta* in tubum connata.

I have a bad specimen of apparently the same plant collected in Abyssinia by Parkyns.

6. *COLEUS (SOLENOSTEMON) TENUICAULIS*, *H. f.*, n. sp. 6–12 unc. altus, laxe molliter glanduloso-pilosus, caule erecto ramoso, ramis gracilibus, foliis  $\frac{1}{4}$ – $\frac{2}{3}$  unc. longis petiolatis ovatis serratis, racemis elongatis compositis puberulis, pedicellis gracilibus racemoso-3–5-floris floribusque glanduloso-puberulis, calycibus minutis, fructiferis hemisphæricis oblique 5-fidis lobis subulatis, superiore recurvo, corollæ tubo brevi defracto, labio superiore brevi, inferiore elongato cymbiformi.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

*Statura* valde variabilis, 2–12 unc., tenuis, annua. *Petioles* folio multo breviores. *Folia* utrinque subscabrulo-pilosa. *Racemi* interdum 8 unc. longi, laxe ramosi. *Calyx* fructifer  $\frac{1}{8}$  unc. longus, lente curvus, subhorizontalis, fauce glaberrima. *Corolla*  $\frac{1}{3}$  unc. longa, glabrata. *Filamenta* ad medium monadelphæ.

7. *COLEUS (SOLENOSTEMON) MANNII*, *H. f.*, n. sp. Glaberrimus nisi racemus puberulus, 2–3-pedalis, caule crasso 4-gono, foliis 1– $1\frac{1}{2}$  unc. longis petiolatis ovatis v. ovato-lanceolatis acutis grosse crenatis crassiusculis, racemo stricto erecto simplici, verticillastris 15-floris, pedicellis in phalanges 2 oppositas aggregatis gracilibus, calyce parvo, bi-

labiato hiante, corollæ tubo brevi defracto, labio superiore brevissimo, inferiore elongato cymbiformi.

*Hab.* Cameroons Mountains, alt. 5000–6000 feet. (Fl. Nov.)

*Caulis* robustus, glaberrimus, crassitie pennæ anatinæ, 4-gonus, internodiis brevibus. *Folia* purpureo variegata, lamina basi in petiolum brevem angustata. *Racemi* 4 unc. longi, stricti, graciles, pedicellis patentibus  $\frac{1}{4}$ – $\frac{1}{3}$  unc. longis. *Calyx* glanduloso-puberulus, lobo superiore recurvo obtuso, lateralibus minutis, inferiore superiorem æquante apice bifido; fauce glaberrima. *Corolla*  $\frac{1}{3}$  unc. longa, glabra. *Filamenta* ad medium monadelphæ.

The calyx of this plant is of the same form as that of *Plectranthus decumbens*, of which it is a near ally, but the monadelphous stamens remove it to *Coleus*.

8. *PYCNOSTACHYS ABYSSINICA*, Fresen. (*ante*, vi. 17).

*Hab.* Fernando Po, alt. 7000 feet. Cameroons Mountains, alt. 6000 feet. (Fl. Dec.)

Specimens from the Cameroons Mountains are more glabrous than those from Fernando Po, in this respect approaching the Madagascar *P. cœrulea* and the S.-African *P. reticulata*. All may be forms of one.

9. *MICROMERIA PUNCTATA*, Br., Benth. in DC. Prodr. xii. 230.

*Hab.* Cameroons Mountains, alt. 7000–10,000 feet. (Fl. Dec., Jan.)

Certainly the same as the Abyssinian plant, and possibly a form of a South-European one.

10. *CALAMINTHA SIMENSIS*, Benth. (*ante*, vi. 18).

*Hab.* Fernando Po, alt. 8500 feet. Cameroons Mountains, alt. 7000–10,500 feet. (Fl. Dec.)

11. *NEPETA (PYCNONEPETA) ROBUSTA*, H. f., n. sp. Erecta, robusta, ramosa, pubescenti-hispidula, foliis breviter petiolatis ovatis obtusis grosse serratis coriaceis reticulatis, verticillastris in spicas densas cylindricas terminales dispositis, bracteis lanceolato-subulatis, calycem rectum tubulosum æquantibus, corollæ tubo exserto.

*Hab.* Cameroons Mountains, alt. 6000–8000 feet. (Fl. Nov., Dec.)

*Herba* 3–4-pedalis, caule valido, ramis crassitie pennæ anserinæ, pilis patulis subhispidis hirsuta. *Folia* 1–1½ unc. longa, rigidula, utrinque rugosa, supra glabra, subtus pilosa. *Cymarum* spicæ 1 unc. longæ, obtusæ, densifloræ. *Flores* breviter graciliter pedicellati, flavi?. *Calyx*  $\frac{1}{6}$ – $\frac{1}{4}$  unc. longus, 15-nervius, pilosus, dentibus subulatis. *Corolla* tubo pubescente exserto, lobis oblongis obtusis.

Closely allied to the Abyssinian *N. ballotifolia*, Hochst., which has broader bracts and much larger flowers.

12. *STACHYS ACULEOLATA*, *H. f.* (*ante*, vi. 18).

*Hab.* Fernando Po, alt. 9000 feet. (Fl. Dec.)

13. *LEUCAS (HEMISTOMA) DEFLEXA*, *H. f.*, n. sp. Herbacea, ramosa, elata, cano pubescens, foliis lanceolatis dentato-serratis, verticillastris densifloris globosis, calycibus hispidis membranaceis ore repente deflexo dentibus 8-10 brevibus late ovatis setaceis.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov.-Feb.)

*Herba* 4-5-pedalis, caule robusto. *Folia* petiolata, 2-3 unc. longa, membranacea, basi attenuata. *Verticillastris*  $\frac{3}{4}$ -1 unc. diametro. *Bracteæ* calyci æquilongæ, rigidæ, setacæ, ciliatæ. *Corolla* parva, galea villosa.

Allied to *L. urticæfolia* of Abyssinia, Arabia, and India, but differing remarkably in the foliage, and in the deflexed mouth of the calyx.

14. *LEUCAS (LOXOSTOMA) OLIGOCEPHALA*, *H. f.*, n. sp. Herbacea, pubescenti-pilosa, caulibus ascendentibus gracilibus simplicibus, foliis parvis oblongo-lanceolatis obtusis grosse pauciserratis, verticillastris globosis subsolitariis, terminalibus longe pedunculatis, bracteis setaceis calycis dimidium æquantibus.

*Hab.* Cameroons Mountains, alt. 7000-8000 feet. (Fl. Nov.-Jan.)

*Herba* rigidula, 1-2-pedalis, ubique pilis patentibus v. deflexis subtomentosa. *Caules* subsimplices v. ramis paucis elongatis. *Folia* vix petiolata,  $\frac{1}{2}$  unc. longa, subcoriacea, subtus nervis prominentibus, utrinque pilosa. *Verticillastris* foliis 2 brevibus involucrati,  $\frac{1}{2}$ - $\frac{3}{4}$  unc. diametro, densiflores. *Bracteæ* subulatæ, rigidæ, ciliatæ. *Calyx* tubulosus, incurvus, 2-labiatus, hirsutus, dentibus longe subulatis. *Corolla* parva, albo villosa.

A very distinct species, clearly belonging to Bentham's previously monotypic section *Loxostoma*.

### 38. PLANTAGINEÆ.

1. *PLANTAGO PALMATA*, *H. f.* (*ante*, vi. 19).

*Hab.* Fernando Po, alt. 7500-8000 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

### 39. POLYGONEÆ.

1. *RUMEX ABYSSINICUS*, *Jacq.* (*Meisn. in DC. Prodr.* xiv. 68), var. *Foliis* subtus pilosiusculis.

Altogether the same as the Abyssinian plant, except that there are more scattered hairs on the under side of the leaf. The species is a native also of Bourbon, and of cornfields in Eastern tropical Africa (*Kirk*). Mann states that it attains a height of 8 feet. According to a note on Roth's Abyssinian specimen, the root is

tuberous, and its juice is mixed with butter to give it a brick-red colour.

2. *RUMEX OBTUSIFOLIUS*, L., var. *Steudelii*. (*R. Steudelianus*, Meisn. in *A. DC. Prodr.* xiv. 56. *R. Nepalensis*, Spreng., Meisn. l. c. 55. *R. hamatus*, Trev., Meisn. l. c. 56.) Foliis lanceolatis, acuminatis basi angulatis, calycibus valvulis ecallosis setis utrinque 6-10 hamatis. *Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov., Dec.)

A very common tropical and intertropical form of the common *R. obtusifolius*, found abundantly in Abyssinia, South Africa, throughout the hilly parts of the East Indies, &c. It has very many names in systematic works. A. Richard, in his Abyssinian Flora, remarks that the leaves vary from attenuate to cordate at the base. In our specimen the upper are very acute.

3. *POLYGONUM NEPALENSE*, Meisn., *A. DC. Prodr.* xiv. 128.

*Hab.* Fernando Po, alt. 7500 feet.

A common Indian and Abyssinian plant.

#### 40. AMARANTHACEÆ.

1. *ACHYRANTHES ARGENTEA*, L.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec., Jan.)

2. *CYATHULA CYLINDRICA*, Moq.-Tand. in *A. DC. Prodr.* xv. pl. 2, var. *Schimperia*. *C. Schimperiana*, Moq. l. c. Foliis lanceolatis

*Hab.* Fernando Po, alt. 10,000 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Dec.-Feb.)

The original or short-leaved form of this same plant occurs in Madagascar, South Africa, and in East tropical Africa (Manganja range, Meller in Livingstone's Cape), but not in Abyssinia, where the form *Schimperia* only occurs.

#### 41. THYMELEÆ.

1. *LASIOSIPHON GLAUCUS*, Fresen., Meisn. in *DC. Prodr.* xiv. 593.

*Hab.* Cameroons Mountains, alt. 7000-7500 feet. (Fl. Dec., Jan.)

Mann's plant has rather longer, narrow lobes to the perianth, than an Abyssinian specimen of what we take to be this plant (collected by Mr. Plowden), of which we have no authentic specimens.

2. *PEDDIEA PARVIFLORA*, H. f. (*ante*, vi. 20).

*Hab.* Fernando Po, alt. 5000 feet. (Fl. Nov.)

#### 42. SANTALACEÆ.

1. *THESIUM TENUISSIMUM*, H. f. (*ante*, vi. 19).

*Hab.* Fernando Po, alt. 9000 feet. Cameroons Mountains, alt. 8000-9000 feet. (Fl. Nov.-Jan.)

## 43. EUPHORBIACEÆ.

1. *EUPHORBIA AMPLA*, *H. f.* (*ante*, vi. 20), var. *tenuior*. Ramulis tenuibus, foliis involucralibus minoribus.

*Hab.* Fernando Po, alt. 8500 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Nov., Dec.)

The Cameroons specimens are of a slender variety of the Fernando Po species.

2. *PHYLLANTHUS*, n. sp.?

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov.–Feb.)

A common herbaceous erect form of the genus, which I cannot identify, but am unwilling to describe in the present entangled condition of the species hitherto known.

3. *CLAOXYLON MANNII*, *H. f.* (*ante*, vi. 20).

*Hab.* Fernando Po, alt. 5000 feet. (Fl. Oct.)

## 44. URTICEÆ.

1. *PARIETARIA MAURITANICA*, *L.*, var. *a. erecta*, Wedd. Monogr. 513 (*ante*, vi. 20).

*Hab.* Fernando Po, alt. 8000 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

The leaves are 3-nerved from the very base; otherwise it more resembles *P. officinalis*.

2. *PARIETARIA DEBILIS*, *Fort.*, var. *β. diffusa*, Wedd. Monogr. 515.

*Hab.* Cameroons Mountains; no elevation given; with plants of the temperate region.

This has the fructiferous perigonium of *P. debilis*, but the terminal apiculus to the fruit of *P. Lusitanica*. The species is universally diffused.

3. *LAPORTEA (SCLEPSIA) ALATIPES*, *H. f.*, n. sp. Herbacea, grosse setigera, foliis ovatis acuminatis grosse dentatis, inflorescentia axillari, pedunculis elongatis, pedicellis fœmineis alatis flabellatim connatis, achenii margine incrassato.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

*Herba* 3-pedalis, setis rigidis ubique horrida. *Folia* 4–5 unc. longa, petiolis gracilibus longiora. *Inflorescentia* ♂ foliis brevior, floribus glomeratis, 4-meris. *Infl.* ♀ foliis longior, ramis paniculatis subsecundis, ramulis divaricatis, pedicellis  $\frac{1}{4}$  unc. longis in laminas flabelliformes connatis. *Fl.* ♀ apici pedicelli oblique impositus. *Perigonii* foliola 2, æqualia, oblique ovata, fructu non accrescentia, achenio dimidio breviora. *Achenium*  $\frac{1}{10}$  unc. latum, compressum, suborbiculare, stylo brevi filiformi, marginibus late incrassatis, faciebus planis vix granulatis.

Very nearly allied to the Indian *L. terminalis*, but the inflorescence is lateral; and still more near to the American *L. Canadensis*, but the achenia have much broader wings; it differs further from both in the shorter stigma.

4. *ELATOSTEMMA MONTICOLA*, *H. f.*, n. sp. 6-8-pollicaris, caule tenui pubescenti-tomentoso, foliis alternis breviter petiolatis oblique obovato-oblongis grosse serrato-dentatis utrinque sparse setulosis, superiore basi acuto, inferiore obtuso, nervis primariis 2-3, stipulis lanceolatis, capitulis ♀ subsessilibus depressis.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

*Herba* tenella. *Folia* 1-1½ unc. longa, membranacea, puberula et setulosa. *Capitula* ♀ ¼-½ unc. diametro. *Involucrum* membranaceum, multilobatum, multiflorum, lobis oblongis ciliatis. *Fl.* ♀ sessiles et pedicellati, conferti. *Perianthii* foliola lanceolata, setuloso-ciliata. *Achenium* ellipsoideum.

A very common form of the genus, resembling closely several mountain Indian species.

5. *PILEA QUADRIFOLIA*, *A. Rich.* Dioica, spithamæa, glaberrima v. sparse pilosula, caule erecto ramoso gracili, foliorum paribus æqualibus graciliter petiolatis ½-¾ unc. longis late ovatis acutis grosse crenato-serratis membranaceis, stipulis amplis late cordato-rotundatis; fl. ♂ in axillis glomerati, ♀ axillis supremis dense paniculatim conferti.—*Wedd. Monogr. Urt.* 199.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

*Species* elegans, gracilis, læte virens. *Petioli* foliis subæquilongi. *Folia* basi 3-nervia. *Stipulæ* ⅙ unc. longæ. *Fl.* ♂ in axillis plurimis caulibus dense congesti, majusculi, 3-5-meri, perianthii lobis 1 v. pluribus longe aristatis. *Fl.* ♀ in paniculas breves subterminales foliis 4 supremis involucratas dense aggregati, perpusilli, breviter pedicellati. *Perianthium* foliolum 1 oblongum (cætera in fructu evanida), achenio brevius. *Achenium* minimum, ovatum, compressum, subgranulatum, stigmate infra-apicali.

The female of this plant (from Abyssinia) is well described by Weddell. The male has long stems and uniform leaves throughout the plant; and the female has much shorter stems, with very few leaves, of which the four upper are subterminal and form a whorl, the lower are (by arrest) smaller, all more or less toothed in our specimens, but apparently sometimes quite entire in Abyssinian. A very closely allied, but larger species, with more effuse female panicles in the axils of all the leaves, is sent by Mann, from 4000 feet in Fernando Po.

6. *LEIANTHUS WIGHTII*, *Weddell, Monog. Urt.* 280.

*Hab.* Fernando Po, alt. 7500 feet.

Apparently the same as the Indian species, which is also Abyssinian.

### 7. URERA?

*Hab.* Cameroons Mountains, alt. 5000 feet. (Fl. Dec.)

A tropical form of *Urticeæ*, of which there are male flowers only.

## 45. PIPERACEÆ.

1. *PEPEROMIA MANNII*, *H. f.*, n. sp. Glabra, 4-6-pollicaris, caule gracili basi repente, foliis alternis breviter petiolatis ovato-rotundatis obtusis reticulatim nervosis minute ciliolatis, amentis solitariis subterminalibus strictis brevibus gracilibus.

*Hab.* Fernando Po, alt. 10,000 feet. Cameroons Mountains, alt. 7000-8000 feet. (Fl. Dec.)

Species parvula, caule gracili, subsimplici. *Folia*  $\frac{1}{4}$ - $\frac{1}{2}$  unc. longa, fere æque lata v. anguste oblonga, subcarnosa, subtus nigro-punctata, margine apicem versus villosulo. *Amenta* gracilia, breviter pedunculata,  $\frac{1}{4}$ -2 unc. longa, minute nigro punctata; squamæ orbiculatæ, peltatæ. *Stamina* 2, brevia, antheris parvis oblongis. *Stigma* globoso-capitatum.

This approaches closely the Indian *P. Heyneana*, but the leaves are always alternate and the whole plant almost perfectly glabrous. The *P. Abyssinica* is a much more robust and fleshy plant.

2. *PEPEROMIA MONTICOLA*, *H. f.*, n. sp. Glaberrima, spithamæa ad pedalis, caule robusto, foliis alternis petiolatis elliptico-oblongis obtusis basi 3-nerviis carnosiss, nervis crassis, amentis pedunculatis elongatis crassiusculis.

*Hab.* Cameroons Mountains, alt. 8000 feet. (Fl. Jan.)

*Caules* basi longe repentes, demum erecti, crassitie pennæ corvinæ. *Folia* 1-1 $\frac{1}{2}$  unc. longa, elliptico- v. ovato-oblonga, in petiolum  $\frac{1}{3}$ - $\frac{1}{2}$  unc. longum attenuata. *Amenta* solitaria, terminalia et axillaria, pedunculata, simplicia, crassitie caulis v. tenuiora, 1-2 unc. longa; squamæ orbiculatæ, peltatæ.

A very common West-Indian type of the genus; also closely allied to *P. Courtallensis*  $\beta$ . of Ceylon (Thwaites's Enum. 292). It differs from *P. Vogeliana* in the obtuse leaves.

3. *COCCOBRYON CAPENSE*, *Klotzsch*.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

A South-African species; also found by Mann on the low ground of Fernando Po (alt. 1300 feet) and in St. Thomas's (alt. 4000-7000 feet). Kirk (Livingstone's Expedition) gathered the same plant at Dzomba, alt. 6500 feet.



## 46. MYRICIÆ.

1. MYRICA SALICIFOLIA, Hochst., *A. Rich. Fl. Abyss.* ii. 277.

*Hab.* Cameroons Mountains, alt. 7000–8000 feet. (Fl. Dec., Jan.)

A tree 20–30 feet high, identical with the Abyssinian, which is described as a tall tree with variable foliage, growing in cold mountain districts.

## 47. CONIFERÆ.

1. PODOCARPUS MANNII, *H. f.*, n. sp. Foliis anguste elongato-lanceolatis 3–5-pollicaribus  $\frac{1}{6}$ – $\frac{1}{3}$  unc. latis lente falcatis acuminatis mucronatis 1-nerviis utrinque lucidis.

*Hab.* St. Thomas's Island, summit of the Peak, alt. 7500 feet.

*Ramuli* tenues, angulati. *Folia* subdisticha, coriacea, nervo latiusculo, petiolo basi semitorto.

The present discovery of Mr. Mann's negatives the observation of Brown, that Coniferous plants are absent in Western tropical Africa; and I may here remark that this indefatigable collector has also added *Laurineæ* to the same flora, an order equally supposed by Brown to be absent in that region of the globe. The present plant approaches so closely to the South-African *Podocarpus falcatus*, Br., that I should not be surprised if it merged into it; but the leaves are much larger, longer, flaccid, and lucid, and there are stomata on both surfaces of the leaf, which (according to Endlicher, *Syn. Conif.* 218) is not the case with *P. falcatus*. From the Cape *P. elongatus*, Hérit., which small-leaved specimens closely resemble, it differs in the lucid, very large, long, and acuminate leaves.

There is another species of *Podocarpus* in Abyssinia, referred to *P. elongatus* by A. Richard (*Fl. Abyss.* ii. 278), which is identical in foliage with the Cape plant, but which differs in the fruit being shortly stipitate.

## MONOCOTYLEDONES.

## 48. ORCHIDÆ.

1. LIPARIS CAPENSIS, *Lindl.* (*Zeyher*, 3887).

*Hab.* Cameroons Mountains, alt. 6000–7000 feet. (Frt. Dec.)

A small species, in fruit only, but clearly the same as *L. Capensis*.

2. BOLBOPHYLLUM (PTILOGLOSSUM) TENUICAULE, *Lindl. in Journ. Linn. Soc.* vi. 126.

*Hab.* Fernando Po, alt. 5000 feet.

3. BOLBOPHYLLUM (PTILOGLOSSUM) MANNII, *H. f.* Pseudobulbis teretiusculis elongatis 2-phyllis, foliis 4–6-pollicaribus linearibus, bracteis glumaceis distichis imbricatis, sepalis lanceolato-subulatis,

petalis parvis linearibus labello lineari-oblongo sepalis subæquilongo longe ciliato.

*Hab.* Cameroons Mountains, alt. 4000–5000 feet. (Fl. Dec.)

*Caudex* repens. *Pseudobulbi* 3–5 unc. longi, basi  $\frac{1}{2}$  unc. lati. *Folia*  $\frac{1}{2}$ – $\frac{3}{4}$  unc. lata, obtusiuscula. *Scapus* 1–1 $\frac{1}{2}$ -pedalis, gracilis, erectus, strictus, spathaceo-bracteatus. *Racemus* 4–6-pollicaris. *Bracteæ* oblongæ, acutæ, concavæ,  $\frac{1}{3}$  unc. longæ. *Flores* labello excepto glaberrimæ, bracteis paulo breviores. *Labellum* brevissime unguiculatum. *Columnæ* ramis longe setaceis.

4. **BOLBOPHYLLUM (PTILOGLOSSUM) MONTICOLUM**, *H. f.*, n. sp. Pseudobulbis oblongis pollicaribus tetragonis 2-phyllis, foliis 2–3-poll. linearibus, bracteis glumaceis distichis imbricatis, sepalis subulato-lanceolatis, labello lineari-oblongo v. subspathulato longe ciliato sepalis subæquilongo.

*Hab.* Cameroons Mountains, alt. 5000 feet. (Fl. Nov.)

*Caudex* repens. *Pseudobulbi* verisimiliter tetrapteri. *Folia*  $\frac{1}{4}$  unc. longa. *Scapus* foliis duplo longior, spathaceo-bracteatus. *Racemus* 1 $\frac{1}{2}$ -poll. *Bracteæ* ovato-oblongæ, acutæ,  $\frac{1}{4}$  unc. longæ. *Flores* flavæ?, bracteis paulo breviores, iis *B. Mannii* valde similes, sed minores, labello a basi sensim lente dilatato, petalisque paulo latioribus.

5. **BOLBOPHYLLUM (MONOPHYLLA) AURANTIACUM**, *H. f.*, n. sp. Caudice valido, pseudobulbis brevibus late ovoideis 1-phyllis, folio lineari basi in petiolum teretem complicato, racemo elongato nutante, floribus aurantiacis secundis, bracteis lanceolatis membranaceis ovarium excedentibus, sepalis longe lanceolato-subulatis, petalis oblongis sepalis dimidio brevioribus, labello elongato-trulliformi recurvo glaberrimo petalis paulo longiore.

*Hab.* Cameroons Mountains, alt. 5000–6000 feet. (Fl. Nov.)

*Caudex* crassitie pennæ anatinæ. *Pseudobulbi* 1 unc. longi, ovoidei, basi plus minus tumidi, obtusi. *Folium* 4–5 poll. long.,  $\frac{1}{2}$ – $\frac{3}{4}$  lat., obtusum. *Scapus* gracilis, spathaceo-bracteatus. *Racemi* 5–6-pollicares, multiflori. *Flores* fere  $\frac{1}{2}$  unc. longi. *Bracteæ* membranaceæ. *Sepala* a basi sensim angustata, longe acuminata. *Labellum* oblongo-lanceolatum, longiuscule stipitatum, eglandulosum, superficie lævi, medio anguste sulcatum. *Columnæ* rami breves, subulati.

6. **BOLBOPHYLLUM (DIPHYLLA) BIFARIUM**, *H. f.*, n. sp. Caudice valido, pseudobulbis elongato-ovoideis pollicaribus tetrapteris 2-phyllis, foliis lineari-oblongis 3-pollicaribus, scapi bracteis imbricatis, racemo disticho, bracteis ovato-lanceolatis acuminatis patentibus flores excedentibus, sepalis e basi ovato-subulatis membranaceis, lateralibus deflexis, petalis parvis late oblongis undulatis, labello minimo crasso recurvo medio excavato apice truncato glanduloso.

*Hab.* Cameroons Mountains, alt. 5000 feet. (Fl. Nov.)

*Caudex* crassitie pennæ corvinæ. *Folia* sessilia,  $\frac{1}{3}$  unc. lata. *Scapus* brevis, bracteis compressis distiche imbricatis acutis tectus. *Racemus* 3-4-pollicaris, rhachi valida angulata. *Bracteæ* fere  $\frac{1}{2}$  unc. longæ, membranaceo-glumacæ. *Flores* purpurei?, glaberrimi. *Sepalum* superius cucullatum, lateralia planiuscula. *Petala* membranacea. *Labellum* crasse carnosum, columna brevius, brevissime unguiculatum, basi latiusculum, in apicem crassum truncatum attenuatum. *Columna* alata, alis in processus 2 breves subulato-productis.

7. BOLBOPHYLLUM, sp.?

*Hab.* Cameroons Mountains, alt. 5000 feet. (Fruit only.)

Species parvula, *caudice* valido. *Pseudobulbi* breves, oblongi, tetrapteri, 2-phylli. *Folia*  $1\frac{1}{2}$  unc. longa, lineari-oblonga, in petiolum contracta. *Scapus* brevis, validus. *Racemus* rhachi compressa v. angulata, robusta. *Bracteæ* parvæ. *Flores* parvi. *Sepala* ovato-subulata. *Petala* parva, linearia. *Labellum* crasse carnosum, recurvum, obtusum, excavatum. *Columna* aptera, ramis 2 subulatis porrectis.

8. ANGRÆCUM ARCUATUM, Lindl.

*Hab.* Cameroons Mountains, alt. 4000-6000 feet. (Fl. Nov.)

The same as the Cape of Good Hope species, which ranges from Uitenhage to Natal. Lindley identifies a much larger form, gathered by Mann on the banks of the Nun, with the same.

9. ANGRÆCUM, sp.

*Hab.* Cameroons Mountains, alt. 5000 feet. (Fruit only.)

Very similar to, but much smaller than, *A. capitatum*, Lindl. (*ante*, vi. 137).

10. POLYSTACHYA ALPINA, Lindl. (*ante*, vi. 131).

*Hab.* Fernando Po, alt. 6000 feet. (Fl. Dec.)

11-15. POLYSTACHYÆ species 5.

*Hab.* Cameroons Mountains, alt. 5000-6000 feet.

Of this genus, which abounds in tropical Africa, and of which one species reaches the Albany district of South Africa, there are five Cameroons Mountains species, occurring at elevations between 4000 and 6000 feet.

16. CALANTHE CORYMBOSA, Lindl. (*ante*, vi. 129).

*Hab.* Fernando Po, alt. 5000 feet. (Fl. Dec.)

17. DISA ALPINA, H.f., n. sp. *Caule* gracili, foliis elongato-lanceolatis longe acuminatis 3-nerviis, spica densiflora, bracteis subulato-lanceolatis flores subæquantibus, sepalo postico late ovato obtuso calcari decurvo æquilongo, petalis late oblique ovatis obtusis, labello minimo lineari.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov.)

*Herba* gracilis, spithamæa ad pedalis, glaberrima. *Folia* caule paulo

breviora,  $\frac{1}{6}$ – $\frac{1}{2}$  unc. lata, subcoriacea, plana. *Spica* 2–3 unc. longa. *Sepala* et *petala*  $\frac{1}{6}$  unc. longa, flava? *Columna* basi latiuscula, glandulosa.

18. *PERISTYLUS* (*BIFOLII*) *TRIDENTATUS*, *H.f.*, n. sp. Parvulus, foliis 2 orbicularibus ciliatis, scapo aphylo villosa 3–4-floro, bracteis parvis subulatis, ovario retrorsum piloso, sepalis petalisque apice 3-dentatis, labello amplo dilatato 7-lobo villosa, calcari brevi conico acuto.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov.)

*Herba* 3-pollicaris. *Folia* coriacea, subacuta, ut videtur cellulosa. *Scapus* robustus. *Flores* parvi. *Sepala* et *petala* subæqualia, pubescentia,  $\frac{1}{10}$  unc. longa. *Labellum* sepalis longius, disco villosa utrinque lobulo aucto, apicem versus dilatatum 5-lobum, lobis ovatis. *Columna* brevis.

19. *HABENARIA* *DEBILIS*, *H.f.*, n. sp. Parvula, caule ovariiisque glanduloso-pilosis, foliis 1 et 2 lanceolatis acuminatis, racemo 3–10-floro, bracteis ovario brevioribus, floribus parvis, sepalis petalisque late ovato-oblongis obtusis labello petalis subæquilongo 3-lobo, lobis lineari-oblongis obtusis, antheræ loculis contiguas, calcari recto ovario breviora.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

*Caulis* 4–6-pollicaris, gracilis. *Folia* caule paulo breviora, plana, acuminata, in petiolum angustata. *Racemus* pauci- v. multiflorus. *Ovarium* subsessile, apice vix constricto. *Bracteæ* setaceo-lanceolatae. *Perianthium*  $\frac{1}{10}$  unc. latum, foliolis obtusiusculis. *Columnæ* processus breves, ascendentes, apice glandulosi.

20. *HABENARIA* *ATTENUATA*, *H.f.*, n. sp. Glaberrima, caule gracili pedali bracteato, foliis ad 2 lineari-lanceolatis, racemo elongato, floribus distantibus, bracteis ovario longioribus attenuato-acuminatis, sepalis petalisque ovato-oblongis obtusis, labello 3-partito lobis linearibus, calcari gracillimo ascendente ovario longiore, antheræ loculis contiguas.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov.)

*Caulis* tenuis. *Folia* 2–5 unc. longa,  $\frac{1}{3}$ – $\frac{3}{4}$  lata, acuta, plana, non petiolata. *Bracteæ* caulinae vaginantes, longe acuminatae. *Racemus* 3–5-pollicaris. *Flores* laxi. *Ovarium* apice contractum. *Perianthium*  $\frac{1}{6}$  unc. latum. *Labelli* lobi lineares, obtusi, petalis æquilongi. *Calcar*  $\frac{1}{3}$ – $\frac{1}{2}$  unc. longum, attenuatum. *Columnæ* processus breves, crassi, porrecti.

Very near the Abyssinian *H. bracteosa*, A. Rich., but the flowers are much smaller and the leaves narrower.

21. *HABENARIA* *MICROCERAS*, *H.f.*, n. sp. Glaberrima, 1–2-pedalis, caule folioso basi vaginato, foliis oblongis utrinque acutis 7–9-nerviis, racemo elongato densifloro, bracteis ovario brevioribus, floribus minutis, sepalis petalisque late oblongis obtusis, labello brevi 3-fido, calcari tumido obtuso æquilongo, antheris contiguas.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov.)

**Exemplar solitarium.** *Caulis* robustus, per totam longitudinem foliosus. *Folia* 5-6, 3-4 unc. longa, 2-3 lata, membranacea, non petiolata. *Racemus* post anthesin fere pedalis, floribus imbricatis. *Bractea* subulato-lanceolatae. *Ovarium* apice contractum. *Perianthium*  $\frac{1}{10}$  unc. latum. *Labellum* late oblongum, lobis brevibus obtusiusculis. *Columnae* processus breves, crassi, obtusi, divergentes.

Habit of *H. præalta*, but leaves much broader and flowers smaller.

22. **HABENARIA PRÆALTA**, *Lindl. Gen. et Sp. Orch.* 321, et ante, vi. 140.

*Hab.* Fernando Po, alt. 10,000 feet. (Fl. Dec.)

Also a native of Bourbon, if the same; but the Fernando Po plant has the spur much longer than the ovary and not at all clavate.

23. **HABENARIA MANNII**, *H. f.*, n. sp. Glaberrima, spithamæa, caule folioso basi vaginato, foliis lineari-lanceolatis acuminatis recurvis, bracteis late ovatis acuminatis ovario longioribus, floribus paucis amplis, sepalis falcato-ovatis acuminatis, petalis linearibus obtusis, labello angusto 3-partito, calcarî æquilongø, lobis anguste linearibus, exterioribus multifidis, columna brevissima 2-cruri, antheris distantibus cruribus insertis.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Nov.)

*Caulis* erectus, strictus, foliosus. *Folia* complicata, 3-nervia, 3-5-pollinaria, in bracteas floriferas abeuntia. *Bractea* concavæ,  $\frac{3}{4}$  unc. longæ. *Flores* 1 unc. lati. *Sepala* 3-nervia, subcoriacea, patentia. *Labelli* lobi angustissimi. [*Calcar* incurvum,  $\frac{1}{2}$  unc. longum, sensim inflatum, obtusum. *Columna* (valde singularis) brevissima, in ramos 2 divaricatos et porrectos fissa, ramis cum processibus columnæ apice oblique truncatæ continuis. *Antheræ* loculi longe distantes, caudiculis erectis.

A most remarkable plant, very closely allied to three Abyssinian species, *H. Quartiniana*, *macrantha*, and *decorata*, in all of which the column is split to the base into two projecting arms, and the anther-lobes placed wide apart, one on each arm, with their caudicles turned up at right angles.

#### 49. IRIDEÆ.

1. **TRICHONEMA BULBOCODIUM**, *Ker.*

*Hab.* Cameroons Mountains, alt. 7000-9000 feet. (Fl. Nov.)

A small-flowered form, in no way differing from the Abyssinian. The species is found from the Channel Islands to the Canaries and Azores, and throughout the Mediterranean region, Algeria, Asia Minor, Syria, and at Socotra in the Red Sea.

2. *GEISSORHIZA ALPINA*, *H. f.*, n. sp. Caule compresso 4–10-pollicari, 2–3-floro, foliis anguste lineari-elongatis 4–6-pollicaribus, bracteis ovato-oblongis acutis ovarium excedentibus capsulam æquantibus, perianthii limbo subobliquo laciniis oblongis obtusis.

*Hab.* Cameroons Mountains, alt. 9000–10,000 feet. (Fl. Nov.)

*Herba* gracilis, glaberrima. *Folia* stricta v. lente curva,  $\frac{1}{10}$  unc. lata, costa valida. *Caulis* strictus v. parum flexuosus, foliis 2–3 spathaceis auctus. *Bracteæ* exteriores  $\frac{1}{2}$  unc. longæ, strictæ, virides, marginibus membranaceis, interiores breviores, obtusæ, hyalinæ. *Flores*  $\frac{3}{4}$  unc. longæ, ut videtur ex sicco pallide purpureæ. *Antheræ* parvæ. *Cap-sula*  $\frac{1}{2}$  unc. longa, cylindrico-trigona, utrinque obtusa, membranacea, polysperma. *Semina* in quovis loculo ad 12, globosa, majuscula.

This resembles a good deal the *G. Abyssinica*, but is a more slender plant, with much fewer flowers, apparently of a very pale colour; the anthers, too, are smaller and straighter. It most resembles the South-African *G. juncea*.

#### 50. HYPOXIDÆÆ.

1. *HYPOXIS VILLOSA*, *L.*, var. foliis recurvis.

*Hab.* Cameroons Mountains, alt. 7000–7500 feet. (Fl. Nov.)

Apparently the same with the Cape, East-African, and Abyssinian species, but the leaves are rather more rigid and always recurved.

#### 51. MELANTHACEÆ.

1. *MELANTHIUM TENUE*, *H. f.*, n. sp. 3–4-pollicare, caule tenui subunifolio 2-floro, folio anguste lineari caule longiore, perianthii foliolis lineari-oblongis obtusis medio purpureis basi vix saccatis, ovarii lobis in stylos rectos subulatos discretos sensim attenuatis.

*Hab.* Fernando Po, alt. 9000 feet. (Fl. April, May.)

Species parvula, facie omnino *Anguillariæ dioicæ*. *Bulbi* tunica lævis, papyracea, castanea. *Caulis* curvus v. subflexuosus, tenuis, basi vaginatus, supra basin 1-foliatus, et superne bractea basi tumida spathacea apice longe lineari auctus. *Folium* vix  $\frac{1}{2}$  unc. latum, rigidum, enerve, concavum. *Flores*  $\frac{1}{3}$  unc. diametro, albi, purpureo maculati.

A very distinct little species, of a peculiarly Cape genus, not hitherto found in Abyssinia.

#### 52. COMMELYNEÆ.

1. *COMMELYNA*, sp.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.) (Fruit only.)

*Caulis* tenuis, decumbens, linea pilorum auctus. *Folia* brevia, 1–1 $\frac{1}{2}$  unc. longa, ovato-oblonga v. oblongo-rotundata, glabra, margine incrassato ciliato. *Vagina* tenuis, membranacea, marginibus longe villosis. *Spatha* breviter pedunculata, complicata, explicata latissime cordata, acuta, glaberrima, ciliolata, 2-flora.

Also an Abyssinian and Madagascar plant, very near *C. Forskahlia*, if not the same; but in the present condition of the genus *Commelyna* it is hopeless to identify a species in all its forms without a study of the whole.

2. *CYANOTIS ABYSSINICA*, *A. Rich.* (*ante*, vi. 21).

*Hab.* Fernando Po, alt. 9000 feet. Cameroons Mountains, alt. 7000–9000 feet. (Fl. Nov., Dec.)

Certainly the same as the Abyssinian plant, of which the tubers are eaten, and probably the same also with a Madagascar and S.-African one.

53. JUNCEÆ.

1. *JUNCUS CAPITATUS*, *Weig.*; *Kunth, Enum. Plant.* iii. 347.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

Identical with the European plant, except that the glumes are rather longer and more membranous; in form they do not differ, any more than the capsules and seeds. The Cameroons specimens are triandrous. This minute species is a native of Europe, from Norway to Spain, Madeira, and the Canary Islands, and from the Azores to Greece and Middle Russia; it has not been found in Abyssinia.

2. *LUZULA CAMPESTRIS*, *L.* (*ante*, vi. 22), var. *congesta*.

*Hab.* Fernando Po, alt. 8500–10,500 feet. Cameroons Mountains, alt. 10,000 feet. (Fl. Dec.)

Apparently identical with the European plant. The flowers are of a very dark colour. This form has not been detected in Abyssinia; but the South-African *L. Africana*, Drège, is referred to this variety by E. Meyer (*Herb. Hook.*).

54. CYPERACEÆ.

1. *CYPERUS ELEGANTULUS*, *Steud. Pl. Schimp.* sect. ii. no. 574.

*Hab.* Fernando Po, alt. 8500 feet.

This Abyssinian species is united by A. Richard with *C. atro-nitens*, Hochst., and perhaps rightly, but the scales are much larger and rather longer in outline.

2. *CYPERUS INGRATUS*, *Kunth, Enum.* ii. 31.

*Hab.* Fernando Po, alt. 6000–7000 feet. Cameroons Mountains, alt. 6000–7000 feet. (Fl. Dec.–April.)

I am unable to identify this species with any but the Cape of Good Hope *C. ingratus*; it varies greatly in size, the larger specimens resembling the Abyssinian *C. derreilema*, Steud., and the

smaller some states of *C. bulbosus*; but the acute glumes distinguish it from both. The small, white, smooth, triquetrous achenium is very characteristic of the Cape and Cameroons Mountains plants.

3. *CYPERUS ADOENSIS*, Hochst.; *A. Rich. Fl. Abyss.* ii. 484.

*Hab.* Fernando Po, alt. 8500 feet. (Fl. April.)

The scales, described by A. Richard as being rarely mucronate in the Abyssinian plant, are always so in the Fernando Po specimens.

4. *KYLLINGIA MACROCEPHALA*, *A. Rich. Fl. Abyss.* ii. 490.

*Hab.* Fernando Po, alt. 7000–8500 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Nov.–April.)

Identical with the Abyssinian plant.

5. *ISOLEPIS CAPILLARIS*, *Rœm. & Sch.; Kunth, Enum.* ii. 211. *I. trifida*, *Nees; Kunth, Enum.* ii. 213.

*Hab.* Fernando Po, alt. 8500–10,700 feet. Cameroons Mountains, alt. 6000–10,000 feet. (Fl. Nov.–April.)

A common tropical plant, found at various elevations, in America, Africa, and India, but not in South or North Africa. The *I. tenerrima*, *Fisch.*, of South Russia is the same plant, I think.

6. *ISOLEPIS SCHÆNOIDES*, *Kunth, Enum.* ii. 209. *Schœnus erraticus*, *H.f. (ante, vi. 22).*

*Hab.* Fernando Po, alt. 8500–9000 feet. Cameroons Mountains, alt. 7000–9000 feet. (Fl. Nov.–April.)

This appears to me to be much nearer allied to *Schœnus* than to *Isolepis*. It is a native of mountain marshes in the eastern parts of the Cape Colony.

7. *CAREX CRUCIATA*\*, *Nees?*; *Boott, Illustr. Carex*, t. 319. *Foliis firmis.*

*Hab.* St. Thomas's, summit of the Peak, alt. 7500 feet.

The original *C. cruciata* is a native of the Himalaya and Khasya ranges.

8. *CAREX WAHLENBERGIANA*, *Boott, Illustr. Carex*, t. 301 (*ante, vi. 22).*

*Hab.* Fernando Po, alt. 8000 feet. (Fl. Dec.)

A native of Bourbon, the Mauritius, and mountains of Abyssinia, at an elevation of 9000–10,000 feet.

9. *CAREX BORYANA*, *Schk. (ante, vi. 22).*

*Hab.* Fernando Po, alt. 7500–8500 feet. (Fl. Dec.)

A native of Bourbon and the Mauritius.

\* The Carices have all been named by the late Dr. Boott, F.L.S.



10. *CAREX ÆTHIOPICA*, Schk.; Boott, *Illustr. Carex*, t. 341-344.

*Hab.* Cameroons Mountains, alt. 7000-10,000 feet. (Fl. Dec.)

Also a native of Abyssinia and South Africa.

11. *CAREX ECHINOCHLOE*, Kunth; Boott, *Illustr. Carex*, t. 166.

*Hab.* Cameroons Mountains, alt. 7000 feet.

Also a native of Abyssinia, alt. 6000 feet, and probably not different from *C. Wahlenbergiana*.

### 55. GRAMINEÆ.

1. *PANICUM (MILIARIA) HOCHSTETTERI*, Steud. *Syn. Gram.* 90. *P. trichanthum*, A. Rich., non Nees.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

Apparently a native of Abyssinia in mountain regions.

2. *PANICUM (VIRGARIA) ACROTRICHUM*, H. f., n. sp. Debile, culmis gracilibus, vaginis foliisque ciliatis, foliis brevibus lanceolatis longe acuminatis planis longe pilosis, nervis 7-9, panicula laxa erecta, spiculis parvis apice setulis strictis valvulis acutis æquilongis terminatis.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

*Gramen* elegans, culmis 2-3-pedalibus foliosis lævibus, nodis glaberrimis.

*Vaginæ* tenues, 2-3-pollicares, glaberrimæ v. pilosulæ, marginibus superne ciliatis, ore lanuginoso. *Folia* 2-4 poll. longa,  $\frac{1}{3}$ - $\frac{2}{3}$  lata, plana, membranacea, ciliata, paginis pilis pallidis elongatis rigidis sparsa.

*Panicula* effusa, laxa, 4-8-uncialis, ramis geminis apices versus divisis rhachique subflexuosa filiformibus lævibus. *Spiculæ* parvæ, pallidæ,  $\frac{1}{2}$  unc. longæ; valvulæ 5, exterior longitudine valde variabilis, quam secunda brevior, oblongo-lanceolata, obtusa, nuda v. setulis 1-2 aucta; secunda ovato-lanceolata, acuminata, viridis, 7-costata, apicem versus setosa, setis 2-3 terminalibus valvulam æquantibus; tertia secundæ subsimilis sed nuda; 2 intimæ cymbiformes, obtusæ, coriaceæ, albidæ, lævissimæ.

A delicate grass, easily recognized by the 2-3 long bristles at the apex of the second valve of the spikelet. It is more allied in habit and other characters to the Cape *P. æquinerve*, Nees, than to any species known to me, though that plant is placed in the section *Virgatæ*.

3. *PANICUM (VIRGARIA) MONTICOLUM*, H. f., n. sp. Debile, culmis gracilibus, vaginis foliisque glabriusculis, foliis brevibus lanceolatis acuminatis planis striatis obscure 7-nerviis, panicula laxa pauciflora erecta, spiculis parvis oblongis obtusis glaberrimis.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Feb.)

*Gramen* elegans, culmis basi prostratis ramosis sulcatis demum ascendentibus 1-2-pedalibus foliosis lævibus, nodis glaberrimis. *Vaginæ* tenues, 1-2 unc. longæ, superne setulis curvis rigidis ciliatæ; ore glabro.

*Folia*  $1\frac{1}{2}$ –2 unc. longa,  $\frac{1}{4}$ – $\frac{1}{2}$  lata, plana, membranacea, viridia, marginibus non ciliatis, nervis primariis ad 7 a secundariis per plurimis vix distincta, nervulis paucis transversis trabeculatis, paginis lævibus. *Panicula* 2–3-pollicaris, laxa, ramis solitariis  $\frac{1}{2}$ –1-pollicaribus apices versus 1–2-floris; rhachi ramisque filiformibus lævibus. *Spiculæ* pedicellatæ,  $\frac{1}{2}$  unc. longæ, glaberrimæ. *Valvula* exterior brevis, late ovata, apice rotundata; secunda et tertia consimiles, concavæ, oblongæ, obtusæ, læves, 5-nerves; 2 intimæ cymbiformes, coriaceæ, obtusæ, læves.

Similar in habit, &c. to *P. acrotrichum*, but at once distinguished by the glabrous leaves, fewer-flowered panicle, its solitary branches, and the glabrous, blunt, 5-nerved glumes, which are not ribbed.

4. PANICUM (MILIARIA) PUSILLUM, *H. f.*, n. sp. Molliter laxè villosum, parvulum, debile, culmis decumbentibus filiformibus foliosis, foliis parvis lanceolatis, panicula laxa ovata ramosa, ramis deflexis 3–4-floris, ramis ramulisque flexuosis, valvulis 3 spiculæ costatis longe setosis.

*Hab.* Cameroons Mountains, alt. 7000–8000 feet. (Fl. Dec.)

Debile, annuum, pusillum, totum pilis mollibus patentibus elongatis laxè villosulum, culmis decumbentibus laxè foliosis fere capillaribus 2–3-pollicaribus, nodis non barbatis. *Vaginæ*  $\frac{1}{8}$  unc. longæ, laxæ, costatæ. *Folia*  $\frac{1}{4}$ – $\frac{1}{3}$  unc. longa, anguste lanceolata, acuminata, plana, multicostata, utrinque villosula. *Panicula* pollicaris, erecta, ramis solitariis brevibus capillaribus. *Spiculæ* vix  $\frac{1}{4}$  unc. longæ. *Valvulæ* 3 exteriores subæquales, membranaceæ, virides, ovatæ, acutæ, longe pilosæ, pilis basi tuberculatis; exterior 3-costata, paulo minor; 2 sequentes 5-costatæ, costis acutis; 2 intimæ cymbiformes, coriaceæ, glaberrimæ, læves, subacutæ.

A very remarkable little species, quite unlike any with which I am acquainted; its habit is that of *Isachne dispar*.

5. ISACHNE REFRACTA, *H. f.*, n. sp. Fere glaberrima, culmis basi geniculatis decumbentibus demum erectis gracilibus strictis lævibus, vaginis lævibus sulcatis versus margines pilosulis, foliis refractis anguste lanceolatis longe acuminatis strictis scabrulis marginibus incurvis, panicula effusa, ramis strictis hic illic longe pilosis, valvulis ovatis subacutis valide costatis.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

*Gramen* rigidulum, perenne, 3-unc. ad pedale, culmis cæspitosis basi decumbentibus ramosis. *Folia* stricta,  $\frac{1}{2}$ –2 unc. longa, omnia deflexa. *Culmi* superne gracillimi, lævissimi. *Panicula* 1–3-pollicaris, late ovata, fere æque lata, ramis alternis capillaribus flexuosis ramulis 1–4-floribus. *Spiculæ* pedicellatæ,  $\frac{1}{2}$  unc. longæ, purpureæ, ovatæ, subacutæ. *Valvulæ* glabræ, exterior minor ovato-oblonga acuta 3-costata, 2 sequentes subæquales 5-costatæ; flosculus inferior (interdum neuter v. imper-

fectus) membranaceus; hermaphroditus 2-paleaceus, valvulis oblongis obtusis cymbiformibus coriaceis lævibus.

The refracted leaves and costate subacute glumes at once distinguish this remarkable species.

6. *PENNISETUM* (*GYMNOTHRIX*) *RIPARIOIDES*, *Hochst.?*; *A. Rich. Fl. Abyss. ii.* 383.

*Hab.* Cameroons Mountains, alt. 7000–8000 feet. (Fl. Dec., Jan.)

The rachis and apex of the culm are more villous than in the Abyssinian specimen, but the plants are otherwise very similar; the whole genus, however, requires revision before the limits of this or any other species can be established. The spikelets are sometimes very lax and few, at others dense; the setæ are about as long as the glumes, and vary greatly in number.

7. *VILFA MONTANA*, *H. f.*, n. sp. Glaberrima, lævis, spithamæa ad pedalis, culmis cæspitosis simplicibus gracilibus erectis, foliis radicalibus curvis elongato-subulatis marginibus involutis scabrulis, panicula laxa ovata, ramis paucis verticillatis capillaribus apices versus 2–3-floris, spiculis glaberrimis nitidis, gluma inferiore superiore lanceolato acuminato  $\frac{1}{2}$  brevior, flosculo gluma superiore brevior.

*Hab.* Cameroons Mountains, alt. 7000–9000 feet. (Fl. Dec.)

*Gramen* elegans, perenne. *Folia* radicalia  $1\frac{1}{2}$ –2 unc. longa, vix  $\frac{1}{4}$  unc. lata, rigidula, patenti-recurva, e vagina brevissima sensim subulato-attenuata, sulcata. *Culmus* gracillimus, 1–2-foliatus, vaginis elongatis tenuibus sulcatis, ligula 0. *Panicula* 2 unc. longa, verticillis ad 6, rhachi ramisque capillaribus, infimis deflexis. *Spiculæ*  $\frac{1}{8}$  unc. longæ, fuscæ, nitidæ. *Gluma* inferior obtusiuscula, superior acuta.

A beautiful small grass, almost identical in the inflorescence, and size, structure, and colour of the spikelets, with the S.-African *V. centrifuga*, Nees; but the branchlets are only in threes, the leaves infinitely narrower, and the whole plant very slender: the two grasses are, however, most closely allied.

8. *DEYEUXIA MANNII*, *H. f.*, n. sp. Culmis elongatis gracillimis foliosis 2–3-pedalibus, vaginis sulcatis scabrulis, foliis strictis anguste lineari-lanceolatis, ligulis elongatis fissis, panicula elongata effusa multiflora rhamis rachique capillaribus, glumis lanceolato-subulatis glabris nerviis carina scabrida, palea inferiore villosa apice breviter 4-setosa arista basilari palea subduplo longiore, superiore æquilonga apice 2-setosa basi villosa et setula villosa aucta.

*Hab.* Fernando Po, alt. 8500 feet. Cameroons Mountains, alt. 8000–13,000 feet. (Fl. Dec.–May.)

*Gramen* gracile, culmis fastigiatis, parce ramosis. *Folia* 6 unc. longa,

$\frac{1}{8}$  unc. lata, stricta, plana v. involuta, minute scabrula. *Panicula* 3–4 unc. longa, erecta v. inclinata, ramis ramulisque capillaribus. *Spiculæ* pallide purpureæ, nitidæ,  $\frac{1}{8}$ – $\frac{1}{4}$  unc. longæ, arista capillari.

The only species of the genus hitherto found in tropical or South Africa.

9. *MICROCHLOA SETACEA*, Br.; *Steud. Syn. Gram.* 202.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

Specimens very small and annual, possibly seedlings only; the flowers, &c., are identical with those of the Indian plant, which is found also in Australia, Abyssinia, S. Africa, S. America, and the plains of the Niger valley.

10. *DESCHAMPSIA CÆSPITOSA*, Pal. Beauv., et var. *latifolia* (ante, vi. 23). *D. latifolia*, Hochst.; *A. Rich. Flor. Abyss.* ii. 413.

*Hab.* Fernando Po, alt. 9000–10,000 feet. Cameroons Mountains, alt. 10,000–12,000 feet. (Fl. Dec., Jan.)

11. *AIRA CARYOPHYLLEA*, Linn.

*Hab.* Cameroons Mountains, alt. 7000–10,000 feet. (Fl. Dec., Jan.)

Also a native of Abyssinia and S. Africa.

12. *AIRA PICTIGLUMA*, *Steud. Syn. Gram.* 221.

*Hab.* Cameroons Mountains, alt. 9000–13,500 feet. (Fl. Dec., Jan.)

Also a native of Abyssinia.

13. *AVENA LACHNANTHA*. *Trisetum lachnanthum*, Hochst. (ante, vi. 23).

*Hab.* Fernando Po, alt. 8000–9000 feet. Cameroons Mountains, alt. 7000–9000 feet. (Fl. Dec., Jan.)

This, having a hairy ovary, should, according to Steudel, be transferred to *Avena*. The villose character of the lower palea is variable. Also a native of Abyssinia.

14. *AVENA NEESII*. *Trisetum*, Hochst.; *Steud. Syn. Gram.* 227.

*Hab.* Cameroons Mountains, alt. 7000–8000 feet. (Fl. Dec., Jan.)

This also is an Abyssinian plant. The spikelets vary in size and colour; the lateral laciniae of the lower palea are sometimes aristate, at others simply acuminate. Sheaths of the lower leaves glabrous, or a little hairy. Ovary villose.

15. *LOUDETIA ELEGANS*, Hochst.; *Steud. Syn. Gram.* 238.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec., Jan.)

A native of the mountains of Abyssinia.

16. *DANTHONIA STREBLOCHÆTA*, *Steud. Syn. Gram.* 245.

*Hab.* Cameroons Mountains, alt. 8000 feet. (Fl. Dec.)

These specimens of this very remarkable grass agree entirely

with the Abyssinian. It differs from the generic character of *Danthonia* in the flowers much exceeding the glumes. The habit of the plant is that of *Festuca gigantea*, which it further closely resembles in colour, stature, and texture.

17. *POA NEMORALIS*, L.

*Hab.* Fernando Po, alt. 7500 feet. Cameroons Mountains, alt. 7000–10,000 feet. (Fl. Dec.–April.)

Not hitherto found in Abyssinia. There are two forms in the Cameroons Mountains: one like the ordinary European; the other, from a lower elevation, of greater size, with more effuse panicles, the branches usually solitary, elongated, and spreading.

18. *KÆLERIA CRISTATA*, Pers. *K. convoluta*, Hochst.; Steud. *Syn. Gram.* 293.

*Hab.* Cameroons Mountains, alt. 8000–12,000 feet. (Fl. Dec., Jan.)

A South-African and Abyssinian plant.

19. *FESTUCA BROMOIDES*, Linn.

*Hab.* Cameroons Mountains, alt. 7000–10,000 feet. (Fl. Dec.)

Common in Abyssinia and South Africa.

20. *FESTUCA SIMENSIS*, Hochst.; Steud. *Syn. Gram.* 314.

*Hab.* Fernando Po, alt. 8500 feet. Cameroons Mountains, alt. 7000 feet. (Fl. Dec.–March.)

21. *FESTUCA GIGANTEA*, Vill.

*Hab.* Fernando Po, alt. 8500 feet. (Fl. March.)

A larger-flowered form than the European, with larger florets; but I can find no distinctive characters. The ovary is glabrous, with terminal stigma.

22. *FESTUCA SCHIMPERIANA*, A. Rich. (*ante*, vi. 23). *F. restituta*, Steud. *Syn. Gram.* 314.

*Hab.* Fernando Po, alt. 8500 feet. Cameroons Mountains, alt. 8000–13,500 feet. (Fl. Dec.–March.)

Varies extremely in stature, and in the inflorescence either dense or lax.

23. *TRIPOGON MAJOR*, H. f., n. sp. *Glaberrimus*, foliis setaceo-involutis, spiculis  $\frac{1}{2}$ -poll. 8–12-floris, glumis lanceolato-subulatis acuminatis, rhachi sericeo-villosa, palea inferiore tridentata breviter aristata.

*Hab.* Cameroons Mountains, alt. 7000–8000 feet. (Fl. Dec.)

*Gramen* cæspitosum, strictum, pedale et ultra. *Folia* 4–6-pollicaria, angustissima, strictiuscula, glaberrima v. pilis paucissimis conspersa,

ligula 0. *Culmus* lævis. *Spica* 4-6 unc. longa. *Spiculæ* remotæ, compressæ. *Glumæ* juniores integerrimæ v. obscure 3-dentatæ, demum apice erosæ, exterior rhachi oblique inserta. *Palea* inferior apice minute 3-dentata, arista brevi recta terminata, basi sericeo-barbata, cæterum glaberrima, 3-nervis; superior apice truncata, marginibus ciliolatis. *Ovarium* lineare, glaberrimum, stylis terminalibus divaricatis, stigmatibus brevibus plumosis.

Much the largest species hitherto discovered. The genus is an Indian, Senegambian, and Abyssinian one, but is not hitherto known in South Africa.

24. *BROMUS SCABRIDUS*, *H. f.*, n. sp. Elatus, gracilis, culmis scabridis, vaginis retrorsum pilosis et scabridis, foliis elongatis planis utrinque scabridis supra pilosis, panicula laxa ampla, ramis oppositis v. ternis 1-4-floris pedicellisque capillaribus et scabridis, spiculis amplis 6-8-floris, palea superiore valide 5-nervia pilosa et scabrula, arista terminalipalea brevior recta.

*Hab.* Cameroons Mountains, alt. 7000-8000 feet. (Fl. Dec.)

*Culmi* 3-4-pedales, tenues, striati. *Vaginæ* graciles, sulcati, 6-8-pollicares, ligula brevi lacera. *Folia* caulina 4-6 unc. longa,  $\frac{1}{2}$  lata, viridia, striata. *Panicula* erecta, pedalis, internodiis 4-5 distantibus, ramulis patentibus flexuosis 3-4-pollicaribus. *Spiculæ* pollicares,  $\frac{1}{2}$  unc. latæ, virides, nervosæ, flosculis compressis. *Glumæ* aristato-acuminatæ, scabridæ. *Palea* inferior  $\frac{1}{2}$ -pollicaris, scabrida et pilosa, marginibus pectinato-ciliatis, arista fere terminali  $\frac{1}{4}$  unc. longa. *Ovarium* apice villosum, stylis lateralibus.

A very handsome grass, nearly allied to *B. asper*, but more scabrid, with far larger and more strongly nerved compressed spikelets. It is also very nearly allied to the *B. cognatus*, Steud., of Abyssinia and *B. pectinatus*, Thunb., of South Africa.

25. *BRACHYPODIUM SYLVATICUM*, *R. & S.* (*ante*, vi. 23).

*Hab.* Fernando Po, alt. 7000 feet.

This is an Abyssinian plant (*B. flexum*, Nees), and also found in South Africa, India, and tropical America.

26. *ANDROPOGON (GYMNANDROPOGON) DISTACHYUS*, *L.*

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec., Jan.)

A native of South Europe and North Africa, as well as of Abyssinia. (*A. polyatherus*, Hochst.)

27. *ANDROPOGON (GYMNANDROPOGON) BRACHYATHERUS*, *Hochst.?*;

*Steud. Syn. Gram.* 372.

*Hab.* Cameroons Mountains, alt. 8000 feet. (Fl. Dec.)

There are two forms thus marked from Abyssinia (Schimper): viz., No. 1635, a stout, broad-leaved form, tallying with the description of Steudel, of which I have very imperfect flowers; and another (Herb. Mus. Paris., Schimper, No. 95) with slender culms and very narrow, strict leaves. The Cameroons specimens accord best with the latter of these. The spikes are sometimes nearly 6 inches long. The second glume of the lower (sessile) spikelet is shortly awned both in Schimper's 95. and the Cameroons plants. The outer glume of the pedicelled spikelet is sometimes awned in the Cameroons specimens and sometimes muticous, but always awned in Schimper's 95. specimens.

28. ANDROPOGON (GYMNANDROPOGON) MANNII, *H. f.*, n. sp. Spithamæus ad pedalis, culmis cæspitosis simplicibus basi compressis foliosis apice sericeis, foliis distichis brevibus parce pilosis, vaginis latis compressis, lamina lineari acuta, spicis 2-5-pollicaribus rhachi ciliata, spiculis lanceolatis lævibus, inferioris basi barbatae valvula exteriori acuminata subaristata, interiori aristata, arista glumam subæquante, superioris valvulis aristato-acuminatis.—*Ante*, vi. 23 (Gymnandropogon, sp?).

*Hab.* Fernando Po, alt. 8500-9000 feet. (Fl. Dec.-April.)

Glaberrima nisi pili sparsi in pagina superiore folii, apice culmi et rhachibus spicarum. *Vaginæ* 1 unc. longæ,  $\frac{1}{8}$  unc. latæ, ligula brevissima sericea. *Folia* subcoriacea, stricta, 2 unc. longa, plana v. complicata, non convoluta. *Culmi* stricti, erecti, subrobusti. *Spicæ* purpurascens. *Spiculæ* laxè imbricatæ, fere  $\frac{1}{4}$  unc. longæ. *Flos* inferior *fæmineus*, superior *masculus*.

I cannot identify this with any described species, though it very closely resembles several Cape and African ones. Its short, stout, tufted habit, much compressed, glabrous, short sheaths, and short, stout, not convolute leaves distinguish it at once from the preceding.

29. ANDROPOGON (CYMBOPOGON) SMITHIANUS, *H. f.*, n. sp. Patentim pilosus v. glabratus, culmis 1-2-ped. foliosis apice ramosis, foliis elongatis superiorum vaginis inflatis, pedunculis longissime sericeis spathis inclusis, spicis 3-4 brevibus paucifloris densissime fulvo-villosis, spiculæ sessilis valvula exteriori truncata, interiori arista torta valvula duplo longiore.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec., Jan.)

*Gramen* pulcherrimum, erectum. *Vaginæ* longè pilosæ, ligulis breviusculis membranaceis. *Folia* 4-8 unc. longa,  $\frac{1}{8}$ - $\frac{1}{5}$  lata, scabrula. *Pedunculi* plurimi, graciles, 2-3 unc. longi, apices versus patentim longè pilosi. *Spicæ* pollicares et breviores, densissime sericeo-villosæ, pilis fulvo-brunneis.

A most beautiful species, at once distinguishable by the dark yellow-brown silky hairs of the spikes.

30. *ANDROPOGON (CYMBOPOGON) PUSILLUS*, *H. f.*, n. sp. Annuus, patentim pilosus, culmis gracilibus decumbentibus 2-5-pollicaribus foliosis, vaginis compressis, foliis linearibus acuminatis planis, pedunculis spathis inclusis, spicis binis brevibus paucifloris, spicularum valvulis exterioribus tenuiter aristatis dorso profunde bipertusis, floris hermaphroditi arista valida torta spicula pluries longiore.

*Hab.* Cameroons Mountains, alt. 7000 feet. (Fl. Dec.)

*Gramen* humile, debile, culmis e basi ramosis. *Vaginæ*  $\frac{1}{4}$ - $\frac{1}{2}$  unc. longæ, ligula brevi obtusa. *Folia*  $\frac{1}{2}$ -1 unc. longa, stricta,  $\frac{1}{8}$  unc. lata, utrinque longe pilosa et basin versus longissime ciliata. *Spathæ* 1-1 $\frac{1}{2}$ -pollicares, glabræ, pedunculos filiformes glaberrimos distachyos velantes. *Spicæ* (aristis exclusis)  $\frac{1}{2}$  unc. longæ. *Spiculæ* 8-10; glumis glabris  $\frac{1}{8}$  unc. long., rhachi pedicellis que dense subdistiche sericeo-villosis. *Valvulæ* nitidæ, virides, exteriores apice bifidæ, interdentes aristatæ, arista tenui valvulæ æquilonga, punctis intrusis magnis collateralibus. *Arista* flosculi hermaphroditi 1-1 $\frac{1}{2}$  unc. longa, valida, torta, brunnea, scabrula.

A most distinct and very singular little grass, quite unlike any other known to me.

31. *ARUNDINELLA ELEGANTULA*, *H. f.*, n. sp. 3-4-pollicaris, annua, longe laxe pilosa, foliis  $\frac{1}{2}$ -unc. lanceolatis acuminatis, panicula ovata ramis capillaribus flexuosis, glumis ovatis acuminatis longe pilosis, flosculi hermaphroditi palea inferiore bifida laciniis tenuiter aristatis dorso penicillis 2 pilorum aucta, inter lacinias aristata, arista valida torta spicula triplo longiore.

Cameroons Mountains, alt. 6000-7000 feet. (Fl. Dec.)

*Gramen* pusillum, debile, basi ramosum, longe laxe pilosum. *Culmi* basi decumbentes, tenues. *Folia* patentia, undulata v. recurva, ore longe ciliato. *Panicula* 1-1 $\frac{1}{2}$ -pollicaris, ramis plurimis flexuosis glaberrimis erecto-patentibus 2-3-floris ramulisque capillaribus. *Spiculæ*  $\frac{1}{8}$  unc. longæ. *Glumæ* longe laxe patentim subsetosæ, setulis basi tuberculatis, ovatæ, acuminatæ. *Palea* inferior fl. masculi glumis subsimilis sed longior, apice aristulata; fl. fertilis palea inferior brevis, basi et supra medium utrinque penicillis albis sericeis pilorum aucta, aristis lateralibus tenuissimis, intermedia valida, torta, geniculata,  $\frac{1}{3}$  unc. longa.

A very beautiful and distinct little grass, allied to the Abyssinian and Indian *A. Wallichii* (*A. pumila*, Steud.), but very different in its much smaller size, much larger, more hairy spikelets, and in the curious pencils of hairs on the lower fertile palea, which resemble those of the Australian *Danthonia semiannularis*. The



genus is South African, but not hitherto found in extratropical North Africa.

CRYPTOGAMIA.

56. FILICES.

1. GLEICHENIA DICHOTOMA, *Willd.*

*Hab.* St. Thomas's Island, summit of the Peak.

2. CYATHEA, *sp.*

*Hab.* St. Thomas's Island, alt. 3000–7000 feet. Fernando Po and Cameroons Mountains.

3. ADIANTUM ÆTHIOPICUM, *L.*

*Hab.* Cameroons Mountains, alt. 7000 feet.

4. LONCHITIS GLABRA, *Bory.*

*Hab.* St. Thomas's Island, top of the Peak. Cameroons Mountains, alt. 7000 feet. Fernando Po.

A native of Natal and Bourbon.

5. HYPOLEPIS PTERIDIOIDES, *Hook.*

*Hab.* Fernando Po and Cameroons Mountains, alt. 7000 feet.

6. CHEILANTHES FARINOSA, *Kaulf.*

*Hab.* Cameroons Mountains, in lava-fields, alt. 7000–10,000 feet.

7. PELLÆA HASTATA, *Link.*

*Hab.* Cameroons Mountains, alt. 7000 feet.

8. PTERIS 4-AURITA, *Retz.*

*Hab.* Cameroons Mountains, alt. 7000 feet.

9. PTERIS FLABELLATA, *Th.*

*Hab.* Fernando Po, alt. 7000 feet.

10. PTERIS AQUILINA, *Linn.*

*Hab.* Cameroons Mountains, alt. 7000 feet.

Also found at the level of the sea, on the Bagroo River and elsewhere in tropical Africa.

11. ASPLENIUM ANISOPHYLLUM, *Kze.*

*Hab.* Cameroons Mountains, alt. 3000–7000 feet.

12. ASPLENIUM ERECTUM, *Bory.*

*Hab.* Fernando Po and Cameroons Mountains, alt. 3000–7000 feet.

A fern of ubiquitous tropical distribution.

13. ASPLENIUM MONANTHEMUM, *L.*

*Hab.* Fernando Po, alt. 8000 feet.

14. *ASPLENIUM PROTENSUM*, Schrad.

*Hab.* Fernando Po and Cameroons Mountains, alt. 7000 feet.

A native of Abyssinia, Mauritius, and South Africa.

15. *ASPLENIUM SERRA*, Langsd.

*Hab.* Fernando Po and Cameroons Mountains, alt. 3000–7100 feet.

16. *ASPLENIUM FURCATUM*, Th. Var. *parvula*, pinnis integris brevibus.

*Hab.* Cameroons Mountains, alt. 8000 feet.

The same state occurs in the Canary and Cape de Verd Islands.

17. *ASPLENIUM ADIANTUM-NIGRUM*, L.

*Hab.* Cameroons Mountains, on lava-fields, alt. 10,000 feet.

Also found in Abyssinia, South Africa, and elsewhere on the tropical mountains of the Old and New World.

18. *ASPLENIUM ABYSSINICUM*, Fée.

*Hab.* Fernando Po and Cameroons Mountains, alt. 3000–7000 feet.

An Abyssinian fern.

19. *ASPLENIUM BRACHYPTERON*, Kze.

*Hab.* Cameroons Mountains, alt. 3000–7000 feet.

20. *ASPLENIUM FILIX-FÆMINA*, L.

*Hab.* Cameroons Mountains, alt. 7000 feet.

A small form of this very variable plant, of which other forms are found in Abyssinia, South Africa, &c.

21. *ASPLENIUM ASPIDIOIDES*, Schl.

*Hab.* Fernando Po and Cameroons Mountains, alt. 5000–7000 feet.

A Madagascar fern.

22. *ASPIDIUM ACULEATUM*, L.

*Hab.* Fernando Po and Cameroons Mountains, alt. 7000–10,000 feet.

Also found in Abyssinia, South Africa, and elsewhere throughout the globe where the climate is sufficiently cool.

23. *NEPHRODIUM CRINIBULBON*, Hook.

*Hab.* St. Thomas's Island, summit of the Peak. Cameroons Mountains, alt. 4000 feet.

24. *NEPHRODIUM FILIX-MAS*, L.

*Hab.* St. Thomas's Island, alt. 6000 feet.

A native of Abyssinia, Southern and Eastern Africa, and elsewhere throughout the world in cool moist climates.

25. *NEPHRODIUM INÆQUALE*, *Hook.*

*Hab.* Fernando Po and Cameroons Mountains, alt. 7000–10,000 feet.

26. *NEPHROLEPIS TUBEROSA*, *Presl.*

*Hab.* St. Thomas's Island and Cameroons Mountains, alt. 4000–5000 feet.

27. *POLYPODIUM VILLOSISSIMUM*, *Hook.*

*Hab.* St. Thomas's Island, alt. 6000 feet.

Also found at Sierra Leone.

28. *POLYPODIUM RUGULOSUM*, *Lab.*

*Hab.* Fernando Po, alt. 7000 feet.

One of the most widely distributed of Ferns in the tropics and south temperate zone.

29. *POLYPODIUM*, n. sp.

*Hab.* Cameroons Mountains, alt. 7000 feet.

30. *POLYPODIUM OPPOSITIFOLIUM*, *Hook.*

*Hab.* Peak of St. Thomas's Island, alt. 5000 feet.

31. *POLYPODIUM LORIFORME*, *Wall.*

*Hab.* Peak of St. Thomas's Island, alt. 4000–5000 feet. Fernando Po, alt. 3000–5000 feet.

32. *POLYPODIUM LEPIDOTUM*, *Willd.*

*Hab.* Cameroons Mountains, alt. 9000 feet.

An American fern ; also found in St. Helena.

33. *GYMNOGRAMME JAVANICA*, *Bl.*

*Hab.* St. Thomas's Island, alt. 4000–5000 feet. Fernando Po, alt. 10,000 feet. Cameroons Mountains, alt. 3000–7000 feet.

A widely distributed fern, extending through India to the Sandwich Islands.

34. *GYMNOGRAMME TOTTA*, *Schlecht.*

*Hab.* Fernando Po and Cameroons Mountains, alt. 1000–7000 feet.

Found also in Madeira, throughout tropical Africa, and India.

35. *GYMNOGRAMME LANCEOLATA*, *Sw.*

*Hab.* Fernando Po and Cameroons Mountains, alt. 3000–7000 feet.

A native of South Africa, India, and South America.

36. *ACROSTICHUM HYBRIDUM*, *Bory.*

*Hab.* Fernando Po and Cameroons Mountains, alt. 4000–8000 feet.

A Bourbon and Tristan-d'Acunha fern.

37. ACROSTICHUM AUBERTII, *Desv.*

*Hab.* Fernando Po, alt. 7000 feet.

A Bourbon, East-African, and Venezuelan fern.

38. ACROSTICHUM SPLENDENS, *Willd.*

*Hab.* Fernando Po and Cameroons Mountains, alt. 5000–6000 feet.

Found also in Sierra Leone, Madagascar, Bourbon, Ceylon, and the Sandwich Islands.

39. ACROSTICHUM SQUAMOSUM, *Sw.*

*Hab.* Cameroons Mountains, alt. 6000 feet. Tropical America, Indian and Pacific Islands, Madeira and Azores.

40. ACROSTICHUM SORBIFOLIUM, *Linn.*

*Hab.* Fernando Po, from the sea to 5000 feet.

A very widely dispersed fern.

57. OPHIOGLOSSEÆ.

1. OPHIOGLOSSUM RETICULATUM, *Linn.*

*Hab.* Fernando Po, summit of the Peak.

A form of *O. vulgatum*, found in many warm countries.

58. LYCOPODIACEÆ.

1. LYCOPODIUM CRASSUM, *Hook.*

*Hab.* Cameroons Mountains, alt. 10,500 feet.

Also a native of Bourbon, Kerguelen's Land, and the Andes.

2. SELAGINELLA, *sp.*

*Hab.* Fernando Po, alt. 8000 feet.

3. SELAGINELLA, *sp.*

*Hab.* St. Thomas's Island, alt. 5000 feet.

59. MUSCI. (Described by Mr. Mitten, *ante*, p. 148.)

		feet.
Leptotrichum capillaceum, <i>Hedw.</i> .....	Cameroons Mountains	7,000
Dicranum obliquatum, <i>Mitt.</i> , n. sp.....	Clarence Peak.	
— stramineum, <i>Mitt.</i> , n. sp. ....	Cameroons Mountains	9,000
— nivale, <i>Brid.</i> .....	"	9–10,000
— ericetorum, <i>Mitt.</i> .....	"	7–10,000
Didymodon radicosus, <i>Mitt.</i> , n. sp.....	"	8,000
— pungens, <i>Mitt.</i> , n. sp.....	"	10,000
Didymodon flexifolius, <i>Hook. &amp; Tayl.</i> {	"	8,000
	Clarence Peak, in the crater.	

		feet.
— <i>purpureus</i> , Hedw. ....	Cameroons Mountains	8,000
— <i>cyathicarpus</i> , Mont.....	”	8,000
<i>Anectangium spathulatum</i> , Mitt., n. sp.	”	8,000
<i>Tortula cylindrica</i> ( <i>Weissia</i> , Bruch).....	”	7,000
<i>Grimmia Abyssinica</i> , Br. & Sch. ....	”	12,000
<i>Zygodon semitortus</i> , Mitt., n. sp. ....	”	8,000
<i>Macromitrium levatum</i> , Mitt., n. sp. ...	”	8–10,000
<i>Entosthodon curvipes</i> , C. Muell.....	”	7–8,000
<i>Funaria hygrometrica</i> , Dill.....	”	7,000
<i>Bartramia stricta</i> , Brid. ....	”	7,000
— <i>commutata</i> , Mitt.....	”	12,000
— <i>Halleriana</i> , Hedw. ....	”	9,000
<i>Philonotis Wilsoni</i> , Br. & Sch. ....	Clarence Peak .....	8,500
<i>Breutelia gnaphalea</i> , Mitt. ....	Cameroons Mountains	12,000
— <i>diffracta</i> , Mitt. ....	”	5–9,000
<i>Mielichhoferia ovalis</i> , Mitt., n. sp. ....	”	10,000
— <i>basilaris</i> , Br. & Sch.....	”	7–8,000
<i>Bryum julaceum</i> , Sm. ....	”	7,000
— <i>argenteum</i> , L. ....	”	8,000
— <i>alpinum</i> , L. ....	”	12,000
— <i>pallescens</i> , Schw.....	”	7–12,000
— <i>flexifolium</i> , Br. & Sch. ....	”	8,000
— <i>suberectum</i> , Mitt., n. sp.....	Clarence Peak.	
— <i>subuliferum</i> , Mitt., n. sp. ....	Peak of St. Thomas's.	
<i>Hypnum vellereum</i> , Mitt., n. sp.....	Cameroons Mountains	8,000
— <i>spiculosum</i> , Mitt., n. sp. ....	”	(no elev.)
<i>Meteorium imbricatum</i> , Beauv. ....	”	4–7,000
	{ Clarence Peak .....	8,000
<i>Trachyloma stipitatum</i> , Mitt., n. sp. ...	”	7,500
<i>Stereodon Abyssinicus</i> , Br. & Sch.....	Cameroons Mountains	7–8,000
— <i>mollicellus</i> , Mitt., n. sp. ....	”	4–5,000
— <i>nitidifolius</i> , Mitt., n. sp. ....	Clarence Peak .....	8,000
— <i>fruticellus</i> , Mitt., n. sp. ....	”	3–8,000
— <i>frondosus</i> , Mitt., n. sp. ....	”	3–8,000
<i>Lepidopilum deflexum</i> , Mitt., n. sp. ...	Cameroons Mountains	4,000
<i>Neckera longirostris</i> , Hook.....	”	7,000
— <i>ramulosa</i> , Mitt., n. sp.....	”	4,000
— <i>pennata</i> , Hedw. ....	Clarence Peak .....	6,000
— <i>remota</i> , Br. ....	Cameroons Mountains	7,000
<i>Hedwigia imberbis</i> , Hook. & Tayl. ....	”	10–12,000
— <i>rupestris</i> , Mitt., n. sp.....	”	10,000
<i>Leskea intricata</i> , Mitt., n. sp. ....	”	7,000
— <i>ramusculosa</i> , Mitt., n. sp. ....	Clarence Peak.	
<i>Rhacopilum Africanum</i> , Mitt., n. sp. ...	Cameroons Mountains	7,000
<i>Fissidens viridulus</i> , Schw. ....	”	7,000

		feet.
<i>Mnium rostratum</i> , Schw. ....	Clarence Peak.	
<i>Daltonia patula</i> , Mitt., n. sp. ....	„ .....	7,000
— <i>longinervis</i> , Mitt., n. sp. ....	Cameroons Mountains	4,000
— <i>splachnoides</i> , Hook. & Tayl. ....	„ .....	8,000
<i>Cyclodictyon</i> ( <i>Hookeria</i> ) <i>laetevirens</i> , Hook. & Tayl. ....	} Clarence Peak .....	8,000
<i>Hypopterygium laricinum</i> , Hook. ....	„ .....	
<i>Polytrichum Simense</i> , Br. & Sch. ....	Cameroons Mountains	8-10,000
— <i>juniperinum</i> , Hedw. ....	„ .....	8-10,000
— <i>commune</i> , Linn. ....	Clarence Peak .....	15,000

60. HEPATICÆ. (Described by Mr. Mitten, *ante*, p. 164.)

<i>Jungermannia dentata</i> , Raddi .....	Cameroons Mountains	7,000
— <i>hirtella</i> , Weber .....	„ .....	7,000
— <i>Abyssinica</i> , Nees .....	„ .....	7,000
— <i>geminifolia</i> , Mitt., n. sp. ....	Peak of St. Thomas's.	
<i>Plagiochila squamulosa</i> , Mitt., n. sp. ...	Cameroons Mountains	7-8,000
— <i>dichotoma</i> , Nees .....	„ .....	4,000
<i>Leioscyphus repens</i> , Mitt., n. sp. ....	Clarence Peak .....	8,000
<i>Lophocolea devexa</i> , Mitt., n. sp. ....	Peak of St. Thomas's.	
— <i>bidentata</i> , Nees .....	Clarence Peak .....	8,000
— <i>muricata</i> , Nees .....	„ .....	8,000
<i>Gymnanthe decipiens</i> , Hook. ....	„ .....	8,000
— <i>biloba</i> , Mitt., n. sp. ....	„ .....	8,000
<i>Physiotium sphagnoides</i> , Hook. ....	Peak of St. Thomas's.	
<i>Sendtnera juniperina</i> , Sw. ....	„ .....	
— <i>dielados</i> , Endl. ....	Clarence Peak.	
<i>Radula bipinnata</i> , Mitt., n. sp. ....	Cameroons Mountains	4,000
— <i>tamariscina</i> , Mitt., n. sp. ....	Peak of St. Thomas's.	
— <i>voluta</i> , Tayl. ....	Cameroons Mountains	8,000
<i>Madotheca subdentata</i> , Mitt., n. sp. ...	„ .....	4,000
<i>Lejeunia acuta</i> , Mitt., n. sp. ....	Clarence Peak.	
— <i>Montagnei</i> , Gottsche .....	Peak of St. Thomas's.	
<i>Frullania emergens</i> , Mitt., n. sp. ....	Cameroons Mountains	8,000
— <i>depressa</i> , Mitt., n. sp. ....	„ .....	8,000
— <i>cordata</i> , Mitt., n. sp. ....	„ .....	8,000
— <i>angulata</i> , Mitt., n. sp. ....	„ .....	8,000
<i>Plagiochasma Aitonia</i> , Lndb. & Nees ...	„ .....	7,000
	„ .....	4,000
<i>Dumortiera hirsuta</i> , Schw. ....	} Clarence Peak.	
<i>Targionia hypophylla</i> , Linn. ....	Cameroons Mountains	7,000
<i>Anthoceros dichotomus</i> , Raddi .....	„ .....	7,000
<i>Dendroceros crispatus</i> , Nees .....	Peak of St. Thomas's.	

## 61. LICHENES. (Named by Dr. Nylander.)

		feet.
Leptogium Burgessii, <i>Lightf.</i> .....	Cameroons Mountains	7,000
— inflexum, <i>Nyl.</i> .....	”	
Stictina quercizans, <i>Mich.</i> .....	”	
— fuliginosa, <i>Dicks.</i> .....	”	
Peltigera polydactyla, var. dolicho- rhiza, <i>Nyl.</i> .....	”	
— rufescens, <i>Hoffm.</i> .....	”	
— polydactyloides, <i>Nyl.</i> .....	”	
Usnea ceratina, <i>Ach.</i> .....	”	8,000
— florida, <i>Ach.</i> .....	”	8,000
Stereocaulon turgescens, <i>Nyl.</i> .....	”	7,000
— denudatum, <i>Fl.</i> .....	”	
Cladonia diplotypa, <i>Nyl.</i> .....	”	6,000
— fimbriata, <i>Hoffm.</i> .....	”	
Ramalina scopulorum, <i>Ach.</i> .....	”	8,000
Physcia speciosa, var. dactylifera, <i>Nyl.</i> ...	”	8,000
— —, var. hypoleuca .....	”	8,000
— dilatata, <i>Nyl.</i> .....	”	8,000
— speciosa, <i>Wulf.</i> .....	”	8,000
Parmelia megaleia, <i>Nyl.</i> .....	”	8,000
— revoluta, <i>Fl.</i> .....	”	
— sp. ? non typica .....	”	8,000
Urceolaria scruposa, <i>Ach.</i> .....	”	
Lecanora subfusca, var. allophora .....	”	

On the Genus *Euptelea*, Sieb. & Zucc.

By DR. J. D. HOOKER and DR. T. THOMSON.

[Plate II.]

IN Siebold and Zuccarini's 'Flora of Japan' (a work which contains figures and descriptions of a great number of remarkable forms of plants, many of which extend to the eastern provinces of India) there is figured, at t. 72, a genus *Euptelea*, referred provisionally by the authors to Ulmaceæ, the absence of ripe fruit making it impossible to determine its affinities with certainty.

In preparing for distribution the monochlamydeous plants of the Griffithian Herbarium, we have been so fortunate as to meet with specimens in fruit of a plant evidently belonging to the same genus, perhaps even specifically identical with that figured and described by Siebold and Zuccarini. These specimens were collected by Griffith on the mountain Thumathaya, in the Mishmi country to the east of the valley of Assam, in an extremely humid