

**A summary of the new ferns which have been discovered or described since 1874 / by J.G. Baker.**

**Contributors**

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BAKER.— SUMMARY OF NEW FERNS.  
MATONIA SARMENTOSA, Baker.

*A Summary of the New Ferns  
which have been discovered  
or described since 1874*

BY

J. G. BAKER, F.R.S.

KEEPER OF THE HERBARIUM, ROYAL GARDENS, KEW

*(Reprinted from the Annals of Botany, Vol. V, 1891)*

Oxford

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THE second edition of Hooker and Baker's *Synopsis Filicum* (now out of print) brings the enumeration of genera and species up to the year 1874. Since that date a large number of novelties have been discovered and described and so much fresh light has been thrown by morphological investigation on the taxonomic relations of the different groups of plants included under FILICES that it is time for a new handbook. As there is not any chance of this being produced at present, I propose in this paper to attempt a general summary of what has been added to our knowledge in respect to species during the last sixteen years. I do not intend to describe again the plants that have been described already; but merely to indicate their position in the sequence followed in the *Synopsis*, in the same way as in the supplement published in the second edition. Most of the larger collections that have been received at Kew have been already published in Britten's Journal of Botany and in the Transactions and Journal of the Linnean Society, but a considerable number of new species which have been received from time to time are still unnoticed. Of many of the plants which have been described by other authors we possess authentic specimens. Some of these I can only place as synonyms, and others, measured by the standard

of specific difference adopted in *Synopsis Filicum*, as forms or varieties. Of the distinctness of published novelties of which I have not been able to see specimens, it is almost impossible to judge, but I have indicated the position they would occupy in the *Synopsis* as well as I could from the published descriptions. In a few cases fresh material that has been received shows that species that are passed over in the book for want of knowledge ought to be maintained, or that species kept up as distinct in the book ought to be combined.

Besides innumerable papers in journals, in the proceedings and transactions of societies and in local floras that include ferns (which I need not attempt to enumerate, as they will appear in the citations), the two principal books that concern our subject that have appeared since 1874 are Beddome's most useful Handbook of the Ferns of British India, published at Calcutta in 1881, and Father Sodiro's '*Recensio Cryptogamarum Vascularium Provinciae Quitensis*' published at Quito in 1883. The sixteenth century of Hooker's *Icones* is devoted entirely to Ferns. The principal collections which contain new species have been made in Madagascar by Pool, Miss Gilpin, Kitching, Baron, Humblot, Hildebrandt and Last; in China by Henry, Faber, Ford, Hancock, Maries and Delavay; in Perak by Scortechini; in Tonquin by Balansa; in the Malay archipelago by Beccari, Burbidge and Dr. Hose (Bishop of Singapore and Sarawak); in New Guinea by Beccari and Sir William Macgregor; in New Caledonia by Vieillard and Balansa; in Polynesia by Moseley (Challenger expedition), Horne, Sir J. B. Thurston and the Rev. R. B. Comins; in the Western United States by various collectors; in Mexico by Pringle, Parry and Palmer; in Costa Rica by Harrison and Cooper; in the West Indies by Jenman, Hart, Nock, Sherring and Fendler; on the Roraima expedition by im Thurn; in New Granada by Kalbreyer; in Ecuador by Father Sodiro; and in Brazil by Glaziou. In this enumeration the species are numbered as in the *Synopsis Filicum*. Novelties are indicated by an asterisk attached to the numbers of the species to which they are most nearly allied.



# GLEICHENIACEAE.

## Genus 2. GLEICHENIA Sm.

3. *G. circinata*, Sw. I cannot separate specifically *G. patens*, Colenso in Trans. New Zeal. Instit. 1888, 212.
4. *G. rupestris*, R. Br., must evidently be placed as a mere variety of *G. circinata*.
8. *G. littoralis*, Colenso, in Trans. N. Zeal. Inst. 1883, 334, I cannot separate from *G. flabellata*.
- 12\*. *Mertensia littoralis*, Philippi, Descr. Nuev. Plant. 1873, 104. Chili. Not seen.
15. *G. subandina*, Sodiro, Recens. 5, and *G. hypoleuca*, Sodiro, Recens. 8, Andes of Ecuador, I should place as varieties of *G. revoluta*.
17. *G. seminuda*, Moore, Ind. Fil. 383, Columbia, *G. blepharilepis*, Sodiro, Recens. 6, and *G. leucocarpa*, Sodiro, Recens. 8, Andes of Ecuador, I should place as varieties of *G. pubescens*.
- 17\*. *G. intermedia*, Baker, in Journ. Bot. 1887, 24. Costa Rica, Cooper. Intermediate between *pubescens* and *dichotoma*. There are two varieties, *flexuosa* and *dissitifolia*.
19. *G. Brackenridgei*, Fourn. in Ann. Sc. Nat. sér. 5, XVIII, 269, New Caledonia and Fiji, and *G. oceanica*, Kuhn, Hook. and Baker, Syn. Fil. edit. 2, 449, should probably be classed as varieties of *G. flagellaris*.
23. *G. linearis*, Clarke, in Trans. Linn. Soc. ser. 2, I 428, (*Polypodium lineare*, Burm.), is a synonym of *G. dichotoma*, Hook.

# CYATHEACEAE.

## Genus 4. CYATHEA Sm.

Bommer proposes to divide *Cyathea* into three genera, viz. 1, *Cyathea*, indusium of one single indehiscent piece; 2, *Eatoniopteris*, indusium of one piece, membranous, breaking up into fragments; 3, *Fourniera*, indusium formed of a number of narrow hyaline imbricated scales. For my own part, I feel more inclined to unite *Hemitelia* to *Cyathea* than to divide *Cyathea* as it now stands.

## NEW WORLD SPECIES.

- 3\*. *C. Nockii*, Jenm., in Journ. Bot. 1879, 257. Jamaica, Nock. Indusium of *C. arborea*, but frond bipinnate.

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- 3\*. *Cyathea Boni*, Christ, in Journ. de Bot. 1890, p. 410. French Tonquin, *Bon*. Near *C. Hookeri*, of Ceylon.
- 4\*. *C. jamaicensis*, Jenm., in Journ. Bot. 1882, 323. = *C. arborea* var. *concinna*, Baker, in Journ. Bot. 1881, 52. Jamaica.
- 4\*. *C. monstrabilis*, Jenm., in Journ. Bot. 1881, 273. Jamaica. Probably an abnormal form.
- 4\*. *C. conquisita*, Jenm., in Journ. Bot. 1882, 324. Jamaica, *Wilson*, 134.
- 4\*. *C. pendula*, Jenm., in Journ. Bot. 1882, 324. Jamaica, *Wilson*, 16. This and the last are known only from specimens sent long ago by Wilson to John Smith, whose fern-herbarium is now at the British Museum.
- 4\*. *C. crassipes*, Sodiro, Recens. 10. Andes of Ecuador. May be a variety of *C. insignis*, Eaton.
- 10\*. *C. ocanensis*, Baker, n. sp. Trunk 8–15 feet long. Frond ample, bipinnatifid, subrigid, glabrous. Pinnae oblong-lanceolate, 1–1½ ft. long. Pinnules lanceolate caudate, 2½–3 in. long, ½–⅝ in. broad, cut down by a broad wing into oblong tertiary segments ⅓ in. broad. Veins 10–12-jugate, indistinct, forked. Sori crowded, costular; indusium very fragile. New Granada; province of Ocana, *Kalbreyer*, 608.
- 10\*. *C. corallifera*, Sodiro, Recens. 11. Andes of Ecuador, *Sodiro*.
- 10\*. *C. fulva*, Sodiro, Recens. 11. Andes of Ecuador, *Sodiro*.
- 10\*. *C. aspidioides*, Sodiro, Recens. 14. Andes of Ecuador, *Sodiro*. This and the last two are closely allied to *C. divergens*, Griseb. = *C. petiolulata*, Karst.
- 11\*. *C. dissoluta*, Baker; Jenman, in Journ. Bot. 1881, 52. Jamaica, *Jenman*. Between *C. gracilis* and *Schanschin*.
- 14\*. *C. puberula*, Sodiro, Recens. 16. Andes of Ecuador, *Sodiro*. Not seen. 'Near *C. straminea*, Karst.'
- 20\*. *C. Copelandii*, Kuhn & Luer, in Abhandl. Nat. Bremen, VII, 278. Island of Trinidad, South Atlantic, *Copeland*. I cannot from the dried pinnae distinguish this clearly from the widely-spread continental *C. Schanschin*, Mart.
- 20\*. *C. ruiziana*, Klotzsch, in Linnaea, XX, 439. Fronds ample, bipinnatifid, glabrous, moderately firm; main rachis densely furfuraceous and muricated. Pinnae oblong-lanceolate, 1½ ft. long, 8 in. broad; rachis densely furfuraceous with many ovate-lanceolate glossy black paleae with a pale edge. Pin-



nules lanceolate, 4 in. long,  $\frac{5}{8}$  in. broad, with many ovate and ovate-lanceolate paleae on the ribs beneath: tertiary segments oblong. Veins 8-10-jugate, deeply forked. Indusium very fragile, Peru, *Pavon*. Described from a type specimen lent by Mr. H. C. Levinge, in 1885.

12. *C. mexicana*, Schlecht. So far as I can judge from sterile fronds, the plants which have been widely spread in gardens under the names of *Alsophila Malzinei* and *A. Vangeertii* are forms of this species.

### OLD WORLD SPECIES.

In no group of Ferns have the additions made since 1874 been more numerous than in the Cyatheas and Alsophilas of the Old World.

- 26\*. *C. Thomsoni*, Baker, in Journ. Bot. 1881, 180. Plateau north of Lake Nyassa, *Joseph Thomson*. Very near *C. Dregei* of the Cape.
- 29\*. *C. mossambicensis*, Baker, n. sp. Frond ample, bipinnate, moderately firm, green and glabrous on both surfaces; rachis pale brown, naked, unarmed. Pinnae lanceolate, a foot or more long, 2 in. broad; pinnules linear-oblong, obtuse, distinct, crenate,  $\frac{1}{8}$ - $\frac{1}{4}$  in. broad. Central veins of the pinnules twice forked. Sori placed nearer the midrib than the margin. Indusium a firm persistent cup with a truncate mouth. Namuli Makua country, *Last*, collected in 1887. Near *C. camerooniana*, Hook.
- 33\*. *C. Lastii*, Baker, in Journ. Bot. 1891, 13. North-West Madagascar, *Last*.
- 33\*. *C. regularis*, Baker, in Journ. Linn. Soc. XXV, 349. Madagascar, *Baron*.
- 33\*. *C. discolor*, Baker, in Journ. Linn. Soc. XV, 412. Madagascar, *Pool*.
- 33\*. *C. serratifolia*, Baker, in Journ. Bot. 1884, 139. North-West Madagascar, *Humboldt*, 278. Very distinct; cutting of *Alsophila Taenitis*.
- 33\*. *C. polyphebia*, Baker, in Journ. Linn. Soc. XX, 303. Madagascar, *Baron*.
- 33\*. *C. segregata*, Baker, in Journ. Linn. Soc. XX, 303. Madagascar, *Baron*.

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- 33\*. *Cyathea rigidula*, Baker, in Journ. Linn. Soc. XXII, 534. Madagascar, *Baron*.
- 34\*. *C. ligulata*, Baker, in Journ. Bot. 1884, 140. North-West Madagascar, *Humblot*, 299.
- 33\*. *C. hirsuta*, Baker, in Journ. Bot. 1884, 140. North-West Madagascar, *Humblot*, 262.
- 33\*. *C. Humblotii*, Baker, in Journ. Bot. 1884, 140. North-West Madagascar, *Humblot*, 264.
- 33\*. *C. Hildebrandtii*, Kuhn, in Ind. Sem. Hort. Berol. 1875, 20. Johanna Island, *Hildebrandt*, 1747.
- 34\*. *C. leptochlamys*, Baker, in Journ. Linn. Soc. XXII, 535. Madagascar, *Baron*.
- 34\*. *C. quadrata*, Baker, in Journ. Linn. Soc. XV, 411. Madagascar, *Pool*.
- 34\*. *C. appendiculata*, Baker, in Journ. Linn. Soc. XV, 411. Madagascar, *Meller*.
- 36\*. *C. sumatrana*, Baker, in Journ. Bot. 1880, 209. Sumatra, *Beccari*, 438.
- 38\*. *C. suluensis*, Baker, in Journ. Bot. 1879, 65. Sulu archipelago, *Burbidge*.
39. *C. sarawakensis*, Hook. The Bishop of Singapore and Sarawak has sent a series of specimens demonstrating that *C. lobbiana*, Hook. and *Alsophila alternans*, Hook. are forms of this species.
40. *C. assimilis*, Hook. *C. beccariana*, Cesati, in Becc. Fil. Born. 3, belongs here.
- 41\*. *C. philippinensis*, Baker; *Alsophila philippinensis*, Hort. Veitch. Trunk short, slender; paleae large, linear, pale brown. Frond bipinnate, oblong-rhomboid, 3 ft. long, 1 ft. broad, narrowed from the middle to the base; rachises of frond and pinnae densely paleaceous. Pinnae lanceolate, central largest, 6–7 in. long,  $1\frac{1}{2}$  in. broad; pinnules ligulate, crowded, sessile,  $\frac{1}{4}$  in. broad, entire or crenate, with forked veins and a single row of sori between the midrib and edge; indusium moderately firm, but breaking up into pieces. Philippines, introduced into cultivation by Messrs. Veitch. Described from a plant that produced fruit at Kew in Feb. 1878.
- 44\*. *C. schizochlamys*, Baker, in Journ. Bot. 1880, 209. Sumatra, *Beccari*, 439.



- 47\*. *C. brevipinna*, Baker, in Benth. Fl. Austral. VII, 709. Lord Howe's Island.
47. *C. medullaris*, Sw. I cannot separate *C. polyneuron*, Colenso, in Trans. New Zeal. Instit. 1878, 429.
- 48\*. *C. Macgregori*, F. M. & Baker, in Journ. Bot. 1890, 104. Highlands of New Guinea, *Sir W. Macgregor*.
49. *C. dealbata*, Sw. I cannot separate *C. tricolor*, Colenso, in Trans. New Zeal. Instit. XV, 304.
- 50\*. *C. Muelleri*, Baker, in Journ. Bot. 1890, 104. Highlands of New Guinea, *Sir W. Macgregor*.
- 52\*. *C. Moseleyi*, Baker, in Journ. Linn. Soc. XV, 104. Admiralty Isles, *Moseley* (Challenger expedition).
- 52\*. *C. fusca*, Baker, in Malesia, III, 31. Fly river, New Guinea, *D'Albertis*.
52. *C. Whitmeei*, Baker, in Journ. Bot. 1876, 343. Samoa, *Whitmee*.
53. *C. Moorei*, Baker, = *C. Macarthurii*, F. M.; Benth. Fl. Austral. VIII, 708; the latter being the earliest specific name.
- 53\*. *C. scabra*, Baker, in Journ. Bot. 1876, 343. Samoa, *Whitmee*.
- 54\*. *C. Thurstoni*, Baker, in Journ. Bot. 1884, 182. Fiji, *Sir J. Thurston*.
- 54\*. *C. samoensis*, Baker, in Journ. Bot. 1876, 9. Samoa, *Whitmee*.
- 55\*. *C. funebris*, Hort. Linden; *Fourniera funebris*, Fourn. in Linden, Ill. Hort. XXIII, 99. New Caledonia; not seen.

Genus 5. HEMITELIA, *R. Br.*

## NEW WORLD SPECIES.

- 11\*. *H. Hartii*, Baker, in Journ. Bot. 1886, 243. Chiriqui, *Hart*.
- 15\*. *H. cystolepis*, Baker; *Cyathea cystolepis*, Sodiro, Recens. 8. Andes of Ecuador. Indusium present, but very small.
- 15\*. *H. firma*, Baker, in Journ. Bot. 1877, 161. Andes of Ecuador, *Sodiro*.
- 15\*. *H. crenata*, Sodiro, Recens. 18. Andes of Ecuador, *Sodiro*.
- 15\*. *H. Joadii*, Baker, n. sp. Frond ample, bipinnatifid, moderately firm, green and glabrous on both surfaces, with a few small white membranous paleae on the midribs of the pinnules beneath; rachis unarmed, glabrous. Pinnae oblong-lanceolate,



- 1-1½ ft. long, 5-6 in. broad; pinnules lanceolate, sessile,  $\frac{3}{4}$ - $\frac{7}{8}$  in. broad, cut down to a broad wing into oblong, distinctly-toothed tertiary segments  $\frac{1}{8}$  in. broad. Veins simple, distinct, 6-7-jugate. Sori marginal; indusium firm,  $\frac{1}{2}$ -cupshaped. Santa Marta, Joad, (1863).
- 15\*. **Hemitelia Traillii**, Baker, n. sp. Fronds ample, bipinnatifid, moderately firm, green and glabrous on both surfaces, slightly scaly on the ribs beneath; rachis unarmed, furnished with a few large lanceolate brown scales. Pinnae oblong-lanceolate, 2 ft. long, 8-9 in. broad; pinnules lanceolate petioled, above an inch broad, cut down to a narrow wing into oblong-lanceolate inciso-crenate tertiary segments  $\frac{1}{4}$  in. broad. Veins forked, 8-9-jugate. Sori medial, placed at the fork of the veins; indusium minute. Amazon valley, North Brazil, collected by Professor Traill of Aberdeen in 1874.
- 15\*. **H. Sherringii**, Jenm., in Journ. Bot. 1886, 266. Rose-hill, Jamaica, *Sherring*; only one plant seen.
- 15\*. **H. parvula**, Baker. First published as *Alsophila parvula*, Jenm., in Journ. Bot. 1879, 258; afterwards as *Hemitelia microsepala*, Jenm., in Journ. Bot. 1886, 266. Jamaica.

#### OLD WORLD SPECIES.

- 16\*. **H. brunoniana**, Clarke, in Trans. Linn. Soc. ser 2, Bot. I, 430, = *Amphicosmia brunoniana*, Beddome. India orientalis. Included under *Alsophila contaminans*, in Syn. Fil. p. 41.
- 16\*. **H. decipiens**, J. Scott, East Himalayas = *Cyathea decipiens*, Clarke & Baker, in Journ. Linn. Soc. XXIV, 409, and the South Indian **H. Beddomei**, Clarke, in Trans. Linn. Soc. n. ser. I, 429, is very nearly allied to it. Both of them only differ from *Cyathea spinulosa* in the indusium.
18. **H. Smithii**, Hook. I cannot separate **H. stellulata**, Colenso, in Trans. New Zeal. Instit. 1885, 222.
- 19\*. **H. glandulosa**, Kuhn, in Hildeb. Pl. Madag. Exsic. No. 4176. Frond ample, bipinnate, moderately firm, green and glabrous on both surfaces; rachis unarmed, naked beneath. Pinnae oblong-lanceolate, 1½-2 ft. long, 8-10 in. broad; pinnules sessile, lanceolate,  $\frac{3}{4}$ - $\frac{7}{8}$  in. broad, cut down to the rachis into distinct linear-oblong crenulate tertiary segments  $\frac{1}{8}$  in. broad.

Veins 10-12-jugate, forked. Sori subcostular; indusium minute. Central Madagascar, *Hildebrandt*. Very near *H. Mel-leri*, Baker.

- 19\*. *H. Godeffroyi*, Luer, in Mus. Godef. II, 4. Queensland, Mrs. Dietrich. Not seen. See Benth. Fl. Austral. VII, 709.

Genus 6. *ALSOPHILA*, R. Br.

NEW WORLD SPECIES.

- 11\*. *A. Sodiroi*, Baker; *A. alata*, Sodiro, Recens. 19, non Fournier. Andes of Ecuador, *Sodiro*. Near *A. leucolepis* and *paleolata*.
- 12\*. *A. sessilifolia*, Jenm. in Journ. Bot. 1882, 325. Jamaica, *Wilson* (Herb. J. Smith only).
12. *A. aspera*, R. Br. I cannot clearly separate the Trinidad *A. echinata*, Moore, Ind. Fil. 49 = *A. Eatoni*, Jenm., in Journ. Bot. 1887, 98 (Fendler, 32).
- 12\*. *A. Kalbreyeri*, Baker; *A. podophylla*, Baker, in Journ. Bot. 1881, 202, non Hook. New Granada, *Kalbreyer*; habit and texture of *Cyathea divergens*.
- 16\*. *A. macrosora*, Baker, in Trans. Linn. Soc. ser. 2, Bot. II, 288. Roraima, *in Thurn*.
- 16\*. *A. trichophlebia*, Baker, n. sp. Frond ample, deltoid, tripinnatifid, moderately firm, green on both surfaces, glabrous above, furnished beneath with copious ovate bullate scales on the midrib of the pinnules, and all the veins beneath ciliated with large hairs; rachises of pinnae pilose on both sides, especially above. Pinnae oblong-lanceolate, the largest 9-10 in. long, 2½-3 in. broad. Pinnules sessile, lanceolate, 4-5 lines broad, cut half-way down to the midrib into oblong tertiary segments ½ in. broad. Veins simple, 2-3-jugate. Sori medial. Paraguay, *Balansa*, 306 (Herb. De Candolle). Allied to *A. atrovirens* and *floribunda*.
- 20\*. *A. pallescens*, Sodiro, Recens. 20. Andes of Ecuador, *Sodiro*. Allied to *A. paleolata*, Mart.
- 37\*. *A. latevagans*, Baker, in Journ. Bot. 1881, 203. New Granada, province of Antioquia, *Kalbreyer*, 1327. Very distinct and curious.
- 37\*. *A. hispida*, Baker, in Journ. Bot. 1881, 202. New Granada, province of Antioquia, *Kalbreyer*, 1561.



# OLD WORLD SPECIES.

- 38\*. *Alsophila alata*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 349. New Caledonia, *Balansa*, 1589. Not seen.
- 40\*. *A. dissitifolia*, Baker, in Journ. Bot. 1886, 182. Fiji, *Sir J. B. Thurston*.
41. *A. Novae-Caledoniae*, Mett. Fournier, in Ann. Sc. Nat. sér. 5, XVIII, 349, refers this to *Fourniera*, but neither Mr. Wright nor I can find any trace of an indusium. *Fourniera lepidotricha*, Fournier, loc. cit., New Caledonia, *Balansa*, 1592, not seen, is said to be extremely near to *F. Novae-Caledoniae*.
- 43\*. *A. woolsiana*, F. Mull. Fragm. VIII, 179. Queensland. Near *A. Leichardiana*.
- 47\*. *A. Hornei*, Baker, in Journ. Bot. 1879, 293. Fiji, *Horne*.
- 47\*. *A. polyphlebia*, Baker, in Journ. Linn. Soc. XV, 104. Arru Islands, *Moseley* (Challenger expedition).
- 48\*. *A. denticulata*, Baker, in Journ. Bot. 1885, 102. Formosa, *Hancock*, 55.
- 56\*. *A. dubia*, Beddome, in Journ. Bot. 1881, 1 t. 279 A. Perak and Borneo. Very near *A. podophylla*, Hook.
- 58\*. *A. rheosora*, Baker, in Journ. Bot. 1890, 292. Tonquin, *Balansa*, 1803, 1861.
- 58\*. *A. formosana*, Baker, n. sp. Frond ample, tripinnatifid, moderately firm, glabrous, green on both surfaces, rachis of pinnae naked, castaneous. Pinnae oblong-lanceolate, 1-1½ ft. long, 5-6 in. broad. Pinnules sessile, lanceolate, nearly an inch broad, cut down to a broad wing into oblong lobes ½ in. broad. Veins 6-8-jugate. Sori medial. Formosa, *Hancock*, 113. Near *A. glabra*, Hook.
58. *A. glabra*, Hook. I cannot separate *A. vexans*, Cesati, Fil. Recens. Born. 4.
- 59\*. *A. albo-setacea*, Beddome, Handb. 16. Nicobar Isles, *Kurz*.
- 59\*. *A. Kingii*, Clarke; Beddome, Handb. 473. Perak. *A. Bakeri*, Zeiller, in Bull. Bot. Soc. France, XXXII, 71, is probably the same species.
- 59\*. *A. modesta*, Baker, in Journ. Bot. 1880, 210. Sumatra, *Becari*, 434.

- 59\*. *A. sikkimensis*, Clarke & Baker, in Journ. Linn. Soc. XXIV. 409. Sikkim, *Clarke*. Probably a variety of *A. ornata*, with which links connecting it have just been found by Mr. Gamie, jun.
- 59\*. *A. obscura*, Scortech.; Beddome, in Journ. Bot. 1887, 321, tab. 278, fig. 2. Perak, *Scortechini*. Near *A. comosa*, Hook.
- 59\*. *A. trichodesma*, Scortech.; Beddome, in Journ. Bot. 1887, 321. Perak, *Scortechini*.
- 59\*. *A. Burbidgei*, Baker, in Journ. Bot. 1879, 38. Borneo, *Burbidge*.
- 64\*. *A. castanea*, Baker, in Journ. Bot. 1891, 3. North-west Madagascar, *Last*.
- 64\*. *A. simulans*, Baker, in Journ. Bot. 1891, 3. North-west Madagascar, *Last*.
- 64\*. *A. vestita*, Baker, in Journ. Linn. Soc. XV. 412. Madagascar, *Pool*.
- 64\*. *A. bullata*, Baker, in Journ. Linn. Soc. XV, 412. Madagascar, *Pool*.
64. *A. Baroni*, Baker, in Journ. Linn. Soc. XXI, 455. Madagascar, *Baron*.

In the second edition of the 'Synopsis Filicum,' in 1874, about 200 tree-ferns are described as distinct species. Since that date upwards of eighty new ones have been found.

#### Genus 8. MATONIA *R.Br.*

*M. sarmentosa*, Baker, in Journ. Linn. Soc. XXIV, 256 (see Plate XIV). Rachis slender, terete, with long internodes. Segments 3-4 from each internode, linear, rigid, glabrous, simple or forked, 4-5 in. long,  $\frac{1}{8}$  in. broad. Veins indistinct, simple, or forked. Indusium globose, rigid, superior, attached by a short central stipe, splitting by circumscissile dehiscence, so as to leave a patelliform persistent base. Sporangia 8-10 in a cluster, with a short stipe and incomplete vertical ring. Niah, Sarawak, Borneo, collected by Mr. Charles Hose in 1887, sent to Kew by the Bishop of Singapore and Sarawak.

This is the most interesting novelty that has been found during the period which this paper covers. It has entirely the indusium and sporangia of the old well-known *Matonia pectinata*, on which this genus was established by Robert Brown,



but the habit of the plant is entirely different. *Matonia* ought clearly to form a tribe by itself, not to be united with the Cyatheaceae.

#### HYMENOPHYLLACEAE.

##### Genus 16. HYMENOPHYLLUM *Smith*.

- 3\*. *H. Armstrongii*, Kirk ; Baker, in Hook. Ic., tab. 1614 = *H. melanocheilos*, Colenso, in Trans. New Zeal. Instit. XVII, 255, is the same as *Trichomanes Armstrongii*, Baker, Syn. Fil. edit. 2, 465.
- 5\*. *H. Balfourii*, Baker, n. sp. Rhizome filiform, wide-creeping. Stipe filiform, very short. Frond deltoid, glabrous,  $\frac{1}{4}$ – $\frac{1}{2}$  in. long, cut down to a narrow wing into 3–6 erecto-patent lobes, the upper simple, the lower forked. Sorus one to a frond, immersed in the end of a lobe ; indusium with a cuneate tube and orbicular lips. Bourbon, *Balfour*. Near the American *H. abruptum*, Hook.
- 8\*. *H. vincentinum*, Baker, Ann. Bot. V, p. 164, Plate X. St. Vincent, *H. H.* and *G. W. Smith*, communicated by F. Ducane Godman, F.R.S.
- 8\*. *H. terminale*, Philippi, in Linnaea, XXXIII, 306. Chili. Near *H. rarum*.
- 10\*. *H. paniculiflorum*, Presl ; V.D. B. Hymen. Jav. tab. 39. Japan. Appears to be a distinct species, intermediate between *gracile* and *polyanthos*.
- 14\*. *H. Thuidium*, Harringt., in Journ. Linn. Soc. XVI, 25. Panay, Philippines, *Steere*.
- 15\*. *H. ooides*, F. M. & Baker, in Journ. Bot. 1890, 105. Highlands of New Guinea, *Sir W. Macgregor*.
- 16\*. *H. dejectum*, Baker, in Trans. Linn. Soc. N. S. Bot. II, 289. Summit of Mount Roraima, *im Thurn*.
18. *H. polyanthos*, Sw. I cannot separate *H. lophocarpum*, Colenso, in Trans. New Zeal. Instit. 1884, 255.
- 18\*. *H. villosum*, Colenso ; Kirk, in Trans. New Zeal. Instit. X, 395. Midway between *polyanthos* and *demissum*, more deltoid in outline than the former, with narrower segments and smaller sori. New Zealand.
- 18\*. *H. trichomanoides*, Bailey, in Queensl. Flora, Suppl. 3, p. 90,

Summit of Bellenden Ker range. Not seen. Said to be like *H. polyanthos* in habit, with fruit between the types of *Hymenophyllum* and *Trichomanes*.

- 21\*. *H. australe*, Willd., Sp. Plant. V. 527 (1810), is an older name for this species than *H. javanicum*, Spreng.
- 21\*. *H. montanum*, Kirk, in Trans. New Zeal. Instit. X, 394, tab. 21, fig. B. Lake Wakatipu, New Zealand. Like dwarf *australe*, with very jagged indusia.
- 21\*. *H. samoense*, Baker, in Journ. Bot. 1876, 10. Samoa, *Whitmee*.
- 21\*. *H. streptophyllum*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 266. New Caledonia, *Balansa*, 2708. Not seen.
22. *H. demissum*, Sw. I cannot separate *H. megalocarpum*, Colenso, in Trans. New Zeal. Instit. XV, 308.
- 22\*. *H. Baldwinii*, Eaton; Baker, in Hook. Ic. tab. 1611. Sandwich Islands, *Miss E. S. Boyd*.
- 27\*. *H. erecto-alatum*, Colenso, in Trans. New Zeal. Instit. 1878, 431. New Zealand. Not seen. Said to come in between *dilatatum* and *pulcherrimum*.
- 31\*. *H. pedicularifolium*, Cesati, Fil. Polyn. Becc. 6. Rhizome filiform, wide-creeping. Frond oblong-rhomboid, nearly sessile, glabrous on the upper surface, densely ferrugineo-pilose beneath, an inch long, cut down to a broadly-winged rachis into 5-6 pairs of pinnae, the upper simple, linear, the lower 2-3-lobed. Sori one each from the upper side of the upper pinnae near the base; indusium oblong; valves as long as the tube. Mountains of New Guinea, *Beccari*.
- 32\*. *H. Levingei*, Clarke, in Trans. Linn. Soc. Bot. ser. 2, I, 439, tab. 49, fig. 3. Sikkim, alt. 7000 ft., *Levinge*. Very distinct.
- 32\*. *H. Boutoni*, Baker, Fl. Maurit. 462. Mauritius, *Bouton*.
- 34\*. *H. Poolii*, Baker, in Hook. Ic. tab. 1619. Central Madagascar, *Pool*.
- 34\*. *H. Balansae*, and *humboldtianum*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 265. New Caledonia, *Balansa*. Not seen. To be compared with *H. ciliatum*, Sw.
- 34\*. *H. pachydermicum*, Cesati, Fil. Becc. Born. 8. Borneo, *Beccari*. Near *ciliatum*.
- 38\*. *H. rufescens*, Kirk, in Trans. New Zeal. Instit. 1878, 457, tab. 19, fig. A. New Zealand, *Field, Kirk*. I am not sure that this is specifically distinct from *H. subtilissimum*, Kunze.



46. *Hymenophyllum sericeum*, Sw. I cannot separate *H. refrondescens*, Sodiro, Recens. 2.
- 52\*. *H. tunbridgense*, Sm. I cannot clearly separate *H. pusillum*, *revolutum*, or *pygmaeum*, Colenso, New Zealand Ferns described in the Transactions of the New Zealand Institute for 1879-1880.
- 52\*. *H. brachyglossum*, Cesati, Fil. Becc. Born. 7. Borneo, *Beccari*. Habit of a slender form of *H. tunbridgense*, but with round sori placed at the end of the segments.
- 52\*. *H. Henryi*, Baker, in Journ. Bot. 1889, 176. West China; province of Hupeh, *Dr. Henry*, 5457.
- 52\*. *H. subflabellatum*, Cesati, Fil. Becc. Born. 8. Sarawak, Borneo, *Beccari*. Fronds  $\frac{1}{2}$ — $\frac{3}{4}$  in. long, broad ovate, almost flabellately bisect, the primary segments pinnatifid, with sori terminal or lateral on the lobes of the upper segments.
- 56\*. *H. oxyodon*, Baker, in Journ. Bot. 1890, 262. Tonquin, *Balansa*, 1905.
- 63\*. *H. polyodon*, Baker, in Journ. Linn. Soc. XX, 104. Admiralty Isles, *Moseley* (Challenger expedition).
- 67\*. *H. Houstonii*, Jenm., in Journ. Bot. 1886, 42. Jamaica, *Herb. Sloane*.
- 67\*. *H. fraternum*, Harringt., in Journ. Linn. Soc. XVI, 26. Panay, Philippines, *Steere*.
- 68\*. *H. Reinwardtii*, Blume, V. D. B., Hymen. Jav. tab. 42. Appears to be a distinct species, near *H. bivalve*, Sw. Mount Singalan, Sumatra, *Beccari*.

Genus 17. *TRICHOMANES* Linn.

- 7\*. *T. Hildebrandtii*, Kuhn, in Reise Deck. Bot. 70. Johanna Island, *Hildebrandt*, 1856.
- 10\*. *T. Motleyi*, V. D. B. I cannot separate *T. beccarianum*, Cesati, Fil. Becc. Born. 8, tab. 1, fig. 2, nor *T. cognatum*, Cesati, Fil. Becc. Polyn. 6.
- 10\*. *T. cultratum*, Baker, in Journ. Bot. 1879, 293. Fiji, *Horne*.
- 10\*. *T. Wallii*, Thwaites. Rhizome filiform, wide-creeping. Frond ovate or orbicular, ciliated, entire,  $\frac{1}{8}$ — $\frac{1}{6}$  in. long. Veins distinct, simple; spurious venules 0. Sorus solitary at the end of the distinct midrib. Indusium funnel-shaped, immersed, with a

broad entire collar-like border. Southern forests of Ceylon, Wall.

- 15\*. **T. Sayeri**, F. M. & Baker. Rhizome wide-creeping. Stipe very short. Frond orbicular, or obovate-cuneate,  $\frac{1}{8}$ – $\frac{1}{4}$  in. long, deeply emarginate, with rounded apical lobes. Midrib distinct from base to apex; veins flabellate. Indusium solitary, terminal, stipitate; lips orbicular. Trinity Bay, Queensland, Sayer.
- 12\*. **T. labiatum**, Jenm., in Gard. Chron. N. S. XXIV. 7. British Guiana, Jenman.
- 14\*. **T. setiferum**, Jenm., in Journ. Bot. 1881, 52. Mountains of Jamaica, near Cinchona plantation, Nock.
20. **T. muscoides**, Sw. I cannot separate **T. yandimense**, Bailey, Queensland Flora, 686.
- 20\*. **T. pinnatinervium**, Jenm., in Gard. Chron. 1886, II, 787. British Guiana, Jenman.
- 23\*. **T. trinerve**, Baker, Fl. Maurit. 463. Mauritius, Lady Barkly.
- 27\*. **T. dichotomum**, Philippi, in Bot. Zeit. 1856, 650. Chili, Philippi.
- 41\*. **T. ignobile**, Cesati, Fil. Becc. Born. 9. Sarawak, Borneo, Beccari. Midway between *bicorne* and *intramarginale*.
- 44\*. **T. apicale**, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 257. New Caledonia, Vieillard. Not seen.
- 44\*. **T. spinulosum**, Philippi, in Linnaea, XXX, 208. Chili, Philippi.
- 48\*. **T. Filicula**, Bory. I cannot, from the description, separate **T. johnstoniense**, Bailey, Synops. Queensl. Plants, Suppl. 63.
49. **T. pyxidiferum**, L. I cannot separate **T. barnardianum**, Bailey, Synops. Queensl. Plants, Suppl. 3, 89, with figure.
- 49\*. **T. jungermannioides**, Fourn. in Ann. Sc. Nat. sér. 5, XVIII, 258. New Caledonia, Balansa, 1632. Not seen.
- 52\*. **T. Macgillivrayi**, Baker, n. sp. Rhizome filiform, wide-creeping. Stipe slender, filiform, under an inch long. Frond oblong-lanceolate, bipinnatifid, glabrous,  $1\frac{1}{2}$ –2 in. long; rachis winged down to the base; pinnae crowded, oblong-lanceolate, sharply serrated; secondary segments small, oblong. Sori one to a pinna, placed near the base on the upper side; indusium with a campanulate tube, and sub-orbicular entire lips. Fiji, Macgillivray. Near the Bornean *T. denticulatum*, Baker.



- 53\*. *Trichomanes venosum*, R. Br. I cannot separate *T. venustum*, Colenso, in Trans. New Zeal. Instit. XII, 366.
54. *T. crispum*, L. I can only separate as a variety *T. digitatum*, Sodiro, Recens. 4, non Swartz. It differs from the type by having the indusium protruded entirely from the lamina.
- 61\*. *T. Hosei*, Baker, in Journ. Linn. Soc. XXII. 223, tab. 12. Sarawak, Borneo, *Bishop Hose*.
- 61\*. *T. Beckeri*, Krause; Philippi, in Linnaea, XXXIII. 305. Chili. Habit of *Hymenophyllum dichotomum*.
- 63\*. *T. Luersseni*, F. M.; Luerss., in Bot. Centralblatt, 1882, 440. Mountains of Aneiteum, *G. Braithwaile*.
70. *T. rigidum*, Sw. Surg. Halcro Johnston sends specimens connecting with this species *T. Hartii*, Baker, in Gard. Chron. 1882, II. 680, collected at Sierra Leone by the late Dr. W. Hart.
71. *T. apiifolium*, Presl. *Hymenophyllum?* *puellum*, Cesati, Fil. Polyn. Becc. 6, collected by Beccari on the mountains of New Guinea, is probably a form of this species.

## POLYPODIACEAE.

I should like to separate Hymenophyllaceae from Polypodiaceae as a distinct sub-order, and divide the latter into four tribes as follows: viz. (1) Indusium none (e. g. *Acrostichum*, *Polypodium*); (2) Indusium formed only from the altered margin of the frond (e. g. *Adiantum*, *Pteris*); (3) Indusium formed in part from the altered margin of the frond, with an inner valve in addition (e. g. *Dicksonia*, *Lindsaya*); and (4) Indusium truly dorsal (e. g. *Aspidium*, *Asplenium*).

## Genus 11. WOODSIA R.Br.

4. *W. lanosa*, Hook., must be omitted. It is identical with *Gymnogramme Andersoni*, Beddome, Fil. Brit. Ind. tab. 100.
6. *W. insularis*, Hance, must also be omitted. It is made up of a mixture of *W. ilvensis* and *manchuriensis*, as is shown by the type specimens, now at the British Museum.
- 6\*. *W. Hancockii*, Baker, n. sp. Stipes densely tufted, 1-1½ in. long; paleae ovate or lanceolate, pale brown. Frond lanceolate, bipinnatifid, 2-3 in. long, ½ in. broad; rachis slender, stramineous, naked; pinnae deltoid, ¼ in. long, cuneate at the base, toothed on the outer edge; lower lobes cuneate. Veins few,

distinct. Sori 2 to the lower pinnae; indusium small, with a fimbriate edge. Siao-wu-tai, Pekin, *Hancock* (Herb. Hance). Habit of dwarf forms of *polystichoides*; sori of *glabella*; stipe and rachis stramineous, not castaneous.

12. *W. obtusa*, Torrey. I cannot separate as a species *W. Plummerae*, Lemmon, in Coulter, Bot. Gazette, VII. 6, from Southern Arizona.
- 12\*. *W. pusilla*, Fourn., in Bull. Soc. Bot. France, 1880, 329. Mexico, *Schaffner*. Not seen.

### Genus 13. DICKSONIA *L'Hérit.*

- 7\*. *D. fibrosa*, Colenso. I cannot separate specifically *D. sparmaniana*, Colenso, in Trans. New Zeal. Instit. 1879, 363, nor *D. microcarpa*, Colenso, in Trans. New Zeal. Instit. 1888, 214. The Chatham Island *Dicksonia* is said to be intermediate between the Australian *antarctica* and New Zealand *fibrosa*.
- 7\*. *D. Lathamii*, Moore, in Gard. Chron. 1885, vol. II, 584. A plant raised by Mr. W. G. Latham, in the Birmingham Botanic Garden. Intermediate between *arborescens* and *antarctica*.
10. *D. squarrosa*, Sw. I cannot separate specifically *D. gracilis*, Colenso, in Trans. New Zeal. Instit. 1882, 306.
- 11\*. *D. Baudouini*, Fourn., in Ann. Sc. Nat. sér. 5, t. 18, p. 347. New Caledonia, *Baudouin*. Allied to *D. berteroana* and *Deplanchei*. Not seen.
- 18\*. *D. ampla*, Baker, in Journ. Linn. Soc. XXII. 223. Sarawak, Borneo, *Bishop Hose*.
- 18\*. *D. Pearcei*, Baker, n. sp. Rootstock not seen. Stipe long, naked, castaneous. Frond oblong-deltoid, tripinnate, a foot long, moderately firm, glabrous above, hairy on the ribs beneath; lower pinnae the largest, subdeltoid; pinnules sessile, lanceolate, cut down to the rachis into oblong obtuse entire tertiary segments,  $\frac{1}{8}$ – $\frac{1}{6}$  in. broad. Veins of tertiary segments few, distinct; lower veinlets forked. Sori not more than one to each tertiary segment; indusium campanulate, coriaceous, with a truncate mouth. Eastern Andes of Ecuador, alt. 8000–9000 feet, *Pearce*, 251. Very distinct.
- 18\*. *D. pubescens*, Baker, in Journ. Bot. 1881, 203. New Granada, province of Antioquia, alt. 6500 feet, *Kalbreyer*.



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- 18\*. *Dicksonia Sprucei*, Baker, in Journ. Bot. 1877, 162. Andes of Ecuador, *Spruce*.
- 18\*. *D. vagans*, Baker, in Journ. Bot. 1877, 162. Andes of Quito, *Sodi*; Andes of Peru, *Barclay*.
- 19\*. *D. incurvata*, Baker, in Journ. Bot. 1879, 294. Fiji Islands, *Horne*, 971.
- 20\*. *D. antillensis*, Jenman, in Journ. Bot. 1886, 267. Mountains of Jamaica, *Morris*, *Sherring*. Allied to the divided forms of *D. cicularia*.
- 20\*. *D. glabrata*, Cesati, Fil. Polyn. Becc. 6. Rootstock wide-creeping. Stipe 3-4 ft. long, stout, glossy, castaneous, naked, muricated. Fronds oblong-deltoid, 3-4 ft. long, glabrous, decompound; many lower pinnae lanceolate-deltoid, a foot long; pinnules lanceolate-acuminate, tertiary segments free, lanceolate-deltoid, produced on the upper side, obtusely toothed. Veinlets distant, erecto-patent. Indusium cup-shaped. New Guinea, *Beccari*.
- 21\*. *D. lambertiana*, Remy, in C. Gay, Fl. Chil. VI. 523. Rootstock not seen. Stipe long, stout, naked, stramineous. Frond lanceolate-deltoid, decompound,  $1\frac{1}{2}$ -2 ft. long, glabrous on both surfaces; rachis stramineous, without any hairs or scales; pinnae crowded, lanceolate, lowest the largest, a foot long; pinnules deltoid, cuneate-truncate on the lower side at the base, produced on the upper side; tertiary segments lanceolate, deeply pinnatifid, in the largest pinnules  $\frac{1}{4}$ - $\frac{1}{2}$  in. long. Sori small, only one to each lobe; indusium 2-lobed; valves broader than long. Andes of Chili, *Bonpland*, *Philippi*, *Ball*. Most resembles *D. davallioides* in the cutting of the final divisions.
- 23\*. *D. gomphophylla*, Baker, in Journ. Linn. Soc. XXII. 223. Borneo, mountains of Sarawak, alt. 2000 feet, *Bishop Hose*.
24. *D. davallioides*, var. *Youngii*, Moore. Rootstock epigaeous, stipes contiguous, an inch thick at the base. Australia. Has been cultivated at Kew for many years.
27. *D. Elwesii*, Baker. Better specimens, received from Mr. H. C. Levinge in 1885, show that this is not more than a marked variety of *D. appendiculata*, Wall.
- 29\*. *D. rhombifolia*, Baker, in Journ. Bot. 1890, 105. New Guinea, near the summit of the Owen Stanley range, *Sir W. Macgregor*.

Genus 14. *DEPARIA* Hook. et Grev.

1. *D. prolifera*, Hook. A plant lent to us by Sir F. Mueller, from Illawarra, New South Wales, will probably prove to be specifically distinct from the Hawaian type. It has narrow segments, and smaller less exerted sori. I believe that only a single specimen has been seen.
3. *D. Godefroyi*, Luer., in Fil. Graef. 222, T. 19 (under *Dennstaedtia*). Fiji Isles, Graeffe, 54. Habit and cutting of *Nephrodium cicularium*; veins forming copious areolae with branched free included veinlets.

Genus 14\*. *LECANOPTERIS* Blume.

I now think this will have to stand as a distinct genus in the neighbourhood of *Dicksonia*, from which it differs by having the indusium formed from a single valve, and curious tuberous rootstock, with species as follows, viz. :—

1. *L. carnosa*, Blume, Fil. Jav. tab. 94 A. Perak and Philippine and Malay Isles.
2. *L. pumila*, Blume, Fil. Jav. tab. 94 B. Malay Isles.
3. *L. Macleayii*, Baker, n. sp. Rootstock not seen. Stipe short, naked. Frond lanceolate, glabrous, moderately firm, above a foot long, 4-5 in. broad, cut down to a narrowly-winged rachis with many linear obtuse crenate pinnae,  $\frac{1}{4}$ - $\frac{1}{3}$  in. broad. Sori distant, many to a pinnae; indusium very small, orbicular, convex. Java, *Macleay*.
4. *L. Curtisii*, Baker, in Hook. Icones, tab. 1607. Sumatra, *Curtis*.
5. *L. deparioides*, Baker, in Journ. Bot. 1881, 366. *Davallia deparioides*, Cesati, Fil. Becc. Born. 13, tab. 4, fig. 8. Rootstock tuberous, as in the other species, produced into short phyllo-podes articulated at the top. Stipe naked, substramineous, 6-8 in. long. Frond lanceolate, membranous, glabrous, simply pinnate, 1½-2 ft. long, 3-4 in. broad; rachis winged only at the top; pinnae sessile, linear, obtuse,  $\frac{1}{3}$  in. broad, narrowed towards the base; barren entire; fertile crenate, with a sorus at the tip of each lobe. Venation of *Phymatodes*. Indusium as in the other species, consisting of a cup, formed from the edge of the frond, holding a small globose sorus. Borneo, Sarawak, *Beccari*.



Genus 18. *DAVALLIA* *Smith.*

Subgenus *Humata.*

- 4\*. *D. pinnatifida*, Baker, in Journ. Bot. 1886, 257. Sarawak and Borneo, *Bishop Hose*. Intermediate between *pectinata* and *pedata*.
- 6. *D. pedata*, Smith. Further material appears to indicate that 7 *D. alpina*, Blume, 9 *D. vestita*, Blume, and 10 *D. Cumingii*, Hook. (*D. lepida*, Presl) are not more than varieties of *pedata*.
- 9\*. *D. Tyermanni*, Baker, in Hook. Ic. tab. 1620. Locality not West tropical Africa, as was supposed when the plant was first described by Moore from garden specimens, but Central China, where it has been collected by *Maries*, *Everard*, and *Hancock*.

Subgenus *Leucostegia.*

- 13\*. *D. oligophlebia*, Baker, in Journ. Bot. 1888, 323. Sarawak, Borneo, *Bishop Hose*.
- 16\*. *D. Kingii*, Baker, in Hook. Ic. tab. 1622. Mountains of Java, *H. O. Forbes*, 657.
- 16\*. *D. nephrodioides*, Baker, in Journ. Bot. 1886, 257. Sarawak, Borneo, *Bishop Hose*.
- 17. *D. Clarkei*, Baker, in Hook. Ic. tab. 1625. I cannot separate specifically the Yunnan *D. Delavayi*, Beddome MSS.; Clarke and Baker, in Journ. Linn. Soc. XXIV, 410.
- 17\*. *D. Hosei*, Baker, in Journ. Bot. 1888, 323. Sarawak, Borneo, *Bishop Hose*.
- 22\*. *D. tripinnata*, F. M., in Benth., Fl. Austral. VII. 717 = *Leptolepia tripinnata*, Kuhn, Choetop. 28. Queensland, *Walter Hill*, and regathered lately at a height of 5000 feet by *Sayer* and *Davidson*.
- 22\*. *D. aspidioides*, Baker; *Leptolepia aspidioides*, Mett.; Kuhn, Choetop. 28, tab. 2, figs. 1-3. New Caledonia, *Vieillard*, 1612.
- 22\*. *D. Andersonii*, Baker; *Leptolepia Andersonii*, Mett.; Kuhn, Choetop. 28, tab. 2, figs. 12-14. Honolulu, *Anderson*.
- 23\*. *D. athyriifolia*, Baker, n. sp. Rootstock not seen; stipe 2 ft. long, with a few lanceolate membranous dull brown paleae at the base. Frond oblong-deltoid, decomposed, glabrous, 1½-2

ft. long; lower pinnae oblong-lanceolate, 6-8 in. long; pinnules oblong-lanceolate, cut down to the rachis into oblong obtuse deeply pinnatifid tertiary segments, with oblong lobes. Veins of ultimate segments simple or forked. Sori generally solitary at the base of each final lobe; indusium minute, membranous. Yunnan, *Delavay*. Near *D. nodosa*, Hook.

- 23\*. *D. Macgillivrayi*, Baker; *Leucostegia Macgillivrayi*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 344. New Caledonia, *Macgillivray*. Not seen.
- 23\*. *D. maxima*, Baker; *Leucostegia maxima*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 344. New Caledonia, *Balansa*, 1593. Not seen.
- 24\*. *D. cicutarioides*, Baker, in Journ. Bot. 1890, 106. Mount Musgrave, New Guinea, *Sir W. Macgregor*.

Subgenus *Odontoloma*.

- 28\*. *D. Hornei*, Baker, Fl. Maurit. 470. Seychelles, *Horne*.

Subgenus *Eudavallia*.

- 34\*. *D. plumosa*, Baker, in Journ. Bot. 1876, 10. Samoa, *Whitmee*.
- 36\*. *D. Graeffei*, Luers. Fil. Graef. 211, tab. 18. Samoa, *Powell*, 168, *Graeffe*, 227.
- 37\*. *D. stenoloba*, Baker, in Becc. Malesia, III. 35. Amboyna, *Beccari*.
- 39\*. *D. arctotheca*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 339. New Caledonia, *Balansa*, 852. Not seen.
40. *D. pallida*, Mett.; Baker, in Hook. Ic. tab. 1624. I cannot separate specifically *D. beccariana*, Cesati, Becc. Fil. Born. 14, tab. 3, fig. 6.
- 45\*. *D. Tasmani*, Cheeseman; Field, Ferns New Zeal. 75, tab. 24, fig. 5. Kermadec Isles, *Cheeseman*. Near *pyxidata* and *canariensis*. One of the very few endemic plants of this small group of islands.
- 47\*. *D. Mariesii*, Moore herb. Rootstock stout, wide-creeping; paleae brownish, lanceolate from a dilated base. Stipe naked, shorter than the frond. Fronds deltoid, decompose, evergreen, moderately firm, glabrous, 4-6 in. long and broad; pinnae cut away on the lower side at the base; lower much the largest, deltoid, produced on the lower side; pinnules



deltoid, cut away on the lower side at the base; final segments short, linear, 1-nerved. Sori distinctly intramarginal; indusium small, campanulate. Mountains of Japan, *Maries*, in Hort. Veitch, 1878. To be compared with the varieties of *bullata*.

- 49\*. *Davallia Veitchii*, Baker, in Journ. Bot. 1879, 39. Kina-balu, Borneo, alt. 6000-7000 ft. *Burbidge*.

Subgenus *Microlepia*.

- 50\*. *D. phanerophlebia*, Baker, in Journ. Bot. 1890, 292. Tonquin, *Balansa*, 118.
- 51\*. *D. Sloanei*, Jenm., in Journ. Bot. 1886, 37. Jamaica, *Herb. Sloane*. Cutting of *Dicksonia adiantoides*, fructification of *Davallia*.
52. *D. pinnata*, Cav. I cannot separate specifically *D. longipinnula* and *D. intramarginalis*, Cesati, Fil. Bec. New Guin. 7, gathered by Beccari on the mountains of New Guinea.
- 53\*. *D. triangularis*, Baker, n. sp. Rootstock not seen. Stipe slender, fragile, naked, 6-8 in. long, brown towards the base, stramineous upwards. Frond deltoid, tripinnate, membranous, glabrous, 4-5 in. long and broad; lowest pinnae much the largest, oblong-deltoid; pinnules cut away on the lower side at the base; final segments oblong,  $\frac{1}{2}$ - $\frac{1}{3}$  in. broad. Veins pinnate in the final segments; veinlets erecto-patent. Indusium campanulate, moderately firm, persistent. Yunnan, *Delavay*. Near *D. Wilfordii*, Baker, which has now been found in Korea and Northern China.
54. *D. hirsuta*, Sw., has been found by *Maries* in Kiu Kiang and by Hancock at Chefoo and Ningpo.
- 57\*. *D. madagascariensis*, Baker = *Microlepia madagascariensis*, Moore, Ind. Fil. 318 = *Davallia calobodon*, Mett. = *Dicksonia hypolepidoides*, Baker, in Journ. Linn. Soc. XVI, 197. Has been gathered in Madagascar recently by Miss Helen Gilpin and Mr. J. T. Last. As regards fructification it stands on the boundary line between *Dicksonia* and *Davallia*. In cutting it closely resembles the common Indian *D. rhomboidea*, Wall.
- 58\*. *D. Kurzii*, Clarke, in Trans. Linn. Soc. Bot. ser. 2, I, 446. Pegu, *Kurz*, 3236. Near *D. platyphylla*, Don.
- 62\*. *D. moluccana*, Blume. I place as a variety, marked by its stout

muricated stipe, *D. asperrima*, Cesati, in Becc. Prosp. 6, gathered by *Beccari* in Amboina.

- 63\*. *D. philippinensis*, Harringt., in Journ. Linn. Soc. XVI, 27. Mount Mahahuy, Philippines, *Steere*.

Subgenus *Stenoloma*.

- 70\*. *D. odontolabia*, Baker, in Journ. Bot. 1884, 140. North-east Madagascar, *Humblot*, 430. Near *D. goudotiana*, Kunze.  
71\*. *D. decomposita*, Baker, in Journ. Bot. 1884, 141. North-east Madagascar, *Humblot*, 259.  
71\*. *D. flabellifolia*, Baker, in Journ. Linn. Soc. XV, 414. Central Madagascar, *Pool*.

Genus 19. CYSTOPTERIS *Bernh.*

1. *C. fragilis*, *Bernh.* I can only separate as geographical varieties *C. Novae-Zelandiae*, Armstrong, in Trans. New Zeal. Instit. 1880, 360, and the Australian *Woodsia laetevirens*, *Prentice*.  
1\*. *C. japonica*, *Luers.*, in Engl. Jahrb. 1883, 363. Kiu-siu Archipelago, *Tachiro*. Not seen.  
4\*. *C. moupinensis*, *Franch.*, Pl. David. 149. Moupine, Tibet, *David*. Not seen. Perhaps identical with a plant collected twice by *Mr. H. E. James*, in his recent journey between Mukden and Kirin, which comes near the very rare European *C. sudetica*, A. Br. & Milde.

Genus 20. LINDSAYA *Dryand.*

Subgenus *Eulindsaya*.

1. *L. linearis*, Sw. I can only separate as a slight variety *L. trilobata*, *Colenso*, in Trans. New Zeal. Instit. 1883, 345.  
1\*. *L. incisa*, *Prentice*, in Journ. Bot. 1873, 295. Queensland, *Prentice, Bailey*.  
1\*. *L. dimorpha*, *Bailey*, Queensland Ferns, 19. *L. heterophylla*, *Prentice*, in Journ. Bot. 1873, 295, non *Dryand.* Queensland, *Prentice, Bailey*. This and the last are very near to *L. linearis*.  
4\*. *L. plicata*, Baker, in Journ. Linn. Soc. XXV, 350. North-east Madagascar, *Baron*, 5887, *Last*.



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5. *Lindsaya concinna*, J. Sm. Not distinct specifically from *L. cultrata*, Sw.
- 5\*. *L. jamesonioides*, Baker, in Journ. Bot. 1879, 39; Hook. Ic. tab. 1626. Kina-balu, Borneo, *Burbidge*.
- 7\*. *L. oxyphylla*, Baker, in Journ. Bot. 1891, 3. North-east Madagascar, *Last*.
- 7\*. *L. crispa*, Baker, in Journ. Bot. 1879, 39; Hook. Ic. tab. 1627. Borneo, *Burbidge*.
- 13\*. *L. leptophylla*, Baker, in Journ. Bot. 1884, 141; Hook. Ic. tab. 1628. North-east Madagascar, *Humblot*, 495.
- 16\*. *L. madagascariensis*, Baker, in Journ. Linn. Soc. XVI, 198; Hook. Ic. tab. 1629. Madagascar. This runs down into a curious odontolomoid form, which bears the same relation to the type that *Davallia schizophylla* (Synopsis, edit. 2, p. 468) bears to *Lindsaya tenera*.
- 16\*. *L. gomphophylla*, Baker, n. sp. Rootstock not seen. Stipe produced, naked, castaneous. Frond deltoid, rigid, glabrous,  $\frac{1}{2}$ -ft. long, simply pinnate in the upper, bipinnate in the lower half; lower pinnae much the largest. Final segments orbicular-cuneate,  $\frac{1}{2}$ -in. broad, deeply crenate round the outer edge, cuneate in the lower half. Veins simple, flabellate. Sori interrupted. Indusium narrow, rigid, persistent. Borneo, *Sir Hugh Low*. Allied to the New Caledonian *L. nervosa*, Mett.
- 17\*. *L. prolongata*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 334. New Caledonia, *Balansa*, 1602. Not seen.
- 24\*. *L. tricrenata*, Baker, in Journ. Bot. 1890, 106. Mount Musgrave, New Guinea, *Sir W. Macgregor*.

Subgenus *Isoloma*.

- 28\*. *L. indurata*, Baker, in Journ. Bot. 1888, 324. Sarawak, Borneo, *Bishop Hose*.
- 31\*. *L. flavicans*, Mett.; Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 334. New Caledonia. Not seen.
- 31\*. *L. exilis*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 335. New Caledonia, *Vieillard*, *Balansa*. Not seen.
- 31\*. *L. campylophylla*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 335. New Caledonia, *Balansa*, 854. Not seen.
- 31\*. *L. Balansae*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 335. New Caledonia, *Balansa*, 1652. Not seen.

- 31\*. *L. medioeris*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 336.  
New Caledonia, *Balansa*. Not seen.
- 32\*. *L. viridis*, Colenso, Fil. Nov. New Zeal. 14. New Zealand.  
Allied to *L. microphylla*, Sw., from which it differs by much  
closer regularly cuneate final segments, and sub-davallioid sori.

Subgenus *Synaphlebium*.

37. *L. lobata*, Poir. I cannot separate specifically *L. ambigens*,  
Cesati, Fil. Becc. Polyn.

Subgenus *Diellia*.

The late Dr. Hillebrand, in his recently-published Flora of the Hawaiian Islands, has fully re-described the species and varieties of this curious subgenus, which is peculiar to the Sandwich Islands. To the species in our *Synopsis Filicum* he adds the following, viz :—

- L. centifolia*, Hillebr. p. 621.  
*L. laciniata*, Hillebr. p. 621, with 2 varieties.  
*L. Alexandri*, Hillebr. p. 622, with 3 varieties.  
*L. Knudsenii*, Hillebr. p. 623, with a variety.

Genus 21. *ADIANTUM* Linn.

Kuhn, in Jahrb. Berlin. Bot. Gart. vol. I. p. 337, has published a valuable monograph of this genus. He characterises briefly 113 species, many of which are dealt with as varieties in the *Synopsis Filicum*. He proposes two subgenera, viz.—(1) *Euadiantum*, sporangia confined to the veins; and (2) *Adiantellum*, sporangia occupying the intervening parenchyma as well as the veins.

1. *A. reniforme*, L. Besides the type, which inhabits Madeira and the Canaries, and var. *asarifolium*, Willd., which inhabits Mauritius and Bourbon, a third subspecies, *crenatum*, Baker, has lately been found by Mr. J. T. Last in the North-East of Madagascar. It differs from the others by its more distant sori and crenate edge of the frond.
- 3\*. *A. Balfourii*, Baker, in Hook. Ic. tab. 1630. Socotra, *Balfour*.  
Differs from all the forms of *lunulatum* by its equilateral shortly-petiolate pinnae.
- 3\*. *A. Balansae*, Baker, in Journ. Bot. 1890, 262. Tonquin, *Balansa*, 134. Near the African *A. Mettenii*, Kuhn,



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- 3\*. *Adiantum Pearcei*, Philippi, in *Linnaea*, XXXIII, 304.  
Andes of Chili, *Pearce*. Near *A. pumilum*, Sw. Not seen.
- 3\*. *A. Gravesii*, Hance, in *Journ. Bot.* 1875, 197 = *A. Mariesii*,  
Baker, in *Gard. Chron.*, N. S. XIV, 494. Central China,  
*Lamont*, *Maries*. Simply pinnate frond like dwarf *lunulatum*;  
segments like those of *monochlamys*.
- 3\*. *A. ruizianum*, Klotzsch.; Hook. Sp. Fil. II, 10. Stipe naked,  
castaneous, 6-9 in. long. Frond lanceolate, simply pinnate,  
6-8 in. long, 2-2½ in. broad, firm, glabrous. Pinnæ 1-1½  
in. broad; end one deltoid; side ones suborbicular, broader  
than long; lower margin straight; all the rest crenate; petiole  
of lower pinnæ ½-1 in. long. Sori orbicular, placed all round  
the pinnæ except the base. Peru, *Pavon*. Near *A. grossum*,  
Mett., but pinnæ smaller, with longer stalks, and sori and  
indusia orbicular. Described from a type specimen kindly  
lent by Mr. H. C. Levinge.
- 5\*. *A. amelianum*, Glaziov; Baker, in *Journ. Bot.* 1882, 309.  
South Brazil, *Glaziov*, 12,280. Doubtfully distinct from *A.*  
*rhizophyllum*, Schrad.
- 7\*. *A. Kaulfussii*, Willd. and 8, *A. obliquum*, Willd. are best  
considered as two varieties of *A. platyphyllum*, Sw.
- 12\*. *A. Glaziovii*, Baker, in *Journ. Bot.* 1882, 309. South Brazil,  
*Glaziov*, 13,345. Intermediate between *intermedium* and  
*obtusum*.
- 13\*. *A. Steerei*, Harringt., in *Journ. Linn. Soc.* XVI, 34. Pona  
Cocha, Andes of Peru, *Steere*.
15. *A. diaphanum*, Blume. *A. heteromorphum*, Colenso; Field,  
*Ferns New Zeal.* 80, is a variety, and I cannot separate  
specifically *A. polymorphum* and *A. tuberosum*, Colenso,  
in *Trans. New Zeal. Instit.* 1888, 215-217.
- 15\*. *A. monosorum*, Baker, in Hook. Ic. tab. 1633. Solomon Isles,  
*Herb. Macleay*.
- 16\*. *A. Hosei*, Baker, in *Journ. Bot.* 1888, 324. Borneo; pendu-  
lous on limestone cliffs, Sarawak, *Bishop Hose*. Near  
*affine*.
16. *A. affine*, Willd., var. *intermedium*, Benth., *Fl. Austral.* VII, 725,  
Queensland and N. S. Wales, differs from the New Zealand  
type by its transversely oblong sori; var. *chathamium*, Field,  
*Ferns New Zeal.* 81, Chatham Island, is less compound than

- the type with longer final segments. See also var. *heterophyllum*, Colenso, in Trans. New Zeal. Instit. 1888, p. 218.
- 16\*. **A. Hornei**, Baker, in Journ. Bot. 1879, 294. Fiji, *Horne*, 560. Near *affine*.
- 22\*. **A. dioganum**, Glaziou; Baker, in Journ. Bot. 1882, 310. South Brazil, *Glaziou*. Between *cristatum* and *villosum*.
- 27\*. **A. Novae-Caledoniae**, Keyserl. Monogr. Adiant. 4. New Caledonia. Introduced into cultivation in 1883, by Messrs. W. and J. Birkenhead. Near *A. fulvum*.
- 31\*. **A. pilosum**, Baker, n. sp. Stipe 2 ft. long, black, glossy, and naked below the top. Frond deltoid, bipinnate, a foot long and broad; rachises densely pilose. Segments crowded, rhomboid, entire on the lower and inner, toothed on the upper and outer edges, the central an inch long,  $\frac{1}{2}$  in. broad. Sori round, one placed at the tip of each lobe on the upper margin of the segments. Indusia round, persistent,  $\frac{3}{4}$  in. diam. New Granada, *Kalbreyer*, 956. Near *A. tetraphyllum*, Willd.
41. **A. Capillus-veneris**, L. **A. Fergusoni**, Moore, in Gard. Chron. 1884, II, 360; and **A. Mairisii**, Moore, in Gard. Chron. 1885, II, 294 (*A. Roperi*, Hort.), are forms of garden origin, probably derived from this species.
- 41\*. **A. Levingei**, Baker, n. sp. Stipe slender, castaneous,  $\frac{1}{2}$  ft. long. Frond deltoid, 2-3-pinnate, glabrous, 8-12 in. long; lower pinnae much the largest. Final segments: terminal cuneate,  $\frac{1}{3}$ - $\frac{1}{2}$  in. broad, deeply 2-3-lobed on the upper margin, with a sorus at the base of a sinus in the centre of each lobe; lateral segments subrhomboid, distinctly petioled. Indusium firm, glabrous, orbicular-reniform,  $\frac{1}{2}$  in. diam. Sikkim, Chingtang, alt. 3000 ft., *Levinge*. Cutting of *Capillus-veneris*; sori and indusium of *venustum*.
- 41\*. **A. Schaffneri**, Fourn., in Bull. Soc. Bot. France, 1880, 328. Mexico, *Schaffner*. Not seen.
- 42\*. **A. hians**, Moore, in Gard. Chron. 1887, I, 41. Stipe elongate, slender, castaneous. Frond membranous, deltoid, tripinnate, glabrous, a foot long. End segments cuneate; lateral rhomboid,  $\frac{1}{3}$ - $\frac{1}{2}$  in. broad, deeply lobed on the outer edge. Sori only 1-2 to a segment. Sinus deep. Indusium large, reniform. New Caledonia and Fiji, *Herbert*.
- 42\*. **A. Williamsii**, Moore in Gard. Chron. 1878, II, 44, fig. 4.



Habit slightly sarmentose. Rachises brown-black, quite glabrous. Frond deltoid, tripinnate,  $1\frac{1}{2}$ –2 ft. long, tinged with sulphur when young. Pinnæ deltoid, the lowest the longest. Rachis flexuose upwards. Final segments  $\frac{1}{2}$ – $\frac{3}{4}$  in. broad, all distinctly stalked, the end one cuneate, the lower side ones rounded or nearly truncate at the base. Sori 3–5 to a segment, roundish or broader than deep. Andes of Peru, alt. 12,000 ft. Near *aethiopicum*.

- 42\*. *Adiantum neo-guineense*, Moore, in Gard. Chron. 1887, I, 12. Stipe naked, castaneous, 6–8 in. long. Frond deltoid, tripinnate, glabrous, above a foot long and broad. Rachises very slender, glabrous, nearly black. End segments cuneate; lateral trapezoid,  $\frac{1}{2}$  in. long, cuneate. Sori orbicular, 3–4 to a segment, placed in deep sinuses. New Guinea, *Goldie*. Recedes from *aethiopicum* in the direction of *tenerum*.
43. *A. excisum*, Kunze. *A. Pacotti*, Hort. and *A. Weigandii*, Moore, in Gard. Chron. 1883, II, 748, are forms of garden origin, probably derived from this species.
- 45\*. *A. Wagneri*, Mett. (*A. decorum*, Moore). *A. elegans*, Moore, in Gard. Chron. 1886, I, 200; *A. cyclosorum*, Moore, in Gard. Chron. 1887, I, 547; and *A. Oweni*, Moore, in Gard. Chron. 1887, I, 110, are forms of garden origin nearly allied to this species.
46. *A. tenerum*, Sw. *A. Lathomi*, *Gheisbreghtii*, *scutum*, *Farleyense*, *Victoriae*, *Bausei*, *rhodophyllum*, and *princeps*, of gardens, are probably all of them derived from this species.
- 46\*. *A. Collisii*, Moore, in Gard. Chron. 1886, I, 681. A form of garden origin which appears to be intermediate between *tenerum* and *cuneatum*.
47. *A. cuneatum*, L. & F. *A. festum*, *fragrantissimum*, *Waltoni*, *Dadsii*, *aemulum*, *gracillimum*, and *mundulum*, of Moore, appear to be varieties of this species.
- 47\*. *A. bellum*, Moore, in Gard. Chron. 1879, I, 172, Fig. 24. Bermuda, *Lefroy*, *Moseley*. Intermediate between *cuneatum* and *aethiopicum*.
- 47\*. *A. Paradiseae*, Baker, in Gard. Chron. 1889, II, 558. Bedford, Cape Colony, *Miss Paradise*.
- 48\*. *A. Cooperi*, Baker, in Journ. Bot. 1887, 25. Costa Rica, *Cooper*. Near *glaucophyllum*, Hook.



- 50\*. *A. Wattii*, Baker, in Journ. Linn. Soc. XVIII, 381, tab. 14a, Figs. 1-2. Chumba, *Watt*.
- 50\*. *A. Davidi*, Franchet, Pl. David. II, 150. Moupine, Tibet, *Père David*.
- 51\*. *A. Faberi*, Baker, in Journ. Bot. 1888, 225. Mt. Omei, West China, alt. 3000 ft., *Faber*, 1033.
- 51\*. *A. Senae*, Baker, in Journ. Bot. 1885, 217. South Brazil, *Glaziou*, 15,723. Intermediate between *tremulum* and the small forms of *cuneatum*.
- 51\*. *A. Roborowskii*, Maxim. Mel. Biol. XI, 867. West China; Kansu, *Przewalski*. Allied to *monochlamys* and *Gravesii*.
- 56\*. *A. Oatesii*, Baker, in Oates, Matebeleland, App. with Figure. Matebeleland, *Oates*. Very near *pedatum*.
57. *A. hispidulum*, Sw. *A. Birkenheadii*, Moore, in Gard. Chron. 1886, I, 648. appears to be a variety of this species.
- 58\*. *A. rigidum*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 329. New Caledonia, *Balansa*, 50, 2689. Not seen.
- 58\*. *A. stenochlamys*, Baker, n. sp. Stipe long, naked, wiry, nearly black. Frond pedate, tripinnate, deltoid, firm, glabrous, 6-9 in. long and broad. Final segments: terminal cuneate,  $\frac{1}{2}$ - $\frac{3}{4}$  in. broad, shallowly lobed, and crenate round the upper half; lateral subrhomboid, shortly petioled, little longer than broad, with the inner edge inflexed so that it is imbricated over the rachis; upper and outer edge shallowly lobed and crenate. Sori 6-8 to a fully-developed segment,  $\frac{1}{8}$  in. long. Indusium firm, narrow. British North Borneo; Kudat, *Dr. Fraser*. Pulo Gaya, *Sir H. Low*.

Genus 23. LONCHITIS *Linn.*

- 1\*. *L. polypus*, Baker, in Journ. Linn. Soc. XV, 414. Madagascar, *Pool*, *Hildebrandt*.

Genus 24. HYPOLEPIS *Bernh.*

- 13\*. *H. meifolia*, Baker; *Cheilanthes meifolia*, Eaton, in Proc. Amer. Acad. XVII, 185. Mexico, *Parry & Palmer*. Closely allied to *H. californica*.

## Genus 25. CHEILANTHES Sw.

Subgenus *Adiantopsis*.

- 1\*. *C. Fordii*, Baker, in Journ. Bot. 1879, 304. Canton, *Ford*.
- 6\*. *C. Duthiei*, Baker, n. sp. Stipes densely tufted, castaneous, glabrous, 1-1½ in. long, with a few paleae towards the base. Frond oblong-deltoid, membranous, glabrous, 2 in. long, green on both surfaces. Pinnae oblong-deltoid, sessile: lowest the largest, produced on the lower side. Pinnules oblong, ⅓-⅔ in. broad. Sori placed all round the edge of the pinnules, usually orbicular, rarely confluent. Indusium grey, glabrous, orbicular-reniform, persistent. British Garwhal, *Duthie*, 5144. Cutting of *C. subvillosa*, but indusium of this subgenus.
11. *C. Schimperi*, Kunze. Has been gathered in the Usugura Mountains by the late *Bishop Hannington* and in the Shiré Highlands by *Mr. J. T. Last*. Known before only in Abyssinia.
- 12\*. *C. Reesii*, Jenm., in Journ. Bot. 1886, 267. Jamaica, *Rev. J. L. Rees*. Cutting of *C. microphylla*; sori and indusium of this subgenus.
- 13\*. *C. madagascariensis*, Baker, in Journ. Linn. Soc. XVI, 198. Madagascar, *Miss Helen Gilpin*.

Subgenus *Eucheilanthos*.

- 15\*. *C. depauperata*, Baker, n. sp. Stipes densely tufted, wiry, castaneous, naked, 3-4 in. long. Frond lanceolate, bipinnate, rigid, 4-6 in. long, ¼-⅓ in. broad, green and glabrous on the upper surface; rachis castaneous, scabrous, visceous. Pinnae numerous, small, deltoid, with many linear lobes with strongly recurved edges. Sori hidden by the recurved margin. Cape Colony; Central Karroo region, *Sir H. Barkly, Bolus*.
- 16\*. *C. moncloviensis*, Baker, n. sp. Stipes naked, tufted, castaneous, 3-4 in. long. Frond deltoid, tripinnate, glabrous, 2-3 in. long, moderately firm, green and naked on both sides. Lower pinnae the largest, deltoid; rachises castaneous, furnished with many ovate or lanceolate pale membranous paleae. Final segments obovate-cuneate, ⅓-⅔ in. broad. Indusium broad, rigid, glabrous. North Mexico; Coahuila



and Nuevo Leon, 1880, *Palmer*, 1378. Near *C. fragrans*, Sw.

17. *C. arabica*, Decaisne. Somali-land, *Hildebrandt*, 1489.
- 18\*. *C. Cooperae*, Eaton, Ferns North Amer. 7, tab. 2, fig. 1. California and North Mexico.
- 18\*. *C. Streetiae*, Baker; *Notochlaena Streetiae*, Baker, in Journ. Linn. Soc. XVI, 204. Madagascar, *Mrs. Street*. Habit and texture of the small forms of *Hypolepis bergiana*.
- 19\*. *C. heterotricha*, Anders., in Eugen. Reise, 40. Charles Island, Galapagos group. Near *C. Macleanii*, Hook. Not seen.
- 22\*. *C. Delavayi*, Baker, n. sp. Stipes tufted, hairy, castaneous, 5-6 in. long. Frond deltoid or oblong-deltoid, tripinnatifid,  $\frac{1}{2}$  ft. long, 2-3 in. broad, moderately firm, green on both surfaces, finely pubescent. Lower pinnae the largest, deltoid, petioled. Pinnules deltoid,  $\frac{1}{2}$ - $\frac{3}{4}$  in. broad, cut down nearly to the rachis into contiguous oblong lobes. Indusium continuous, rigid, drab-brown, crenate. Yunnan, *Delavay*.
- 23\*. *C. trichophylla*, Baker, n. sp. Stipes tufted, pubescent, brown, 4-5 in. long. Frond oblong-lanceolate, tripinnate, moderately firm, densely pilose, a foot long, 3-4 in. broad; main rachis flexuose. Pinnae deltoid or oblong-deltoid, the longest 2 in. long, mostly patent or even rather deflexed; final segments linear-oblong,  $\frac{1}{8}$ - $\frac{1}{6}$  in. long. Indusium broad, pale, persistent. Yunnan, *Delavay*.
- 24\*. *C. Pringlei*, Davenport, in Bull. Torrey Club, 1883, 61, tab. 34. Mountains of South-East Arizona, *Pringle*.
- 24\*. *C. longipila*, Baker, n. sp. Stipes tufted, wiry, brown, 1-4 in. long, densely clothed with long soft white hairs, as are the rachis and lamina. Fronds oblong-lanceolate, tripinnate, 3-4 in. long. Pinnae lanceolate-deltoid, rather ascending, more produced on the lower side. Ultimate segments oblong, crenate-pinnatifid, subbullate, under  $\frac{1}{2}$  line broad. Sori round, very minute, finally confluent. Central Mexico, 6000-8000 ft., *Parry & Palmer*, 989. Near *C. viscosa*, Kaulf., but hairs longer, not glandular, and fronds oblong-lanceolate, not deltoid.
- 26\*. *C. Clelandi*, F. M. & Tate, in Trans. Roy. Soc. South Austral. 1887. South Australia: west of Spencer gulf. Habit of *Pellaea pilosa* and *Bojeri*. Not seen.

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- 27\*. *Cheilanthes Thwaitesii*, Mett. An earlier name is *C. laxa*, Moore, Ind. Fil. 245.
- 28\*. *C. patula*, Baker, in Journ. Bot. 1888, 225. Western China, Dr. A. Henry, 3998. Near *C. subvillosa*, Hook.
- 28\*. *C. Krameri*, Franch. et Savat., Enum. Jap. III, 619. Japan. Near *C. subvillosa*. Not seen.
- 29\*. *C. albomarginata*, Clarke, in Trans. Linn. Soc. Bot. ser. 2, I, 456, tab. 52. Eastern Himalayas. Cutting of *C. farinosa*, but denuded, with white-edged paleae. Beddome now places *C. Dalhousiae*, Hook. as a variety of *farinosa*.
34. *C. tenuifolia*, Sw. It seems impossible to draw any definite line of demarcation between *tenuifolia* and *Sieberi*. I cannot separate specifically *C. Kirkii*, Armst., in Trans. New Zeal. Instit. 1880, 36, non Hook.; *C. javensis*, Moore, Ind. Fil. 244; *Pteris alpina*, Field, Ferns New Zeal. 97, tab. 98, fig. 3; nor *C. exilis*, Moore & Houlston.
- 34\*. *C. viscida*, Davenport, in Bull. Torrey Club, VI, 192. Sierra Nevada, California.

Subgenus *Physapteris*.

- 35\*. *C. flexuosissima*, Baker, n. sp. Stipes densely tufted, castaneous, naked,  $\frac{1}{2}$  ft. long. Frond deltoid, decomposed, 3-4 in. long, fragile, membranous, glandulose-puberulent on both surfaces. Segments round or obovate, bullate,  $\frac{1}{2}$  line broad, flabellately toothed in the upper half. Sori placed all round the segments except the base. Indusium continuous, scariose. South Brazil, *Glaziou*, 7482.
- 36\*. *C. recurvata*, Baker, in Journ. Bot. 1878, 299. Paraguay, *Balansa*, 358. Near *C. regnelliana*, Mett.
- 37\*. *C. Bolusii*, Baker, in Hook. Ic. tab. 1636. Cape Colony: South Western province, *Bolus*, 2801. Near *C. induta*, but 4-pinnatifid, with a black rachis and stipe and small round bullate segments.
- 38\*. *C. Parishii*, Davenport, in Bull. Torrey Club, VIII (1881), 61, tab. 8. California, *W. P. Parish*.
- 43\*. *C. albida*, Baker, n. sp. Stipes tufted, wiry, slender, slightly scaly, 2-5 in. long. Frond oblong-lanceolate or oblong-deltoid, tripinnate, 2-3 in. long, densely white-hairy on both surfaces, with densely imbricated bright brown paleae on the midribs of



- the pinnae and pinnules beneath. Pinnae lanceolate-deltoid, the central  $\frac{1}{2}$ – $\frac{3}{4}$  in. long; tertiary segments small, round, bullate. Central Mexico, *Parry & Palmer*, 999.
- 43\*. *C. Clevelandii*, Eaton, *Ferns North Amer.* 89, tab. 12, fig. 2. California.
- 43\*. *C. cinnamomea*, Eaton, in *Proc. Amer. Acad.* XVII, 186. *Myriopteris rufa*, Fée. Mexico, *Schaffner*, 91.
- 47\*. *C. intermedia*, Baker; *Myriopteris intermedia*, Fourn., in *Bull. Soc. Bot. France*, 1880, 328. Mexico, *Schaffner*.
- 48\*. *C. peruviana*, Baker; *Plecosorus peruvianus*, Fée, *Gen. Fil.* 195. Stipes brown, tufted, nearly naked, 6–8 in. long. Frond oblong-lanceolate, bipinnate, a foot long, subrigid, green and glabrous on the upper surface, densely paleaceous beneath. Pinnae many, lanceolate,  $1\frac{1}{2}$ –2 in. long, cut down to the midrib into oblong crenate pinnules with much inflexed edges. Sori filling up nearly the whole under surface of pinnules. Peru, *Pavon*. Very distinct.
53. *C. farinosa*, Kaulf. For an account of the Indian forms see Mr. H. F. Blanford's paper on the Silver Ferns of Simla, read before the Simla Natural History Society, June 25, 1886. I cannot separate specifically *C. anceps* and *C. grisea*, there described, nor from the descriptions, the Mexican *Aleuritopteris Schaffneri*, Fourn. in *Bull. Soc. Bot. France*, 1888, 328; nor the Japanese *C. Brandtii*, Franch. et Savat. *Enum. Jap.* II, 620.
- 53\*. *C. Palmeri*, Eaton, in *Proc. Amer. Acad.* XXII, 464. Jalisco, Mexico, *Palmer*, 223.

## Genus 30. PELLAEA Link.

- 12\*. *P. cambodiensis*, Baker, n. sp. Stipes densely tufted, slender, castaneous, naked. Frond glabrous, chartaceous, lanceolate-deltoid, 2–3 in. long, an inch broad, bipinnatifid or bipinnate. Pinnae 5–6-jugate below the pinnatifid apex, the lowest the longest, produced on the lower side, subdeltoid, broadly obtusely lobed. Veins free, branched. Indusium pale, glabrous. Cambodia, *Godefroy-Lebeuf*, 860. Habit of *P. nitidula*, much less compound.
- 13\*. *P. Riedelii*, Baker, n. sp. Habit of *P. burkeana*. Frond rigid, bipinnate. Segments linear, with enrolled margins. Central Brazil, *Riedel*.

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15. *Pellaea ternifolia*, Fée. West Indies, St. Domingo, *Baron Eggers*. I cannot separate specifically *Cheilanthes weddelliana*, Moore, Ind. Fil. 257.
- 16\*. *P. Pringlei*, Davenport, in Herb. Pringle Jalisco, 2591. Frond simply pinnate; lower pinnae petioled, hastate. North Mexico.
- 17\*. *P. lancifolia*, Baker, n. sp. Stipes densely tufted, castaneous, 2-3 in. long, with a few minute linear paleae near the base. Frond lanceolate, bipinnate, membranous, glabrous, 4-5 in. long, narrowed from the middle both ways. Rachis naked, castaneous. Central pinnae the largest, sessile, lanceolate, cut down nearly or quite to the rachis into 2-3-jugate, adnate, ovate-deltoid patent lobes, 1-1½ lin. broad; lower pinnae distant, dwarfed. Indusium very broad, green, glabrous. Namaqualand, *Sir H. Barkly*. Differs from *profusa* by its naked rachis and very broad indusium.
- 22\*. *P. Kitchingii*, Baker, in Journ. Bot. 1880, 327; Hook. Ic. tab. 1639. Central Madagascar, *Kitching*.
- 24\*. *P. fumariaefolia*, Philippi. Stipes tufted, slender, naked, 3-4 in. long, green above the castaneous base. Frond oblong, decompound, thick, green, glabrous, 2-3 in. long; sterile more compound than the fertile. Lower pinnae the largest, petioled, deltoid. Final segments short, linear, 1-nerved. Fertile frond less compound; final segments linear-oblong, ¼-½ in. long. Sori filling the whole under surface of the segments. Indusium broad, continuous, rigid, glabrous. Araucania, *Philippi*. Habit of *Cryptogramme crispa*.
- 28\*. *P. namaquensis*, Baker, n. sp. Stipes densely tufted, castaneous, 2-3 in. long, clothed with distinct spreading linear paleae. Frond deltoid, tripinnatifid, bright green, glabrous, 2-3 in. long; rachis castaneous, with a few minute paleae. Lowest pinnae much the largest, deltoid, stalked, ½ in. broad, its pinnules cut down nearly to the rachis into a few oblong lobes. Indusium narrow, green, membranous, glabrous. Namaqualand, *Sir H. Barkly*. Between *involuta* and *conso-brina*.
- 35\*. *P. integricuspis*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 324. New Caledonia, *Balansa*, 824. Not seen. To be compared with *P. falcata*.



- 38\*. *P. tripinnata*, Baker, in Journ. Linn. Soc. XXV, 350. Madagascar, *Baron*, 5674.
- 40\*. *P. crispatula*, Baker, n. sp. Stipes very slender, densely tufted, castaneous, fragile, naked, 1-2 in. long. Basal paleae lanceolate, bright brown, minute. Fronds simple, lanceolate, glabrous, 2-2½ in. long, ¼-½ in. broad, narrowed gradually to the point, generally cordate at the base, with small rounded contiguous lobes. Veins very distinct, forming 2-3 rows of areolae between the midrib and edge, without any included veinlets. Sori placed all round the margin of the frond, at first globose, finally confluent. Indusium very narrow, obscure. South Brazil, *Glaziou*, 14,405. Habit of *Pteris sagittifolia*. Sori and indusium very different.

Genus 31. *PTERIS* Linn.Subgenus *Eupteris*.

- 1\*. *P. phanerophlebia*, Baker, in Journ. Bot. 1881, 367; Hook. Ic. tab. 1610. Madagascar, *Curtis*, *Baron*, *Humblot*, *Last*. Habit of *P. sagittifolia*, Raddi, but veins free.
- 1\*. *P. quinquelobata*, Baker; *Pellaea quinquelobata*, Fée; Prantl, in Engler's Jahrb. 1882, 422. South Brazil, *Glaziou*, 7011. Habit of less divided forms of *P. palmata*. Frond thick, deltoid, 3-5-lobed.
- 1\*. *P. platysora*, Baker, in Journ. Bot. 1880, 211. Sumatra, *Beccari*.
- 3\*. *P. vitiensis*, Baker, in Journ. Bot. 1879, 295. Fiji, *Horne*, 718.
4. *P. cretica*, L. *P. Mayi*, Hort. is a crested variegated form. I cannot separate specifically the New Zealand *P. lomarioides*, Colenso, in Trans. New Zeal. Instit. 1880, 380; Field, Ferns New Zeal. 91, tab. 25, Fig. 4. *P. treacheriana*, Baker, in Journ. Bot. 1879, T. 5, is identical with *P. melanocaulon*, Fée.
5. *P. pellucida*, Presl. *P. commutata*, Kuhn, in Reise Decken Bot. 20, is apparently a variety of *pellucida*, with veins casually anastomosing.
- 5\*. *P. papuana*, Cesati, Fil. Bec. Polyn. 3, 7. Rhizome repent, as thick as a man's thumb, tomentose, with minute brown subulate paleae. Stipe a foot long, naked, dark purplish brown.

Fronds oblong-lanceolate, simply pinnate, glossy, glabrous, coriaceous, 2-3 ft. long. Pinnae linear, 6-7 in. long,  $\frac{1}{4}$  in. broad, very acuminate, obscurely serrulate at the tip, the upper single, the lower 3-4-jugate. Veins subpatent, very fine, and close. Mountains of New Guinea, *Beccari*. *P. pellucida*, Cesati, loc. cit., is a more luxuriant form of the same species.

- 6\*. *Pteris sumatrana*, Baker, in Journ. Bot. 1881, 367. Sumatra, *Curtis*. Near *P. hookeriana* and *serrulata*.
7. *P. dactylina*, Hook., has been found recently in Szechwan by *Faber*, and Yunnan by *Delavay*.
9. *P. serrulata*, L. fil. Has been found lately in Alabama and Guadeloupe. Can it be a mere variety of *cretica*?
10. *P. ensiformis*, Burm. *P. Victoriae*, Hort. Bull., is a beautiful variety of this species, with fronds variegated with white.
- 10\*. *P. Balansae*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 320. New Caledonia, *Balansa*, 797. Not seen.
- 10\*. *P. polymorpha*, Fourn., in Ann. Sc. Nat. sér. 5, XVIII, 320. New Caledonia, *Balansa*, 831, 2686. Not seen.
- 12\*. *P. inaequalis*, Baker, in Journ. Bot. 1875, 199. China and Japan. Between *P. semipinnata* and *longipinnula*.
- 13\*. *P. appendiculata*, Baker, in Journ. Bot. 1881, 366. Madagascar, *Curtis*. Like *P. triplicata* in texture and general habit.
- 14\*. *P. remotifolia*, Baker, in Journ. Linn. Soc. XVI, 199. Madagascar, *Miss Helen Gilpin*.
- 16\*. *P. dissitifolia*, Baker, in Journ. Bot. 1890, 262. Tonquin, *Balansa*, 1970. Near *inaequalis* and *semipinnata*.
- 16\*. *P. formosana*, Baker, in Journ. Bot. 1885, 103. Formosa, *Hancock*, 83. Near *semipinnata*.
22. *P. quadriaurita*, Retz. *P. subindivisa*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 467, tab. 56, fig. 1, Himalayas, and *P. reducta*, Baker, in Journ. Bot. 1880, 211, Sumatra, are probably forms of *quadriaurita* with a simply pinnatifid frond. Clarke and Beddome agree in separating as a species *P. grevilleana*, Wall. See Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 466.
- 22\*. *P. furcans*, Baker, in Journ. Bot. 1888, 324. Borneo, *Bishop Hose*.



- 22\*. *P. concinna*, Baker, in *Malesia*, III, 37. Mountains of New Guinea, *Beccari*. Near *P. Griffithii*, Hook.
- 22\*. *P. Walkeri*, Baker, in *Journ. Bot.* 1888, 324. Borneo, *Walker*. Sent by *Bishop Hose*, 224, from Banggi Island, also off the coast of Borneo.
- 29. *P. heterophylla*, L. *P. internata*, Moore, is probably a garden variety of this species.
- 29\*. *P. macrodon*, Baker, in *Journ. Linn. Soc.* XV, 414. Central Madagascar, *Pool*.
- 34. *P. tremula*, R. Br. Var. *foliosa*, Moore, in *Gard. Chron.* 1886, I, 787, is a curious monstrous garden form.
- 36. *P. longipes*, D. Don. Further material shows *P. brevisora*, Baker, No. 39, which has now been found in Zambesia, to be only a variety of this species, with shorter sori.

Subgenus *Poesia*.

- 42\*. *P. Radula*, Baker, in *Journ. Bot.* 1880, 211. Mountains of Borneo, *Beccari*. Near *P. scaberula*, A. Rich.

Subgenus *Campteria*.

- 46. *P. biaurita*, L. *P. dubia*, Kuhn, in *Reise Decken Bot.* 71. Johanna Island, *Hildebrandt*, 1763, differs from the type by the want of spinules on the face and by the segments being sharply serrulate at their barren tips.
- 48. *P. triplicata*, Agardh. Further material shows *P. Melleri*, Baker, No. 49, to be a form of this species.
- 50\*. *P. oligodictyon*, Baker, in *Journ. Bot.* 1889, 328. Central Madagascar. Habit of *P. flabellata*, Thurnb. with campterioid veining.

Subgenus *Doryopteris*.

- 52\*. *P. cordifolia*, Baker, in *Journ. Bot.* 1891-4. North-West Madagascar, *Last*. Near *P. sagittifolia*, Raddi.

Subgenus *Litobrochia*.

- 61\*. *P. acuminata*, Baker, in *Journ. Bot.* 1891, 5. North-West Madagascar, *Last*. Near *P. lanceaefolia*, Agardh.

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- 62\*. *Pteris Burtoni*, Baker, n. sp. Stipe naked, castaneous, 2-4 in. long, winged in the upper half. Frond deltoid, simply pinnate,  $\frac{1}{2}$  ft. long, moderately firm, glabrous; rachis winged. Pinnae 3-7, lanceolate, entire, sessile, the largest 3-4 in. long,  $\frac{3}{4}$ -1 in. broad. Veins forming 2-3 rows of areolae between the midrib and margin. Fruit not seen. Gold Coast, *Burton & Cameron*. Near *P. splendens*, Kaulf.
62. *P. splendens*, Kaulf. var. *Miersii*, Baker. Pinnae only  $\frac{1}{2}$  in. broad, more numerous than in the type; veins much less conspicuous than in the type; areolae fewer. Rio Janeiro, *Miers*.
- 62\*. *P. dominicensis*, Baker, in Hook. Ic. tab. 1642. Dominica, *Baron Eggers*, 960.
- 63\*. *P. platyodon*, Baker, in Journ. Linn. Soc. XV, 415. Central Madagascar, *Pool*.
66. *P. denticulata*, Sw. I place *P. Enderi*, Regel, as a variety of this species.
- 66\*. *P. Pearcei*, Baker, n. sp. Stipe long, naked. Frond lanceolate-deltoid, simply pinnate,  $1\frac{1}{2}$  ft. long, moderately firm: rachis stramineous. Pinnae distant, ascending, linear: lowest the largest, 8-9 in. long, with 1-4 irregular lanceolate lobes on the lower side. Veins very distinct, forming 2-3 rows of hexagonal areolae between the midrib and edge. Indusium narrow, glabrous. South America, probably South Brazil, *Pearce*, 271. Near *P. splendens*.
- 66\*. *P. Johnstoni*, Baker, n. sp. Stipe naked, slender, castaneous, nearly a foot long. Frond deltoid-caudate, simply pinnate, bright green, glabrous, 6-8 in. long, chartaceous. Lower pinnae sessile, forked at the base; upper lanceolate, entire,  $2\frac{1}{2}$ -3 in. long,  $\frac{3}{4}$  in. broad, decurrent in a narrow wing to the rachis. Veins fine, distinct, forming 2-3 rows of areolae between the midrib and edge. Fruit not seen. Sierra Leone, *Dr. Halcro Johnston*. Habit of *P. cretica*.
- 73\*. *P. similis*, Kuhn, in Reise Decken Bot. 21. Niam-niam land, *Schweinfurth*, 3311. Much larger than *P. atrovirens*: final segments 2 in. long. Rachis very spinulose.
- 74\*. *P. villosa*, Hort. Linden. Stipe long, naked. Frond deltoid, 2-3-pinnatifid,  $1-1\frac{1}{2}$  ft. long, membranous, very hairy. Lower pinnae largest, forked at the base, lanceolate,  $\frac{1}{2}$  ft. long,  $1\frac{1}{2}$



- in. broad, cut down nearly to the rachis into oblong segments  $\frac{1}{4}$  in. broad. Veins anastomosing copiously. Fruit not seen. Hort. Linden. 1859, 1861, said to come from Assam. Near *P. woodwardioides*, Bory.
77. *P. macilenta*, A. Cunn. I cannot separate specifically *P. pendula*, Colenso, in Trans. New Zeal. Instit. 1888, 218.
- 77\*. *P. Nevillei*, Baker, n. sp. Frond ample, tripinnate, membranous, glabrous: rachis weak, stramineous, naked. Lowest pinnae a foot or more long, its lowest pinnules copiously compound, with deeply pinnatifid lanceolate tertiary segments; final segments contiguous, oblong, deeply toothed,  $\frac{1}{8}$ – $\frac{1}{6}$  in. broad. Veins forming 1–2 rows of areolae between the midrib and margin. Fruit not seen. Bourbon, *Neville*. Near *P. macilenta*.
- 79\*. *P. platypteris*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 28. Andes of Ecuador, *Sodiro*. Near *P. macroptera*, Link.
82. *P. tripartita*, Sw. This dates from 1800 and is an older name than *P. marginata*, Bory. Further material shows that *P. milneana*, Baker, is probably a mere variety of this species.
- 85\*. *P. longibrachiata*, Agardh. The full material recently sent home from St. Vincent by Messrs. H. H. & G. W. Smith shows that this is probably a distinct species.

## Genus 33. LOMARIA Willd.

- 6\*. *L. acuminata*, Baker. Also Samoa, *Whitmee*. An earlier name is *L. norfolkiana*, Heward, in Lond. Journ. Bot. I, 122.
- 6\*. *L. deflexa*, Baker, in Journ. Bot. 1888, 226. West China on Mount Omei, alt. 7000 ft., *Faber*. Near *L. norfolkiana*.
- 8\*. *L. simillima*, Baker, in Journ. Bot. 1884, 141. North-East Madagascar, *Humblot*, 307. Very near the American *L. Plumieri*, Desv.
9. *L. vulcanica*, Blume. I cannot separate specifically *L. paucijuga*, Colenso, in Trans. New Zeal. Instit. 1888, 222.
11. *L. lanceolata*, Spreng. I cannot separate specifically *L. aggregata*, Colenso, in Trans. New Zeal. Instit. 1888, 223; Field, Ferns New Zeal. 103, tab. 29, fig. 7.

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- 11\*. *Lomaria pubescens*, Baker, in Journ. Linn. Soc. XV, 415. Central Madagascar, *Pool*.
- 14\*. *L. leyboldtiana*, Philippi, in Linnaea, XXXIII, 303. Chili, shore at Lota, *Pearce*. Not seen.
- 14\*. *L. Hancockii*, Baker; *L. apodophylla*, Baker, in Journ. Bot. 1885, 104; *Blechnum Hancockii*, Hance, in Journ. Bot. 1883, 267. Formosa, *Hancock*.
- 18\*. *L. stenophylla*, Baker, in Journ. Bot. 1884, 142. North-East Madagascar, *Humboldt*, 305.
- 20\*. *L. parvifolia*, Colenso, in Trans. New Zeal. Instit. 1888, 224. Exactly matches our type specimen of *L. pumila*, Raoul, which can scarcely be regarded as more than a variety of *L. alpina*. See Field, Ferns New Zeal. 106.
22. *L. procera*, Spreng. Under this I place *Blechnum sociale*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 31. Andes of Ecuador.
- 22\*. *L. areolaris*, Harringt., in Journ. Linn. Soc. XVI. Philippines, *Steere*.
24. *L. boryana*, Willd. Under this I place *L. stipitellata*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 29. Andes of Ecuador.
- 24\*. *L. microbasis*, Baker, in Journ. Bot. 1880, 328. Madagascar, *Kitching*.
- 25\*. *L. xiphophylla*, Baker, in Journ. Bot. 1884, 142. North-East Madagascar, *Humboldt*.
30. *L. membranacea*, Colenso. I cannot separate specifically *L. oligoneuron*, Colenso, in Trans. New Zeal. Instit. 1883, 346.
- 31\*. *L. biformis*, Baker, in Journ. Linn. Soc. XV, 415; Hook. Ic. tab. 1643. Madagascar. Fronds curiously heteromorphic.

Subgenus *Plagiogyria*.

- 35\*. *L. stenoptera*, Baker; *L. concinna*, Baker, in Journ. Bot. 1885, 103; *Blechnum stenopterum*, Hance, in Journ. Bot. 1883, 268. Formosa, *Hancock*.

Genus 34. *BLECHNUM* Linn.

- 2\*. *B. parvulum*, Philippi, Descr. Nuev. Plant. 1873, 104. Juan Fernandez. Not seen.
- 9\*. *B. rugosum*, Moore, in Gard. Chron. 1884, I, 408. Garden. Not seen.



- 14\*. *B. Whelani*, Bailey, Queensl. Flora, Suppl. III, 92. Mountains of Queensland. Near *B. serrulatum*. Not seen.

Genus 37. *DOODIA* R.Br.

- 4\*. *D. polysora*, Terracino, in Rend. R. Acad. Sc. Fisc., Nap., April, 1886. New Caledonia. Not seen.  
5. *D. caudata*, R. Br. I cannot separate specifically *D. squarrosa*, Colenso, in Trans. New Zeal. Inst. 1880, 382, and *D. harryana*, Moore, in Gard. Chron. 1884, 408.

Genus 38. *ASPLENIUM*, Linn.

Subgenus *Euasplenium*.

- 13\*. *A. Robinsoni*, F. M., in Journ. Bot. 1884, 289. Norfolk Island, *Robinson*. I believe this to be identical with *A. squamulatum*, var.? *Smithii*, Hook., a garden plant of unknown origin.  
15\*. *A. Mactierii*, Beddome, in Journ. Bot. 1888, 3. Malay Peninsula.  
15\*. *A. Scortechinii*, Beddome, in Journ. Bot. 1887, 322. Perak, *Scortechinii*.  
15\*. *A. holophyllum*, Baker, n. sp. Frond simple, lanceolate, subcoriaceous, glabrous, 3-4 in. long,  $\frac{1}{2}$ - $\frac{5}{8}$  in. broad at the middle, narrowed gradually to the apex and a very short stipe. Veins immersed, erecto-patent, simple or forked. Sori short, ceasing a space from the edge, not above  $\frac{1}{8}$  in. long. Indusium simple, broad, firm, glabrous, persistent. Formosa; Tamsui Mountains, *Hancock*, 101.  
17\*. *A. melanolepis*, Baker, in Journ. Bot. 1890, 264. Tonquin, *Balansa*, 1919.  
20\*. *A. longissimum*, Baker, in Journ. Bot. 1891, 4. North-West Madagascar, *Last*.  
25\*. *A. filicaule*, Baker, in Journ. Bot. 1881, 204. New Granada; province of Antioquia, *Kalbreyer*.  
25\*. *A. holophlebium*, Baker, in Journ. Bot. 1877, 163. Andes of Ecuador, *Sodiro*.  
26\*. *A. Delislei*, Baker, n. sp. Tuft with long stolons rooting at the end. Basal paleae minute, lanceolate, clathrate, nearly

black. Stipes 1-2 in. long, slender, green, naked. Frond linear-lanceolate, simply pinnate, green, glabrous, 3-4 in. long,  $\frac{1}{2}$  in. broad. Pinnae rhomboid, sessile, truncate on the lower and inner side, crenate on the upper and outer; lowest pinnae distant and dwarfed. Veins distinct, flabellate, 5-6 to a pinna. Sori short, broad. Indusium glabrous, persistent. Bourbon, *Delisle*, 592. Near *A. viride* and *Kraussii*.

33. *A. Sandersoni*, Hook. Further material shows that *A. Haningtoni*, Baker, in Journ. Bot. 1883, 245, from the Usagura Mountains, is a form of this species, and that *A. brachypterum* and *Dregeanum*, Kunze, are dareoid varieties.
34. *A. dentatum*, L. I can only separate as a variety *A. jamaicense*, Jenm. in Journ. Bot. 1886, 208, from the Mountains of Jamaica.
37. *A. Trichomanes*, L. I cannot separate specifically the New Zealand *A. melanolepis*, Colenso, in Trans. New Zeal. Instit. 1888, 227, and the Portuguese *A. Caput-serpentis*, Henriquez.
- 37\*. *A. Reuteri*, Milde, Fil. Eur. 62. Cilicia, *Balansa*. Not seen.
42. *A. normale*, Don. Received lately from Japan, China, Siam, Sumatra, and Madagascar.
- 42\*. *A. leucostegioides*, Baker, n. sp. Stipes very short, tufted, castaneous, with a few minute crisped linear-subulate paleae. Fronds lanceolate, membranous, simply pinnate, 2-3 in. long,  $\frac{3}{4}$ -1 in. broad, with a few minute paleae on both surfaces. Pinnae sessile, rhomboid-oblong,  $\frac{1}{4}$  in. broad, very oblique at the base. Veins few, distant, erecto-patent, lower forked. Sori oblong or orbicular, not more than 2-3 to a pinna. Indusium membranous, green, glabrous. East Maui, Sandwich Isles, *F. L. Clarke*. Received from Mr. G. E. Davenport.
- 44\*. *A. parvulum*, Mart. et Gal. Stipes densely tufted, short, black, wiry. Fronds lanceolate, simply pinnate, 4-6 in. long,  $\frac{1}{2}$ - $\frac{3}{4}$  in. broad. Pinnae sessile, oblique oblong, auricled on the upper side at the base, cuneate-truncate on the lower side; lower pinnae gradually smaller. Sori medial, oblong, 5-6-jugate in the central pinnae. Mexico and Southern United States.
- 48\*. *A. ludens*, Baker, in Journ. Linn. Soc. XIX, 294. Solomon Isles, Rev. *R. B. Comins*. Near *A. multilineatum*, Hook.



- 50\*. **A. Poolii**, Baker, in Journ. Linn. Soc. XV, 416. Central Madagascar, *Pool*.
53. **A. Vieillardii**, Mett. New Caledonia. Very variable in cutting. I place as varieties **A. schizodon**, Moore, in Gard. Chron. 1871, 1004; **A. apicidens**, Moore, in Gard. Chron. 1881, I, 267; and **A. Baptistii**, Moore, in Gard. Chron. 1881, I, 235. See also var. *facile*, Moore.
- 54\*. **A. Moorei**, Baker, n. sp. Stipe long, green, naked. Fronds oblong-deltoid, simply pinnate, moderately firm, glabrous, a foot long and broad. Pinnae multijugate, lanceolate, distinctly petioled, serrated, the lowest  $\frac{1}{2}$  ft. long, an inch broad at the base, cuneate on the lower side. Veins distinct, forked, very ascending. Sori  $\frac{1}{2}$ – $\frac{3}{4}$  in. long. Indusium narrow, firm persistent, glabrous. Solomon Isles, *Chas. Moore*. Between *A. Vieillardii* and *lucidum*.
- 56\*. **A. pachysorum**, Baker, in Journ. Bot. 1891, 4. North-West Madagascar, *Last*. Very near the West African *A. longicauda*, Hook., of which Kalbreyer has found a bipinnate variety.
- 64\*. **A. Hancockii**, Maxim. Mel. Biol. XI, 868. Formosa, *Hancock*. Differs from *A. lunulatum* by vestiture, entire pinnae, and sori reaching from midrib to margin.
- 65\*. **A. Mannii**, Hilleb. Fl. Hawaii, 594. Sandwich Isles, *Seemann*, 2240, *Hillebrand*. Near *A. persicifolium*, J. Sm.
- 65\*. **A. Steerei**, Harringt. in Journ. Linn. Soc. XVI, 28. Mount Mahayhay, Philippines, *Steere*.
70. **A. cultrifolium**, L. I cannot separate specifically **A. pululahuæ**, Sodiro, Recens. Crypt. Vasc. Quit. 33, from the Andes of Ecuador.
77. **A. contiguum**, Kaulf, var. *fissum*, Moore, in Gard. Chron. 1881, 267, is a subbipinnate variety, and **Paralleloneuron Neitneri**, Hort., a still more deeply cut form of this species. I have not seen **A. Knudsenii** and **nitidulum**, Hilleb. Fl. Hawaii 601.
- 81\*. **A. Balfourii**, Baker, n. sp. Stipes 6–9 in. long, clothed throughout with lanceolate, brown paleae, with a pale margin. Fronds oblong-lanceolate, simply pinnate, 2–3 ft. long, 8–9 in. broad, moderately firm, glabrous: rachis scaly throughout. Pinnae lanceolate, serrated especially towards the tip, 4–4½ in. long, an inch broad, cuneate on the lower side at the base; lower gradually smaller. Veins distant, erecto-patent, forked.

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- Sori reaching from the midrib nearly to the edge,  $\frac{1}{4}$ – $\frac{1}{3}$  in. long. Bourbon, *Balfour*. Near *A. compressum*, Sw. of St. Helena.
- 87\*. *A. Schweinfurthii*, Baker, in Balf. Bot. Socot. 328, t. 100. Socotra, *Schweinfurth*. *Balfour*.
88. *A. obtusatum*, Forst. Under this, as defined in Synopsis Filicum, range the Sandwich Island *A. Kaulfussii*, Schlecht., Hilleb. Fl. Hawaii, 592, and the New Zealand *A. anomodum*, Colenso, in Trans. New Zeal. Instit. 1882, 309.
- 88\*. *A. cesatianum*, Baker, in Malesia, III, 39. New Guinea, on Mount Arfak, *Beccari*.
- 92\*. *A. sherburgense*, Baker, n. sp. Stipes tufted, 3–4 in. long, clothed with deciduous subulate paleae. Fronds oblong-lanceolate, simply pinnate, moderately firm, glabrous, a foot long,  $1\frac{1}{2}$ –2 in. broad, rooting at the tip. Pinnæ 20–25-jugate, sessile, oblong, crenate,  $\frac{3}{4}$ – $\frac{7}{8}$  in. long,  $\frac{3}{8}$  in. broad, cuneate on the lower side at the base, slightly auricled on the upper; rachis thinly clothed with bristly paleae like those of *A. crinicaule*. Veins erecto-patent, simple except the lowest. Sori regular, simple, parallel, remote from the edge. Indusium glabrous, persistent. Sherburg Island, Upper Guinea, *Mrs. Mair*. Near *A. crinicaule*, Hance.
94. *A. falcatum*, Lam. I have not seen the Sandwich Island *A. pseudo-falcatum*, Hilleb. Fl. Hawaii, 597, nor the New Caledonian *A. fastigiatum* and *dentato-serratum*, Fourn. in Ann. Sc. Nat. sér. 5, XVIII, 305.
95. *A. caudatum*, Forst. *A. decipiens*, Kuhn, in Reise Decken. Bot. 71, Johanna Island, *Hillebrand*, 1773, differs from the type by its more deeply cut pinnæ and frond dwarfed gradually at the base.
- 100\*. *A. oligophlebium*, Baker, in Gard. Chron. n. s. XIV, 494. Japan, *Maries*. Near *A. formosum*, Willd.
102. *A. resectum*, Smith. *A. unilaterale*, Lam. Ency. II, 305 (1786), is an older name for this species.
- 105\*. *A. centrifugale*, Baker, in Journ. Linn. Soc. XXV, 360. Christmas Island, *J. J. Lister*. Very near the Indian *A. planicaule*, Wall.
- 105\*. *A. castaneo-viride*, Baker, n. sp. Stipes tufted, castaneous below, green above, 2–3 in. long. Frond lanceolate, pinnate,



- subrigid, green, glabrous,  $\frac{1}{2}$  ft. long,  $1-1\frac{1}{2}$  in. broad at the middle, narrowed gradually to the base. Pinnae sessile, unequal-sided, laciniate-pinnatifid. Veins indistinct, erectopatent. Sori finally forming a continuous mass, covering the whole pinna, except the tip and outer edge. China; Chefoo, *Hancock*, 14.
- 106\*. *A. formosanum*, Baker; *A. Hancockii*, Baker, in Journ. Bot. 1885, 104, non Maxim. Formosa, *Hancock*, 134. Allied to *A. laciniatum* and the small forms of *A. affine*.
- 107\*. *A. subaquatile*, Cesati, Fil. Born. Beccar. 20, tab. 3, fig. 5. Borneo, first gathered by Beccari, later by Curtis and Bishop Hose.
- 114\*. *A. Lydgatei*, Hilleb. Fl. Hawaii, 596. Sandwich Islands. "Allied to *A. difforme*, R. Br." Not seen.
119. *A. pekinense*, Hance. Further material shows that 132, *A. Saulii*, Hook., in Blakistone's Yangtze, 303 (1862), is a larger, more compound form of the same species, and the latter is the older name. It has lately been found by Levinge in the Himalayas (Chumba and Jhelum Valley).
- 124\*. *A. spenotomum*, Hilleb. Fl. Hawaii, 529. Sandwich Islands. Not seen.
125. *A. furcatum*, Thunb. An earlier name for this cosmopolitan species is *A. praemorsum*, Swartz, Prodr. Fl. Ind. Occ. 130 (1788).
126. *A. affine*, Swartz. In Madagascar this proves to be excessively variable in cutting. I now refer here *A. simillimum*, Kuhn, in Hildeb. Pl. Madag. Exsic. No. 3773; *A. Gilpinae*, Baker, in Journ. Linn. Soc. XVI, 200; *A. herpetopteris*, Baker, in Journ. Linn. Soc. XVI, 20; and *A. viviparoides*, Kuhn, in Hildeb. Pl. Madag. Exsic. No. 4148. See also vars. *Pecten* and *lanalense*, Baker.
133. *A. fontanum*, Bernh. I place as a variety very near *exiguum*, *A. yunnanense*, Franchet, in Bull. Bot. Soc. France, XXXII, 28, gathered in Yunnan by Father Delavay.
- 133\*. *A. chihuahuense*, Baker, n. sp. Stipes densely tufted, castaneous, green upwards,  $\frac{1}{2}-1$  in. long. Frond oblong-deltoid, bipinnate, moderately firm, glabrous, an inch long. Lower pinnae the largest, sessile, ovate, lobed down to the base on the upper side (lobe obovate-cuneate), cuneate-truncate on the

lower side. Veins flabellate. Sori medial, linear or oblong. Indusium pale, persistent, glabrous. Mexico; province of Chihuahua, *Pringle*, 144, in collection of 1887. Allied to *A. fontanum*.

- 134\*. *A. coenobiale*, Hance, in Journ. Bot. 1874, 142 = *A. fuscipes*, Baker, in Journ. Bot. 1879, 304. Canton, *Ford*.  
 134\*. *A. moupinense*, Franchet, Pl. David. II, 152, Tibet; province of Moupine, *David*. Near *A. varians* and *incisum*.  
 144. *A. bulbiferum*, Forst. I cannot from the descriptions separate *A. canterburiense*, Armstrong, in Trans. New Zeal. Instit. 1881, 361, New Zealand, and *A. meiotomum*, Hilleb. Fl. Hawaii, 596, Sandwich Islands.

#### Subgenus *Darea*.

- 156\*. *A. beccarianum*, Cesati, Prosp. 7. New Guinea, *Beccari*. Between *A. Mannii* and *obtusilobum*.  
 165\*. *A. loxoscaphoides*, Baker, in Trans. Linn. Soc. ser. 2, Bot. II, 354. Mount Kilimanjaro, alt. 8000 ft., *Johnston*, 43.  
 168\*. *A. sertularioides*, Baker, in Trans. Linn. Soc. ser. 2, Bot. II, 354. Mount Kilimanjaro, alt. 9000-13,000 ft., *Johnston*, 26.  
 174\*. *A. Solmsii*, Baker, in Hemsl. Biol. Cent. Amer. Bot. III, 639. Guatemala, *Bernouilli* and *Cario*, 317. Like the dareoid forms of *bulbiferum*.

#### Subgenus *Athyrium*.

178. *A. spinulosum*, Baker. Has lately been found in Japan by Maries, and in Yunnan by Delavay. Further material shows the East Himalayan *A. subtriangulare*, Hook., cannot be separated as a species.  
 180\*. *A. Atkinsoni*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 487 = *Athyrium Atkinsoni*, Bedd. Ferns Brit. Ind. Suppl. 11, t. 359. Himalayas; and var. *Andersoni*, Clarke, loc. cit. t. 57.  
 184\*. *A. mongolicum*, Franch. Pl. David. I, 351. China. Habit of *A. thelypteroides*, with indusium almost of a *Lastrea*.  
 184\*. *A. Henryi*, Baker, n. sp. Stipes long, naked, tufted, stramineous. Fronds oblong-lanceolate, bipinnate, moderately firm, glabrous, 1-2 ft. long. Pinnae sessile, lanceolate, the largest



- 6-8 in. long,  $1\frac{1}{2}$  in. broad, cut down nearly to the rachis into oblong crenate secondary lobes  $\frac{1}{8}$  in. broad. Veins 9-10-jugate in secondary lobes; veinlets forked. Sori medial, much curved. Indusium glabrous, persistent. West China; Hupeh and Patung, *Dr. A. Henry*. Near *A. thelypteroides*.
- 185\*. *A. nephrodioides*, Baker, in Journ. Bot. 1887, 170. West China; Patung, *Dr. A. Henry*. Frond narrowed gradually from the middle to both ends. Indusium like that of a *Lastrea*.
- 189\*. *A. Newtoni*, Baker, n. sp. Stipes long, tufted, stramineous or castaneous, with a few lanceolate paleae. Fronds oblong-lanceolate or subdeltoid, 2-3-pinnate, moderately firm, glabrous,  $1-1\frac{1}{2}$  ft. long, 8-12 in. broad. Many lower pinnae, subequal, oblong-lanceolate, 4-5 in. long,  $1\frac{1}{2}-2$  in. broad. Pinnules oblong-lanceolate; tertiary segments deeply crenate,  $\frac{1}{8}-\frac{1}{6}$  in. broad, with a cuneate base. Upper veins simple; lower forked. Sori round, medial. Indusium much curved, glabrous. Island of St. Thomas, West Tropical Africa, *Newton*. Very near the Indian *A. macrocarpum*, Blume.
190. *A. nigripes*, Blume. Beddome places as a variety *A. Clarkei*, Atkinson; Clarke, in Trans. Linn. Soc. ser. 2, I, 489. Eastern Himalayas.
- 192\*. *A. Duthiei*, Beddome, in Journ. Bot. 1889, 72. Garwhal and Kumaon, *Duthie*.
193. *A. oxyphyllum*, Hook., var. *kulhaitense*, Atkins.; Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 494, is a form with the indusium obsolete.
- 194\*. *A. Baldwinii*, Hilleb. Fl. Hawaii, 618. Sandwich Isles. Near *A. aspidioides*.
- 197\*. *A. lastreoides*, Baker, in Journ. Bot. 1888, 227. China, Mount Omei, alt. 3500 feet, *Faber*, 1064.
- 198\*. *A. umbrosum*, J. Sm., var. *cristovalense*, Baker, in Journ. Linn. Soc. XIV, 294, is a very compound variety allied to *assimile*. Beddome places as a variety of *australe* the Himalayan *A. bellum*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 496, plate 63, fig. 2.
- 199\*. *A. oosorum*, Baker, in Journ. Bot. 1876, 343. Samoa, *Whitmee*. Near *A. woodwardioides* in sori, but frond much larger and more compound.

Subgenus **Diplazium**.

- 203\*. **A. porphyrorachis**, Baker, in Journ. Bot. 1879, 40. Borneo, *Beccari, Burbidge*. **Polypodium subseriatum**, Hook. Syn. Fil. 325, gathered by Wallace, is this plant in an immature sterile condition.
205. **A. pallidum**, Blume. I cannot separate **A. Prenticei**, Bailey, in Trans. Linn. Soc., N. S. Wales, IV, 37. Queensland.
- 205\*. **A. chlorophyllum**, Baker, in Journ. Bot. 1885, 104. Formosa, *Hancock*, 97.
- 205\*. **A. Harrisoni**, Baker, in Journ. Bot. 1884, 362. Costa Rica, *Harrison*.
- 205\*. **A. aequibasale**, Baker, in Journ. Linn. Soc. XXII, 225. Sarawak, Borneo, *Bishop Hose*.
- 206\*. **A. macrotis**, Baker, in Journ. Bot. 1884, 362. Costa Rica, *Harrison*.
- 208\*. **A. verapax**, Donnell Smith, in Bot. Gaz. 1888, 77, t. 2. Guatemala. Very near *A. Riedelianum*, Bongard, of Brazil.
- 207\*. **A. xiphophyllum**, Baker, in Journ. Bot. 1879, 40. Borneo, *Burbidge*.
- 209\*. **A. leptorachis**, Baker, in Journ. Bot. 1890, 264. Tonquin, *Balansa*, 1833. Near *A. Seemannii*, Baker.
- 209\*. **A. Pullingeri**, Baker, in Gard. Chron. 1874, 484. Hong-Kong, *Pullinger*. Cultivated at Kew. Near *A. Seemannii*.
- 210\*. **A. Campbelli**, Jenman. Stipes tufted, naked,  $\frac{1}{2}$  ft. long. Frond simply pinnate, deltoid, moderately firm, glabrous,  $\frac{1}{2}$  ft. long and broad. Pinnæ 3-5, lanceolate, 3-5 in. long, 1-1 $\frac{1}{4}$  in. broad at the middle, crenate, deltoid at the base, narrowed to the point. Veins ascending, forked. Sori  $\frac{1}{2}$ - $\frac{3}{4}$  in. long. Indusium narrow, glabrous. British and Dutch Guiana, *Jenman*. Near *A. bantamense*, Baker.
- 210\*. **A. longisorum**, Baker, in Journ. Bot. 1881, 204. Antioquia, *Kalbreyer*, 1876. Near *A. bantamense*.
- 216\*. **A. megaphyllum**, Baker, in Journ. Bot. 1890, 264. Tonquin, *Balansa*, 1836. Near *A. celtidifolium*.
- 216\*. **A. mocennianum**, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 37. Andes of Ecuador, *Sodiro*. Between *A. celtidifolium* and *sylvaticum*.
- 217\*. **A. Sammadii**, Kuhn, Reise Decken. Bot. 34. Niam-Niam Land, Central Africa, *Schweinfurth*, 3117. Near *A. syl-*



- vaticum*. Pinnae  $1\frac{1}{2}$ –2 in. broad, shallowly lobed. Lobes sharply toothed. Veins few in a group.
- 219\*. **A. sandwichense**, Hilleb. Fl. Hawaii, 610. Sandwich Islands. Near *A. arboreum*.
- 220\*. **A. brevipes**, Baker, in Journ. Linn. Soc. XVI, 201. Central Madagascar, *Miss Helen Gilpin*. Near *A. Shepherdii*.
221. **A. semihastatum**, Kunze. Has lately been found in Porto Rico by Sintenis.
- 221\*. **A. monticolum**, Jenm. in Journ. Bot. 1882, 326. Jamaica, *Sherring, Morris*, 250. Near *A. Mildei*.
- 226\*. **A. fenzlianum**, Luers., in Flora 1875, 434. Sandwich Isles, *Wawra*. Near *A. sylvaticum* and *japonicum*.
- 226\*. **A. marginale**, Hilleb. Fl. Hawaii, 613. Sandwich Isles. Near *A. fenzlianum*.
- 229\*. **A. crenato-lobatum**, Baker, n. sp. Stipe brownish, naked,  $\frac{1}{2}$  ft. long. Fronds lanceolate-deltoid, bipinnatifid, bright green, glabrous,  $1\frac{1}{2}$  ft. long. Pinnae lanceolate, sessile, the largest  $\frac{1}{2}$  ft. long,  $\frac{3}{4}$ –1 in. broad, cut down to a narrow wing into oblong obtuse conspicuously, crenate lobes  $\frac{1}{4}$  in. broad. Veins pinnate in the secondary lobes: veinlets simple, distant, ascending. Sori medial, the lowest diplazioid. Indusium glabrous. Sandwich Islands. Cultivated at Kew in 1879. Near *A. speciosum* and *sorzogonense*.
233. **A. sorzogonense**, Presl. I place as a variety **A. Stoliczkae**, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 500 = *Diplazium Stoliczkae*, Beddome, Ferns Brit. Ind. Suppl. 13, t. 361. Himalayas.
- 233\*. **A. crinitum**, Baker, in Journ. Linn. Soc. XXIV, 258 = *A. sorzogonense*, var. *majus*, Hook. Further material received from the Bishop of Singapore and Sarawak shows that this is a distinct species.
- 235\*. **A. laffanianum**, Baker, in Gard. Chron. 1882, I, 73; Bot. Challenger, I, 84, t. 12. Bermuda. Near *A. crenulatum*. Cultivated at Kew in 1880.
- 235\*. **A. diminutum**, Jenman, in Journ. Bot. 1881, 53. Jamaica. Like *A. Franconis* on a small scale.
- 236\*. **A. Wheeleri**, Baker, n. sp. Stipe long. Frond membranous, deltoid, nearly tripinnate,  $1\frac{1}{2}$  ft. long. Pinnae and pinnules lanceolate, the latter sessile, reaching  $1\frac{1}{2}$ –2 in. long,  $\frac{1}{2}$ – $\frac{5}{8}$  in.

broad, cut away on the lower side at the base, cut down to a narrow wing into oblong tertiary segments  $\frac{1}{8}$ – $\frac{1}{6}$  in. broad. Veins pinnate in the tertiary segments, the lowest veinlet forked, the rest simple. Sori oblong, medial, often diplazioid. Japan, *Wheeler*. Habit of *A. deltoideum*, Presl.

- 240\*. *A. caryaefolium*, Baker, n. sp. Fronds ample, firm, bipinnate; rachises scaly. Lower pinnae oblong-lanceolate, above a foot long, 4–5 in. broad, with many free lanceolate nearly entire pinnules  $\frac{1}{2}$ – $\frac{5}{8}$  in. broad. Veins usually forked. Sori linear, touching the midrib, not reaching the edge. New Granada, *Kalbreyer*, 985. Near *A. nervosum*, Mett.
- 243\*. *A. Doderleinii*, Luers., in Engler Jahrb. 1883, 355. Liu-kiu Archipelago, Japan, *Doderlein*. Near *A. vestitum*, Presl.
- 243\*. *A. polypodioides*, Mett. I place as a variety *A. sikkimense*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 500, tab. 65, fig. 1. Sikkim.
249. *A. latifolium*, D. Don. Beddome places under this variable species *A. succulentum*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 502, tab. 64, fig. 4, and *A. torrentium*, Clarke, loc. cit. p. 500, tab. 64, fig. 3 (excl. fig. 2, which is typical *latifolium*). *A. maximum*, Don, appears to be merely a form of the same species.
- 249\*. *A. travancoricum*, Beddome, Ferns, Brit. Ind. 188, under *Diplazium*. Travancore Hills. Very large, with pinnae 2 ft. long.
251. *A. arborescens*, Mett. Much fresh material has been received. It has been sent from the Usagura Mountains by Sir John Kirk, and from the Island of St. Thomas, off the Guinea coast, by Professor Henriquez, and it now seems the Madagascar *A. madagascariense* and *A. nemorale*, Baker, in Journ. Linn. Soc. XV, 417, had better not be separated specifically.
- 253\*. *A. amplissimum*, Baker, n. sp. Frond ample, tripinnatifid, moderately firm, bright green, glabrous; rachises brown-stramineous, naked, or sparsely fibrillose. Pinnae oblong-lanceolate, 1–1½ ft. long. Pinnules lanceolate, lower shortly petioled, 3–4 in. long, 1–1¼ in. broad, cut down to a narrow wing into oblong-lanceolate crenate tertiary segments. Veinlets 6–7-jugate, mostly forked. Sori oblong, reaching from the midrib



half-way to the edge. Amboyna, *Challenger expedition*. Received from Professor Balfour. Near *A. Arnotti*, Baker, of the Sandwich Isles.

259. *A. radicans*, Schk. From this variable species I cannot clearly separate *A. hartianum*, Jenm. in Journ. Bot. 1886, 268, *A. altissimum*, Jenm. in Journ. Bot. 1879, 259, and *A. taylorianum*, Jenm. in Journ. Bot. 1886, 269, all three Jamaican.
- 261\*. *A. zanzibaricum*, Baker, n. sp. Frond ample, membranous, glabrous, deltoid, 4-pinnatifid. Pinnae oblong-lanceolate, 2 ft. long, 9-10 in. broad. Pinnules oblong-lanceolate, cut down to the rachis into lanceolate deeply pinnatifid tertiary segments with oblong erecto-patent lobes. Veins pinnate in lower quaternary segments. Sori sausage-shaped, not more than  $\frac{1}{8}$ - $\frac{1}{2}$  in. long, lower diplazoid. Indusium narrow, membranous. Zanzibar, *Last*.
- 261\*. *A. brunneo-viride*, Jenm. in Journ. Bot. 1886, 269. Jamaica, *Morris*, 264, *Sherring*. Near *A. sandwichianum*, Mett.
- 261\*. *A. Huttoni*, Baker, n. sp. Fronds ample, deltoid, compound, moderately firm, glabrous. Pinnae oblong-lanceolate, a foot or more long. Pinnules lanceolate; tertiary segments oblong, obtuse,  $\frac{1}{2}$  in. broad, deeply pinnatifid; quaternary lobes oblong, obtuse. Veins pinnate in the quaternary lobes; veinlets ascending, simple. Sori medial, reach  $\frac{1}{2}$  in. long. Indusium firm, glabrous, persistent. Malay Isles, *Hutton*. Received from Messrs. Veitch. Near *A. sandwichianum*, Mett.

#### Subgenus *Anisogonium*.

- 264\*. *A. Virchowii*, Kuhn, in Hildeb. Pl. Madag. Exsic. No. 4168. South Betsileo Land, Madagascar, *Hildebrand*. Frond simple, lanceolate.
- 264\*. *A. Corderoi*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 39. Andes of Ecuador, *Sodiro*. Frond lanceolate, simple or simply pinnate. Pinnae oblong.
- 266\*. *A. cardiophyllum*, Baker; *Micropodium cardiophyllum*, Hance, in Journ. Bot. 1883, 268. Rhizome slender, wide-creeping, naked. Stipe slender, naked, castaneous, 7-8 in. long, arti-

culated at the base. Frond simple, cordate-ovate, membranous, 4-5 in. long; basal lobes orbicular, an inch broad; costa ebeneous. Veins immersed, anastomosing towards the margin of the frond. Sori ascending, medial, irregular, at most an inch long, all single. Hainan, Formosa, *B. C. Henry*.

- 268\*. *A. Forbesii*, Baker, n. sp. Rootstock not seen. Stipe naked, 5-6 in. long. Frond deltoid, simply pinnate, a foot long, glabrous, moderately firm. Pinnae 3-jugate, lanceolate-acuminate, entire, sessile,  $\frac{1}{2}$  ft. long, 2-2 $\frac{1}{2}$  in. broad, cordate at the base. Veins 3-5-jugate, anastomosing towards the margin of the frond. Sori linear. Java: Province of Bantam, *H. O. Forbes*, 459. Near *A. lineolatum*, Mett.
- 271\*. *A. macrodictyon*, Baker, in Journ. Bot. 1877, 193. Andes of Quito, *Sodirol*.
- 271\*. *A. hemionitideum*, Baker, in Journ. Bot. 1877, 163. Andes of Ecuador, *Sodirol*.
- 273\*. *A. fuscum*, Baker; *A. fuliginosum*, *Sodirol*, Recens. Crypt. Vasc. Prov. Quit. 40, non Hook. Andes of Ecuador, *Sodirol*.
- 274\*. *A. esculentum*, Presl. Further material shows that *A. vitiense*, Baker, is a form of this species, and I cannot from the description separate *A. dietrichianum*, Luer. in Mus. Godef. V, 16. Queensland.
- 275\*. *A. platyphyllum*, Baker, in Journ. Bot. 1890, 264. Tonquin, *Balansa*, 1847.

#### Genus 41. SCOLOPENDRIUM, *Smith*.

- 1\*. *S. Delavayi*, Franchet, in Bull. Soc. Bot. France, XXXII, 29; Clarke, in Journ. Linn. Soc. XXV, t. 41. Yunnan, *Delavay*. Manipur, *Watt, Clarke*. Frond small, orbicular; midrib none; veins free.
- 5\*. *S. Balansae*, Baker, in Hook. Ic. t. 1653. Paraguay, *Balansa*, 2885.

#### Genus 41\*. DIPLORA, *Baker*.

- D. integrifolia*, Baker, Solomon Isles, is figured Hook. Ic. t. 1651.



Genus 41\*. *TRIPHLEBIA*, Baker.

Differs from *Scolopendrium* and agrees with *Diplora* in having a prominent receptacle running down the centre of the sorus. Here it arises from a sort of adventitious vein, not always produced beyond the sorus, but in *Diplora* the receptacle runs along the proper vein, and the two valves of the indusium do not spring from veins.

Four species are known, as follows:—

1. *T. pinnata*, Baker, in Malesia, III, 41: Hook. Ic. t. 1652 = *Scolopendrium pinnatum*, J. Sm. Philippines, *Cuming*, 137, 311.
2. *T. longifolia*, Baker, l. c. = *Scolopendrium longifolium*, Presl. Rel. Haenk. I, 48, t. 9, fig. 1. Philippines, *Haenke*. Sarawak, Borneo, *Dr. Hose*.
3. *T. Linza*, Baker, in Malesia, III, 42, t. 5 = *Asplenium Linza* Cesati, Fil. Bec. Polyn. 4. New Guinea, *Beccari*.
4. *T. dimorphophylla*, Baker, in Malesia, III, 42, t. 4 = *Asplenium subserratum*, Cesati, non Blume. Island of Andai, North of New Guinea, *Beccari*.

*Asplenium scolopendropsis*, F. M. Notes, Papuan plants III, 49, gathered in New Guinea by D'Albertis, probably also belongs to *Triphlebia* and may be identical with *T. Linza*.

Genus 43. *ASPIDIUM*, Sw.Subgenus *Polystichum*.

- 3\*. *A. basipinnatum*, Baker, in Journ. Bot. 1889, 176. China; Kwantung Province, *Ford*, 103.
- 5\*. *A. xiphophyllum*, Baker, in Journ. Bot. 1888, 227. China; Mount Omei, alt. 5000 feet, *Faber*, 1040. Near *A. munitum* and *falcinellum*.
- 5\*. *A. auritum*, Baker; *Phanerophlebia aurita*, Fée. Fil. Bras. Suppl. 70, tab. 100, fig. 1. Rio Janeiro, *Glaziou*, 4431.
- 6\*. *A. Macleaii*, Baker, in Hook. Ic. tab. 1654. Drakensbergen, Transvaal, *McLea*, *Ayres*.
- 9\*. *A. otophorum*, Franchet, Pl. David. II, 154. Moupine, Tibet, *Father David*. Between *A. Lonchitis* and *auriculatum*.
- 11\*. *A. Atkinsoni*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 506; *Polystichum Atkinsoni*, Beddome, Ferns Brit. Ind. tab. 362. Bhotan and Sikkim.

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12. *A. triangulum*, Sw. I place as a variety *A. caudatum*, Jenm. in Journ. Bot. 1879, 260. Jamaica, *Jenman*.
13. *A. auriculatum*, Sw., vars. *submarginale* and *stenophyllum*, Baker, in Journ. Bot. 1888, 227. China, *Faber* and *Ford*.
- 13\*. *A. deltodon*, Baker, in Gard. Chron., n. s., XIV, 494. Ichang gorge, Central China, *Maries*.
- 13\*. *A. lanceolatum*, Baker, in Gard. Chron., n. s., XIV, 494. China. This and the last are nearly allied to *A. auriculatum*.
- 14\*. *A. acanthophyllum*, Franchet, in Bull. Soc. Bot. France, 1885, 28. Yunnan, *Delavay*. Nearly allied to *A. ilicifolium*.
- 14\*. *A. phaeostigma*, Cesati, Fil. Becc. Polyn. 7. New Guinea, *Beccari*. Habit and texture of *Nephrodium crassifolium*, but indusium distinctly peltate.
18. *A. aculeatum*, Sw. I should now reduce as varieties of this species 21. *A. obtusum*, Mett., and 22. *A. californicum*, Eaton.
20. *A. mohrioides*, Bory. Has been found in California by Lemmon and Pringle, and in the Falkland and Auckland Isles, and also in the Antarctic Island of Amsterdam.
23. *A. Richardi*, Hook. *A. oculatum*, Hook, is evidently a mere variety.
- 26\*. *A. moupinense*, Franchet, Pl. David. 153. Moupine, Tibet, *Father David*. Near *A. prescottianum*, Hook.
- 26\*. *A. bakerianum*, Atkinson; Baker, in Hook. Ic. tab. 1656. Himalayas. Placed by Beddome as a variety of *A. prescottianum*.
- 26\*. *A. capillipes*, Baker, in Journ. Bot. 1888, 228. West China, Mount Omei, *Faber*, 1086.
- 29\*. *A. Hancockii*, Baker; *A. reductum*, Baker, in Journ. Bot. 1888, 105; *Phlopteris Hancockii*, Hance, in Journ. Bot. 1884, 139. Tamsui, Formosa, *Hancock*, 41. Very near *A. tripteris*, Kunze.
30. *A. laserpitiifolium*, Mett. I cannot separate *A. festinum*, Hance, in Journ. Bot. 1883, 269, found near Canton by *Faber*. This species has also been found in Tonquin by *Balansa*.
31. *A. maximowiczianum*, Miquel, Prolus. 343. Japan, *Maximowicz*, *Dickins*. Intermediate between *aculeatum* and *aristatum*.



35. *A. ascendens*, Sw. Here belongs *Nephrodium duale*, Donnell Smith, in Amer. Bot. Gaz. 1890, 29, tab. 4, gathered in Guatemala by Baron von Turckheim.
37. *A. aristatum*, Sw. I place as a variety *A. exile*, Hance, in Journ. Bot. 1883, 268, gathered in Che-Kiang, by Stonach.
40. *A. multifidum*, Mett. I cannot separate specifically *Polystichum Pearcei*, Philippi, in Linnaea, XXXIII, 805, gathered in Chili by Pearce.
41. *A. sikkimense*, Baker = *Nephrodium sikkimense*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 52. Distributed also as *Lastrea bella*, Clarke. Like *A. varium*, this stands on the line between *Aspidium* and *Nephrodium*, which I should not in a new book keep up as genera.
- 42\*. *A. caruifolium*, Baker, in Journ. Bot. 1888, 228. Mount Omei, China, alt. 3000-3500 ft., *Faber*, 1027.
- 42\*. *A. Wattii*, Beddome, in Journ. Bot. 1888, 231. Manipur, *Watt*, 6715.

Subgenus *Cyrtomium*.

- 46\*. *A. Boydiae*, Eaton, in Bullet. Torrey Club, 1879, 359. Hawaii, *Baldwin*.

Subgenus *Euaspidium*.

- 51\*. *A. Murrayi*, Baker, n. sp. Stipe naked, stramineous. Fronds deltoid, membranous, glabrous, a foot long, with a shallowly pinnatifid oblong-cuneate end-segment and two pairs of sessile pinnae, the lowest produced on the lower side and deeply lobed towards the base. Main veins parallel, arcuate,  $\frac{1}{2}$  in. apart, with copious hexagonal areolae between them, with free included veinlets. Sori small, copious, scattered irregularly. Indusium peltate, persistent, glabrous. St. Lucia, *H. B. Murray*.
- 52\*. *A. trilobum*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 41. Andes of Ecuador.
- 53\*. *A. beccarianum*, Baker, in Malesia, III, 43; *A. calcareum*, Cesati, Fil. Polyn. Becc. 4, non Presl. Island of Andai, off the coast of New Guinea, *Beccari*.
- 53\*. *A. subrepandum*, Baker, n. sp. *A. repandum*, Sodiro, Recens. 42, non Willd. Stipes tufted, naked, above a foot long. Fronds oblong-lanceolate, membranous, glabrous, simply pinnate, above a foot long; apex pinnatifid. Pinnae 3-4-jugate,

lowest the largest, produced on the lower side, the others lanceolate acuminate, sessile, 6-8 in. long, an inch broad at the middle. Main veins fine, erecto-patent, under  $\frac{1}{4}$  in. apart, with copious hexagonal areolae between them. Sori in two rows near the main veins, 3-4 in a row. Indusium large, peltate, persistent. Andes of Ecuador, *Sodiro*.

#### Genus 44. NEPHRODIUM, *Rich.*

##### Subgenus *Lastrea*.

- 4\*. *N. brachypodium*, Baker, in Trans. Linn. Soc. ser. 2, Bot. II, 290. Roraima, *im Thurn*.
- 4\*. *N. longicaule*, Baker, in Journ. Bot. 1881, 204; Hook. Ic. tab. 1658. Antioquia, New Granada, *Kalbreyer*, 1454.
- 6\*. *N. Dickinsii*, Baker; *Aspidium Dickinsii*, Franch. et Savat. Enum. Jap. II, 236, 639. Japan and China.
- 6\*. *N. Faberi*, Baker, n. sp. Stipe stramineous, 6-8 in. long, clothed up to the top with ovate brown membranous paleae. Frond oblong-lanceolate, simply pinnate, moderately firm,  $\frac{1}{2}$  ft. long, 3 in. broad, scattered over with scales beneath; rachis paleaceous. Lower pinnae longest, lanceolate, sessile,  $\frac{1}{4}$ - $\frac{1}{3}$  in. broad, auricled on the upper side at the base, rounded on the lower side. Veins obscure. Sori principally in two rows near the midribs of the pinnae. Indusium small, evanescent. Ningpo, China, *Faber*, 205. Near *N. decipiens* and *Dickinsii*.
- 6\*. *N. parallelum*, Baker, in Journ. Linn. Soc. XV, 417. Central Madagascar, *Pool*, *Kitching*.
- 7\*. *N. Sheareri*, Baker, in Journ. Bot. 1875, 200; *N. isolatum*, Baker, in Gard. Chron., n. s., XIV, 494. Kiu-Kiang, China, *Shearer*, *Maries*; Ningpo, *Hancock*.
- 8\*. *N. enneaphyllum*, Baker, n. sp. Stipe 8-9 in. long, densely scaly at the base; paleae lanceolate, bright brown. Frond deltoid, simply pinnate, moderately firm, glabrous, 8-9 in. long and broad. Pinnae about 9, lanceolate, petioled, truncate at the base, crenate, the lowest the largest, 4 in. long, an inch broad. Veins in pinnate groups, free; veinlets 3-4-jugate, ascending. Sori small, almost restricted to the central half of the pinnae. Ichang, China, *Henry*, 3217. Between *N. podophyllum* and *Sieboldii*.



10. **N. hirtipes**, Hook. Found in China by Hancock, and Samoa by Whitmee. **Polypodium Scottii**, Beddome, Ferns Brit. Ind. t. 345, appears to be a form without indusium.
- 10\*. **N. trichophlebium**, Baker, in Journ. Linn. Soc. XVI, 201. Central Madagascar, *Mrs. Pool*.
- 10\*. **N. fibrillosum**, Baker, in Journ. Linn. Soc. XV, 418. Central Madagascar, *Pool*.
- 15\*. **N. semilunatum**, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 46. Andes of Ecuador. Near *N. insigne*, Baker.
16. **N. gracilescens**, Hook. Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 514, describes three Himalayan varieties, *decipiens*, *hirsutipes*, *didymochlaenoides*. I have not seen **Aspidium laxum**, Franch. et Savat. Enum. Jap. II, 237.
- 16\*. **N. Humblotii**, Baker, in Bull. Linn. Soc. Paris, 534. Comoro Isles, *Humblot*, 274. Allied to *N. albo-punctatum* and *subbiaurilum*.
- 16\*. **N. mongolicum**, Baker. *Aspidium mongolicum*, Franchet, in David, Exsic. No. 2273. South Mongolia, *Father David*.
- 16\*. **N. ochrorachis**, Baker, in Journ. Bot. 1854, 142. North-east Madagascar, *Humblot*, 272.
- 17\*. **N. Fournieri**, Baker. *Aspidium flaccidum*, Fourn. in Bull. Soc. Bot. France, 1880, 328. Mexico.
- 17\*. **N. pubirachis**, Baker, in Journ. Bot. 1876, 344. Samoa, *Whitmee*.
- 17\*. **N. Holmei**, Baker, n. sp. Rootstock not seen. Stipe  $\frac{1}{2}$  ft. long, substramineous, glabrous, naked. Frond oblong-lanceolate, bipinnatifid, membranous, a foot long, densely pilose on the rachis, and main ribs; rachis not scaly. Pinnae lanceolate, sessile, the largest 3 in. long,  $\frac{3}{4}$  in. broad, cut down nearly to the rachis into entire oblong segments  $\frac{1}{8}$ – $\frac{1}{6}$  in. broad; lower pinnae reduced at the base. Veins very distinct, 8–9-jugate, simple. Sori few, medial. Indusium minute hispid, fugacious. Montserrat, *Rev. H. R. Holme*.
- 17\*. **N. borbonicum**, Baker, n. sp. Rootstock not seen. Pinnae naked, 4–5 in. long, brown at the base, stramineous above it. Frond oblong-deltoid, bipinnate,  $\frac{1}{2}$  ft. long, thick, with a few small bullate scales on the under surface. Pinnae lanceolate, sessile or shortly petioled, the lowest not reduced,  $1\frac{1}{2}$ –2 in. long,  $\frac{5}{8}$ – $\frac{3}{4}$  in. broad; segments entire,  $1\frac{1}{2}$  in. broad; lowest

sometimes slightly compound. Veinlets simple, erecto-patent, 8-10-jugate. Sori small, supramedial. Indusium minute, fugacious. Bourbon, *Delisle*, 331.

- 17\*. **N. savaiense**, Baker, n. sp. Rootstock rather creeping; paleae linear, brown. Stipe 6-9 in. long, naked, pilose. Frond oblong-lanceolate, bipinnatifid, subcoriaceous, 12-15 in. long, 8-9 in. broad, pilose on the rachis and under surface. Pinnae lanceolate, sessile, cut down to the rachis into oblong lobes  $\frac{1}{8}$  in. broad. Veinlets simple, 10-12-jugate. Sori basal, minute. Indusium fugacious, densely bristly. Samoa, *Powell*, 183.
- 19\*. **N. tibeticum**, Baker. *Aspidium tibeticum*, Franch. Pl. David. II, 156. Moupine, Tibet, *Father David*. Near *N. patens*.
- 19\*. **N. Turckheimii**, Donnell Smith, in Bot. Gaz. 1887, 133, tab. 11. Guatemala, *Baron von Turckheim*, 714.
- 22\*. **N. paucijugum**, Jenm. in Journ. Bot. 1886, 270. Jamaica, *Sherring*. Near *N. Sloanei*.
- 26\*. **N. japonicum**, Baker, n. sp. Stipe subcastaneous,  $\frac{1}{2}$ -ft. long. Frond lanceolate, deltoid, bipinnatifid, membranous, finely downy, 12-15 in. long, 9-10 in. broad; rachis castaneo-stramineous, downy, not scaly. Pinnae lanceolate, sessile, acuminate, the lowest the largest, 4-5 in. long,  $\frac{3}{4}$  in. broad, cut down to a narrow wing into obtuse subentire lobes 1-1 $\frac{1}{2}$  in. broad. Veinlets simple, 8-9-jugate. Sori supra-medial. Indusium large, membranous. Nagasaki, Japan, *Capt. Blomfield*.
28. **N. albo-punctatum**, Desv. Oldest name is *Polypodium pectinatum*, Forsk.
- 28\*. **N. zambesiaceum**, Baker, n. sp. Stipe not seen complete. Frond large, bipinnate, slightly hairy. Lower pinnae lanceolate, a foot long, 1 $\frac{1}{4}$  in. broad, cut down to the rachis into entire acute lanceolate segments  $\frac{1}{2}$  in. broad. Veinlets simple, 14-15-jugate. Sori medial. Indusium fugacious, membranous, glabrous. Zambesi Highlands, *Buchanan*.
- 29\*. **N. lepidum**, Baker. *Lastrea lepida*, Moore, in Gard. Chron., n. s. XXVI, 681. Polynesia, *Hort. Henderson*. Very near the Vitian *N. Prenticei*.
- 29\*. **N. Sangnellii**, Herb. Moore. Stipe long, naked, with a few



brown basal paleae. Frond oblong-deltoid, moderately firm, hairy on the main ribs beneath, above a foot long, a foot broad; rachis naked, stramineous. Pinnæ lanceolate, 5-6 in. long,  $\frac{1}{2}$ - $\frac{5}{8}$  in. broad, cut down to a narrow wing into obtuse segments  $\frac{1}{2}$  in. broad; lower pinnæ rather reduced. Veinlets 8-9-jugate, simple. Sori medial. Indusium small, membranous. New Caledonia, *Hort. Birkenhead*. Near *N. calcaratum*, Hook.

- 35\*. *N. valdepiosum*, Baker, in Journ. Bot. 1888, 204. New Granada, Antioquia, *Kalbreyer*, 1347, 1871.
33. *N. crinitum*, Desv., var. *exaggeratum*, Baker. Fronds deltoid, free lanceolate pinnules reach an inch long, obtusely lobed. Veins subpinnate in the lower lobes. Sori 2-4 to a lobe. Central Madagascar, *Pool*. Bears same relation to type that *elongatum* bears to *Filix-mas*.
- 36\*. *N. regulare*, Baker, in Journ. Bot. 1875, 200. China, Province of Kiu-Kiang, *Dr. Shearer*.
- 40\*. *N. Buckholzii*, Baker; *Aspidium Buckholzii*, Kuhn, Reise Decken. Bot. 47. Cameroon Mountains, *Buckholz*. Habit of *Polypodium cyatheaefolium*.
- 40\*. *N. beccarianum*, Cesati, Fil. Bec. Born. 23. Sarawak, Borneo, *Beccari*.
- 40\*. *N. Luersseni*, Harringt. in Journ. Linn. Soc. XVI, 29. Buluku Island, Philippines, *Steere*.
- 41\*. *N. polytrichum*, Baker, in Journ. Bot. 1891, 107. West Borneo, Sarawak, *Dr. Hose*. A fine large plant, near *N. crassifolium* and *Leprieurei*.
44. *N. sanctum*, Baker, Andes of Quito, *Sodiro*. Var. *magnum*, Jenm., in Journ. Bot. 1886, 290, connects the type with *N. conterminum*.
- 45\*. *N. Sewellii*, Baker, in Journ. Linn. Soc. XV, 418. Central Madagascar, *Pool*.
- 45\*. *N. anateinophlebium*, Baker, in Journ. Linn. Soc. XVI, 202. Central Madagascar, *Miss Helen Gilpin*.
47. *N. Beddomei*, Baker. Lately found in the Philippines by Micholitz, in China by Dr. Henry, and in Moupin, Tibet, by Father David.
- 47\*. *N. perakense*, Beddome, in Journ. Bot. 1888, 4. Perak, *Day*. Near *N. Beddomei*.

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- 48\*. *N. nevadense*, Baker; *Aspidium nevadense*, Eaton, Ferns North Amer. 73, tab. 10. California, on the Sierra Nevada.
49. *N. conterminum*, Desv. Under this very variable species fall *N. brachypus*, *amphyoxpteris*, *lasiopteris*, *stenophyllum*, and *stramineum*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. p. 43-51, from the Andes of Ecuador and the Jamaican *N. caribaeum* and *nockianum*, Jenm. in Journ. Bot. 1886, 270.
- 49\*. *N. Macgregori*, Baker; *N. simulans*, Baker, in Journ. Bot. 1890, 106, non 188, 325. Mount Knutsford, New Guinea, *Sir W. Macgregor*. Very near *N. conterminum*.
- 49\*. *N. fasciculatum*, Baker; *Aspidium fasciculatum*, Fourn. in Ann. Sc. Nat. sér. 5, XVIII, 295. New Caledonia, *Balansa*, 1611, 3568. Not seen.
- 49\*. *N. Seemanni*, Baker, n. sp. Rootstock not seen. Stipe short, naked. Frond oblong-lanceolate, bipinnatifid, 2-2½ ft. long, 8-9 in. broad, moderately firm, slightly hairy; rachis naked. Pinnae very numerous, sessile, lanceolate, acuminate, ½ in. broad, cut down nearly or quite to the rachis into entire segments, ½ in. broad; lower pinnae reduced. Veinlets, 5-6-jugate, simple, erecto-patent. Sori supra-medial. Indusium firm, glabrous, persistent. Oahu, *Seemann*. Very near *N. conterminum*.
- 49\*. *N. firmum*, Baker; Jenm. in Journ. Bot. 1879, 260. Jamaica, *Jenman*.
52. *N. Sprengelii*, Hook. *N. Sherringii*, Jenm. in Journ. Bot. 1879, 261, is, I think, a variety of this species.
- 52\*. *N. conforme*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 45. Andes of Ecuador, *Sodiro*, type and var. *strigillosum*. Near *N. Sprengelii*.
- 53\*. *N. polylepis*, Baker; *Aspidium polylepis*, Franch. et Savat. Enum. Jap. II, 236, 631. Japan, *Savatier*, *Dickins*. Allied to *N. conterminum* and *prolixum*. Distinguished by its few veins and scaly rachis and lamina.
- 53\*. *N. longicuspe*, Baker, in Journ. Linn. Soc. XVI, 202. Central Madagascar, *Miss Helen Gilpin*. Near *N. prolixum*.
- 55\*. *N. retrorsum*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 51. Andes of Ecuador, *Sodiro*.



- 55\*. *N. atomiferum*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 48.  
Andes of Ecuador, *Sodiro*.
- 55\*. *N. Canadasii*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 48.  
Andes of Ecuador, *Sodiro*.
- 55\*. *N. macradenium*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 48.  
Andes of Ecuador, *Sodiro*. This and the three last are allied  
to *N. resinofetidum* and *Sprucei*.
- 57\*. *N. subjunctum*, Baker, n. sp. Rootstock decumbent. Stipe  
naked, 5-6 in. long. Frond membranous, oblong-lanceolate,  
bipinnate,  $2\frac{1}{2}$ -3 ft. long, 8-12 in. broad at the middle, narrowed  
to the base, finely pilose beneath, principally on the midrib of  
the pinnae; rachis pilose. Pinnae lanceolate, sessile, the  
largest 6-8 in. long,  $\frac{1}{2}$ - $\frac{5}{8}$  in. broad, cut down nearly to the  
midrib into linear-oblong entire lobes  $\frac{1}{2}$ - $\frac{1}{3}$  in. broad. Veinlets  
simple, 8-10-jugate. Sori sub-marginal. Samoa, *Powell*, 248.  
Habit of *N. sophoroides*, but veins free.
- 62\*. *N. carazunense*, Baker, in Journ. Bot. 1877, 163. Andes of  
Ecuador, *Sodiro*.
- 63\*. *N. Jenmani*, Baker, in Journ. Bot. 1877, 263. Jamaica, alt.  
4000-5000 ft., and found lately in St. Vincent, by Messrs. H.  
H. and G. W. Smith, whilst collecting for Mr. F. D. God-  
man.
- 66\*. *N. Wilsoni*, Baker, n. sp. Rootstock not seen. Frond oblong-  
lanceolate, nearly bipinnate,  $1\frac{1}{2}$  ft. long,  $\frac{1}{2}$  ft. broad, pubescent  
beneath; rachis nearly black, finely pubescent. Pinnae  
lanceolate, sessile, 3 in. long, cut down nearly to the midrib,  
with entire or crenate segments  $\frac{1}{8}$  in. broad; lower pinnae  
not reduced. Veins 8-9-jugate, often forked. Sori sub-  
marginal. Indusium large, reniform, persistent. Uganda,  
Tropical Africa, *Rev. C. T. Wilson*. Habit of least compound  
forms of *Polypodium distans*.
- 66\*. *N. Macarthyi*, Baker; *N. puberulum*, Baker, in Journ. Bot.  
1875, 201, non Syn. Fil. edit. 2, 495. Central China, *Dr.*  
*Shearer*, *Macarthy*.
68. *N. apiciflorum*, Hook., is now placed by Beddome as a variety  
of *Filix-mas*, with which it is connected by var. *Nidus*, Clarke:  
Hook. et Baker, Syn. Fil. edit. 2, 498.
- 70\*. *N. unifurcatum*, Baker, in Journ. Bot. 1888, 228. Mount  
Omei, China, alt. 3500 ft., *Faber*, 1051.

- 70\*. *N. singalanense*, Baker, in Journ. Bot. 1880, 212. Mount Singalan, Sumatra, alt. 5000–6000 ft., *Beccari*, 471.
- 71\*. *N. Dayi*, Beddome, in Journ. Bot. 1887, 323. Perak, *Scortechini*, *Day*.
- 73\*. *N. chontalense*, Baker, *Aspidium chontalense*, Fourn. in Bull. Soc. Bot. Paris, XIX, 254. Chontales, *Levy*, 516. Not seen.
73. *N. Filix-mas*, Rich. *N. cochleatum*, D. Don, which is kept up as a species by Clarke in Trans. Linn. Soc. ser. 2, Bot. I, 521, is placed again under *Filix-mas* by Beddome. I cannot separate specifically the Chinese *Aspidium oxyodon*, Franch. Pl. David. I, 353, the Hawaiian *A. hawaiense*, Hilleb. Fl. Hawaii, p. 575, and now think *N. antarcticum*, Baker, in Journ. Linn. Soc. XIV, 479, from Amsterdam Island, had better be placed here.
- 73\*. *N. Mannii*, Hope, in Journ. Bot. 1890, 145. Assam, *Mann*. Allied to the compound forms of *N. Filix-mas*, but rachis densely paleaceous.
- 73\*. *N. subtriangulare*, Hope, in Journ. Bot. 1890, 327. Assam, *Mann*. Not seen.
77. *N. lacerum*, Baker. Chefoo, *Hancock*. Both *lacerum* and *erythrosorum* are, in a broad sense, only varieties of *Filix-mas*.
78. *N. erythrosorum*, Hook. *Aspidium prolificum*, Maxim., which has been introduced into cultivation, is a monstrous form of this species.
- 83\*. *N. fragile*, Baker; *Polypodium fragile*, Baker, in Journ. Linn. Soc. XVI, 203. Central Madagascar, *Miss Helen Gilpin*. Further material shows that this has a reniform indusium.
- 83\*. *N. assamense*, Hope, in Journ. Bot. 1890, 326. Assam, *Mann*. Habit of *Asplenium (Athyrium) nigripes*. Not seen.
89. *N. fragrans*, Rich., has been found by Maries in Japan.
- 91\*. *N. coriaceum*, Hope, in Journ. Bot. 1890, 328. Assam, *Mann*. Texture and cutting of a small form of *Pteris aquilina*. Not seen.
- 92\*. *N. bissetianum*, Baker, in Journ. Bot. 1877, 366. Japan, *Bisset*. Cutting of *N. spinulosum*. Remarkable for its copious peculiar paleae.
- 93\*. *N. xanthotrichium*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 52. Andes of Ecuador, *Sodiro*.



- 93\*. *N. tricholepis*, Baker, in Hemsl. Biol. Cent. Amer. Bot. III, 651. Guatemala.
94. *N. sparsum*, Don. I cannot separate specifically *Aspidium pellucidum*, Franchet, Pl. David. II, 157. Moupine, Tibet, David.
101. *N. Falconeri*, Hook. Further material shows this is a more compound variety of *N. barbigerum*.
- 103\*. *N. Layardi*, Baker, n. sp. Caudex erect. Stipes densely tufted, naked, a foot long. Frond deltoid, tripinnate, a foot long, membranous, glabrous; rachis naked. Lower pinnae the largest, deltoid, unequal-sided, all cuneate-truncate on the lower side at the base. Largest pinnules oblong, sessile, obtuse, crenate,  $\frac{1}{4}$ – $\frac{1}{3}$  in. broad. Upper veinlets of tertiary segments simple; lower forked. Sori small, medial. Indusium minute. Polynesia, probably Fiji, Layard. Near *N. hirtum* and *chinense*.
105. *N. chinense*, Baker; *Aspidium Forbesii*, Hance, in Journ. Bot. 1875, 198, cannot be separated.
- 105\*. *N. gymnophyllum*, Baker, in Journ. Bot. 1887, 170. Nanto, China, Dr. Henry. Between *N. chinense* and *sparsum*.
117. *N. odoratum*, Baker = *N. crenatum*, Baker, Fl. Maurit. 497, its oldest name being *Polypodium crenatum*, Forsk.
- 117\*. *N. Fordii*, Baker, in Journ. Bot. 1889, 177. Kwantung, China, Ford, 104. Very near *N. crenatum*.
- 118\*. *N. Hendersoni*, Baker, n. sp. Stipe pubescent, 4–5 in. long. Frond deltoid, tripinnate, 5–6 in. long, very hairy, especially on the rachis and midrib of the pinnae beneath. Lowest pinnae the largest, much produced on the lower side, the rest lanceolate and simply pinnate, their pinnules oblong-rhomboid, obtuse,  $\frac{1}{4}$  in. broad, the lower inciso-crenate. Veinlets distant, distinct, erecto-patent. Sori small, medial. Indusium minute, fugacious. Fernando Po, Henderson. Near *pubescens* and the small forms of *subquinquefidum*.
123. *N. decompositum*, R. Br. Kirk wishes to separate as a species the New Zealand *N. pentangularum*, Colenso, which has a creeping rhizome. It is figured and described under the name of *decompositum* by Field, Ferns New Zeal. 131, tab. 5, fig. 7.
126. *N. dissectum*, Desv. Clarke separates as a species in Trans.

- Linn. Soc. ser. 2, Bot. I, 526, tab. 73, *N. ingens* of Atkinson, which Beddome still regards as a variety of *dissectum*.
128. *N. splendens*, Hook. West China, *Dr. Henry*.
131. *N. scabrosum*, Baker. A plant gathered by Mann, in Assam, is close to this, but evidently distinct specifically.
- 131\*. *N. Lastii*, Baker. Rootstock and stipe not seen. Frond ample, deltoid, decompound, glabrous; rachis naked, stramineous. Lower pinnae oblong-lanceolate, a foot long; pinnules lanceolate; tertiary segments oblong, obtuse,  $\frac{1}{8}$ – $\frac{1}{4}$  in. broad, cut down to the rachis into contiguous oblong quaternary lobes, toothed on the outer edge. Veins pinnate in the quaternary lobes. Sori costular. Indusium firm, glabrous, persistent. Namuli Mukua Country, South-east Tropical Africa, *J. T. Last*. Near *N. scabrosum*.
- 131\*. *N. sarawakense*, Baker, in Journ. Linn. Soc. XXII, 225. Sarawak, Borneo, *Bishop Hose*.
- 131\*. *N. aciculatum*, Baker, in Journ. Linn. Soc. XXII, 226. Sarawak, Borneo, *Bishop Hose*.
- 131\*. *N. spectabile*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 526, non Hook. = *Lastrea Hendersoni*, Bedd. Ferns Brit. Ind. t. 377. Khasia and Nepaul.
- 134\*. *N. intermedium*, Baker. I cannot separate specifically *N. rhodolepis*. Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 526. Himalayas.
- 134\*. *N. leucostipes*, Baker, in Journ. Bot. 1885, 105. Formosa, *Hancock*.
- 137\*. *N. oligophlebium*, Baker, n. sp. Stipe slender, naked, stramineous. Frond lanceolate-deltoid, tripinnatifid,  $1\frac{1}{2}$  ft. long, membranous, glabrous. Several lower pinnae opposite, subequal, oblong-lanceolate, 4–5 in. long; pinnules sessile, lanceolate, the lower cut down to a narrow wing into contiguous lobes  $\frac{1}{2}$  in. broad. Veins pinnate in the ultimate segments, with simple distant 3-jugate veinlets. Sori submarginal, very small. Indusium glabrous, fugacious. Kiangsu, China, *Quekett*. Near *N. setigerum*.
- 138\*. *N. obovatum*, Baker, in Journ. Bot. 1890, 265. Tonquin, *Balansa*, 1815.
- 139\*. *N. multisetosum*, Baker, in Journ. Linn. Soc. XXII, 226. Sarawak, Borneo, *Bishop Hose*. Habit of *Polypodium ornatum*, Wall.



- 141\*. *N. megaphyllum*, Baker, in Journ. Linn. Soc. XXII, 227. Sarawak, Borneo, *Bishop Hose*.
- 142\*. *N. myriolepis*, Baker, in Journ. Bot. 1888, 34. St. Domingo, *Baron Eggers*, 1575. Near *N. amplum*.
- 145\*. *N. setulosum*, Baker, in Journ. Bot. 1890, 265. Tonquin, *Balansa*, 1856. Habit of *N. villosum*.
146. *N. arborescens*, Baker. I had much correspondence with the late Rev. T. Powell about this plant, and finally he came to the conclusion that he had made a mistake in reporting it as arborescent. I propose therefore to drop the name and keep up two nearly-allied Samoan species, as follows.
- 146\*. *N. Powellii*, Baker, n. sp. Caudex erect. Stipes tufted, densely clothed with linear paleae, of which the lower are  $1\frac{1}{2}$  in. long. Frond deltoid, decompound, firm, glabrous,  $2\frac{1}{2}$ -3 ft. long. Lower pinnae the largest, deltoid, a foot long. Pinnales oblong-lanceolate; tertiary segments lanceolate, deeply pinnatifid, cuneate-truncate on the lower side at the base; lobes obtuse. Veins pinnate in the quaternary lobes; veinlets simple, erecto-patent. Sori medial. Indusium firm, glabrous, persistent. Samoa, *Powell*, 245.
- 146\*. *N. ludens*, Baker, n. sp. Rootstock decumbent. Stipes 1-2 ft. long: basal paleae linear, the lowest  $1-1\frac{1}{4}$  in. long. Fronds oblong-deltoid, decompound, moderately firm, glabrous, 4-4 $\frac{1}{2}$  ft. long. Pinnae deltoid; quaternary segments oblong, crenate. Veins pinnate in the quaternary lobes. Sori medial. Indusium firm, glabrous, persistent. Samoa, *Powell*, 87, 167.
- 146\*. *N. maximum*, Baker, in Journ. Bot. 1884, 162. Fiji, *Sir J. B. Thurston*.
- 151\*. *N. ochropteroides*, Baker, n. sp. Stipe stramineous, a foot long, furnished towards the base with copious spreading lanceolate brown paleae. Frond deltoid, subcoriaceous, glabrous, tripinnate, a foot long. Pinnae cut away on the lower side at the base; lowest the largest, deltoid, unequal-sided; final segments ovate or lanceolate, contiguous, acute, at most  $\frac{1}{4}$  in. long. Veins pinnate; veinlets obscure, erecto-patent. Sori medial. Indusium firm, reniform, persistent. Fox's gap, Jamaica, *Hart*.
- 153\*. *N. magnum*, Baker, in Hook. Icones, tab. 1663. North-east Madagascar, *Humboldt*, 265.

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- 153\*. *N. granulatum*, Baker, in Journ. Bot. 1891, 4. North-west Madagascar, *Last.* Near *N. effusum*.

Subgenus *Eunephrodium*.

- 154\*. *N. Bakeri*, Harrington, in Journ. Linn. Soc. XVI, 29; Hook. Icones, tab. 1664. Panay, Philippines, *Steere*.
- 157\*. *N. subintegrum*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 54; *Polypodium subintegrum*, Baker, in Journ. Bot., n. s., VI, 164. Andes of Ecuador, *Sodiro*.
- 158\*. *N. Harrisoni*, Baker; *N. stenophyllum*, Baker, in Journ. Bot. 1884, 363, non Sodiro. Costa Rica, *Harrison*. Near *N. incisum* and *Skinneri*.
- 159\*. *N. debile*, Baker, in Journ. Bot. 1880, 212. Mount Singalan, Sumatra, *Beccari*, 433. Habit of *Polypodium reptans*, Sw.
- 161\*. *N. calcareum*, Jenm. in Journ. Bot. 1886, 271, and *N. usitatum*, Jenman, Jamaica, *Sherring* and *Jenman*, are, I think, indusiate forms of *Polypodium tetragonum*, Sw.
- 161\*. *N. hastatum*, Jenman, in Journ. Bot. 1879, 261, Jamaica, *Jenman*, is, I believe, an indusiate form of *Polypodium oblitteratum*, Sw.
- 162\*. *N. unitum*, R. Br. I cannot distinguish specifically the New Zealand *N. inaequilaterum*, Colenso, in Trans. New Zeal. Instit. 1888, 229.
- 163\*. *N. lucidum*, Baker, in Gard. Chron. 1887, II, 456. Central Madagascar, *Pool*. Cultivated at Kew, Oct. 1877.
- 165\*. *N. Hopei*, Baker=*N. microsorum*, Clarke; Beddome, Ferns Brit. Ind. 270, non Hook. Sikkim.
- 165\*. *N. Wakefieldii*, Baker, n. sp. Rootstock and stipe not seen. Frond oblong-lanceolate, bipinnate, 3-4 ft. long, 1½ ft. broad, moderately firm, pubescent on the ribs beneath; rachis naked. Pinnae lanceolate, 8-9 in. long, ¾ in. broad, cut down to a narrow wing, with linear-oblong lobes 1½ in. broad; lowest pinnae not dwarfed. Veins 9-10, simple, only the lowest joined. Sori near the margin. Indusium firm, persistent. Mombasa, *Rev. T. Wakefield*. Near *N. extensum*.
- 168\*. *N. aneitense*, Baker. *Aspidium aneitense*, Fourn. in Ann. Sc. Nat. sér. 5, XVIII, 297. Aneiteum and New Caledonia. Not seen.
169. *N. procurrens*, Baker. Doubtfully distinct from *N. molle*.



- 169\*. *N. rampans*, Baker, in Journ. Bot. 1889, 177. Hupeh, China, *Dr. A. Henry*, 7814.
- 176\*. *N. Peripae*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 54. Andes of Ecuador, *Sodiro*.
- 176\*. *N. eminens*, Baker, in Journ. Bot. 1880, 213. Mount Singalan, Sumatra, alt. 5000-6000 ft., *Beccari*, 455.
- 179\*. *N. philippinense*, Baker. *N. caudiculatum*, J. Smith, non Sieber. Rootstock and complete stipe not seen. Frond oblong-lanceolate, bipinnatifid, 2-3 ft. long, 1-1½ ft. broad, moderately firm, glabrous; rachis naked. Pinnæ lanceolate-acuminate, 8-9 in. long, ½ in. broad, cut down less than half way to the rachis into oblong erecto-patent lobes ⅛ in. broad; lower pinnæ not dwarfed. Veins simple, 8-9-jugate. Sori medial. Indusium firm, glabrous, persistent. Philippines, *Cuming*, 10, 84, 338. Near *N. arbuscula*, but lower pinnæ not gradually dwarfed.
- 179\*. *N. tenebricum*, Jenman, in Journ. Bot. 1882, 326. Jamaica. Nearly allied to *N. arbuscula*.
- 182\*. *N. simulans*, Baker, in Journ. Bot. 1888, 325. Borneo, *Bishop Hose*, 231. Near *N. latipinna*, Hook.
- 183\*. *N. eurostotrichum*, Baker, in Journ. Bot. 1880, 329. Tanala, Madagascar, *Kitching*. Near *N. pennigerum*.
- 183\*. *N. costulare*, Baker, in Journ. Linn. Soc. XVI, 203. Central Madagascar, *Miss Helen Gilpin*.
- 185\*. *N. jamaicense*, Baker, in Journ. Bot. 1877, 264. Jamaica, *Jenman*.
- 185\*. *N. bermudianum*, Baker, in Voyage Challenger, Bot. I, 86, tab. 13. Bermuda. Cultivated at Kew in 1879 from plants sent by Sir R. Laffan.
- 186\*. *N. decadens*, Baker, in Journ. Bot. 1884, 183. Viti Levu, alt. 2000 ft., *Sir J. Thurston*.
- 187\*. *N. Sintenesii*, Baker = *Aspidium Sintenesii*, Kuhn, in Sintenis, Pl. Portorico Exsic. No. 2136. Porto Rico, *Sintenis*. Near *N. molle*.
- 187\*. *N. devolvens*, Baker, in Journ. Bot. 1885, 217. Rio Janeiro, *Glaziou*, 15,766. Midway between *N. molle* and *refractum*.
- 194\*. *N. Rodigasianum*, E. Morren, in Linden Ill. Hort. n. ser. t. 442. Samoa. Differs from *N. truncatum* by having the frond narrowed gradually to the base. Cultivated at Kew, 1883.

- 194\*. *N. sakayense*, Zeiller, in Bull. Bot. Soc. France, XXXII, 74. Perak, *Morgan*. Near *N. truncatum*.

Subgenus *Pleocnemia*.

- 197\*. *N. microchlamys*, Baker, in Journ. Linn. Soc. XV, 107. Little Kei Island, Polynesia, *Moseley* (Challenger Expedition).
- 199\*. *N. fuscipes*, Clarke, in Trans. Linn. Soc. ser. 2. Bot. I, 536, tab. 75 = *Pleocnemia membranifolia*, Bedd. Ferns Brit. Ind. 225, t. 115. Tropical Asia. Habit of *N. dissectum*, but venation pleocnemioid.
- 199\*. *N. oligodictyon*, Baker, n. sp. Rootstock and stipe not seen. Frond oblong-deltoid, bipinnatifid, moderately firm, glabrous; rachis without scales. Lower pinnae largest, equilateral, 9-10 in. long, 2 in. broad, cut down to a broad wing into entire linear-oblong segments  $\frac{1}{4}$  in. broad. Veins copiously pinnate in the secondary lobes, forming areolae only in the wing. Sori medial, 10-12-jugate in the lobes. Indusium membranous, fugacious. Malay Isles, *Hutton*, in Herb. Veitch. Near *N. giganteum*.
- 199\*. *N. Fournieri*, Baker. *Aspidium Vieillardii*, Fourn. in Ann. Sc. Nat. sér. 5, XVIII, 299. New Caledonia, *Vieillard*, 1602. Near *N. giganteum*. Not seen.
- 200\*. *N. chrysotrichum*, Baker, n. sp. Frond ample, decompose, moderately firm, furnished on the rachises and ribs beneath with short bright yellow hairs. Lower pinnae oblong-lanceolate, 1-1 $\frac{1}{2}$  ft. long, 6-8 in. broad; pinnules lanceolate, sessile,  $\frac{1}{2}$ - $\frac{3}{4}$  in. broad, cut down to a broad wing into pinnatifid tertiary segments with oblong lobes. Upper veins forked, lower forming an arch. Sori small, one in each final lobe. Indusium persistent, glabrous. Samoa, *Whitmee*.
- 200\*. *N. artinexum*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 536. *Pleocnemia Clarkei*, Beddome, Ferns Brit. Ind. Suppl. 15, tab. 368. Khasia, *Clarke*.

Subgenus *Sagenia*.

- 201\*. *N. pteropodium*, Baker, in Journ. Bot. 1888, 325. West Borneo, *Bishop Hose*, 232. Near *N. singaporianum*. Stipe winged.



- 202\*. *N. nebulosum*, Baker, in Journ. Bot. 1880, 213. Sumatra, *Beccari*, 575.
- 202\*. *N. domingense*, Baker, n. sp. Stipes tufted, castaneous and slightly scaly towards the base, green and naked upwards. Basal paleae small, lanceolate, dark brown. Frond deltoid, glabrous, 6-9 in. long, imperfectly or perfectly tripartite. Pinnae oblong-lanceolate, slightly lobed on the lower side at the base; end segment deltoid-cuneate. Main veins distinct nearly to edge; intermediate areolae copious, with free included veinlets. Sori small, scattered irregularly, sometimes confluent. Indusium small, glabrous. St. Domingo, *Imray*. Cultivated at Kew, 1881. Allied to *N. ternatum*.
- 203\*. *N. quinquefidum*, Baker, in Journ. Bot. 1890, 265. Tonquin, *Balansa*, 1948.
- 203\*. *N. subpedatum*, Harringt. in Journ. Linn. Soc. XVI, 30. Formosa, *Steere*.
- 205\*. *N. antioquianum*, Baker, in Journ. Bot. 1881, 205. Antioquia, New Granada, alt. 3000-4000 ft., *Kalbreyer*, 1806. Near *N. subtriphyllum*.
- 205\*. *N. subconfluens*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 536; *Aspidium subconfluens*, Bedd. Ferns Brit. Ind. t. 364. Khasia.
- 207\*. *N. subdigitatum*, Baker, in Journ. Linn. Soc. XXIV, 259. West Borneo, *Bishop Hose*, 196. Allied to *N. Lobbii* and *subbipinnatum*.
- 211\*. *N. Sodiroi*, Baker, in Journ. Bot. 1877, 164. Andes of Ecuador, *Sodiro*. Near *N. polymorphum*.
- 212\*. *N. stenopteron*, Baker, in Journ. Bot. 1890, 265. Tonquin, *Balansa*, 1857.
- 212\*. *N. Sherringiae*, Jenman, in Journ. Bot. 1887, 99. Trinidad, *Sherring*. Habit of *N. macrophyllum*, but sori numerous and scattered.
- 213\*. *N. Endresi*, Baker, n. sp. Stipe long, slender, naked, castaneous. Frond oblong-lanceolate entire, glabrous, cordate at the base, 6-8 in. long,  $1\frac{1}{2}$ -2 in. broad, the fertile smaller than the sterile. Main veins erecto-patent, parallel, distinct nearly to the edge,  $\frac{1}{4}$ - $\frac{1}{3}$  in. apart, with copious areolae between them with free included veinlets. Sori in rows near the main veins. Indusium glabrous, subpersistent. Costa Rica, *Endres* (Herb. Veitch).

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- 213\*. *N. hederaefolium*, Baker, in Journ. Linn. Soc. XIX, 295; Hook., Icones, tab. 1665. Solomon Isles, *Rev. R. B. Comins*. Near *N. Pica*.
- 213\*. *N. tripartitum*, Baker, in Journ. Bot. 1879, 296; Hook. Icones, tab. 1666. Fiji, *Horne*, 562. Near *N. Pica*.
- 213\*. *N. lawrenceanum*, Baker; *Sagenia lawrenceana*, Moore, in Gard. Chron. 1881, I, 8. Mountains of Madagascar, alt. 3000 feet. *Humblot*. Like *N. Pica* on a very large scale. Named in compliment to Sir Trevor Lawrence, M.P., President of the Royal Horticultural Society.
- 216\*. *N. Keckii*, Baker; *Aspidium Keckii*, Luerss. in Bot. Centralblatt, 1882, 76. Near *N. latifolium*, Baker. Sumatra, *Keck*.
- 217\*. *N. macrosorum*, Baker, in Journ. Linn. Soc. XIX, 295. Solomon Isles, *Rev. R. B. Comins*. Near *N. decurrens*.
- 217\*. *N. Gardneri*, Baker, n. sp. Stipes castaneous. Fronds oblong-lanceolate, simply pinnate, moderately firm, glabrous, 1-1½ ft. long. Pinnae including the lowest, very decurrent on the main rachis. Pinnae 2-jugate below the pinnatifid apex; lowest the largest, oblong-lanceolate, 8-9 in. long, 2-2½ in. broad at the middle. Main veins very arcuate, parallel, distinct nearly to the edge, ⅓-½ in. apart. Sori mainly in rows nearly the main veins. Indusium glabrous, subpersistent. Brazil, Organ Mountains, *Gardner*, 5947. Gongo Soco, *Gardner*, 5315. Very near *N. decurrens*.
- 217\*. *N. mamillosum*, Baker; *Sagenia mamillosa*, Moore, in Ill. Hort., ser. 4, VI, t. 598. Malay Isles, Introduced into cultivation about 1886. Near *N. decurrens*.
- 218\*. *N. Wightii*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 538, tab. 76; *N. siifolium*, Baker, Syn. Fil. 299, ex parte. Courtallum, *Wight*.
- 219\*. *N. juglandifolium*, Baker, in Journ. Bot. 1879, 296. Samoa, *Horne*. Near *N. Barteri* and *pachyphyllum*.
- 219\*. *N. Hosei*, Baker; *N. stenophyllum*, Baker, in Journ. Linn. Soc. XXII, 227, tab. 11, non Journ. Bot. 1884, 363. Sarawak, *Bishop Hose*.
- 219\*. *N. nudum*, Baker, in Journ. Bot. 1879, 41. Lawas River, Borneo, *Burbidge*.
- 219\*. *N. grande*, Baker; *Aspidium grande*, J. Sm.; Hook. Sp. Fil.



- IV, 55. Philippines, *Cuming*, 356. Appears to be specifically distinct from *N. pachyphyllum*.
- 219\*. *N. amblyotis*, Baker, n. sp. *Sagenia amblyotis*, Moore, herb. Stipe long, naked, castaneous. Frond oblong-lanceolate, simply pinnate, moderately firm, glabrous, a foot long,  $\frac{1}{2}$  ft. broad; rachis naked, castaneous. Pinnae 4-jugate below the pinnatifid apex, lanceolate, 4-5 in. long,  $\frac{3}{4}$ -1 in. broad at the middle, the lowest with a large oblong lobe on the lower side at the base. Main veins faint, with copious intermediate areolae. Sori in two rows near the main veins. Indusium firm, glabrous. Polynesia, *Hort. Veitch*, 1879. Near *N. pachyphyllum*.
- 219\*. *N. Lazarzaburii*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 55. Andes of Ecuador, *Sodiro*. Near *N. pachyphyllum*.
- 221\*. *N. athyrioides*, Baker, in Journ. Bot. 1884, 363. Costa Rica, *Harrison*. Habit of *Aspidium trifoliatum*.
- 221\*. *N. melanorachis*, Baker, in Journ. Bot. 1888, 325. Sarawak, Borneo, *Bishop Hose*.
- 221\*. *N. multicaudatum*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 540, tab. 77; *Aspidium multicaudatum*, Wall. Base of Khasia Hills and Chappedong.
- 221\*. *N. kanakorum*, Baker; *Bathmium kanakorum*, Fourn. in Ann. Sc. Nat., sér. 4, XVIII, 301. New Caledonia, *Balansa*, 823. Not seen.
- 224\*. *N. andinum*, Baker, n. sp. Stipe naked, stramineous. Frond oblong-deltoid, simply pinnate, membranous, glabrous,  $1\frac{1}{2}$  ft. long; rachis naked, stramineous. Pinnae 4-jugate, oblong-lanceolate, 8-9 in. long, the side ones 2-3 in. broad at the middle, the end one broader. Veins arcuate, parallel,  $\frac{1}{3}$ - $\frac{1}{2}$  in. apart. Sori in regular rows near the main veins. Indusium firm, glabrous. Eastern Andes, *Pearce*, 307.

## Genus 45. NEPHROLEPIS Schott.

- 1\*. *N. cordifolia*, Presl. I cannot separate specifically the New Zealand *N. flexuosa*, Colenso, in Trans. New Zeal. Instit. 1888, 231. *N. Duffii*, Moore, in Gard. Chron. 1878, tab. 113, from North Australia, is apparently a monstrous form of this species, and *N. Pluma*, Moore, in

Gard. Chron. 1878, I, 588, fig. 68, from Madagascar, a marked variety.

- 2\*. *N. exaltata*, Schott. Clarke and Beddome both agree that *N. volubilis*, J. Sm., should be kept up as a distinct species. I cannot separate specifically the Andine *N. intermedia*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 57.
3. *N. acuta*, Presl. I cannot draw any definite line between this and *N. exaltata*. *N. Bausei*, Hort. Veitch, is a fine garden form, with deeply pinnatifid pinnae. *N. rufescens tripinnatifida*, Hort. Veitch; Gard. Chron. 1887, I, figs. 90, 91, is another handsome garden form.

#### Genus 46. *OLEANDRA*, Cav.

- 3\*. *O. cuspidata*, Baker, in Malesia, III, 44. New Guinea, *Beccari*.
- 3\*. *O. Whitmeei*, Baker, in Journ. Bot. 1876, 11. Samoa, *Whitmee*.

#### Genus 47\*. *LUERSSSENIA*, Kuhn.

1. *L. kehdingiana*, Kuhn; Luer. in Bot. Centralblatt, 1882, III, 77. Sumatra. Sori and indusium like those of *Fadyenia*. Fronds simple, lanceolate, rooting at the tip.

#### Genus 48. *POLYPODIUM*, Linn.

##### Subgenus *Phegopteris*.

- 1\*. *P. Krameri*, Franch. et Savat. Enum. Pl. Jap. II, 244; *P. oyamense*, Baker, in Journ. Bot. 1877, 366. Japan.
- 1\*. *P. gymnogrammoides*, Baker, in Journ. Bot. 1888, 229. China; Mount Omei, alt. 3000 feet, *Faber*. Very near *P. Krameri*.
- 8\*. *P. blandum*, Baker; *Phegopteris blanda*, Fée, Mem. VIII, 91. Mexico; Mirador, *Schaffner*, 222.
- 9\*. *P. Crossii*, Baker, sp. n. Rootstock not seen. Stipe castaneous, naked, 6-9 in. long. Frond oblong-lanceolate, bipinnatifid, subcoriaceous, hairy only on the midribs of the pinnae beneath, 8-9 in. long, 2-2½ in. broad at the middle, narrowed to the base. Pinnae lanceolate, the largest an inch long, ¼ in. broad, cut down nearly to the rachis into oblong



segments  $1\frac{1}{2}$  in. broad, with incurved edges. Veins 5-6-jugate, simple, erecto-patent. Sori round, medial. Andes of Loxa, *Cross*. Habit of *N. conterminum*.

- 10\*. *P. Lechleri*, Baker = *P. laevigatum*, Baker, in Syn. Fil. edit. 2, 505. Peru, *Lechler*, 2628. The name *laevigatum* used previously.
- 11\*. *P. sylvicolum*, Baker, in Journ. Bot. 1881, 205. New Granada, province of Antioquia, *Kalbreyer*, 1807.
- 13\*. *P. omeiense*, Baker, in Journ. Bot. 1888, 229. China; Mount Omei, *Faber*, 1059.
- 15\*. *P. hydrophilum*, Baker; *Phegopteris hydrophila*, Fée, Fil. Ant., tab. 13, fig. 3. Guadeloupe. Further specimens gathered by MM. L'Herminier and Mazé show that this is quite distinct from *P. germanianum*.
- 15\*. *P. euchlorum*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 58. Andes of Ecuador, *Sodiro*.
- 15\*. *P. demeraranum*, Baker, in Trans. Linn. Soc. ser. 2, Bot. II, 290. Mount Roraima, *im Thurn*. Habit of *Nephrodium diplazioides* and *pachyrachis*.
- 17\*. *P. roraimense*, Baker, in Trans. Linn. Soc. ser. 2, Bot. II, 291. Mount Roraima, *im Thurn*. Habit of *Gymnogramme diplazioides*.
- 17\*. *P. Thomsoni*, Jenman, in Journ. Bot. 1886, 272. Jamaica, *Jenman*. Habit of *Nephrodium conterminum*.
- 18\*. *P. tuberculatum*, Baker; *Nephrodium tuberculatum*, Cesati, Fil. Becc. Polyn. 4. New Guinea; Mount Arfak, *Beccari*.
- 18\*. *P. Percivalii*, Jenm. in Herb. Guian. No. 2080. British Guiana, *Jenman*, 2080. Near *P. rude* and *decussatum*.
19. *P. decussatum*, Linn. I cannot separate specifically *P. velutinum*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 59, from the Andes of Ecuador.
- 19\*. *P. dentatum*, Baker, n. sp. Stipe  $1\frac{1}{2}$  ft. long, brown; paleae lanceolate. Frond oblong-deltoid, bipinnatifid, green, glabrous, 2 ft. long; rachis brown, scaly: pinnae lanceolate, the lowest the largest, 6-8 in. long,  $1\frac{1}{2}$ -2 in. broad, cut down to the rachis into lanceolate dentate segments  $\frac{1}{8}$ - $\frac{1}{2}$  in. broad. Veins 10-12-jugate, simple, arcuate, ascending. Sori round, medial. Andes of Ecuador, *Sodiro*. Near *P. rude* and *decussatum*.

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- 19\*. *P. Michaelis*, Baker, in Journ. Bot. 1877, 164. Andes of Ecuador, *Sodi*ro.
- 20\*. *P. rheosorum*, Baker, sp. n. Stipe incomplete. Frond deltoid, bipinnate rigid, glabrous, 6–8 in. long; rachis very scaly; pinnae lanceolate, the lowest the largest, 3–4 in. long,  $\frac{3}{4}$  in. broad; segments distinct, entire, linear-oblong,  $\frac{1}{2}$  in. broad. Veins obscure, immersed. Sori medial, globose, confluent. China: province of Che-Kiang, *Macarthy*. Habit of small forms of *Aspidium varium*.
- 22\*. *P. Mazei*, Baker; *Phegopteris Mazei*, Fourn. in Mazé, Fil. Guadelup. Exsic. Caudex erect. Stipes tufted, scaly, a foot long. Fronds oblong-lanceolate, bipinnate.  $1\frac{1}{2}$ –2 ft. long. Pinnae lanceolate; pinnules linear-oblong, obtuse, entire or shallowly obtusely lobed,  $\frac{1}{4}$ – $\frac{1}{3}$  in. broad. Veins in pinnate groups opposite the lobes; veinlets bijugate, simple, very short. Sori at the end of the short veinlets. Guadeloupe, *Mazé*.
- 23\*. *P. ichthosmum*, Sodi, Crypt. Vasc. Prov. Quit. 59. Andes of Ecuador, *Sodi*ro. Near *P. macrophyllum*, Hook., but distinct specifically.
25. *P. Phegopteris*, L. Has been gathered in Lahul by Dr. Watt and in Kashmir by Dr. Aitchison.
- 25\*. *P. Clarkei*, Baker, sp. n. Stipe naked. Frond deltoid, bipinnate, membranous, glabrous, 6–8 in. long. Pinnae lanceolate, sessile, the lowest the largest,  $\frac{3}{4}$  in. broad, cut down to the midrib in oblong crenate secondary segments  $\frac{1}{2}$  in. broad. Veinlets 6–8-jugate in the secondary segments, usually simple and not produced beyond the medial orbicular sori. Sandwich Islands; East Maui, *F. L. Clarke*. Sent to Kew by Mr. G. E. Davenport in 1882.
26. *P. distans*, Don. Gathered lately in China and the island of Formosa.
- 26\*. *P. stenopteron*, Baker, in Journ. Bot. 1888, 229. West China; Patung, *Dr. Henry*, 3682.
- 27\*. *P. oxydon*, Baker, in Journ. Bot. 1879, 66. Sulu archipelago, *Burbridge*. Near *P. caudatum*, Kaulf.
- 35\*. *P. myriotrichum*, Baker, in Journ. Bot. 1885, 217. Rio Janeiro, *Glaziou*, 15734. Recalls *Lonchitis pubescens* in general habit.



- 35\*. *P. hemsleyanum*, Baker, in Hemsl. Biol. Cent. Amer. III, 660, tab. 108. Guatemala, *Salvin* and *Godman*.
- 39\*. *P. Willsii*, Baker. Stipe 6-8 in. long, densely clothed in the lower half with squarrose linear-subulate paleae. Frond lanceolate-deltoid, tripinnatifid, 15-18 in. long, 8-9 in. broad, bright green, pilose on the ribs beneath. Pinnae lanceolate, the lowest the largest; pinnules lanceolate, the lowest only not adnate and deeply pinnatifid, with contiguous linear-oblong tertiary segments. Veins pinnate in the lowest tertiary segments. Rio Janeiro, sent to Kew alive by Mr. Justice Wills in 1881. General habit of *Nephrodium Filix-mas* var. *elongatum*.
- 40\*. *P. leptophyllum*, Baker, sp. n. Stipe a foot long, slender, brown, fragile. Frond subdeltoid, 4-pinnatifid, membranous, glabrous, 15-18 in. long, 9-10 in. broad. Pinnae oblong-deltoid, the three lower pairs petioled, 4-5 in. long, 2 in. broad; pinnules oblong-deltoid, petioled; tertiary segments oblong-deltoid, unequal-sided, deeply pinnatifid, with oblong lobes. Veins pinnate in the quaternary segments; veinlets simple, ascending. Sori crowded, globose, costal. Japan, *Hancock*, 15. Near *P. unidentatum* and *Oldhami*.
- 41\*. *P. hirtum*, Presl. Reliq. Haenk. I, 27 (1830), non Hook. Stipe not seen complete. Frond deltoid, decompound, a foot long, moderately firm, glabrous; rachises clothed with copious adpressed linear brown paleae; lower pinnae the largest, deltoid, produced on the lower side; central oblong-lanceolate; final segments oblong, entire,  $\frac{1}{2}$  in. broad; veinlets paucijugate, erecto-patent. Sori medial. Philippines, *Haenke*. Final segments like those of the glabrous forms of *Nephrodium villosum*. The name antedates *P. hirtum*, Hook., our No. 99.
- 42\*. *P. Davidi*, Franch. Pl. David. II, 157. Moupine, Tibet, *David*. Near the European *P. alpestre*.
- 43\*. *P. laserpitiifolium*, Scortech.; Beddome, in Journ. Bot. 1887, 324. Perak, *Scortechini*. Habit of the most compound forms of *Nephrodium sparsum*.
- 43\*. *P. alcicorne*, Baker, in Journ. Bot. 1888, 229. West China; Mount Omei, alt. 3000 ft., *Faber*. Habit of *Aspidium multifidum*, Mett.; Baker, in Hook. Ic., tab. 1067.
- 43\*. *P. Gordoni*, Baker, in Journ. Bot. 1879, 297. Fiji Islands, *Horne*. Habit and texture of *Nephrodium boryanum*.

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- 43\*. *P. alsophiloides*, Baker, in Journ. Bot. 1879, 297. Fiji Islands, *Horne*. Near the last.
48. *P. punctatum*, Thunb. I cannot separate specifically *P. rufo-barbatum*, Colenso, in Trans. New Zeal. Instit. 1883, 347.
- 48\*. *P. manipurense*, Beddome, in Journ. Bot. 1888, 235. Manipur, *Dr. Watt*.
- 48\*. *P. Balansae*, Baker; *Phegopteris alsophiloides*, Fourn. in Ann. Sc. Nat. sér. 5, XVIII, 289. New Caledonia, *Balansa*, 25. Not seen.
- 48\*. *P. Henriquesii*, Baker, in Henriq. Cat. St. Thom. 30, t. 3. Island of St. Thomas, West tropical Africa, *Moller*, 25.
- 50\*. *P. subarboreum*, Baker, in Journ. Linn. Soc. XXIV, 259. Sarawak, Borneo, *Bishop Hose*. Habit of the largest forms of *Nephrodium Filix-mas* var. *elongatum*.
- 50\*. *P. spinulosum*, Baker; *Phegopteris spinulosa*, Hilleb. Pl. Haw. 566. Sandwich Islands. Near *P. sandvicense*, Hook. et Arn.
- 50\*. *P. aneitense*, Hook. Sp. Fil. IV, 268. New Hebrides. Appears to be distinct from *P. sandvicense*.
- 50\*. *P. subtripinnatum*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 545, tab. 80, fig. 1. Himalayas. According to Beddome, this is an ex-indusiate form of *Nephrodium boryanum*.
- 50\*. *P. persimile*, Baker, in Journ. Bot. 1876, 344. Samoa; *Whitmee*, 204. Habit of *Nephrodium boryanum*.
- 51\*. *P. camptocaulon*, Baker; *Phegopteris camptocaulon*, Fée, Fil. Bras. Suppl. 60, tab. 98, fig. 1. Rio Janeiro, *Glaziou*, 4618. Not seen. Rachis very flexuose. Pinnae deflexed; pinnules lanceolate, with short oblong lobes.
- 53\*. *P. sharpianum*, Baker, in Journ. Bot. 1880, 369. Madagascar, *Kilching*.
- 53\*. *P. Baroni*, Baker, in Journ. Linn. Soc. XXII, 535. Madagascar. Near the ex-indusiate glabrous forms of *Nephrodium villosum*.
- 55\*. *P. loxoscaphoides*, Baker, in Journ. Bot. 1890, 107. New Guinea; Mount Musgrave, *Sir W. Macgregor*.
- 55\*. *P. cheilanthoides*, Baker, in Malesia, III, 45. Mountains of New Guinea, *Beccari*.
- 55\*. *P. ornatum*, Wall.; Beddome, Fil. South Ind. t. 171; *Phegopteris ornata*, Beddome, Ferns Brit. Ind. 294, fig. 152. Himalayas, South India, Malay peninsula. Beddome and Clarke concur in treating this as a distinct species.



Subgenus *Cyrtomiphlebium*.

- 56\*. *P. polyxiphion*, Baker, in Bull. Linn. Soc. Paris, 534. Comoro Islands, *Humblot*, 102. Dr. Kuhn tells me this is identical with *Phegopteris biformis*, Mett. = *Polypodium biforme*, Baker, Syn. Fil. edit. 2, 505.

Subgenus *Goniopteris*.

- 57\*. *P. holophyllum*, Baker, in Journ. Bot. 1888, 325. Sarawak, Borneo, *Bishop Hose*. Habit of *Meniscium simplex*.
- 57\*. *P. subintegrum*, Baker, in Journ. Bot. 1877, 164. Andes of Ecuador, *Sodirol*. = *Nephrodium subintegrum*, *Sodirol*, Recens. 54.
- 57\*. *P. aoristisorum*, Harringt. in Journ. Linn. Soc. XVI, 30. Panay, Philippines, *Steere*.
- 62\*. *P. oligophlebium*, Baker, in Journ. Bot. 1891, 6. North-west Madagascar, *Last*. Near *P. poecilophlebium*, Hook.
64. Beddome transfers to *Nephrodium*: 64. *P. urophyllum*, Wall., as *N. urophyllum*, Beddome; 72. *P. multilineatum*, Wall., as *N. moulmeinense*, Beddome; and 71. *P. lineatum*, Coleb. = *P. costatum*, Wall., non Hook., as *N. costatum*, Beddome.
- 64\*. *P. megacuspis*, Baker, in Journ. Bot. 1890, 266. Tonquin, *Balansa*. Near *P. urophyllum*.
- 64\*. *P. arfakanum*, Baker, in Malesia, III, 45. Mountains of New Guinea, *Beccari*.
- 64\*. *P. Pinwillii*, Baker, sp. n. Stipe incomplete. Frond oblong, simply pinnate, minutely pubescent, 2 ft. long. Pinnae lanceolate, serrato-crenate, caudate, 9-10 in. long, 1½ in. broad. Main veins arcuate, ⅛-⅙ in. apart. Sori very copious, often confluent. Malacca, *Pinwill*. Near *P. urophyllum*.
- 64\*. *P. coalescens*, Baker, in Journ. Bot. 1877, 104. Andes of Quito, *Sodirol*.
- 66\*. *P. Rivorei*, Baker; *Goniopteris Rivorei*, Fée, Fil. Ant., t. 18. Guadeloupe. Specimens lately received from M. Mazé show that this is distinct specifically from *P. crenatum*, Sw.
67. *P. Gheisbreghtii*, Linden. Gathered lately in Guatemala by Baron von Turckheim, No. 1407. Sent to Kew by Captain Donnell Smith.
68. *P. faucium*, Liebm. Mr. Jenman has identified this with *P.*

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*obliteratum*, Sw., and gathered it in both the West Indies and Guiana.

- 70\*. *P. granulolum*, Presl. Reliq. Haenk. tab. 4, fig. 2. Timor, Haenke.
74. *P. reptans*, Sw. Mettenius long ago referred this to *Aspidium*, and in 1882 Mr. Sime sent specimens from Jamaica showing the presence of a reniform indusium when the plant is very young. If placed in *Aspidieae* its position will be *Nephrodium* 177\*.
- 76\*. *P. imponens*, Cesati, Fil. Becc. Polyn. 5. Mount Arfak, New Guinea, Beccari. Habit of *Nephrodium ferox*.
77. *P. stegnogrammoides*, Baker, Sandwich Islands, proves to be identical with *P. polycarpum*, Hook. and Arn. Bot. Beech. 104 = *Phegopteris polycarpa*, Hilleb. Fil. Haw. 560.
78. *P. pennigerum*, Forst. I cannot separate specifically *P. sub-simile*, Colenso, in Trans. New Zeal. Instit. 1888, 238.
- 78\*. *P. Metcalfei*, Baker, sp. n. Rootstock not seen. Stipe stramineous, 3-4 in. long, with a few lanceolate paleae at the brown base. Frond oblong-lanceolate, bipinnatifid, membranous, above 2 ft. long, 9-10 in. broad, obscurely hairy beneath. Pinnae lanceolate, many of the lower ones much dwarfed; largest 5-6 in. long,  $\frac{3}{4}$  in. broad, cut down to a broad wing into entire linear-oblong lobes  $\frac{1}{2}$  in. broad. Veinlets distinct, 10-12-jugate, about the three lower uniting. Sori small, medial. Santa Cruz, New Hebrides, *P. H. Metcalfe*. Near *P. pennigerum*.
- 80\*. *P. heterophlebium*, Baker, in Journ. Bot. 1884, 363. Costa Rica, Harrison. Near *P. tetragonum*.
- 80\*. *P. lunanianum*, Heward, in Mag. Nat. Hist. 1838, 460. Jamaica, Lunan. Habit of *Nephrodium amboinense*.
- 80\*. *P. Lebeufii*, Baker, n. sp. Rootstock not seen. Stipe 1-1½ ft. long, naked, pale brown. Frond oblong-lanceolate, bipinnatifid, membranous, finely pilose, 15-18 in. long, 4-5 in. broad at the middle, narrowed gradually to the base. Pinnae sessile, lanceolate,  $\frac{3}{4}$ -1 in. broad, cut down to a broad wing into lobes  $\frac{1}{2}$  in. broad. Veinlets 10-12-jugate. Sori nearer the midrib than the edge. Cambodia, *Godefroy-Lebeuf*, 69. Near *P. tetragonum*, but lobes longer, and lower pinnae distant and much dwarfed.



Subgenus **Dictyopteris**.

- 84\*. **P. chattaqrammicum**, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 548, tab 81. = *Dictyopteris chattaqrammica*, Beddome, Ferns Brit. Ind., 299. Chittagong, at a low level.
- 85\*. **P. andaiense**, Baker, in Malesia, III, 45. Andai, New Guinea, *Beccari*.
- 85\*. **P. fernandense**, Baker, sp. n. Stipe slender, stramineous, naked. Frond deltoid, decompose, moderately firm,  $1\frac{1}{2}$  ft. long and broad. Lower pinnae the largest, deltoid, unequal-sided, petioled; upper lanceolate, sessile, deeply pinnatifid; ultimate lobes oblong,  $\frac{3}{4}$ -1 in. broad. Main ribs distinct to the margin; veinlets forming copious distinct areolae, with a few included free veinlets. Sori large, forming regular rows near the main veins. Fernando Po, *Henderson*. Smaller and less compound than *P. cameroonianum*, Hook.
- 87\*. **P. rheosorum**, Baker, in Journ. Bot. 1884, 363. Costa Rica, *Harrison*. Habit of *Aspidium trifoliatum*.
- 90\*. **P. Haynaldi**, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 61. Andes of Ecuador, *Sodiro*.
- 90\*. **P. nicotianaefolium**, Baker, in Journ. Bot. 1877, 165. Andes of Ecuador, *Sodiro*. Gathered also by Seemann and Spruce.
- 90\*. **P. beccarianum**, Cesati, Fil. Becc. Polyn. 5, 8. New Guinea; Ramoi, *Beccari*. Near *P. heterosorum* and *draconopterum*.

Subgenus nov. **Depariopsis**.

Differs from *Dictyopteris* by having the sori protruded beyond the margin of the lamina.

- 90\*. **P. deparioides**, Baker, in Journ. Bot. 1879, 297. Fiji Islands, *Milne, Horne*. Habit of *Deparia Moorei*.

Subgenus **Eupolypodium**.

*Fronde simple.*

- 91\*. **P. minimum**, Baker, in Journ. Bot. 1879, 41. Borneo, *Burbridge*.
- 91\*. **P. synsorum**, Baker, in Journ. Linn. Soc. XVI, 203. Central Madagascar, *Miss Helen Gilpin*.
- 91\*. **P. Gilpiniae**, Baker, in Journ. Linn. Soc. XVI, 204. Central Madagascar, discovered by Miss Helen Gilpin, and gathered lately in the north-west of the island by Mr. J. T. Last.

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- 91\*. *P. Poolii*, Baker, in Journ. Linn. Soc. XV, 419. Central Madagascar, *Pool*.
- 93\*. *P. albosetosum*, Bailey, in Plants Bellend. Ker Exped. 29. Bellenden Ker Range, Queensland, alt. 4000-5000 ft., *Bailey*. Near *P. Hookeri*. Not seen.
- 96. *P. subavenosum*, Baker. Gathered lately in Perak by Father Scortechini.
- 96\*. *P. holophlebium*, Baker, in Journ. Bot. 1880, 370. Madagascar; Tanala, *Kitching*.
- 97\*. *P. Fawcettii*, Baker, in Journ. Bot. 1889, 270. Jamaica; high mountains, on trees, *Moore, Jenman*.
- 98. *P. hirtellum*, Blume. Found lately in Perak, China, and the Philippines.
- 98\*. *P. trichopodium*, F. M. & Baker, in Journ. Bot. 1890, 107. Mountains of New Guinea, *Sir W. Macgregor*.
- 98\*. *P. Wallii*, Beddome, Suppl. t. 380. Ceylon, *Wall*.
- 99. *P. hirtum*, Hook. Name antedated by *P. hirtum*, Presl., therefore we must fall back on *P. Reinwardtii*, Mett.
- 99\*. *P. mollipilum*, Baker, in Journ. Bot. 1890, 107. New Guinea; Owen Stanley range, *Sir W. Macgregor*.
- 99\*. *P. parietinum*, Klotzsch, in Linnea, XX, 373. Columbia, *Moritz*, 253.
- 99\*. *P. congener*, Hook.=*Grammitis congener*, Blume, Fil. Jav. tab. 46, fig. 3. Java and Sumatra. Differs from *P. Reinwardtii* by its subglabrous frond, longer less pilose stipe and more compound venation.
- 100\*. *P. padangense*, Baker, in Journ. Bot. 1880, 213. Sumatra; Mount Singalan, alt. 5000-6000 ft., *Beccari*.
- 100\*. *P. Whitmeei*, Baker, in Journ. Bot. 1876, 12. Savaii, Samoa, *Whitmee, Powell*.
- 101\*. *P. knutsfordianum*, Baker, in Journ. Bot. 1890, 107. Mount Knutsford, New Guinea, *Sir W. Macgregor*.
- 101\*. *P. stanleyanum*, Baker, in Journ. Bot. 1890, 107. New Guinea; near the summit of the Owen Stanley range, *Sir W. Macgregor*.
- 101\*. *P. Baldwinii*, Baker, sp. n. Rhizome short-creeping; paleae dense, small, linear-oblong, obtuse. Stipe none or very short. Frond simple, ligulate, subcoriaceous, glabrous, 3-5 in. long,  $\frac{1}{4}$  in. broad at the middle, narrowed gradually to the base. Veins



- distinct, ascending, with 2-3 branches. Sori globose, superficial, submarginal,  $\frac{1}{12}$  in. diam. Sandwich Isles, *Baldwin*. Received from Professor Eaton, of Yale.
- 103\*. *P. savaiense*, Powell; Baker, in Journ. Bot. 1876, 344. Savaii, Samoa, *Powell, Whitmee*.
- 105\*. *P. simplex*, Baker, in Journ. Bot. 1876, 12. Samoa, *Powell, Whitmee*.
- 106\*. *P. universe*, Baker, sp. n. Densely tufted. Fronds simple, sessile, rigidly conaceous, linear,  $1\frac{1}{2}$ -2 in. long,  $\frac{1}{12}$ - $\frac{1}{8}$  in. broad above the middle, narrowed gradually to the base, furnished with deciduous brown hairs. Midrib distinct; veins immersed, hidden. Sori oblong, crowded, uniseriate, confined to the upper part of the frond, where they fill up the whole space between the midrib and margin. Penang, *Curtis*, 633. Habit of *P. linearifolium*, Hook.
- 106\*. *P. cryptophlebium*, Baker, in Journ. Bot. 1880, 370. Madagascar; between Tamatave and Antananarivo, *Kitching*.
- 106\*. *P. Rutenbergii*, Luer. Reliq. Ruten. I, 48, tab. 1, figs. 1, 2. Madagascar, *Rutenberg*.
- 108\*. *P. australe*, Mett. I cannot clearly separate specifically the New Caledonian *P. pseudaustrale*, Fourn. in Ann. Sc. Nat. sér. 5, XVIII, 282; the New Zealand *P. paradoxum*, Colenso, in Trans. New Zeal. Instit. XIV, 337; *Grammitis pumila*, Armst. in Trans. New Zeal. Instit. 1880, 341; the Stewart Island *P. crassum*, Kirk, in Trans. New Zeal. Instit. 1884, 232; nor the Chilian *Grammitis araucana*, Phil. in Linnaea, XXXIII, 304.
- 108\*. *P. subselliguum*, Baker, in Journ. Bot. 1890, 107. New Guinea; Mount Knutsford, *Sir W. Macgregor*.
- 108\*. *P. Mollerii*, Baker, in Henriq. Cat. Pl. St. Thom. 30, tab. 4, fig. B. Island of St. Thomas, West Tropical Africa, *Moller*.
- 110\*. *P. scabristipes*, Baker, in Journ. Bot. 1890, 108. New Guinea; near summit of Owen Stanley range, *Sir W. Macgregor*.
- 111\*. *P. locellatum*, Baker, in Journ. Bot. 1890, 108. New Guinea; Mount Victoria, *Sir W. Macgregor*.
- 112 *P. flabellivium*, Baker. *P. holophyllum*, Baker, in Journ. Bot. 1879, 43, proves to be identical. It has been gathered lately by Burbidge and Bishop Hose.

*Fronds compound.*

- 117\*. *P. sumatranum*, Baker, in Journ. Bot. 1880, 214. Mount Singalan, Sumatra, alt. 5000-6000 feet, *Beccari*.
- 118\*. *P. percrassum*, Baker, in Journ. Bot. 1887, 26. Costa Rica, *Cooper*.
- 119\*. *P. alternidens*, Cesati, Fil. Born. Becc. 25, tab. 2, fig. 4. Borneo, first gathered near Sarawak by Beccari; since by Burbidge and Bishop Hose.
120. *P. subpinnatifidum*, Blume, Gathered lately in Perak by Morgan.
121. *P. cucullatum*, Nees. Found lately in New Guinea by Beccari, and in Fiji by Horne.
- 123\*. *P. nimbatum*, Jenman, in Journ. Bot. 1886, 271. Jamaica. Near *P. truncicola* and *organense*.
- 123\*. *P. Sherringii*, Baker; Jenm. in Journ. Bot. 1882, 326. Mountains of Jamaica, *Sherring*.
- 124\*. *P. Okurboi*, Yatabe, in Bot. Mag. (Jap.) V, 35, t. 21. Japan.
- 125\*. *P. albobrunneum*, Baker, Fil. Maurit. 505. Seychelles, *Horne*. Near *P. leucosorum*, Hook.
- 125\*. *P. subpinnatum*, Baker, in Journ. Linn. Soc. XV, 419. Central Madagascar, *Pool*.
- 128\*. *P. stenopteron*, Baker, in Journ. Bot. 1884, 183. Fiji Isles, *Sir J. B. Thurston*.
129. *P. subserratum*, Hook. Must be omitted. It was refound in a fertile state by Burbidge, and proved to be identical with *Asplenium porphyrorachis*, Baker.
- 129\*. *P. barathropyllum*, Baker, in Journ. Bot. 1891, 107. West Borneo, Sarawak, *Bishop Hose*.
- 130\*. *P. deltoideophyllum*, Baker, in Journ. Bot. 1876, 345. Samoa, *Whitmee*.
- 131\*. *P. Glaziovii*, Baker, sp. n. Rhizome short-creeping; paleae dense, linear, light brown. Stipes 1-3 in. long, densely covered with fine spreading brown hairs. Frond lanceolate, subcoriaceous, glabrous, 8-10 in. long,  $1\frac{1}{4}$ - $1\frac{1}{2}$  in. broad at the middle, narrowed very gradually to the base, cut down nearly to the rachis into linear entire lobes, the largest  $\frac{1}{2}$ - $\frac{3}{4}$  in. long,  $\frac{1}{8}$  in. broad. Veins 12-15-jugate, distinct, once forked, falling short of the margin. Sori small, superficial, medial. South Brazil, *Glaziov*, 9062. Near *P. inaequale*, Fée.



- 131\*. *P. Burbidgei*, Baker, in Journ. Bot. 1879, 42. North Borneo, Lawas river, *Burbidge*. Habit of *Davallia Emersoni*.
- 132\*. *P. moniliforme*, Lag. This Andine species has now been found on the mountains of Jamaica.
- 132\*. *P. streptophyllum*, Baker, in Journ. Bot. 1879, 42. North Borneo, *Burbidge*. Very near *P. cucullatum*, but fully pinnate, with an apical sorus.
- 132\*. *P. triangulare*, Scortech.; Beddome, in Journ. Bot. 1887, 324, tab. 278, fig. 1. Perak, *Scortechini*.
- 132\*. *P. saxicolum*, Baker, in Journ. Bot. 1877, 264. Jamaica, *Jenman*. Very near *P. moniliforme*.
133. *P. exiguum*. The original authority for the name is Heward, not Grisebach, and the length is 6-24 lines, not inches.
- 133\*. *P. musgravianum*, Baker, in Journ. Bot. 1890, 108. New Guinea; Mount Musgrave, 7000-8000 feet, *Sir W. Macgregor*.
- 133\*. *P. oosorum*, Baker, in Henriq. Cat. St. Thom. 30, tab. 4, fig. A. Island of St. Thomas, West tropical Africa, alt. 6000 feet, *Moller*.
- 133\*. *P. nutatum*, Jenm. in Journ. Bot. 1886, 272. Jamaica.
- 133\*. *P. Hartii*, Jenm. in Journ. Bot. 1886, 272. Jamaica, *Jenman*: Dominica, *Eggers* and *Higgins*. Differs from *trichomanoides* by its immersed oblong sori.
- 134\*. *P. trichomanoides*, Sw. Has lately been found on the mountains of Mozambique at an altitude of 5000 feet by M. de Carvalho.
- 134\*. *P. antioquianum*, Baker, in Journ. Bot. 1881, 205. New Granada; province of Antioquia, *Kalbreyer*, 1703.
- 135\*. *P. albo-punctatum*, Baker, in Journ. Bot. 1877, 265. Jamaica, *Jenman*. Between *P. flabelliforme* and *P. subtile*.
- 136\*. *P. subscabrum*, Klotzsch; Baker, in Journ. Bot. 1887, 165. Andes of Quito, *Sodiho*. Further material sent by Father Sodiho shows that this is a distinct species.
139. *P. parvulum*, Bory. The Himalayan plant must be excluded.
- 139\*. *P. fuscopilosum*, F. M. & Baker, in Journ. Bot. 1887, 169. Mountains of Queensland, 3000-4000 feet, *Sayer* and *Davidson*. Near *P. parvulum*.
- 139\*. *P. heterotrichum*, Baker, in Journ. Bot. 1879, 262. Jamaica, *Jenman*. Near *P. parvulum*.

141. *P. jubaeforme*, Kaulf. Has also been found in Guiana (*P. confusum*, J. Smith) and Brazil.
- 141\*. *P. undosum*, Baker, in Journ. Bot. 1890, 108. New Guinea; Mount Musgrave, *Sir W. Macgregor*.
144. *P. cultratum*, Willd. Has lately been found in Madagascar.
- 145\*. *P. macrorhynchum*, Baker, in Journ. Bot. 1880, 370. Madagascar; province of Tanala, *Kitching*.
148. *P. obliquatum*, Blume. I cannot separate specifically *P. Schenkii*, Harringt. in Journ. Linn. Soc. XVI, 31, gathered in the Philippines by Steere.
- 149\*. *P. perludens*, Baker, in Journ. Linn. Soc. XVI, 204. Central Madagascar. *Miss Helen Gilpin*. Very near *P. repandulum*, Mett.
- 149\*. *P. deltodon*, Baker, in Journ. Linn. Soc. XV, 419. Central Madagascar, *Pool*.
- 157\*. *P. Eggersii*, Baker, in Hook. Ic. tab. 1671. Dominica, *Eggers*, 937. Intermediate between *pendulum* and *suspensum*.
- 157\*. *P. comorense*, Baker, in Journ. Bot. 1877, 72. Johanna Island, *Hildebrandt*, 1788.
- 158\*. *P. devolutum*, Baker, in Journ. Linn. Soc. XV, 19. Central Madagascar, *Pool*. Near *P. suspensum*.
- 159\*. *P. kokenaamae*, Jenman; Baker, in Trans. Linn. Soc. ser. 2. Bot. II, 292. Mount Roraima, *im Thurn*, 186, ex parte. Near *P. Kalbreyeri*.
- 159\*. *P. brunneo-viride*, Baker, in Journ. Bot. 1877, 265. Mountains of Jamaica, *Jenman*.
- 159\*. *P. Kalbreyeri*, Baker, in Trans. Linn. Soc. ser. 2, Bot. II, 191. New Granada, *Kalbreyer*, 387. Mount Roraima, *im Thurn*, 186.
160. *P. celebicum*, Blume. Has been found in Sumatra by Beccari.
165. *P. madrense*, J. Sm. I should now place this, and *P. oulolepis* (not *ontolepis*), Fée, as varieties of *P. plebeium*.
167. *P. fuscatum*, Blume. Has been found in Perak by Scortechini and Sumatra by Beccari.
- 168\*. *P. ? davalliaceum*, F. M. & Baker, in Journ. Bot. 1890, 108. Mountains of New Guinea, *Sir W. Macgregor*.
- 168\*. *P. nutans*, Blume, Fil. Jav. tab. 86 A: Baker, in Journ. Bot. 1880, 214. Java and Sumatra. Further material, received from Curtis and Beccari, shows that this is distinct specifically from *P. decorum*.



- 168\*. *P. aturense*, Maury, in Journ. de bot. 1889, 134, tab. 3. Upper Orinoco, *Gaillard*, 111. Not seen.
- 169\*. *P. Hornei*, Baker, in Journ. Bot. 1879, 298. Fiji Islands, *Horne*.
- 169\*. *P. craterisorum*, Harringt. in Journ. Linn. Soc. XVI, 31. Mount Mahayhay, Philippines, *Dr. Steere*.
174. *P. papillosum*, Blume. Has lately been found in Perak by Wray.
- 175\*. *P. Leysii*, Baker, in Journ. Bot. 1879, 66. Sulu Archipelago, *Burbidge*.
- 175\*. *P. Curtisii*, Baker, in Journ. Bot. 1881, 367. Padang, Sumatra, *Curtis*.
- 175\*. *P. cesatianum*, Baker, in Journ. Bot. 1879, 42. Sarawak, Borneo, *Beccari*.
176. *P. elasticum*, Rich., and 179. *P. pectinatum*, L. Both these widely-spread tropical American species have been found to extend northward to Florida.
- 177\*. *P. paraguayense*, Baker, in Journ. Bot. 1878, 301. Paraguay, *Balansa*, 388. Near *P. recurvatum*, Kaulf.
- 177\*. *P. manabyanum*, Baker, in Journ. Bot. 1877, 165. Andes of Ecuador, *Sodiro*. Near *P. taxifolium*.
183. *P. chnoophorum*, Kunze. Has been found in Paraguay by Balansa.
- 184\*. *P. Endresi*, Baker, sp. n. Rhizome stout, epigaeous, paleaceous. Stipe naked, wiry, pale brown, 4-5 in. long. Frond oblong-lanceolate, simple pinnate, firm, glabrous,  $\frac{1}{2}$ -1 ft. long, 3-6 in. broad. Pinnae lanceolate, entire, sessile; lowest not spaced out, dwarfed; largest 2-3 in. long,  $\frac{1}{2}$ - $\frac{5}{8}$  in. broad. Veins very distinct, with 1-2 short branches on each side. Sori round, superficial, forming a single row midway between the margin and midrib. Costa Rica, *Endres*. Near *P. Martensii*, Mett.
- 184\*. *P. microchasmum*, Baker, in Journ. Bot. 1887, 44. Jamaica, *Mrs. Baker*. Near *P. vulgare* and *P. Martensii*.
- 184\*. *P. quitense*, Baker, in Journ. Bot. 1877, 165. Andes of Ecuador, *Sodiro*.
187. *P. clavifer*, Hook. Has lately been found in the mountains of New Guinea by Beccari.
- 188\*. *P. graveolens*, Baker, in Journ. Bot. 1877, 265. Jamaica, *Jenman*. New Granada, *Kalbreyer*, 1947. Near *P. tenuifolium*, H. B. K.

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- 199\*. *P. atacamense*, Baker; *P. squamatum*, Philippi, in *Linnaea*, XXIX, 107, non Linn. Desert of Atacama, *Philippi*.
- 208\*. *P. abietinum*, Eaton, in *Proc. Amer. Acad.* 1886, 219. Sandwich Isles. Near *P. hymenophylloides*.
210. *P. tenuisectum*, Blume. The Samoan *P. sertularioides*, Baker, in *Journ. Bot.* 1876, 12, appears to be the same species. It has also been found in Perak by Scortechini.
- 210\*. *P. taxodioides*, Baker, in *Journ. Bot.* 1879, 42. Kinabalu, North Borneo. alt. 3000 ft., *Burbidge*.
- 212\*. *P. bipinnatifidum*, Baker, in *Journ. Bot.* 1890, 109. Summit of Owen Stanley range, New Guinea, *Sir W. Macgregor*.
- 212\*. *P. melanotrichum*, Baker, in *Trans. Linn. Soc. ser. 2. Bot.* II, 292. Mount Roraima, *in Thurn*, 125. Near *P. achilleae-folium*.
- 212\*. *P. pozuzoense*, Baker, in *Hook. Ic. tab.* 1672. Andes of Pozuzo, alt. 8000 feet, *Pearce*, 248.
- 212\*. *P. torulosum*, Baker, in *Journ. Linn. Soc. XVI*, 204. Central Madagascar, *Miss Helen Gilpin*. Bourbon, *Delisle*.
- 218\*. *P. aspidiolepis*, Baker, in *Journ. Bot.* 1887, 26. Costa Rica, *Cooper*. Near *P. murorum*.

Subgenus *Goniophlebium*.

- 225\*. *P. moupinense*, Franchet, *Pl. David.* II, 159. Moupine, Tibet, *David*. Habit of *Drymoglossum carnosum*. Not seen.
- 228\*. *P. caudiceps*, Baker; *Goniophlebium caudiceps*, Moore, in *Gard. Chron.* 1886, I, 234. Formosa, *Hort. Williams*. Not seen.
- 229\*. *P. Eatoni*, Baker; *P. Gheisbreghtii*, Eaton *Cat. Pl. Gheisbr.* 2, non Linden. South Mexico, *Gheisbreght*, 273.
- 229\*. *P. Veitchii*, Baker, in *Gard. Chron. n. s. XIV*, 494. Japan, *Bisset, Maries*.
- 229\*. *P. stenoloma*, Eaton, in *Pl. Gheisbr. No. 386*. South Mexico, *Gheisbreght*. Habit of *P. sororium*, with fewer pinnae and anastomosing venation.
230. *P. niponicum*, Mett. Has been found lately in China by Shearer, Maries, Faber, and Hancock, and in Manipur by Dr. Watt.
- 230\*. *P. formosanum*, Baker, in *Journ. Bot.* 1885, 105. Formosa, *Hancock*, 50.



231. *P. amoenum*, Wall. Has lately been found in China by Dr. Henry.
- 231\*. *P. yunnanense*, Franchet, in Bull. Soc. Bot. France, 1885, 29. Yunnan, *Delavay*.
- 231\*. *P. subamoenum*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 550, tab. 82, fig. 2. Ridge between Sikkim and Nepal, alt. 11,000-12,000 feet.
237. *P. translucens*, Kunze. We have received from Messrs. Veitch a curious monster with the lower pinnae deeply pinnatifid, gathered in Juan Fernandez by Downton.
- 237\*. *P. columbianum*, Baker, sp. n. Rootstock epigaeous,  $\frac{1}{8}$  in. diam., clothed with dense lanceolate membranous pale brown paleae. Stipe naked, wiry, 3-4 in. long. Frond oblong-lanceolate, simply pinnate, membranous, glabrous, 6-10 in. long, 4-7 in. broad. Pinnae 6-9-jugate, sessile, linear, obscurely crenate, 2-4 in. long,  $\frac{1}{8}$  in. broad, the lowest not dwarfed. Areolae and sori in a single row. Columbia, *Moritz*, 191, 194. Near *P. translucens*.
238. *P. lachnopus*, Wall. I cannot separate specifically *Gonio-  
phlebium fieldingianum*, Moore, Ind. Fil. 389.
242. *P. Catherinae*, F. & L. I cannot specifically separate *P. Weisbaurii*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 65, and now think it would be better to treat *P. Catherinae* as a mere variety of *P. loriceum*.
243. *P. loriceum*, L. Kalbreyer has gathered in the Andes of New Guinea a curious monstrous form with deeply pinnatifid pinnae.
- 243\*. *P. chartaceum*, Baker, in Journ. Bot. 1877, 166. Andes of Ecuador, *Sodiro*.
- 246\*. *P. remotum*, Baker, sp. n. Stipe 9-12 in. long, naked, stramineous. Frond oblong, simply pinnate, moderately firm, glabrous, 9-12 in. long, 6-9 in. broad. Pinnae 15-20, remote, linear, acuminate, sessile, spreading, 3-5 in. long,  $\frac{1}{4}$ - $\frac{1}{3}$  in. broad, entire or lobed at the base. Areolae and sori in a single row, the latter small, superficial, globose. New Granada, *Kalbreyer*, 843. Demerara, *Jenman*, 1434. Near *P. surrucuchense*, Hook.
252. *P. verrucosum*, Wall. Has lately been found in Queensland and New Guinea.
- 253\*. *P. ? tachiroanum*, Luer, in Engl. Jahrb., 1883, 362. Kiu-siu archipelago, south of Japan, *Tachiro*. Not seen.

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- 254\*. *P. nanegalense*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 65, Andes of Ecuador, *Sodiro*. Near *P. attenuatum*, H. B. K. Not seen.
- 259\*. *P. Sampsoni*, Baker, sp. n. Rhizome slender, wide-creeping, firm, glabrous, with only a few lanceolate membranous paleae. Stipe naked,  $1\frac{1}{2}$ –2 ft. long. Frond oblong, simply pinnate, moderately firm, glabrous, above a foot long, 7–8 in. broad. Pinnae 11, oblong-lanceolate, entire, cuspidate, sessile, cuneate at the base, the largest 4–5 in. long, an inch broad, the lowest dwarfed. Main veins erecto-patent, distinct to the edge,  $\frac{1}{2}$  in. apart; areolae and sori 5–6 between each main vein, the latter superficial, globose. West river, Canton, *Sampson* (Herb. Hance). Near *P. fraxinifolium*, Jacq.
260. *P. menisciifolium*, L. & F. I should not now separate this as a species from *P. neriifolium*.
- 261\*. *P. xantholepis*, Harringt. in Journ. Linn. Soc. XVI, 36. Oroya railway, Andes of Peru, *Dr. Steere*.

Subgenus *Phlebodium*.

- 263\*. *P. nematorhizon*, Eaton, in Pl. Fendl. Trinit. No. 73. Trinidad, *Fendler*: and gathered long ago in the same island by Aldridge. Habit of *P. lycopodioides*. A plant gathered by Bridges in 1846 in the Andes of Bolivia is either the same species or very near it.
266. *P. decumanum*, Willd. Has been found lately in Mexico and Jamaica.

Subgenus *Campyloneuron*.

269. *P. sphenodes*, Kunze. Has been found in Guatemala by Salvin and Colman, and in Peru by Dr. Steere.
273. *P. Phyllitidis*, L. This very common and well-known Tropical American species has lately been found in the island of St. Thomas, in West Tropical Africa, by M. Moller. We are indebted for a specimen to Dr. Henriquez.

Subgenus *Niphobolus*.

276. *P. confluens*, R. Br. The true plant of Robert Brown proves to be 316. *P. glabrum*, Mett. I now look upon 276 as merely a smaller, more slender variety of 277. *P. serpens*, Forst.



- 278\*. *P. laeve*, Baker; *P. jaintense*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 552, tab. 82, fig. 4; *Niphobolus laevis*, Beddome, Ferns Brit. Ind. 325. Khasia hills. Both Clarke and Beddome agree in separating this as a species from *P. adnascens*.
- 278\*. *P. Davidii*, Baker, sp. n. Rhizome slender, wide-creeping; paleae small, brown, lanceolate. Fronds homomorphous, linear or lanceolate, 2-3 in. long,  $\frac{1}{4}$ - $\frac{5}{8}$  in. broad at the middle, narrowed into a distinct stipe, thinly tomentose beneath. Sori small, mainly confined to the upper half of the frond, continuous from the midrib to the margin. Pekin, *Father David*, 558. Intermediate between *P. adnascens* and *Lingua*.
- 278\*. *P. pachydermum*, Baker, in Journ. Linn. Soc. XV, 108. Little Kei Island, *Moseley* (Challenger expedition).
- 278\*. *P. macropodum*, Baker, in Journ. Linn. Soc. XV, 108. Aru Islands, *Moseley* (Challenger expedition).
280. *P. Lingua*, Sw. Has lately been traced northward to Manchuria by Mr. James.
- 282\*. *P. polydactylon*, Hance, in Journ. Bot. 1883, 269. Formosa, *Hancock*. Near *P. tricuspe*, Sw.
- 282\*. *P. drakeanum*, Franchet, Pl. David. I, 355. China; South Chensi, *Father David*. Between *P. stigmatosum* and *Lingua*.
- 282\*. *P. Sheareri*, Baker, in Journ. Bot. 1875, 201. Central China; first gathered by Dr. Shearer; since by Maries, Everard, and Henry.
- 283\*. *P. calvatum*, Baker, in Journ. Bot. 1879, 304. Central China; first gathered by Ford; since by Henry and Faber.
- 283\*. *P. princeps*, Mett. Larger than *P. stigmatosum*, more coriaceous in texture, with tomentum not at all fimbriated. Patches of sori thicker and veins slanter and more raised. New Guinea, *Beccari*.
- 285\*. *P. angustissimum*, Baker, sp. n. Rootstock slender, wide-creeping, clothed with lanceolate pale brown adpressed paleae. Stipe none or very short. Frond linear, rigid, 3-4 in. long,  $\frac{1}{2}$ - $\frac{1}{3}$  in. broad, with revolute edges, bright green and naked above, densely coated below with thick woolly tomentum. Veins quite hidden. Sori small, confluent, covering the whole surface of the upper part of the frond. Patung, China, *Henry*, 5137. Habit of *P. linearifolium*, Hook.
286. *P. floccigerum*, Mett. I do not now think this can be sepa-

rated as a species from *P. fissum*, which has lately been found in China, Madagascar, and the Zambesi Highlands.

- 287\*. *P. assimile*, Baker, in Journ. Bot. 1875, 201. Central China; gathered by Shearer, Maries, and Henry.
- 290\*. *P. asterosorum*, Baker, in Journ. Bot. 1880, 214. Mountains of Sumatra, alt. 5000–6000 ft., *Beccari*, 458. Distinct in the group by its very large non-contiguous sori.
294. *P. penangianum*, Hook. Has lately been found in Burma, Perak, and Java.

Subgenus *Phymatodes*.

- 297\*. *P. involutum*, Baker, in Journ. Bot. 1889, 177. West China; province of Hupeh, *Dr. A. Henry*, 6859.
- 297\*. *P. Bakeri*, Luerksen; *P. torulosum*, Baker, in Journ. Bot. 1880, 215, non Journ. Linn. Soc. XVI, 201. Mount Singalan, Sumatra, alt. 5000–6000 ft., *Beccari*, 445.
- 297\*. *P. hammatisorum*, Harringt. in Journ. Linn. Soc. XVI, 32; *Pleopeltis nummularifolia*, Moore herb. Philippines, *Cuming*, 121; *Steere*.
- 297\*. *P. inconspicuum*, Baker, in Journ. Bot. 1884, 143. North-east Madagascar, *Humblot*, 143.
- 297\*. *P. Lewisii*, Baker, in Journ. Bot. 1875, 201. China; province of Kiu-Kiang, *Dr. Shearer*.
- 297\*. *P. Wrayi*, Baker, sp. n. Rhizome slender, wide-trailing; paleae dense, lanceolate-acuminate, ciliated, ferrugineous. Fronds simple, dimorphic, sterile, oblanceolate, obtuse, thick, glabrous, 1–1½ in. long; ¼–⅓ in. broad, with a naked stipe 1–15 lines long; fertile with a longer stipe and a linear blade 2–3 in. long, ⅓–½ in. broad. Sori globose, superficial, medial. Perak, alt. 5000 ft., *Wray*, *Scortechini*.
- 297\*. *P. stenopteris*, Baker, in Journ. Bot. 1879, 43. Borneo; moist rocks near the Lawas river, *Burbidge*. Near *P. soridens*, Hook.
- 298\*. *P. cyclophyllum*, Baker, sp. n. Rhizome thread-like, wide-creeping; paleae minute, linear-subulate, spreading. Fronds nearly sessile, simple, dimorphic, orbicular or obovate-oblong, entire, firm, glabrous, ½–1 in. long, ¼–⅓ in. broad; midrib not continued to the apex; veins anastomosing copiously in irregular areolae. Sori large, globose, uniserial, confluent, confined to the upper half of the blade. China; Ningpo, *Hancock*, 32.



- 298\*. *P. drymoglossoides*, Baker, in Journ. Bot. 1887, 170. Central China, *Henry*, 1576, *Faber*, 1046.
- 298\*. *P. macrosorum*, Baker, in Journ. Bot. 1885, 106. Formosa, *Hancock*. Near *P. accedens*, Blume.
299. *P. rostratum*, Hook. Has been found in West China by Mr. C. Ford.
301. *P. oodes*, Kunze. Has been found in Borneo by Burbidge.
304. *P. lineare*, Thunb. I cannot separate specifically *P. Alberti*, Regel, Descr. Pl. Nov. VIII, 122, Turkestan; and *P. Onoei*, Franch. et Savat. Enum. Jap. II, 246, 642, Japan.
- 304\*. *P. clathratum*, Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 559, tab. 82, fig. 1. Western Himalayas, and gathered lately by *Hancock* in North China. Very near *P. lineare*.
- 304\*. *P. oligolepidum*, Baker, in Gard. Chron. n. s. XIV, 494. China; Mountains of Kiu-Kiang, *Maries*. Between *P. lineare* and *lanceolatum*.
- 304\*. *P. subsparsum*, Baker, in Journ. Bot. 1880, 215. Mountains of Sumatra, *Beccari*. Between *P. lineare* and *rostratum*.
- 304\*. *P. aspidiolepis*, Baker, in Journ. Bot. 1888, 230. West China; Mount Omei, alt. 4500 ft., *Faber*, 1063. Differs from *P. simplex* by its submarginal sori.
- 304\*. *P. bullatum*, Baker, in Journ. Linn. Soc. XV, 420. Central Madagascar, *Pool*. Since gathered by *Hildebrandt*, 4173, *Kitching*, and *Scott Elliot*.
- 305\*. *P. tonkinense*, Baker, in Journ. Bot. 1890, 266. Tonquin, *Balansa*, 148. Near *P. tenuilore*, Kunze.
- 305\*. *P. Playfairii*, Baker, sp. n. Rootstock slender, wide-creeping. Fronds simple, sessile, oblanceolate, acute, moderately firm, glabrous, 4-6 in. long, 1-1½ in. broad above the middle, narrowed gradually to the base; midrib black; veins indistinct. Sori minute, superficial, arranged in irregular erecto-patent rows, many to a row. Formosa; Ape's Hill, Taiwan, *Playfair*, 383. Near *P. tenuilore*, Kunze.
- 305\*. *P. ningpoense*, Baker, sp. n. Rhizome slender, wide-creeping; paleae lanceolate, brown, membranous. Fronds lanceolate, subsessile, entire, thin but firm, glabrous, 4-5 in. long, ¾-1 in. broad; midrib distinct from base to apex; areolae copious, with many free included veinlets. Sori scattered, moderately large, superficial, globose. China; Ningpo, *Hancock*.

- 307\*. *P. induratum*, Baker, sp. n. Rhizome slender, wide-creeping. Stipe wiry, naked, 3-4 in. long. Frond simple, linear, rigidly coriaceous, glabrous, 8-9 in. long,  $\frac{1}{2}$  in. broad at the middle, narrowed gradually to the base and apex. Veins immersed, quite hidden. Sori middle-sized, globose, superficial, forming a single lax row of each side of the midrib, with a few others forming an outer row at the middle of the frond. New Guinea: Mount Yule. Received from Sir F. Mueller, April 1891.
311. *P. superficiale*, Blume. Has lately been found in West China by Faber.
- 311\*. *P. sarawakense*, Baker, in Journ. Linn. Soc. XXII, 228. Sarawak, Borneo, *Bishop Hose*. Very near *P. superficiale*.
- 311\*. *P. papuanum*, Baker, in Malesia, III, 48. Mountains of New Guinea, *Beccari*.
- 311\*. *P. buergerianum*, Miquel, Prolus. 334. Japan: regathered lately by Dickins. *P. brachylepis*, Baker, in Gard. Chron. n. s. XIV, 494, from Central China, province of Kiu-Kiang, Maries, is probably the same species.
- 311\*. *P. Steerei*, Harringt. in Journ. Linn. Soc. XVI, 32. Formosa, *Steere*.
312. *P. schomburgkianum*, Kunze. An earlier name is *P. megalophyllum*, Desv. Ann. Linn. Soc. Par. VI, 226.
315. *P. linearifolium*, Hook. Has now been found in Japan by Maximowicz, Moseley, and Dickins.
316. *P. glabrum*, Mett. Authentic specimens from R. Brown's herbarium show this to be *P. confluens*, R. Br. Prodr. 146, a much earlier name. It is also *Drymoglossum Cunninghami*, Moore, Ind. Fil. 343. Norfolk Island.
317. *P. angustatum*, Sw. New South Wales to be omitted.
318. *P. samarense*, Mett. There is some confusion here: Cuming's, 323, on which *Gymnosorium samarense*, Presl, Epim. 140, is founded, is *Niphobolus varius*, to which it was long ago referred by John Smith; but I do not think the plant, of which a scrap is figured by Mettenius, Polyp., under this name is identical. Our specimen of Cuming's No. 93 is very near *P. angustatum*, but probably distinct by its crowded sori.
- 322\*. *P. Annabellæ*, Forbes, in Journ. Bot. 1888, 33, tab. 280. Mountains of New Guinea, *H. O. Forbes*. Differs from *P. lycopodoides* by its cordate-orbicular sterile frond.



- 322\*. *P. Thurnii*, Baker, sp. n. Rhizome slender, wide-creeping, densely clothed with large adpressed lanceolate brown paleae. Stipe very short. Fronds simple, lanceolate-acuminate, moderately firm, glabrous, 6-8 in. long,  $1-1\frac{1}{2}$  broad at the middle, cuneate at the base. Veins distinct, anastomosing copiously. Sori large, globose, superficial, forming a single row midway between the edge and midrib. British Guiana; gathered by Ankers 1829, and recently again by Jenman. Midway between *P. lycopodioides* and *P. persicariaefolium*.
- 322\*. *P. rampans*, Baker, in Journ. Linn. Soc. XV, 109. Admiralty Isles, *Moseley* (Challenger expedition).
327. *P. normale*, var. *madagascariense*, Baker, in Journ. Linn. Soc. XV, 420. Central Madagascar, *Pool*. Near the Cape *P. Pappei*, Mett. Var. *sumatranum*, Baker, in Journ. Bot. 1880, 205, connects *normale* and *superficiale*.
329. *P. linguaeforme*, Mett. Has been found in Borneo by Bishop Hose, and the Admiralty Islands by Moseley.
- 329\*. *P. glossipes*, Baker, sp. n. Rootstock wide-creeping, with a few small squarrose linear brown paleae. Stipe  $1\frac{1}{2}$  in. long. Frond lanceolate or oblong-lanceolate, chartaceous, glabrous, acute or obtuse, narrowed very gradually at the base, 6-8 in. long,  $1\frac{1}{2}-2\frac{1}{2}$  in. broad. Veining as in *P. myriocarpum*. Sori globose, superficial,  $\frac{1}{12}$ -in. diam., scattered all over the frond. Mountains of New Guinea, *Beccari*. Near *P. linguaeforme*, but frond stipitate, and narrowed gradually to the base.
- 330\*. *P. Morgani*, Zeiller, in Bull. Bot. Soc. France, XXXII, 76. Perak, alt. 3500 ft., *Morgan*.
- 330\*. *P. lateritium*, Baker, sp. n. Rhizome very slender, wide-creeping; paleae dense, brown, squarrose, linear-subulate. Stipe erect, naked, 1-2 in. long. Frond lanceolate or ovate-lanceolate, entire, rigidly coriaceous, glabrous,  $1\frac{1}{2}-3$  in. long,  $\frac{1}{2}-1$  in. broad. Main veins erecto-patent, distinct nearly to the edge,  $\frac{1}{4}$  in. apart, connected by irregular cross-bars. Sori globose, superficial, uniseriate, 2-3 in each row. Fronds when old turn brick-red. Cambodia, *Godefroy-Lebeuf*, 862. Near *P. lanceolatum*.
- 331\*. *P. campyloneuroides*, Baker, in Journ. Linn. Soc. XX, 229. Borneo; Sarawak, alt. 2000 ft., *Bishop Hose*, 127.
- 332\*. *P. plebiscopum*, Baker, in Journ. Linn. Soc. XV, 110.

Summit peak of the Island of Ternate, *Moseley* (Challenger expedition).

- 333\*. *P. costulatum*, Baker, in Journ. Bot. 1880, 215; *Acrostichum costulatum*, Cesati, Fil. Becc. Polyn. 8. Mount Singalan, Sumatra, alt. 5000-6000 ft., *Beccari*.
334. *P. triquetrum*, Blume. Has now been found in Ternate, New Guinea, Samoa, and Fiji.
- 334\*. *P. leucophorum*, Baker, in Journ. Linn. Soc. XXII, 229. Sarawak, Borneo, *Bishop Hose*, 129.
335. *P. rupestre*, Blume. Has now been found in Sumatra and Perak.
336. *P. ovatum*, Wall. Has now been found in several localities in China, and is evidently a mere form of the Japanese *P. ensatum*, Thunb., our No. 344.
- 336\*. *P. dimorphum*, Baker, sp. n. Rhizome stout, woody, short-creeping. Fronds dimorphic; sterile many, with a slightly paleaceous stipe, 2-3 in. long, and a simple oblong-lanceolate acuminate blade 3-4 in. long, 18-21 lines broad at the middle, narrowed to the base; fertile with a stipe 7-8 in. long, and a lanceolate blade under an inch broad. Main veins of sterile frond erecto-patent, flexuose,  $\frac{1}{2}$  in. apart, not quite reaching the edge. Sori irregularly 2-3-seriate between the main veins, large, globose or two confluent in an oblong mass. Hainan, Formosa, *Rev. B. S. Henry*. Near *P. triquetrum*.
337. *P. platyphyllum*, Sw. Has been found in Perak by *Scortechini*.
- 338\*. *P. Picoti*, *Rev. Hort.* 1886, 20, fig. 62. Brazil; not determinable. May be a form of *crassifolium*.
339. *P. membranaceum*, Don. Has now been found in West China and the Philippines.
- 339\*. *P. Lastii*, Baker, in Journ. Bot. 1891, 5. North-West Madagascar, *Last*. Very near *P. membranaceum*.
- 339\*. *P. Scortechinii*, Baker, sp. n. Rhizome woody, wide-creeping, flexuose, calvate. Stipe brown, naked, 15-16 in. long. Frond oblanceolate, acuminate, membranous, glabrous, 16-18 in. long, 3-3½ in. broad, obscurely repand, narrowed gradually from the middle to the base. Main veins distinct to the edge  $\frac{1}{2}$ -in. apart. Sori minute, superficial, scattered all over the surface of the frond, often confluent. Perak, *Scortechini*.



- 340\*. *P. xiphias*, Baker; *Pleopeltis xiphias*, Moore, in Gard. Chron. 1888, I. 331. Southern Polynesia, introduced into cultivation by Bull. Near *P. membranaceum* and *heterocarpum*.
- 341\*. *P. millisorum*, Baker, in Journ. Linn. Soc. XV, 109. Little Kei Island, *Moseley* (Challenger expedition). Near *P. irioides*, Lam.
342. *P. musaefolium*, Blume. Has now been found in Perak by Scortechini and in New Guinea by Beccari.
- 348\*. *P. subhastatum*, Baker, in Journ. Bot. 1889, 177. West China: province of Hupeh, *Henry*, 5450.
- 349\*. *P. deltoideum*, Baker, in Journ. Bot. 1888, 230. West China: Ichang, *Henry*, 3279.
- 349\*. *P. Engleri*, Luer. in Engler Jahrb. 1883, 361. Japan, *Doderlein*. Not seen.
- 352\*. *P. (Dipteris) quinquefurcatum*, Baker, in Journ. Linn. Soc. XXIV, 269. West Borneo, *Bishop Hose*. Near *P. bifurcatum*, Baker.
- 354\*. *P. hemitomum*, Hance, in Journ. Bot. 1883, 369. Canton, *Rev. B. Henry* (Hance herb. 22,404). A doubtful species. The cutting looks abnormal, and there are no sori in Dr. Hance's type specimen, now at the British Museum.
354. *P. leucosporum*, Klotzsch. I now regard this an abnormal more or less deeply pinnatifid form of *P. lanceolatum*, our No. 314.
- 355\*. *P. pentaphyllum*, Baker, sp. n. Rhizome wide-creeping, woody,  $\frac{1}{2}$  in. diam.; paleae small, sparse, lanceolate-acuminate. Stipe naked, an inch long. Frond above a foot long, membranous, green, glabrous, simple in the lower half, forming a mere wing to the rachis, deeply pinnatifid in the middle; lobes distant, linear-lanceolate,  $\frac{1}{3}$ – $\frac{1}{2}$  in. broad; veins fine, anastomosing, copious. Sori minute, scattered. Philippines, *Wallis*. Texture and sori of *P. tenuilore*.
- 355\*. *P. glaucopsis*, Franchet, in Bull. Soc. Bot. France, 1885, 29. Yunnan, *Delavay*. Near *P. trifidum*, Don.
- 355\*. *P. quinquefidum*, Baker, in Journ. Bot. 1880, 216. Mount Singalan, Sumatra, alt. 5000–6000 ft., *Beccari*. Very near *P. trifidum*.
- 355\*. *P. senanense*, Maxim. in Bull. Imp. Acad. Petersb. XII, 571. Japan, *Tschonoski*, *Hancock*. Very near *P. trifidum*. It

is the plant so called by Franchet and Savatier, Enum. II, 247.

- 356\*. *P. crenato-pinnatum*, Clarke, in Journ. Linn. Soc. XV, 99, tab. 42. North Manipur, *Clarke*. Yunnan, *Delavay*. Near *P. malacodon*.
357. *P. incurvatum*, Blume. Has been found in Perak by Scortechini.
357. *P. fossum*, Baker; *Pleopeltis fossa*, Moore, in Gard. Chron. 1882, II, 586. Eastern Archipelago, *Hort. Veitch*, received from Leyden.
- 360\*. *P. Hancockii*, Baker, in Journ. Bot. 1885, 106. Formosa, *Hancock*, 100. Sori as in *P. affine*, Blume.
- 361\*. *P. novae-zelandiae*, Baker, in Hook. Ic. t. 1674; Field, Ferns New Zeal., 142, tab. 27, fig. 3. Waikato district, New Zealand. First sent to us by Mr. Cheeseman in 1877. Near *P. Billardieri*, R. Br.
- 361\*. *P. pictum*, Baker; *Pleopeltis picta*, Moore, in Gard. Chron. 1881, I, 331. Polynesia.
- 361\*. *P. vitiense*, Baker, in Journ. Bot. 1879, 298. Fiji Isles, *Horne*.
362. *P. Phymatodes*, L. Has been found in Perak by Scortechini.
363. *P. nigrescens*, Blume. Has now been found in Queensland, and is probably *P. membranifolium*, R. Br. Prodr. 147, which is an older name than *nigrescens*.
- 364\*. *P. expansum*, Baker, in Journ. Bot. 1876, 12; *Drynaria acuminata*, Brackenr. Fil. 47 now 41. Samoa, *Powell*, *Whitmee*.
- 366\*. *P. macrourum*, Baker, in Gard. Chron. 1886, XXX, 136. Received at Kew alive in 1886 from the Brisbane botanic garden. Native country uncertain.
- 366\*. *P. grandidentatum*, Baker; *P. dilatatum* var. *grandidentatum*, Cesati, Fil. Born. Becc. 27. Stipe above a foot long below the wing; wing  $\frac{1}{2}$  foot to lowest pinna. Frond oblong, membranous, bright green, glabrous, deeply pinnatifid, 3 ft. long; lobes lanceolate, the lower much dwarfed, central 8-9 in. long, 1-1 $\frac{1}{4}$  in. broad, sharply toothed. Main veins erecto-patent, distinct to the edge,  $\frac{1}{2}$  in. apart. Sori copious, minute, scattered. Borneo; Sarawak, *Beccari*. Differs from *dilatatum* by its toothed pinnae and main veins and sori produced up to the margin.



- 372\*. *P. Sauvinieri*, Baker, sp. n. Rootstock not seen. Stipe naked, stramineous, 4-5 in. long. Frond oblong-lanceolate, firm, glabrous, simply pinnate,  $1\frac{1}{2}$  ft. long, 4-5 in. broad at the middle, narrowed to the base. Pinnae 30-40-jugate, linear, entire, obtuse,  $\frac{1}{4}$  in. broad, adnate by a dilated base. Veins hidden. Sori in a single medial row, sunk in deep pit and showing as papillae on the upper surface, about 20 in a row in the central pinnae. Celebes, *Sauvinière*, 382.
- 372\*. *P. macrochasmum*, Baker, in Journ. Bot. 1880, 216. Mount Singalan, Sumatra, alt. 5000-6000 ft., *Beccari*, 468. Perak, *Morgan*.
373. *P. Heracleum*, Kunze. Has now been found in Perak by Scortechini and New Guinea by D'Albertis.
- 376\*. *P. (Drynaria) nectariferum*, Beccari; Baker, in Malesia, II, 217, III 47. Mount Arfak, New Guinea, *Beccari*. Habit of *P. meyenianum*, but sterile and fertile fronds distinct.
- 377\*. *P. (Drynaria) Parkinsoni*, Baker, sp. n. Rhizome wide-creeping,  $\frac{1}{8}$  in. diam.; paleae adpressed, brown, membranous, ciliated. Sterile frond not seen. Fertile frond oblong-lanceolate, coriaceous, pinnate, a foot long, half as broad. Pinnae about 5-jugate below the pinnatifid apex, lanceolate, entire, broadly adnate to the rachis, an inch broad when fertile,  $1\frac{1}{2}$  in. when sterile. Main veins erecto-patent,  $\frac{1}{8}$  in. apart; cross-bars 5-6 between midrib and edge, one oblong brown sorus in each square. New Britain, *Parkinson*. Received from Sir F. Mueller in 1887. Texture of *P. conjugatum*, but no drynarioid base.
- 383\*. *P. Baudouini*, Baker; *Drynaria Baudouini*, Fourn. in Ann. Sc. Nat. sér. 5, XVIII, 285. Differs from *P. diversifolium* by segments of sterile frond more numerous, narrower, with acute sinuses, serrated fertile segments, areole biseriate, costular series alone soriferous and by its softer more translucent texture. New Caledonia, *Baudouin*. Not seen.
- 384\*. *P. Moseleyi*, Baker, in Journ. Linn. Soc. XV, 110. Ternate, *Moseley* (Challenger expedition). Near *P. palmatum*, Blume.
386. *P. Lehmanni*, Mett. Further material shows that this cannot be separated as a species from *P. himalayense*, Hook., which has now been gathered by Ford, Faber, and others in Western China.

- 387\*. *P. Wardii*, Clarke, in Journ. Linn. Soc. XXV, 99, t. 43. Naga hills, *Clarke*. Bhotan, *Griffith*. Very near *P. himalayense*.  
 388. *P. leiorhizon*, Wall. Add to the localities Neilgherries and Western China.  
 389. *P. albo-squamatum*, Blume. The name should be *albido-squamatum*. It has been found in New Guinea by D'Albertis.

Genus 50. NOTHOCHLAENA, *R. Br.*

The above is the original spelling of the name as given by R. Brown.

- 1\*. *N. Reynoldsii*, F. M. Fragn. VIII, 175. Mount Olga, sub-central Australia, *Gosse*, 161. Habit of *Gymnogramme Muellieri*, next to which Bentham places it.  
 4. *N. lanuginosa*, Desv. The oldest name is *N. vellea*, R. Br. Prodr. 146. It has now been found in Nubia, Afghanistan, and the Western Himalayas.  
 4\*. *N. Parryi*, Eaton, Ferns south-west. 306. California, Arizona, and Utah.  
 4\*. *N. Balansae*, Baker, in Journ. Bot. 1878, 301; Hook. Ic. t. 1677. Paraguay, *Balansa*, 330.  
 6\*. *N. chinensis*, Baker, in Gard. Chron. n. s. XIV, 494; Hook. Ic. t. 1676. Ichang gorge, Central China, *Maries*.  
 10\*. *N. eckloniana*, Kunze. Has been found lately in Angola by *H. H. Johnston*.  
 12\*. *N. paucijuga*, Baker. Is accepted by Mueller and Bentham as *N. pumilis*, R. Br. Prodr. 146, and has been refound on the Endeavour river by Dr. Norman Taylor.  
 12\*. *N. Prenticei*, Baker; *Cheilanthes Prenticei*, Luer, in Bot. Centralblatt, 1882, 442. Thursday Island, Queensland, *Prentice*. Near *N. fragilis*. Hook. Not seen.  
 18\*. *N. tricholepis*, Baker, in Journ. Bot. 1883, 245. Usagura Mountains, East tropical Africa, *Bishop Hannington*.  
 19. *N. tenera*, Gillies. Has been found in Mexico and California.  
 19\*. *N. Palmeri*, Baker, in Hook. Ic. tab. 1678. Central Mexico, *Parry* and *Palmer*, 991.  
 19\*. *N. Grayi*, Davenport, in Bull. Torrey Club, VII (1880), 50. Arizona and New Mexico.



Subgenus *Cincinalis*.

- 22\*. *N. aurantiaca*, Eaton, in Proc. Amer. Acad. XXII, 462.  
Jalisco, North Mexico, *Palmer*, 83.
- 22\*. *N. californica*, Eaton, in Bull. Torrey Club, X (1883), 27.  
Is the Californian plant which has been referred to *N. candida*.
- 22\*. *N. rigida*, Davenport, in Pringle, Pl. Jalisco, No. 2509.  
Jalisco, North Mexico, *Pringle*.
- 22\*. *N. Pringlei*, Davenport, in Bull. Torrey Club, 1886, 132, tab.  
58. North Mexico; Coahuila, *Palmer*, 1382, 1383; Chihuahua, *Pringle*, 441.
- 22\*. *N. Hookeri*, Eaton, Ferns south-west, 308; Baker, in Hook.  
Ic. t. 1679. California, Arizona, and New Mexico.
- 22\*. *N. Lemmoni*, Eaton, in Bull. Torrey Club, VIII (1880), 63.  
Arizona, Chihuahua, and Jalisco.
26. *N. dealbata*, Kunze. Has now been found in many of the  
western states and fuller material shows that it cannot be  
separated specifically from *N. nivea*, Desv.
27. *N. Fendleri*, Kunze. Has now been found in several of the  
western states.

*Abnormal Species.*

- N. pteridiformis*, Baker, in Malesia, III, 49; *Gymnogramme*  
*pteridiformis*, Cesati, Fil. Becc. Polyn. 5, 8. Andai, New Guinea,  
*Beccari*. Habit of *Polypodium tenellum*, with round marginal  
sori.

Genus 51. MONOGRAMME, *Schk.*

- M. interrupta*, Baker, sp. n. Stipes densely tufted, wiry, naked,  
2-3 in. long. Frond linear, thick, rigidly coriaceous, glabrous,  
1-1½ in. long, ½ in. broad. Veins quite hidden. Sori filling  
the whole space between the midrib and margin, which is  
broken up into a series of pits of unequal length, in which the  
sporangia are immersed. New Guinea; Mount Yule. Re-  
ceived from Sir F. Mueller, April 1891. Forms a new sub-  
genus of Monogramme, distinguished by its broken band of  
fructification.

Genus 52 GYMNOGRAMME, *Desv.*

- Gymnogrammeae* is monographed in Kuhn's Choetopterides  
and divided into eight genera, viz. *Aspleniopsis*, *Trichogramme*,

*Taenitis*, *Platytaenia*, *Cheiropleuria*, *Psilogramme*, *Gymnogramme*, and *Monachosorum*.

Subgenus **Leptogramme**.

- 9\*. *G. Levingei*, Baker; *G. aurita* var. *Levingei*, Clarke, in Trans. Linn. Soc. Bot. ser. 2, I, 568. Rhizome slender, wide-creeping; paleae lanceolate, membranaceous. Stipe slender, naked, 6-8 in. long, stramineous with a brown base. Frond lanceolate or oblong-lanceolate, bipinnate, membranous, pubescent, 1-1½ ft. long, 3-4 in. broad at the middle, narrowed to the base. Pinnæ lanceolate, sessile, ½-¾ in. broad, cut down to the rachis into contiguous erecto-patent linear-oblong pinnules. Veinlets erecto-patent: upper simple, lower forked. Sori oblong or globose, placed nearer the margin than the midrib. West Himalayas; Jhelum valley, alt. 4000 feet. *Levinge*. I follow Mr. C. W. Hope in treating this as a species.
- 10\*. *G. subsimilis*, Hook. Sp. Fil. V, 142, tab. 293. Further specimens gathered by Kalbreyer in the Cameroons show this is a good species, which should be placed here.
- 11\*. *G. gigantea*, Baker, in Journ. Bot. 1889, 177. West China: Hupeh, *Dr. Henry*, 6517. Habit of American *Asplenium dubium*, Mett.
- 11\*. *G. Cominsii*, Baker, in Journ. Linn. Soc. XIX, 296. Solomon Isles, *Rev. R. B. Comins*. Near the last.

Subgenus **Eugymnogramme**.

- 14\*. *G. cyclophylla*, Baker, in Trans. Linn. Soc. ser. 2. Bot. II, 293, tab. 53; figs. 1-2. Mount Roraima, *in Thurn*, 295. Falls under *Pterozonium*, Fée, near *G. reniformis*, Mett.
- 15\*. *G. elaphoglossoides*, Baker, in Trans. Linn. Soc. ser. 2, Bot. II, 293, tab. 54, figs. 1-5. Mount Roraima, *in Thurn*, 101, 215. Habit of *Acrostichum Lingua*. The confluent sori finally fill up the whole surface of the frond except a band near the margin.
- 16\*. *G. sinuata*, Moore herb. Habit of *Polypodium trifurcatum*, L. Stipes tufted, slender, about 2 in. long, densely clothed with spreading brown hair-like paleae. Frond lanceolate, membranous, 6-8 in. long, ½-¾ in. broad at the middle, narrowed gradually to the base, shallowly obtusely lobed, furnished on



- both sides with hair-like paleae like those of the stipe. Veins pinnate opposite the lobes. Sori medial, linear, often  $\frac{1}{8}$  in. long. Andes of Quito, *Jameson*.
- 17\*. *G. Delavayi*, Baker, sp. n. Rhizome short-creeping; paleae dense, linear, ferruginous. Stipes tufted, wiry, castaneous, pilose, 3-4 in. long. Frond oblong-lanceolate, subcoriaceous, simply pinnate, 3-4 in. long,  $1-1\frac{1}{4}$  in. broad, green and nearly naked above, densely clothed beneath with lanceolate brown membranous paleae. Pinnae oblong,  $\frac{1}{2}-\frac{3}{4}$  in. long,  $\frac{1}{8}$  in. broad, the lower lobed on one or both sides at the base. Sori oblique, quite hidden beneath the paleae. Yunnan, *Delavay*. Near *G. Muellieri* and *vestita*.
21. *G. Pozoi*, Kunze. I cannot separate specifically *G. alpina*, Potts, in Trans. New Zeal. Instit. X, 361, from the mountains of New Zealand.
22. *G. Andersoni*, Beddome. As has been already stated *Woodsia lanosa*, Hook., must be placed here as a synonym.
- 24\*. *G. longifolia*, Baker, sp. n. Rhizome wiry, short-creeping; paleae minute linear-subulate, castaneous. Stipe flexuose, wiry, castaneous, naked, 1-4 in. long. Fronds lanceolate, bipinnatifid, 4-6 in. long,  $\frac{1}{2}-\frac{3}{4}$  in. broad: apex indefinite, circinate. Pinnae 20-30-jugate, oblong, obtuse, shortly petioled, obtusely lobed. Veins flabellate in the lobes. Sori oblong. Mountains of Central Brazil, *Glaziou*, 7017. Very near the Andine *G. angustifrons*, Baker.
- 33\*. *G. vellea*, Baker, in Journ. Bot. 1881, 206. New Granada; province of Antioquia, alt. 8800 feet, *Kalbreyer*, 1487. Near *G. Warcewiczii*, Mett.
35. *G. javanica*, Blume. Has now been found in West China, Madagascar, and East tropical Africa.
- 43\*. *G. Schaffneri*, Baker; *Bommeria Schaffneri*, Fourn. in Bull. Soc. Bot. France, 1880, 327. Mexico, *Schaffner*. Fournier's genus *Bommeria* is founded on *Gymnogramme pedata*, Kaulf.
44. *G. leptophylla*, Desv. Has now been found in Madagascar, Kumaon, and Paraguay.
- 48\*. *G. schizophylla*, Baker, in Journ. Bot. 1877, 266; Hook. Ic. t. 1682. Mountains of Jamaica, alt. 4000-5000 feet, first found by Miss Taylor. Rediscovered by Jenman and Nock in 1875 and introduced into cultivation.

- 48\*. *G. Lathamiae*, Moore, in Gard. Chron. 1884, II, 360. Supposed to be a garden hybrid between *G. decomposita* and *schizophylla*. Raised by Mr. W. B. Latham, of the Birmingham Botanic Garden.
- 48\*. *G. dubia*, Baker; *Psilogramme dubia*, Kuhn, Choetop. 17. Central Brazil, *Glaziou*, 5321. Not seen. Placed by Kuhn near *G. insignis* and *orbignyana*.
- 48\*. *G. domingensis*, Baker, sp. n. Rootstock not seen. Stipe stout, naked, castaneous, 4-6 in. long. Frond lanceolate, firm, decompose, glabrous above, hispid on the ribs beneath, a foot long, 3-4 in. broad at the middle, narrowed to the base: rachis straight, stout, naked, castaneous. Pinnae oblong-deltoid, cut away on the lower side at the base, the largest 2-2½ in. long, an inch broad: pinnules oblong-deltoid; final segments short, linear-oblong, 1-nerved. Sori short. Alto Causal, San Domingo, alt. 7000 feet, *Hort. Bull.* (Herb. Moore.)
- 49\*. *G. prehensibilis*, Baker, in Hook. Ic. t. 1683. Has been regathered in the Andes of New Granada, province of Antioquia, by Kalbreyer.
- 50\*. *G. xerophila*, Baker, in Journ. Bot. 1881, 206. New Granada: province of Antioquia, *Kalbreyer*, 1563. Near *ferruginea* and *aureo-nitens* in vestiture and shape of final segments, but larger and more compound.

#### Subgenus *Ceropteris*.

- 51\*. *G. chrysosora*, Baker, in Journ. Linn. Soc. XXIV, 260. Sarawak, Borneo, collected by Forstermann, sent to Kew by Bishop Hose.
- 51\*. *G. longipes*, Baker, in Journ. Bot. 1878, 301. Paraguay, *Balansa*, 333, and a denudate variety, *Balansa*, 334. Near *G. trifoliata*.

#### Subgenus *Syngramme*.

58. *G. borneensis* var. *major*, Baker, in Journ. Bot. 1879, 299. Fiji, *Horne*, 926.
- 58\*. *G. Dayi*, Beddome, in Journ. Bot. 1888, 5, tab. 279 B. Perak, *Day*.
- 60\*. *G. scolopendrioides*, Baker, in Journ. Bot. 1879, 299. Fiji Isles, *Horne*. Near *G. obtusifolia*.



- 64\*. *G. valleculata*, Baker, in Journ. Bot. 1888, 325. Borneo; Sarawak, *Bishop Hose*, 239.  
 65. *G. quinata*, Hook. Has been found in New Guinea by Beccari.

Subgenus *Selliguea*.

66. *G. lanceolata*, Hook. Has now been found in Kaffraria.  
 66\*. *G. grammitoides*, Baker, sp. n. Rhizome wide-creeping. Fronds simple, oblanceolate, subsessile, glabrous, 2-3 in. long,  $\frac{1}{3}$  in. broad, obtuse or subacute, narrowed gradually to the base. Veins anastomosing copiously. Sori oblong or linear, oblique, confined to the upper part of the frond. West China; Hupeh. *Dr. Henry*, 5451, and a nearly allied plant from Szechwan, *Dr. Henry*, 7531. Habit of *Polypodium australe*.  
 69. *G. elongata*, Hook. *Taenitis Swartzii*, Jenman, in Journ. Bot. 1877, 100, is a synonym.  
 71\*. *G. acuminata*, Baker, in Journ. Bot. 1888, 326. West Borneo, *Bishop Hose*, 238. Near *G. membranacea*, Hook.  
 71\*. *G. campyloneuroides*, Baker, in Journ. Linn. Soc. XXIV, 261. West Borneo, *Bishop Hose*, 208.  
 72\*. *G. Henryi*, Baker, in Journ. Bot. 1887, 171. Nanto, China, *Dr. Henry*, 2114. Near *G. Wrightii*, Hook.  
 72\*. *G. Sayeri*, F. M. & Baker, in Journ. Bot. 1887, 163. Mountains of Queensland, alt. 5000 ft., *Sayer* and *Davidson*.  
 76\*. *G. cantoniensis*, Baker, in Hook. Ic. t. 1685. North River, Canton, *Ford*.  
 81\*. *G. finlaysoniana*, Baker; *Grammitis finlaysoniana*, Wall. Cat. No. 776; *Gymnogramme digitata*, Baker, in Journ. Bot. 1890, 694. Cochin China, *Finlayson*, *Gaudichaud*; Tonquin, *Balansa*, 102. Like *G. elliptica*, but subdigitate in habit with 3-5 segments.  
 81\*. *G. longisora*, Baker, in Journ. Bot. 1890, 267. Tonquin, *Balansa*, 1870. Very near *G. elliptica*.  
 81\*. *G. ampla*, Benth. Fl. Austral. VII, 775. Queensland. Very near *G. elliptica*.  
 82. *G. pinnata*, Hook. *G. subtrifoliata*, Hook., mentioned under this species in the Synopsis Filicum, proves to be an abnormal form of *Acrostichum sorbifolium*.

83. *G. japonica*, Desv. Has now been found in several places in China.
84. *G. podophylla*, Hook. An older name is *G. ehrenbergiana*, Klotsch, in *Linnaea*, XX, 411. It has now been found in Guatemala.

*Excluded species.*

- G. edulis*, Cesati, Fil. Born. 28, is *Asplenium esculentum*, Presl.
- G. microphyloides*, Cesati, Prosp. 8, is *Cheilanthes tenuifolia*, Sw.

Genus 52\*. ENTEROSORA, *Baker*, in Trans. Linn. Soc. ser. 2, Bot. II, 294, tab. 55.

- E. Campbellii*, *Baker*, loc. cit. Mount Roraima, *in Thurn*, 184, ex parte. Rose Hill, Jamaica, *Fawcett* (collected by Moore). Habit of *Polypodium trifurcatum*, with immersed oblong sori, finally bursting through the cuticle.

Genus 54. MENISCIMUM, *Schreb.*

- 1\*. *M. beccarianum*, Cesati, Fil. Becc. Polyn. 8. Andai, New Guinea, *Beccari*. Fiji, *Horne*.
- 2\*. *M. giganteum*, Mett. Has now been found in Ecuador and New Granada by Sodiro and Kalbreyer. *M. grande*, Hort. Wendl., received alive at Kew in 1881, differs from the type by its shorter stipe, clothed up to the top with spreading paleae.
- 4\*. *M. Hosei*, *Baker*, in Journ. Linn. Soc. XXII, 230. Sarawak, West Borneo, *Bishop Hose*, 160. Near *M. Thwaitesii*, Hook.
- 4\*. *M. stenophyllum*, *Baker*, in Journ. Bot. 1891, 108. West Borneo, *Bishop Hose*.
- 9\*. *M. opacum*, *Baker*, in Journ. Bot. 1877, 166. Andes of Ecuador, *Sodiro*.
- 10\*. *M. reticulatum*, Sw. I cannot separate specifically *M. andreanum*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 71. *M. oligophyllum*, Hort. Linden, differs from the type by having only 5-9 pinnae.

Genus 55. ANTROPHYUM, *Kaulf.*

- 1\*. *A. vittarioides*, *Baker*, in Journ. Bot. 1890, 267. Tonquin, Balansa, 1921. Stands on the boundary line near *Antrophyum* and *Vittaria*.



- 1\*. *A. minimum*, Baker, sp. n. Rootstock slender, wide-creeping. Fronds linear, obtuse, moderately firm, glabrous, 1-1½ in. long, ⅙ in. broad, narrowed gradually from the middle to a short stipe. Veins, about three, all down the centre of the frond, anastomosing by a few short cross-bars. Sori few, linear, vertical, sunk in a distinct groove. Mountains of Costa Rica, alt. 4000-5000 ft., *Endres*.
7. *A. reticulatum*, Kaulf. Has now been found in Madagascar by Mr. J. T. Last.
11. *A. subsessile*, Kunze. Has now been found in Mexico by M. Finck.
14. *A. mannianum*, Hook. Has now been found in East Tropical Africa by Mr. J. T. Last.

Genus 56. *VITTARIA*, *Smith*.

- 2\*. *V. intramarginalis*, Baker, in Journ. Bot. 1877, 266. Mountains of Jamaica, gathered by Wilson and Jenman.
- 3\*. *V. sulcata*, Kuhn. Has now been found in Perak by Scortechini and New Guinea by Beccari (*Taenitis simplicissima*, Cesati).
- 3\*. *V. wooroonooran*, Bailey, in Plants Bellend. Ker Exped. 27. Mountains of Queensland, alt. 4000-5000 ft., *Bailey*. Not seen.
- 3\*. *V. sikkimensis*, Kuhn; Clarke, in Trans. Linn. Soc. ser. 2, Bot. I, 574. Eastern Himalayas.
9. *V. scolopendrina*, Thwaites. Has now been found in Fiji, Eastern Himalayas, Perak, Bourbon, and Mauritius.

Genus 57. *TAENITIS*, *Sw*.

3. *T. lanceolata*, R. Br. Has now been found in Florida, the Bahamas, and Mexico.
5. *T. blechnoides*, Sw. Range is Himalayas and Ceylon, eastward to Fiji.

Genus 58. *DRYMOGLOSSUM*, *Presl*.

1. *D. carnosum* var. *obovatum*, Harringt. in Journ. Linn. Soc. XV, 33. Formosa, *Dr. Steere*.

- 2\*. *D. niphoboloides*, Baker, in Hook. Ic. t. 1686; *Taenitis niphoboloides*, Luer. in Rel. Ruten. I, 49, tab. 1, figs. 3-6. Madagascar, gathered first by Rutenberg, since by Baron, Humblot, and Last.

Genus 59. *HEMIONITIS*, Linn.

1. *H. lanceolata*, Hook. Has been found in New Guinea by Beccari.
- 1\*. *H. Hosei*, Baker, in Journ. Bot. 1891, 108. West Borneo; Sarawak, alt. 1500 ft., *Bishop Hose*. Very near *H. lanceolata*.
- 1\*. *H. Zollingeri*, Kurz. Has been found in Sumatra by Curtis and the Philippines by Dr. Steere.
- 2\*. *H. Levyi*, Fourn. in Bull. Soc. Bot. France, XVII, 237. Nicaragua, *Dr. Levy*. Near *H. cordata*.
- 4\*. *H. elegans*, Davenport, in Pringle, Plant. Jalisco, No. 2585. Jalisco, North Mexico, *Pringle*.
6. *H. pinnata*, J. Sm.; Baker, in Hook. Ic. t. 1687. Was regathered in Jamaica in 1875 by Sherring and Jenman.

Genus 60. *ACROSTICHUM*, Linn.

Subgenus *Elaphoglossum*.

- 1\*. *A. Curtisii*, Baker; *A. schizolepis*, Baker, in Journ. Bot. 1881, 368; non Journ. Linn. Soc. XV, 421. Madagascar, *Curtis*, 121. Like dwarf *conforme*.
- 2\*. *A. caespitosum*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 74. Andes of Ecuador, *Sodiro*. Near *A. tambillense*, Hook.
- 4\*. *A. gramineum*, Jenm. in Journ. Bot. 1879, 263. Mountains of Jamaica. Near *A. simplex*, Sw.
- 4\*. *A. Wawrae*, Luer. in Flora, 1875, 420. Sandwich Islands. Near *A. simplex*, Sw.
- 7\*. *A. Yoshingae*, Yatabe, in Bot. Mag. (Japan), V, 109, tab. 23. Japan.
- 7\*. *A. inaequalifolium*, Jenm. in Journ. Bot. 1886, 273. Mountains of Jamaica, *Sherring*. Near *A. conforme*.
- 9\*. *A. viridifolium*, Jenm. in Journ. Bot. 1886, 273. Mountains of Jamaica. Near *A. flaccidum*, Fée.
- 9\*. *A. tenerum*, Baker, in Journ. Bot. 1878, 302. Paraguay, *Balansa*, 370.



- 9\*. **A. Miersii**, Baker, sp. n. Rhizome short; paleae dense, lanceolate, brown, membranous, crisped. Stipe of sterile frond 1-4 in. long. Sterile frond lanceolate, acuminate, subcoriaceous, naked, 6-8 in. long, an inch broad at the middle, narrowed to the base and apex; edge horny; veins ascending, distinct, moderately close. Fertile blade lanceolate, an inch long. Rio Janeiro, *Miers*.
- 9\*. **A. beccarianum**, Baker, in *Malesia*, III, 27. Sarawak, Borneo, *Beccari*. Near *A. flaccidum*.
9. **A. flaccidum** var. **stipitatum**, Baker, in *Journ. Bot.* 1887, 26. Costa Rica, *Cooper*.
- 10\*. **A. macrorrhizum**, Baker, sp. n. Rhizome thick, woody; paleae dense, lanceolate, acuminate, brown, membranous, crisped. Stipe of sterile frond 5-6 in. long. Sterile frond lanceolate, very thin, quite naked, 1½-2 ft. long, 1½-2 in. broad at the middle, narrowed to the base and apex, edge scariose, distinct. Veins distant, distinct. Fertile frond linear, under a foot long, under an inch broad. Rio Janeiro, *Miers*.
- 10\*. **A. castaneum**, Baker, in *Journ. Bot.* 1877, 166. Andes of Ecuador, *Sodi*. New Granada, *Kalbre*.
- 11\*. **A. borneense**, Burck, in *Ann. Jard. Bot. Buitenzorg*, IV, 98. Borneo, *Teuscher*. Not seen. Near *A. Norrisii* and *melanostictum*.
- 16\*. **A. pallidum**, Baker, in *Journ. Bot.* 1879, 263. Mountains of Jamaica, *Jenman*.
- 19\*. **A. maximum**, Baker, sp. n. Stipe stramineous. Sterile frond oblong-lanceolate, acute, subcoriaceous, glabrous, 1½ ft. long, 5-6 in. broad; veins indistinct, close, rather ascending, casually anastomosing. Fertile frond not seen. Andes of New Granada, *Paton*. Like *latifolium* on a large scale.
- 19\*. **A. versatile**, *Sodi*, *Recens. Crypt. Vasc. Prov. Quit.* 76. Andes of Ecuador, *Sodi*. Near *A. latifolium*.
- 19\*. **A. sessile**, Baker, in *Journ. Bot.* 1884, 143. North-east Madagascar, *Humblot*, 568.
- 19\*. **A. madagascariense**, Kuhn, in *Hildebr. Plant. Madag. Exsic.* No. 4167. Madagascar, *Hildebrandt*. Near *A. latifolium*.
21. **A. melanopus**, Kunze. I cannot distinguish specifically the Mexican **A. attenuatum**, *Fée*.

- 23\*. *A. backhousianum*, Baker; *Elaphoglossum backhousianum*, Moore, in Gard. Chron. 1882, I, 672. Mexico, *Hort. Backhouse*. Near *A. Prestonii*, Baker.
- 25\*. *A. stipitatum*, Bory; Fée, Acrost. 38, tab. 4, fig. 3. Bourbon, *Dr. Cordemoy*.
27. *A. squamipes*, Hook. Has now been found in Central Brazil by Glaziov.
- 27\*. *A. borbonicum*, Baker, sp. n. Rhizome creeping, as thick as a quill; paleae linear, brown, membranous, under  $\frac{1}{2}$  in. long. Stipe of sterile frond 1-1½ in. long; blade oblong, obtuse, cuneate at the base, ½-1 in. long, dotted all over beneath with distant minute peltate paleae; veins lax, erecto-patent, simple or forked. Fertile frond not seen. Bourbon, *Dr. Balfour*. Near *A. squamipes*, Hook.
- 29\*. *A. squarrosum*, Klotzsch. Has now been found in the Andes of Ecuador by Father Sodiro.
- 30\*. *A. cochlearifolium*, Fée, Gen. Fil. 42, 43; Icon. Nouv. II, tab. 1, fig. 3. Mountains of Venezuela, *Fendler*, 495.
32. *A. Huacsaro*, Ruiz. Has now been found in the Mountains of Jamaica.
- 32\*. *A. tenuiculum*, Baker; *Elaphoglossum tenuiculum*, Moore herb. Venezuela, *Fendler*, 222. Andes of Bolivia, *Rusby*, 299. Like dwarf *viscosum*.
- 33\*. *A. gardnerianum*, Fée. Has now been found in the Andes of New Granada.
- 33\*. *A. furfuraceum*, Baker, in Journ. Bot. 1877, 166. Andes of Ecuador, *Sodiro*. Near *A. gardnerianum*.
- 33\*. *A. albescens*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 75. Andes of Ecuador. Near *A. gardnerianum*.
- 33\*. *A. Lastii*, Baker, sp. n. Basal paleae large, ovate-lanceolate, brown, membranous. Stipe of sterile frond 1½ in. long, stiffly erect, scaly throughout. Frond linear-oblong, thick, coriaceous, 3 in. long, under an inch broad, clothed all over the lower surface with adpressed lanceolate brown paleae; veins immersed, obscure. Fertile frond not seen. Zanzibar, *Last*. Near *A. gardnerianum*.
36. *A. Aubertii* var. *crinitum*, Baker, in Trans. Linn. Soc. ser. 2, Bot. II, 294. Mount Roraima, *im Thurn*, 278.
- 36\*. *A. achroalepis*, Baker, in Journ. Bot. 1880, 371. Madagascar,



between Tamatave and the capital, *Kitching*. Veining and stature of *A. Aubertii*; paleae different.

- 38\*. *A. asterolepis*, Baker, in Journ. Bot. 1880, 371. Central Madagascar, *Kitching*. Near *A. Welwitschii* of Angola.
- 38\*. *A. Salvini*, Baker, in Hemsl. Bot. Cent. Amer. III, 688. Guatemala, *Salvin*.
- 38\*. *A. aspidiolepis*, Baker, in Journ. Bot. 1880, 371. Ankaratra Mountains, Central Madagascar, *Kitching*.
- 39\*. *A. chartaceum*, Baker; Jenm. in Journ. Bot. 1882, 325. Mountains of Jamaica.
- 43\*. *A. tricholepis*, Baker, in Journ. Bot. 1891, 5. North-west Madagascar, *Last*. Between *A. villosum* and *A. scolopendrifolium*.
- 43\*. *A. papillosum*, Baker, in Journ. Bot. 1877, 167. Andes of Ecuador, *Sodi*ro.
- 43\*. *A. Bakeri*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 77. Andes of Ecuador, *Sodi*ro. Frond 2-3 ft. long, 5-6 in. broad; stipe as long as the frond.
- 43\*. *A. heliconiaefolium*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 78. Andes of Ecuador, *Sodi*ro. Sterile frond like a leaf of *Heliconia hirsuta*.
- 45\*. *A. leptophlebium*, Baker, in Trans. Linn. Soc. ser. 2, Bot. II, 295. Mount Roraima, *im Thurn*, 237.
- 45\*. *A. Sodi*roi, Baker, in Journ. Bot. 1877, 167. Andes of Ecuador, *Sodi*ro.
- 45\*. *A. lepidoglossum*, Baker, sp. n. Rhizome slender, wide-trailing; basal paleae lanceolate, pale brown, large, membranous. Stipe of sterile frond nearly naked, 4-8 in. long. Sterile frond ovate, obtuse,  $\frac{1}{2}$  foot long, 3 in. broad, deltoid at the base, green on both sides, thinly scaly on the surfaces, not fringed; veins close, distinct, ascending, mostly simple. Fertile frond lanceolate. Andes of New Granada, *Kalbre*yer, 994. Habit of *A. Lingua*, Raddi.
- 46\*. *A. schizolepis*, Baker, in Journ. Linn. Soc. XV, 421. Central Madagascar, *Pool*. Near *A. spathulatum*, Bory.
- 48\*. *A. Galvinii*, Glaziou herb. Rhizome short-creeping; basal paleae dense, small, linear, castaneous. Stipes tufted, 1-2 in. long, densely paleaceous; paleae lanceolate, fimbriated. Sterile frond linear, 3-6 in. long,  $\frac{1}{4}$ - $\frac{1}{3}$  in. broad at the middle, nar-

rowed gradually to the base; upper surface slightly, lower densely paleaceous; paleae much fimbriated. Fertile frond similar but smaller. South Brazil, *Glaziou*, 9304. Habit of large forms of *A. spathulatum*; paleae different.

- 50\*. *A. araneosum*, Eaton, in Proc. Amer. Acad. XXII, 461. North Mexico, *Palmer*, 333.
51. *A. succisaefolium*, Thouars. Has been found by Delisle in the Antarctic Amsterdam Island. We had it before only from Tristan d'Acunha.
- 51\*. *A. Poolii*, Baker, sp. n. Rootstock erect. Stipes densely tufted, 1-1½ in. long, densely clothed with imbricated bright red-brown ovate aliated membranous paleae. Sterile frond ovate-oblong, ¾-1 in. long, 4-6 in. broad, densely clothed beneath, less densely above, with ovate densely ciliated, imbricated obtuse paleae. Fertile frond not seen. Central Madagascar, *Pool*.
- 52\*. *A. Eggersii*, Baker, in Journ. Bot. 1888, 34. San Domingo, alt. 8000-9000 ft., *Baron Eggers*, 2201.
- 52\*. *A. Eatoni*, E. G. Britton. Quichara, *Pearce*. Andes of Bolivia, *Rusby*, 342. Habit of *Niphobolus*, with long rigid linear fronds with a reflexed margin, clothed beneath with thick ferruginous woolly pubescence.
- 53\*. *A. boragineum*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 80. Andes of Ecuador, *Sodiro*.
55. *A. villosum*, Sw. I cannot separate specifically *A. siliquoides*, Jenm. in Journ. Bot. 1881, 53.
- 55\*. *A. quitense*, Baker, sp. n. *A. samoense*, Sodiro herb., non Baker. Stipes densely tufted, 1-6 in. long, densely clothed with spreading hair-like brown paleae. Sterile frond firm, lanceolate, 6-8 in. long, ¾-1 in. broad, more or less densely clothed with bristle-like brown palae. Veins immersed, obscure. Fertile frond smaller, with a very long stipe. Andes of Ecuador, *Sodiro*.
- 55\*. *A. Haynaldii*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 80. Andes of Ecuador, *Sodiro*. Near *A. villosum*.
- 58\*. *A. fimbriatum*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 84. Andes of Ecuador, *Sodiro*. Very distinct. Rhizome wide-creeping. Stipe long. Fronds small, lanceolate, with a dense fringe of ovate brown paleae.



- 58\*. *A. argyrophyllum*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 85. Andes of Quito, *Sodiro*. Habit of *A. latifolium*; under surface dotted over with minute paleae; edge minutely fringed.
- 58\*. *A. trivittatum*, Sodiro, Recens. Crypt. Vasc. Prov. Quit. 82. Andes of Ecuador, *Sodiro*. Near *A. muscosum*, Sw.
- 64\*. *A. magnum*, Baker, in Gard. Chron. n. s. XX, 135. Demerara; banks of the Mazaruni River, *Jenman*, 769. Allied to *A. per-elegans* and *A. Sprucei*.

Subgenus *Stenochlaena*.

66. *A. sorbifolium*, L. Has lately been found in New Guinea. *Gymnogramme? subtrifoliata*, Hook. is an abnormal form.

Subgenus *Polybotrya*.

- 71\*. *A. stenosemioides*, Baker, in Journ. Linn. Soc. XXII, 230. Malang, Sarawak, alt. 2000 ft., *Bishop Hose*.
- 82\*. *A. botryoides*, Baker, in Journ. Bot. 1881, 206. New Granada; province of Antioquia, *Kalbreyer*, 1873. Fertile frond of *A. canaliculatum*; sterile much more compound.

Subgenus *Aconiopteris*.

- 89\*. *A. savaiense*, Baker, sp. n. Rhizome creeping,  $\frac{1}{4}$  in. diam.; paleae lanceolate, brown, membranous,  $\frac{1}{8}$  in. long. Stipe of sterile frond 4-5 in. long. Sterile frond oblanceolate, naked, rigidly coriaceous, 9-10 in. long, 3 in. broad at the middle, narrowed to the base; veins  $\frac{1}{2}$  line apart, anastomosing by a distinct intramarginal line. Fertile frond narrower, with a longer stipe. Samoa, *Powell*. Near *A. gorgoneum*, Kaulf.

Subgenus *Stenosemia*.

- 91\*. *A. teysmannianum*, Baker, in Malesia, III, 56. Island of Sumba, Timor, *Teymann* (Herb. Beccari).

Subgenus *Gymnopteris*.

- 93\*. *A. oligodictyon*, Baker, in Journ. Linn. Soc. XXIV, 261. Sarawak, Borneo, *Bishop Hose*, 210. Near *A. linneanum*, Hook.

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- 95\*. *A. Listeri*, Baker, in Journ. Linn. Soc. XXV, 361. Christmas Island, *J. J. Lister*. Near *A. variabile*, Hook.
- 99\*. *A. Hollrungii*, Baker; *Gymnopteris Hollrungii*, Kuhn, in Schum. et Hollrung, Flora Kais. Wilh. land, 8. Northern New Guinea, *Hollrung*, 640. Near *A. taccaefolium*, Hook.
100. *A. flagelliferum*, Wall. Has now been found in Borneo, Sumatra, Solomon Isles, and New Guinea.
- 100\*. *A. neglectum*, Bailey, Synops. Queensl. Flora, 222; Baker, in Hook. Ic. t. 1689. Queensland; gullies of Trinity Bay Ranges, *Bailey*. Near *A. virens*, Wall.
- 101\*. *A. Taylora*, Bailey, Synops. Queensl. Flora, Suppl. 65. Queensland; banks of Johnstone River, *Bailey*. Very near *A. repandum*. Not seen.
- 101\*. *A. Fendleri*, Baker, in Jenm. Journ. Bot. 1887, 100. Trinidad, *Fendler*, 88. Habit of *Meniscium reticulatum*.
- 105\*. *A. Hartii*, Baker, sp. n. Rhizome wide-creeping; basal paleae lanceolate, membranous, pale brown. Stipe of sterile frond above a foot long, pale brown, naked. Sterile frond oblong-lanceolate, simply pinnate, moderately firm, glabrous,  $1\frac{1}{2}$ –2 ft. or more long. Pinnae lanceolate, sessile or nearly sessile, 4–6 in. long,  $1\frac{1}{4}$ –2 in. broad, narrowed gradually to the point, entire or shallowly lobed. Veins in pinnate groups, as in *Eunephrodium*; veinlets 4–5-jugate; lower joining by their tips. Fertile frond bipinnate, distinct or ending the sterile frond; fertile segments torulose, at most  $\frac{1}{3}$ – $\frac{1}{2}$  in. long. Trinidad, *Hart*, 228.
- 105\*. *A. juglandifolium*, Baker, in Journ. Bot. 1881, 207; Hook. Ic. t. 1691. New Granada; province of Antioquia, *Kalbreyer*, 1798.
- 105\*. *A. polybotryoides*, Baker, in Journ. Bot. 1881, 207; Hook. Ic. t. 1690. New Granada; Ocana, *Kalbreyer*, 1254.
- 105\*. *A. suberectum*, Baker, in Journ. Bot. 1881, 207; Hook. Ic. t. 1692. New Granada; Antioquia, *Kalbreyer*, 1877.
- 105\*. *A. insigne*, Baker, in Journ. Bot. 1877, 167. Andes of Ecuador, *Sodi*. The last four are all nearly allied.
- 106\*. *A. Preslianum*, Hook. Has now been found at Fernando Po by Henderson.
- 107\*. *A. exsculptum*, Baker, in Journ. Bot. 1888, 326. Sarawak, Borneo, *Bishop Hose*, 244. Near *A. virens*, Wall.



Subgenus *Chrysodium*.

- 108\*. *A. modestum*, Baker, in Journ. Linn. Soc. XXII, 231. Sarawak, West Borneo, *Bishop Hose*, 159. Near *A. Wallii*, Baker, of Ceylon.
- 108\*. *A. phanerodictyon*, Baker, in Henriq. Cat. Pl. St. Thom. 32, tab. 4, fig. C. Island of St. Thomas, West Tropical Africa, *Moller*. Near *A. minus* and *lanceolatum*.
- 109\*. *A. Rawsoni*, Baker, sp. n. Rootstock erect; basal paleae small, dense, linear, dark brown, crisped. Stipe of sterile frond 6-7 in. long, fragile, naked, pale brown. Sterile frond simple, lanceolate, membranous, glabrous, 6-8 in. long, 1-1½ in. broad, rounded to a cuneate base. Areolae copious, without free included veinlets. Stipe of fertile frond ½ ft. long; blade linear, 6-7 in. long, ⅛-⅜ in. broad, with enrolled edges. Grand River, Mauritius, *Sir Rawson Rawson*, gathered in 1853. Habit of *A. lanceolatum*; veining different.
- 110\*. *A. antrophyoides*, Baker, in Journ. Linn. Soc. XXII, 231. Malang, Sarawak, *Bishop Hose*, 162.
- 111\*. *A. gillianum*, Baker, in Journ. Bot. 1882, 310; Hook, Ic. t. 1693, Brazil; province of Minas Geraes, *Glaziou*, 13341.
115. *A. bicuspe*, Hook. Has now been found in New Guinea.
118. *A. pandurifolium*, Hook. Has been found by Father Sodiro in the Andes of Ecuador.
- 122\*. *A. Humblotii*, Baker, in Journ. Bot. 1884, 144. North East Madagascar, *Humblot*, 300. Near *A. blumeianum*, Hook.

Subgenus *Hymenolepis*.

129. *A. spicatum*, Linn. A very curious *Hymenolepis* has been sent by Sir F. von Mueller from the New Hebrides. It shows no structural difference from this species, but the leafy part of the frond is only 2-3 in. long and the apical fertile ¼-½ in., resembling the spike of *Eleocharis palustris*.

Subgenus *Photinopteris*.

- 132\*. *A. Thomsoni*, Baker, in Journ. Linn. Soc. XV, 111. Admiralty Isles, *Moseley* (Challenger expedition).

Genus 61. *PLATYCERIUM*, *Desv.*

- 1\*. *P. andinum*, Baker, n. sp. Habit of *P. alcorni*, but the sterile frond much larger, 2-3 ft. long, and the fertile frond 6-10 ft.

long, with the soriferous patches placed at the base of the long strap-shaped final segments. East Peru, *Spruce*, 4729. Paquichas, *Pearce*, 786.

2. *P. aethiopicum*, Hook. *P. elephantotis*, Schweinf. in Bot. Zeit. 1871, 361, is identical with *P. angolense*, Welw. I cannot distinguish specifically a plant from Guiana of which Messrs. Sander and Co. of St. Albans have sent several specimens lately to Kew.
- 2\*. *P. Ellisii*, Baker, in Journ. Linn. Soc. XV, 421; Hook. Ic. t. 1695. Madagascar, first gathered by the Rev. W. Ellis in 1870.
- 2\*. *P. madagascariense*, Baker, in Journ. Linn. Soc. XV, 421. Madagascar, first gathered by Mr. W. Pool in 1876.

#### OSMUNDACEAE.

Genus 62. *OSMUNDA*, Linn.

6. *O. regalis*, L. var. *O. japonica*, Thunb. Has been gathered in Angola by Mr. H. H. Johnston.

Genus 63. *TODEA*, Willd.

2. *T. wilkesiana*, Brack. Has now been found in New Guinea and Samoa.
3. *T. hymenophylloides*, R. & L. *T. grandipinnula*, Moore, in Gard. Chron. 1886, I, 752, is probably a form of this species.

#### SCHIZAEACEAE.<sup>1</sup>

Genus 64. *SCHIZAEA*, Smith.

2. *S. pusilla*, Pursh. Has been found in Nova Scotia by Mrs. Britton.
15. *S. pennula*, Sw. *S. plana*, *S. tenuis*, and *S. Balansae*, characterised by Fournier in Ann. Sc. Nat. sér. 5, XVIII, 353, all three gathered by Balansa, are to be compared with this species. I have not seen specimens.

<sup>1</sup> See Prantl's Untersuch. z. Morph d. Gefässkryptogamen, Heft II, Die Schizaeaceen, Leipzig, 1881, 4to, pp. 161, 8 plates. In this paper 22 species of *Lygodium*, 46 of *Aneimia*, and 19 of *Schizaea*, are kept up.



Genus 65. ANEMIA, Sw.

3. *A. oblongifolia*, Sw. var. *lanosa*, Baker, in Journ. Bot. 1885, 217, and var. *microphylla*, Baker, loc. cit. 218, are varieties of this species gathered in Central Brazil by Glaziou.
21. *A. Phyllitidis*, Sw. Mr. Carruthers tells me that the type specimen of *A. hirsuta*, Sw. in the herbarium of the British Museum ranges here.
22. *A. aurita*, Sw. Has now been found in Porto Rico.

Genus 66. MOHRIA, Sw.

1. *M. thurifraga*, Desv. Has now been found in Angola, the Zambesi highlands, and on Mount Kilimanjaro.
2. *M. vestita*, Baker, in Hook. Ic. t. 1696. Mount Kilimanjaro, in crevices of rocks at 6000 feet, *H. H. Johnston*.
3. *M. lepigera*, Baker; *Notochlaena lepigera*, Baker, in Journ. Bot. 1884, 53. Mount Dzomba, Zambesia, alt. 6000-7000 ft., *Sir John Kirk*.

Genus 68. LYGODIUM, Sw.

- 5\*. *L. hians*, Fourn. in Ann. Sc. Nat. sér. 5, XVIII, 355. New Caledonia, *Balansa*, 1564, 2737, *Vieillard*, 2606. Near *L. articulatum*, A. Rich. of New Zealand.
- 7\*. *L. gracile*, Baker, in Journ. Bot. 1888, 35. San Domingo, *Baron Eggers*, 2536.
11. *L. polystachyum*, Wall. Has lately been found in Anam by Dr. Kuntze.
12. *L. subalatum*, Bojer = *L. Kerstenii*, Kuhn. The latter name having a short priority in publication.

Prantl transfers the name of *L. pinnatifidum*, Sw. to *L. polystachyum*, Wall., on the ground that it was Willdenow's *Hydroglossum pinnatifidum*, in part. : he divides *L. pinnatifidum* of our Synopsis into two species, calling the Asiatic plant *L. salicifolium*, Presl, and the African *L. smithianum*, Presl.

MARATTIACEAE.

Genus 71. DANAEA, Sm.

- 5\*. *D. serrulata*, Baker, in Journ. Bot. 1881, 208. Hook. Ic. t. 1699. Antioquia, New Granada, *Kalbreyer*, 1352.

8. *D. moritziana*, Presl. Has lately been found in Jamaica and Costa Rica.
- 11\*. *D. polymorpha*, Leprieur. Stipe long, 1-jointed. Sterile frond oblong, a foot long; rachis not winged; pinnae 7-9, petioled, oblong-cuspidate, the end one the largest, 5-7 in. long, 2-2½ in. broad; veins distinct, erecto-patent. Fertile frond with a jointed stipe 1½ ft. long and 9-11 narrower pinnae. Guadeloupe, *Mazé*; Grenada, *Sherring*. Perhaps a mere variety of *D. elliptica*. *D. oligosora*, Fourn., also gathered by Fournier in Guadeloupe, has about the same number of pinnae as *D. polymorpha*, but they are only 1¼-1½ in. broad, and narrowed more suddenly at the base.

#### OPHIOGLOSSACEAE.

##### Genus 73. OPHIOGLOSSUM, *Linn.*

The genus is monographed very carefully by Prantl, in *Jahrb. Bot. Gart. Berlin*, III, 297, tabs. 7-8. He admits 29 species, dividing into several our *O. lusitanicum*, *nudicaule*, and *vulgatum*, on characters furnished by the rootstock and the venation of the barren frond.

- 1\*. *O. minimum*, Armstr. in *Trans. New Zeal. Instit.* 1880, 342. New Zealand. I have not seen a type-specimen, but suppose it to be identical with *O. coriaceum*, A. Cunn., which is kept up as a species by Prantl.
- 5\*. *O. costatum*, R. Br. *Prodr.* 163, should clearly be kept up as a primary species. It is spread from North Australia to West Africa and under it range *O. brevipes*, Beddome, *O. Wightii*, Hook. et Grev., *O. aphrodisiacum*, Welw., and *O. fibrosum*, Schum. et Thonn.
7. *O. intermedium*, Hook. Further material shows this a mere form of *O. pendulum*.
9. *O. palmatum*, L. Has now been found in Florida and Madagascar.

##### Genus 74. HELMINTHOSTACHYS, *Kaulf.*

1. *H. zeylanica*, Hook. Has now been found in the Solomon Islands and New Guinea.



Genus 75. BOTRYCHIUM, Sw.

Monographed by Prantl along with *Ophioglossum*, as above cited.

He admits 15 species out of substantially the same materials as our six.

3. **B. Lunaria**, Sw. Has now been found in New Zealand and the Northern United States.
4. **B. ternatum**, Sw. The New Zealand **B. biforme**, Colenso, in Trans. New Zeal. Instit. 1885, 223, exactly matches the North American *B. dissectum*, Muhl.





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