STUDIES OF FERN TYPES, II

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This paper is the second and final part of C. V. Morton’s general work on fern types. This work was accomplished in large part through grants from the John Guggenheim Memorial Foundation and the National Science Foundation (grants G-4080 and GB-1243). The first part, “Studies of Fern Types, I” (Contr. U.S. Nat. Herb. 38:29–83, 31 Aug. 1967), included an introduction that provides background for this paper as well; readers may wish to refer to it.

At the time of his death, in July 1972, Mr. Morton had all but completed the present paper. The work is entirely his, except for this introduction and some slight editorial changes that I made in assembling the manuscript for publication.—D. B. Lellinger.

   TYPE: Trinity Bay Ranges, Queensland, Australia, May, 1877, F. M. Bailey (isotype BM, Morton photograph 7357).

   This species is very different in the cutting of the sterile blades from other Australian species of Bolbitis. Apparently it is endemic in Queensland, where it is rare.

2. ACROSTICHUM OBDUCTUM Kaufm. ex Spreng. in L. Syst. Veg. ed. 16. 4:34. 1827.
   TYPE: A renaming of Acrostichum lancifolium Desv., and thus based on the same type as that.

It is likely that Kaufuss intended his A. obductum to be based on Mauritius, Sieber, Syn. Fil. no. 25, and it has been perhaps generally so considered, although never definitely lectotypified. But when Sprengel published the name he did not mention Sieber or indeed cite any specimens, merely citing Acrostichum lancifolium Desv. as a synonym. Since the name A. lancifolium was a legitimate and available name, there was no need to propose a different name, A. obductum. There is nothing in the original description to suggest that A. lanci-
folium was cited as a synonym with an implied query, and so by Art. 63 of the Code the name A. obductum must be considered superfluous, and by Art. 7 it must be typified on the basis of the type of the name that ought to have been adopted, thus on the type of A. lancifolium. For the plant identified as Elaphoglossum obductum, see under Acrostichum tomentosum Bory.

   =Elaphoglossum tomentosum (Bory) Christ, Farnkr. 37. 1837.
   Acrostichum heterolepis Fée. Mém. Fong. 2:56, t. 15, f. 1. 1845. Based on Bourbon [Réunion], Bory and Sieber, Fl. Mix. 281 (probably also from Réunion). I do not choose to lectotypify it at present.
   Elaphoglossum heterolepis (Fée) Moore, Ind. Fil. 10. 1857.
   Elaphoglossum obductum sensu auct. (e.g., Tardieu, Notul. Syst. 16:185. 1960), non Acrostichum obductum Kaulf. ex Spreng. See under A. obductum.

   TYPE: Bourbon Island [=Réunion], Bory. In the Willdenow Herbarium in Berlin there is a single sheet (no. 19508) named A. tomentosum, this received from Flügge. I do not believe that Flügge ever collected in Réunion, but he is known to have exchanged plants widely; his specimen of A. tomentosum may well have come from Bory. The specimen in the Willdenow Herbarium is poor, just a detached frond, but it agrees well enough with Willdenow's description.

   In Madame Tardieu's treatment of Elaphoglossum in Madagascar and the Mascarene Islands (Notul. Syst. 15:425–443, 1959), the species Acrostichum tomentosum Bory ex Willd. is not placed or mentioned except (p. 429) under E. obductum (Kaulf.) Moore, where a synonym is "A. tomentosum Bory in herb. (non Willd. Spec.)." If A. tomentosum Bory ex Willd. is different from obductum, then it must be the same as one of the other species treated by Tardieu, since it is from Réunion, and it would very likely be the earliest and thus the correct name for one of them. But this does not seem likely, for there is no a priori reason to think that the Bory specimens in Paris labeled A. tomentosum are different from the species described by Willdenow. If they are indeed different, then the proper name for the plant called E. obductum by Madame Tardieu will be E. heterolepis (Fée) Moore.

   Syntypes: Mexico, Galeotti 6266 and 6359. Lectotype: Mount Orizaba, Vera cruz, Mexico, 9,500 feet, Galeotti 6266 (BR, Morton photograph 5062). Although Martens and Galeotti cite only two numbers they indicate four localities.

   Fournier (Mex. Pl. 128. 1872) did not mention var. angustifolium by name, but he cited Galeotti 6266 under A. multiforme A. Braun var. β and 6539 under A. amabile Liebm. Adiantum multiforme A. Braun ex Fourn. (Mex. Pl. 128. 1872) is essentially without a description as a species, although the two varieties are distinguished as var. a, pinnis
latioribus, inferioribus aliquando suborbicularibus, and var. β, pinnis angustioribus. Under var. a there are several synonyms, all “sensu” names except A. extensum Fée. At the places cited by Fournier (Fée, Gen. Fil. 119. 1852 and Mém. Foug. 9:6. 1857) this name is also a nomen nudum based on Schaffner 40 and 41, but the species was validly described in Mém. Foug. 8:72. 1857, based on Schaffner 40 and 41 from Orizaba and Huatusco, Veracruz. I do not choose one of these as lectotype at the moment, since I have not seen either specimen; however, A. multiforme A. Braun can be considered as validly published, a substitute name for A. extensum Fée. As such it is a superfluous and consequently illegitimate name which must be typified on the same types as A. extensum, namely Schaffner 40 and 41. Under var. β Fournier cited A. mexicanum Presl, Tent. Pterid. 158. 1836. From the entry in the “Index Filicum” it would appear that this is a validly published name, but apparently it is only a nomen nudum. Presl gave no description, only referring to A. cuneatum Schlecht. (non Langds. & Fisch.), by which he seemingly intended A. cuneatum sensu Schlecht. & Cham. Linnaea 5:615. 1830, but in Schlechtendal and Chamisson there is no word of description that might validate the name. Fournier cited also Mettenius, but I do not find any use of the name by Mettenius.


TYPE: Oaxaca, Mexico. “terre froide,” 8,000 ft. alt., Galeotti 6361 (holotype BR, Morton photograph 5063).


Aspidium zollingerianum Kunze. Bot. Zeit. 4:462. 1846. Syntypes: Java, Zollinger 655, 655A. The specimens of these numbers in Geneva (Morton photographs 3803 and 3804 respectively) have the names in Kunze’s hand, and are undoubtedly the syntypes. No. 655 is here chosen lectotype, since it is the larger and more mature specimen. The labels of the Geneva specimens lack specific locality data, and consequently Kunze did not cite this. A duplicate of no. 655 in Leiden gives the locality as on calcareous rocks on stream banks near Tjikoyan, Java, i.e., the same locality as A. brachiatum.

Aspidium variolosum Wall. ex Hook. Sp. Fil. 4:51. 1862. Syntypes: Hooker cites seven syntypes, but since the name is adopted from Wallich, Num. List no. 379. 1829 (nom. nud.) and is attributed to Wallich, one of the collections under Wallich Cat. 379 must be the lectotype. Hooker, however, cited three localities for no. 379, namely Amherst, Tavoy, and Penang. Ching (Sinensia 2:21. 1931) indicated Wallich 379 as “type” (i.e., lectotype) and illustrated it in his Plate III, presumably from a specimen in the Kew Herbarium. This plate ought to be matched up with the Kew specimens to determine the type locality.

Type: "In calcarea-argillosus ad ripas rivulorum prope Tjikoya prov. Batav., raro," Java, Zollinger. These data correspond to Zollinger 655 and 655A, the same numbers that A. zollingerianum Kunze was based on.

Since the publication of Zollinger and Moritzi is rare, at least outside of Dutch libraries, I give below the original description:

Fronde heteromorpha membranacea glabriuscule marginae ciliolata ternata, foliolis lateralisibus bipartitis cordatis, laeninis acuminatis, medio 3-partito, laeninis lateralisibus sessilibus, mediiali elongato-acuminata plumatifida; frondibus fertilibus longe stipitatibus frondibus sterilibus similibus sed omnibus partibus elongato-angustatis, sortis majusculis subseriatis, stipite glabriuscule.

Filis vix pedalis. Foliioli laterali para superior inferiore longior subplumatifida; foliioli medi I laeniniae laterales subfalcatae. Venules subbus hirsutulae.

Stipes frondis sterilis minus elatus; fertillis foliioli breviter petiolati. Sorii venularum ramulos superiores terminantes.

It is too bad that the rather well-known name Tectaria variolosa must be abandoned, but there seems no help for it.

In publishing Aspidium variolosum for Wallich, Hooker completely overlooked the earlier species A. brachiatum and A. zollingerianum. Moore, who was adept in picking up overlooked names, listed A. brachiatum as a doubtful species, with A. zollingerianum as a synonym. Christensen in the "Index Ficulum" also recognized brachiatum as a valid species. Ching in his "A Revision of the Genus Tectaria from China and Sikkime-Himalaya" (Sinesis 2:9-36. 1931) adopted T. variolosa (Wall. ex Hook.) C. Chr. and reduced both A. brachiatum and A. zollingerianum to synonymy, even though these were earlier names. This is perhaps explained by the fact that he attributes (twice on page 21) the date "1826" to volume 4 of Hooker's "Species Ficulum," whereas the correct date is really 1862. Hohltim, in his "Ferns of Malaya" (p. 506. 1954), recognized T. variolosa, and commented on its occurrence in Java, but also overlooked the earlier names brachiatum and zollingerianum.


Lastrea immersa Moore, Ind. Fil. LXXXIX. 1857.


Dryopteris besnikiensis f. confertiloba van Alderw. van Rosenb. loc. cit. Type: Besoeki Idjen, Java, Koorders 19830 B (isotype or syntype L, Morton photograph 1064).

Type: Giaenang Parrang, Java, Blume (holotype L, Morton photograph 1164).

This species has been reported also from Borneo, New Guinea, and the Philippine Islands, but its real range remains to be determined. My
notes on the type are: Veins oblique, bearing yellow glands beneath and no long hairs; indusia flat, glabrous, persistent.


**Aspidium chaerophylloides** Moritz ex Mett. loc. cit. pro syn.


**Type:** Caracas, Venezuela, Moritz 435. The holotype is presumably in the Mettenius Herbarium in Berlin. I have seen a specimen labeled **Aspidium chaerophylloides** Moritz but bearing the number Moritz 434 (Leiden, Morton photographs 1087, 1088). It seems likely that this is an isotype, and that it bears the wrong number "434" or that Mettenius erred in citing the number originally as "435."

Christensen in describing **Dryopteris patula** var. **chaerophylloides** credited the epithet to "Bak. Syn. 276," but this is an error. Baker never used the generic name **Dryopteris**; he had this plant as "**Nephrodium mexicanum** β A. **chaerophylloides** Moritz" (Hook. & Bak. Syn. Fil. 276, 1868), an illegitimate combination, using a binomial for a variety. Moreover, var. **serratum** has a clear priority of ten years. The taxonomic validity of this eglandular variety needs further investigation, as do the forms of this variable species generally.


**Lectotype:** Described from cultivated specimens in the botanical garden in Leipzig, which Kunze had received from the botanical garden in Bonn. Since Kunze’s herbarium in Leipzig was destroyed, there is no holotype extant. So far as I know, no lectotype has been designated. There is a specimen (Morton photograph 19739) in the Jardin Botanique National de Belgique, Brussels, from the botanical garden in Leipzig with the notation that the plant was originally from Java; this specimen is identified in Kunze’s own hand as "**Aspidium uliginosum** mihi," and is thus fully authentic; I therefore designate it as lectotype.

The above lectotype is quite the same as the species treated by Holtum (Blumea 17:27. 1969) as **Macrothelypteris torresiana** (Gaud.) Ching.


Sometimes, as in Kuhn’s "Filices Africanae," a "var. capense Schlecht." is cited as though validly published, and the name appears also on some herbarium labels. Schlechtendal mentioned that **Asplenium adiantum-nigrum** occurs in two varieties, one with acute segments in the Canary Islands, Italy, and Porto Rico, the other with obtuse segments in the Cape of Good Hope and Germany. He did not actually propose varietal names for these, however, nor did he indi-
cate which, if either, included the type of A. adiantum-nigrum L. The name “capense” occurring only on the plate and the explanation of the plate merely indicates material drawn from plants collected in the Cape region and is not a formal naming of a variety.

   Syntypes: Haleakala, Maui, Hawaii, Hillebrand and Oahu, Hawaii, Hillebrand. The former collection from Haleakala, right-hand frond, is here designated lectotype (B, Morton photograph 9066).
   This is a form with long-attenuate pinnae, these prominently lobed at the base only or nearly throughout. Skottsberg recognized three or four forms.

   Type: Java, Kollmann (not seen).
   I am calling attention to this species because the name is overlooked in the “Index Filicium” and its supplements. Although mentioned in a note only, it is accepted as new by Kunze and given sufficient description to validate it, namely that the caudex is flexuous and glabrous and the blade irregularly incised-dentate. Kunze indicates that this might be a Diplazium, but this does not of course invalidate the name, which is definitely indicated as Asplenium decipiens Zippel. The matter is of some importance because this name antedates Asplenium decipiens Mett. (1859) and A. decipiens Kuhn (1879). Backer and Posthumus (Varenfl. Java 126. 1939) place A. decipiens Zippel as a synonym of Diplazium subserratum (Blume) Moore.

   Type: Java, Blume (holotype L, Morton photograph 527). The type is mounted on a sheet with four other Blume types. All the labels, in Blume’s own hand, are grouped on the right-hand margin of the sheet, and there is no indication as to which label goes with which plant. The other types are Asplenium tripartitum Blume, A. furcatum var. fissum Blume, A. furcatum var. fragrans Blume, and A. furcatum var. depauperatum Blume. I have compared these plants with Blume’s descriptions, and I was able to decide on the various types with some degree of certainty. The large central plant is A. furcatum var. fissum. The plant at the lower left is A. tripartitum; the plant at the upper right is A. furcatum var. fragrans. The small fragment at the bottom center is A. furcatum var. depauperatum. And the plant at the lower right is the type of A. denticulatum.
   In the “Index Filicium,” Asplenium denticulatum Blume is listed in italics as a dubious species. In Backer and Posthumus’ “Varenflora
voor Java” (1939), it is placed as possibly the same as Asplenium stereophyllum Kunze (Bot. Zeit. 6: 175. 1848), in which case it would be the prior and correct name. I have seen the type of A. stereophyllum (Java, Zollinger 2249, holotype G, Morton photograph 3811; isotype FI-Webb!). The Zollinger collections from Java that Kunze described were evidently lent to Kunze from Geneva, for they have the annotations in Kunze’s own hand and the data as published by Kunze; they are thus indeed holotypes, which is fortunate since Kunze’s own herbarium was destroyed during World War II. This holotype shows that A. stereophyllum has been correctly interpreted in the naming of recent collections. The pinnae are strongly unequal-sided, the lower side being cut away to about the middle of the pinnae and so it has fewer segments than the upper side. Asplenium denticulatum Blume is by no means this species but is only a form of the widespread, pantropic A. aethiopicum, not unlike some of the American forms that are called A. praemorsum Swartz. In fact, all of the types on this sheet (A. tripartitum and the varieties of A. furcatum) are referable to A. aethiopicum in a broad sense, which is evidently just as variable in Java as it is elsewhere.


Type: Oaxaca, Mexico, Galeotti 6529 (isotype P, Morton photograph 4165). Fée wrongly gave the number as 6579, which was corrected by Fournier to 6529.

The holotype, with the name in Fée’s hand, has not been found, but the isotype seen agrees with the description and is surely authentic. In the “Index Filicicum,” Asplenium distans Fée is considered a dubious species of Asplenium; however, the isotype shows that it is not an Asplenium, but a large, bipinate (almost subtripinate at base) Diplazium. It is very likely the same as D. campylocarpum Fée, the type of which is from Córdoba, Veracruz, Mexico, A. Nieto (Schaffner 69, not seen), a species that is similar at least to the more divided forms of D. franconis Liebm.


Type: Nuuanu-Kalihili Ridge, Koolau Mountains, Oahu, Hawaii, Skottsberg 146 (not seen).

This variety includes the plants referred to A. caudatum Forst. in Hillebrand’s “Flora of the Hawaiian Islands.” Skottsberg, after an exhaustive study of the variation in Asplenium falcatum Lam. and its allies, excluded A. caudatum from the Hawaiian Islands, most of the variations being proposed as varieties of A. falcatum. As I indicated
in my earlier paper on fern types (Contr. U.S. Nat. Herb. 38:39–41. 1967), *Asplenium falcatum* Lam. was a superfluous and illegitimate name. The earliest correct name for this species is *A. polyodon* Forst., and consequently the various Hawaiian varieties are here transferred to that species (see also *A. knudsenii*, *A. nitidulum*, and *A. caudatum* var. *sectum*).

16. **Asplenium gracile** D. Don, Prodr. Fl. Nepal. 8. 1825. = *Athyrium setiferum* C. Chr. Ind. Fl. 146. 1905. Based on *Asplenium tenellum* Hope, non Roxb.¹


**Type:** “Hab. in summis alpibus reg. Himalayae dict. Nepaliae,” *Wallich* (holotype BM, Morton photograph 6986, four right-hand plants; the left-hand plant on this sheet is also Nepal, *Wallich*, but was probably added later after the time of Don).

*Asplenium gracile* D. Don is considered in the “Index Filicum” as possibly the same as *Athyrium nigripes* (Blume) Moore (type from Mount Burangrang, Java, *Blume*, L, Morton photograph 665); there is some resemblance, but I do not believe that they are quite the same. On the other hand, it does seem clear that *A. gracile* is the same as *Athyrium setiferum* C. Chr., which is of course a later name. There is already an *Athyrium gracile* Fourn. (1872), however, and so Don’s epithet may not now be transferred to *Athyrium*. Hope did not designate a type and cited many syntypes. He evidently chose the epithet “tenellum” from the cited synonym *Allantodia tenella* Wallich, which is a manuscript name only, not even appearing in Wallich’s “Numerical List.” It would thus seem that a Wallich specimen ought to be the lectotype, but Hope specifically indicated that the Wallich specimen represented a variant, thus making it ineligible as a lectotype. The specimen chosen above as lectotype seems to be a normal and typical specimen of Hope’s concept. I have seen several other syntypes also, not all of which seem identical; in particular, the Mackinnon specimen from Sowarna Nala, Dehra Dun District, is larger and more divided and may not belong here at all, at least so far as the left-hand plant on the sheet in the British Museum (Natural History) is concerned; the specimens on the right may be rather typical (Morton photograph 6982). These *Athyriums* of the *fili-femina* group in the Himalayas are extremely perplexing and much confused in herbaria. There are probably too many names proposed for them.

¹ Christensen wrongly cites *Allantodia tenella* Wallich as the basionym, but this was a manuscript name only and so cannot be a basionym.

Syntypes: Ocana, Colombia, Engel 250 (isotype BM, Morton photograph 7073A), Schim 69 (isotype L, Morton photograph 931). Since I have not seen the original syntypes in Berlin, I do not choose a lectotype.

In the "Index Filicum," the authority for the name D. gracilescens is given as "Moore, Ind. Fil. 329. 1861," but the name was a nomen nudum at this place. Since the species was not described until 1864, a new combination of the epithet under Diplazium could not be validly published three years previously in 1861. Therefore, Christensen must be cited as the author.

Asplenium caespitosum Wallich, Num. List. no. 217. 1829, nom. nud., non Blume, 1828.
Asplenium laciniatum sensu Hook. Sp. Fil. 3:164. 1860, non D. Don.

Type: Port Natal, South Africa, Gueinzius (holotype B, Morton photograph 9714).

Hieronymus stated (Hedwigia 61:34. 1919) that this South African species was not distinct from the Himalayan plant that he called A. laciniatum, and he was probably right, for the holotype of A. guerinianum does look indistinguishable from Wallich 217, the basis of the unpublished A. caespitosum Wallich (non Blume).


Type: Escamela, near Orizaba, Veracruz, Mexico, Aug. 2, 1865, Hahn (holotype P, Morton photograph 4067).

Diplazium hahnii (Fourn.) C. Chr. Ind. Fil. 283. 1905.

The type is very similar to that of A. distans Fée (non D. Don); it seems to agree with the description of Diplazium camptocarpon Fée.


Type: Clarke cited merely Kasalong, Chittagong, India. Ching indicated the type to be at Kew, but did not designate a specimen. There are four specimens of Clarke's collecting from Kasalong, all much alike and agreeing with Clarke's description, but none of them is named var. chattagrammicum. Three are named merely Asplenium japonicum, and one Asplenium japonicum var. elongata (an unpublished name). Since the latter specimen agrees with the original description, it seems that Clarke first intended to call this plant var. elongata and changed it ultimately to var. chattagrammicum. Therefore, I take this sheet, the first collected, to be the lectotype of var. chattagrammicum: Kasalong, Chittagong, Jan. 10, 1869, Clarke 8254 (K, Morton photograph 18917). The other specimens that I believe to represent var. chattagrammicum also are from the same locality, but with later dates—Clarke 19074D, 19740A (this sheet bearing an annotation slip by Ching), and 19818.
Diplazium japonicum has recently been segregated as a distinct genus, Athyriopsis Ching (Acta Phytotax. Sinica 9:63. 1964), and as Lunathyrium Koidz. sect. Athyriopsis (Ching) Ohba (Sci. Rep. Yokosuka City Mus. 11:52. 1965). It is said to differ from Diplazium in having the lateral ridges of the rhachis above continuous and not open at the junction of the pinnae, and the prothallia with papillae on the margin and on the surface near the growing point. Rhachis characters are important, but especially for bipinnate or tripinnate plants. Simply pinnate-pinnatifid plants like D. japonicum do not show very different rhachis characters. Characters of the prothallia may indeed offer substantiating characters in segregating groups, but they are not useful as key characters, and in any case only a relatively few of the species of Diplazium have been studied from this viewpoint. The generic status needs to be investigated further.


**Type**: Waiheea, Kauai, Hawaii, Knudsen. A specimen bearing this name and data is not in the Hillebrand Herbarium in Berlin; however, there are two specimens from Kauai in the Hillebrand numbered 125 and 144 and named A. knudsenii. These may well be and probably are the types. The left-hand frond numbered 125 is here designated lectotype (Morton photograph 9677).

This variety represents the least cut form of A. polyodon found in the Hawaiian Islands. It is finely doubly serrate, but not at all lobed.


*Asplenium varians* Hook. & Grev. Icon. Fil. 2: t. 178. 1830. **Type**: Nepal, common name “Dawecow”, Wallich (holotype K or possibly E, not seen).

**Type**: “In alpibus,” Nepal, Wallich (holotype BM, Morton photograph 6686).

It is indeed unfortunate that the application of the name *A. laciniatum* D. Don must be changed, but I see no alternative. The name has been applied, following Hooker, to a rather characteristic plant of Nepal and the Himalayas (and elsewhere) that is allied to *A. planicaule* Wallich, but Hooker did not explain how he determined the identity of Don’s species. There is in the British Museum (Natural History) a sheet containing a number of plants, indicated as “1,” “2,” and “3.” Those at the top of the sheet (and the one in the right bottom corner) were collected on the banks of the Rapti River by Wallich in 1820; these are not types. The three plants numbered “2” are on the left center and are from Nepal collected by Wallich in December, 1817, and the common name in Nepal is given as “Dawecow”; these data are the same as those given by Hooker and Greville for their *Asplenium varians* except that they give the date as January, 1818; the specimens agree with Hooker and Greville’s figure. The three specimens at right
center and the one center bottom are numbered “3,” and they quite agree with each other; these are labeled, I think in Don’s hand, “laciniatum” and “in Nepalia alphasis, D. Don Prod.”; these specimens are indeed clearly the holotype, for they not only have Don’s name and data but agree with Don’s description, so far as that goes.

Don described his plants as only three to four inches long and the blades thin (“tenerae”), characters that clearly agree with the plants on this sheet labeled laciniatum, for these are small plants of thin texture. The plant described by Hooker as laciniatum is much larger, the stipes alone being stated by Hooker to be four to six inches, and the blades a span to a foot long, i.e., about nine to twelve inches; the texture is thick, and the species itself belongs to a different section of Asplenium, viz. sect. Sphenopteris. On the other hand, the true A. laciniatum is identical with the plants described as A. varians Hook. & Grev., and they probably came from the same Wallich gathering in either December, 1817, or January, 1818. Unfortunately, Hieronymus (Hedwigia 61:33. 1919), in discussing the differences between A. laciniatum D. Don and A. planicaule Wallich, followed Hooker’s concept, apparently without any doubt about the matter, but he must not have looked carefully at Don’s description or tried to locate Don’s type in the British Museum (Natural History). The plant that has been wrongly called A. laciniatum is best called, at least tentatively, Asplenium queinzianum Mett. (see entry No. 18).


Authentic material: Chitlong, Nepal, April 11, 1802, Buchanan-Hamilton (BM, Morton photograph 6678).

This sheet has been marked by someone (Gepp?) as the type of “Asplenium laspeptifiolium (Hamilton) Don,” and the label does say “Asplenium laspeptifiolium B.,” the “B” evidently standing for “Buchanan.” When Don published the name in his “Prodromus,” however, he attributed the name to Lamarck, and so there is no “A. laspeptifiolium Buch.-Ham.” even though this name appears in the “Index Filicum” and this sheet is marked as the type. This authentic specimen was first identified as A. bulbiferum Forst. f., to which it was attributed in the “Index Filicum,” but it can hardly be that, although it does resemble it from my photograph, since the true A. bulbiferum grows in New Zealand and perhaps in New Caledonia, but nowhere in Asia. Someone has crossed out bulbiferum and written bullatum Wallich, which possibly is correct, although I doubt it. The matter is not of importance, however, since this is a “sensu” name only, a misidentification, and it does not have to be placed
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at all, although it should be identified correctly in a definitive treatment of the ferns of Nepal.

   Wallich (isotype BR, Morton photograph 21170, left-hand plant).
   Diplazium lobulosum (Wallich ex Mett.) C. Chr. Ind. Fil. 234. 1905 (wrongly attributed to Presl).

   Type: Based on Nepal, Wallich. A specimen that is doubtless an isotype is in Brussels (Morton photograph 21170, right-hand plant); this was received from the Lambert Herbarium (where Don was curator) in 1826.

   The name Diplazium lobulosum has been generally adopted since the publication of the "Index Filicum," since the first name applied to the species, Asplenium longifolium D. Don, was an illegitimate later homonym. By the Code (Art. 72, Note), however, Moore's name Diplazium longifolium must be considered as a new name for A. longifolium D. Don (1825), non Schrader (1824), rather than as a transfer. Since Moore's name dates from July, 1859, it is earlier than the synonymous name Asplenium lobulosum Wallich ex Mettenius, which according to Stearn was published in September, 1859. The epithet longifolium thus has a priority of two months.

   var. nitidulum (Hillebr.) Morton, comb. nov.

   Syntypes: Kauapali, Maui, Hawaii, Hillebrand (B, Morton photograph 9676); hills near Hilo, Hawaii, Hillebrand. The first of these is the lectotype.

   This is a form that is just a little more cut than var. knudsenii, the pinnae being short and broad, mostly with an evident superior basal lobe.

   Asplenium unilatereale Buch.-Ham. mss. ex D. Don, loc. cit. in syn.
   Asplenium multifugum Wallich, Num. List. no. 207. 1829, nom. nud.
   Gardner 25. The Wallich specimen is here designated lectotype.

   Type: Naranhatta, Nepal, Buchanan-Hamilton (holotype BM, Morton photograph 6675)

   The type is a good specimen, complete with rhizome, representing Asplenium normale in its usual sense. Asplenium multifugum Wallich is identical; Wallich ignored the name A. normale D. Don.
Type: Bourbon Island [Réunion], collector unknown (holotype P, Herb. Desvaux, Morton photograph 4161).

In the "Index Filicum," Asplenium obtusilobum is referred to the West Indian A. cuneatum Lam. (holotype P, Herb. Jessieu Cat. 1255, Morton photograph 3033, the locality and collector unknown). This disposition was accepted by Weatherby in his paper on the Desvaux fern types (Contr. Gray Herb. 114:21. 1936), probably on the basis that someone has written on the type sheet "Habitat in America calidior," although pointing out that it differs somewhat from typical A. cuneatum. Actually the type does not match any American material, but it does match specimens from Réunion and Mauritius of A. affine Swartz (type not stated in original publication, but given later by Swartz, Syn. Fil. 84, 279. 1806, as Mauritius, Groendal; holotype S-PA, Herb. Swartz, Morton photographs 5770, 5771). Therefore, Desvaux' original ascription of the species to Bourbon was correct and the locality of tropical America on the type sheet is wrong. Asplenium affine is similar to A. cuneatum, but obviously it is different in having the ultimate segments trapezoidal and bluntly toothed or lobed, whereas those of A. cuneatum are obovate and sharply toothed. The Old World specimens, mostly from the South Pacific, that have been identified as A. cuneatum are probably referable to A. affine or other allied species.

Asplenium planicaule Wallich, Num. List. 8, no. 189. 1829, nom. nud.  
Tarachia truncata K. B. Presl, Euphr. Bot. 78. 1849 [1851], nom. nud.  
A new name for Asplenium planicaule Wallich ex Mett., non Lowe.  
Type: Based on A. planicaule Wallich ex Mett., non Lowe. The syntypes are Himalaya Mountains, Wallich no. 189 and Fielding. The name planicaule originated with Wallich and so the Wallich specimen no. 189 in Berlin ex Herb. Mettenius is here designated lectotype (Morton photograph 9739, a sheet with a detached frond at the left, and two fronds with a rhizome at the right, and a label saying "Typus"; there are other sheets of Wallich 189 at Berlin, all of them also with the label "Typus").

Sledge noted that the well-known name Asplenium planicaule Wallich ex Mett. (1859) was a later homonym of A. planicaule Lowe (1858) and so proposed the new name A. indicum, remarking that a
variety grew in Japan. He overlooked the fact that the Japanese variety had been originally proposed as a species, *Asplenium yoshinagae* Makino (1900). So long as these are considered as only varietally different, which appears to be best, the name *A. yoshinagae* has priority as a species name for the combined species, and Sledge’s name *A. indicum* is unnecessary. The Japanese plant has been called *A. planicaule* var. *yoshinagae* (Makino) Tagawa (Acta Phytotax. Geobot. 14:95. 1951), but now this variety must become the species and the species the variety. Even though *A. planicaule* Wallich ex Mett. is not correct as a species name, the epithet *planicaule* is available as a varietal name and is therefore adopted here. Sledge cited as a synonym *Asplenium falcatum* var. *abbreviatum* Kunze (Linnaea 24:260. 1851), and so it might appear that *abbreviatum* is the earliest varietal epithet, but an examination of Kunze’s publication shows that Sledge misinterpreted Kunze’s intention, for Kunze clearly indicated that his names at this place were forms. Since epithets have priority only within their category, it is not necessary to raise Kunze’s forma *abbreviatum* to varietal status, and I do not do so because I am not absolutely convinced that the name really refers to this plant. Kunze’s original type specimens were destroyed in Leipzig and so his plant cannot really be definitely identified; the f. *abbreviatum* was based on plants from the Niligiri Mountains (Schmid-Koch 49 and 132; duplicates may exist elsewhere).


**Type:** Brazil, Riedel (holotype B, Morton photograph 10449).

The authority for *Diplazium riedelianum* is usually stated as Kuhn, Linnaea 36:102. 1869, but at this place the name appears as a synonym only. I cannot find that anyone properly made a combination under *Diplazium* until Christensen in 1905.


*Asplenium concinum* Wallich, Num. List No. 216. 1829, nom. nud. Based on Nepal, Wallich, doubtless on a part of the same collection as the type of *A. tenuifolium* D. Don.

**Type:** Nepal, Wallich. One would expect a holotype in the British Museum (Natural History), but I was unable to locate one there; a specimen labeled *Asplenium tenuifolium* D. Don is in Brussels, received from Lambert (the employer of D. Don), which is surely an isotype at least and may even be a holotype; it is here designated lectotype until such time as a true holotype may be found in the British Museum (Natural History) or elsewhere (Morton photograph 20049). Isolectotype: Nepal, Wallich 216 (US).

*Asplenium tenuifolium* D. Don is a common species of the Himalayas that has always been correctly understood. So far as I know, there are no validly published synonyms.
Type: Santo Domingo (West Indies), Nectoux, FI (holotype, Morton photograph 16116).

The type and type locality of this species has been in doubt. There is no specimen in Paris labeled by Poiret that could be the type. Poiret did not cite a specimen or locality, merely "Amerique meridionale," a term applied vaguely by Poiret, Desvaux, and other early workers to almost any part of tropical America. There is a specimen in the Jussieu Herbarium (Cat. no. 1235) under the name Asplenium erosisum L. that I formerly thought might be the type (Morton photograph 3017), but this now seems unlikely, for the specimen is from Peru, collected by Joseph de Jussieu, and the species that has been known as S. unilobum is known only from the Greater Antilles. In Florence I found a specimen labeled Asplenium unilobum Poir. nov. sp., from the Desfontaines Herbarium. Poiret described some new species from the Desfontaines Herbarium (e.g., Polypodium elegans) and this is another one, very evidently the holotype. It is from Santo Domingo, collected by Nectoux. The specimen agrees exactly with Linden 1921 in Florence, an isotype of Asplenium semihostatum Kunze, which agrees with the opinion expressed by Hieronymus.

Type: Nitiperu, Rapa Island, July 18, 1934, Fosberg 11577 (isotype US).

This rare species is apparently a Rapa Island endemic. Copeland considered Diplazium as a synonym of Athyrium, but pteridologists are now generally agreed that the two may be distinguished, although a few species are a little hard to place. One of these is our eastern United States narrow-leaved spleenwort, Athyrium pycnocarpum, which has been considered a Diplazium by some authors. Since A. pycnocarpum has n=40 (as always in Athyrium), it is an Athyrium that is somewhat aberrant rather than a Diplazium, in which the chromosome number is n=41, so far as known.

Syntypes: Matang, Borneo, Hose 74 (presumably K), and 287 (K, Morton photograph 18084).

In the "Index Filicium," Christensen overlooked this species, which he apparently noted only in preparing Supplement 3. In the meantime,
he had applied in 1917 the name Diplazium matangense C. Chr. to an
totally different species, and therefore renamed the species of Hose
D. falcinellum C. Chr. Hose listed this plant as merely Asplenium
(Diplazium) sp. in his list of the ferns of Borneo in 1899. He gave
a rather elaborate description and ended up by stating that he named
the species provisionally A. matangense. Since the author himself
indicates that he considered his name provisional, we have no option but
to consider it a nomen provisorium also, and consequently invalid.
Apparently no one discussed the species again until Copeland, who ac-
cepted it as a valid species. The epithet matangense therefore dates
from Copeland. Under Athyrium, the name A. matangense Copel. is
correct; under Diplazium the name must be D. falcinellum C. Chr.

   =Diplazium megistophyllum (Copel.) Morton, comb. nov.
   TYPE: Penibuken, Mount Kinabalu, Borneo, 5,000 ft. alt., Oct. 19, 1933, J. & M. S.
   Clemens 40806 (isotype K, Morton photograph 18948).

   This is one of the few Diplaziums that has a "spiny" stipe. In this
case at least, the "spines" are the knobby persistent and hardened bases
of the numerous deciduous stipe scales. This is one of the largest Di-
plaziums, as indicated by the specific epithet, the middle pinnae being
almost a meter long. The caudex is unknown, but it may be conjectured
that it is elongate and erect, thus making this a little "tree fern."

   t. 10. 1938. =Diplazium sancti-johannis (Copel.) Morton, comb. nov.
   TYPE: Tubuai Island, Austral Islands, Aug. 20, 1934, H. St. John 16410
   (isotype US).

   This rare endemic of Tubuai is probably known only from the type
   collection. It is a relative of Diplazium membranaceum (Mett. ex.
   Kuhn) C. Chr., a more widespread Polynesian species. In the "Index
   Filicum," the authority is given as "Mett. Linn. 36:103. 1869 (syn.)" —
   however, a name published as a synonym is not published at all. Ap-
   parently no one else treated this species as a Diplazium until Christen-
   sen, and so Christensen must be considered the author of the combi-
   nation D. membranaceum.

   =Sadleria souleyetiana (Gaud.) Moore, Ind. Fil. XXVI. 1857 [as
   "souleyetiana"].
   TYPE: Sandwich Islands [Hawaii], Gaudichaud.

   In the "Index Filicum," B. souleyetianum [as "souleyetianum"] is
   cited as "sine desc." and consequently the name S. souleyetiana is
   indicated as first published by Hillebrand in 1888. Although there
is no description, Gaudichaud's t. 134 gives a full illustration with analyses and consequently provides a valid publication by Art. 42 of the Code. The exact date of publication of t. 134 is still uncertain. Johnston (Journ. Arn. Arb. 25:487. 1944) gives dates for most of the plates in Gaudichaud's work, but leaves t. 134 only as "1845–50." Further bibliographic work is indicated.


=Sadleria squarrosa (Gaud.) Moore, Ind. Fil. XXVI. 1857.


Type: Sandwich Islands [Hawaii], Gaudichaud. As lectotype I choose the specimen in Firenze, with the name in the hand of Gaudichaud (Morton photograph 16428); an isotype is in Berlin (Morton photograph 16229). There is probably an isotype in Paris also.

In the "Index Filicum" and in the "Revised List of Hawaiian Pteridophyta" (Bern. P. Bishop Mus. Bull. 25:16. 1925), Christensen adopted the name Sadleria polystichoides, remarking in the "Index" that B. squarrosum Gaud. was "sine desc."; however, although there is no description by Gaudichaud, there is a plate with analyses and so B. squarrosum is validly published by Art. 42 of the Code. The illustration is fine and readily identifiable as the same as the later B. polystichoides Brack., which is confirmed also by the isotypes that I have seen. I have seen the name given as "S. squarrosa (Gaud.) H. Mann" on some herbarium labels, which I do not understand. The combination was validly published by Moore in 1857, although wrongly attributed to Gaudichaud.


=Diplazium woodwardiiæ (K. B. Presl) Morton, comb. nov.


Athryrium basilare Fée, Gen. Fil. 197. 1832. Based on Brachysorus woodwardiiæ K. B. Presl. Since the epithet woodwardiiæ was legitimate and available under Athryrium, there was no need to change it to "basilare," which is thus an illegitimate, superfluous name.


Type: Luzon, Philippine Islands, Cuming 153 (holotype presumably in Prague, not seen; isotypes BM, Morton photograph 6999, and FI, Morton photograph 16203).

Presl distinguished his genus Brachysorus from Diplazium primarily by the short sori occupying the lower part of the veinlets and
not extending beyond the vein-fork, and by the sori being solitary rather than back to back. He did not mention the genus *Allantodia* R. Brown, although that is the obvious alliance. The sori are mostly in the lower part of the veins, but they do sometimes extend somewhat above the fork. I have not seen young sori, but it is likely that the indusia are somewhat inflated and at least partly covering the young sporangia, as in *Allantodia australis* R. Brown of Australia and *A. umbrosa* (Ait.) Kaulf. of Madeira. The habit of these plants is entirely that of *Diplazium* rather than *Athyrium*, and the cytological evidence is in favor of this, so far as it goes. Brownlie has found $n=123$ in *A. umbrosa* and Sledge indicates that the related *Diplazium muricatum* (Mett.) van Alderw. van Rosenb. of Java, India, and Ceylon is $n=82$, an indication that the base number of *Allantodia* is $x=41$ as in *Diplazium* rather than $x=40$ as in *Athyrium*. Sledge has suggested that this group, *Diplazium* subg. *Pseudallantodia* (C. B. Clarke) Sledge (Bull. Brit. Mus. [Nat. Hist.] 2:312–315, 1962), may ultimately deserve generic status, in which case the name *Allantodia* is available. Pending a thorough study, however, it is better to place it as a subgenus of *Diplazium*.


Ching (Hong Kong Nat. 10:201. 1941) places *C. dealbata* D. Don as a synonym of typical *Aleuropteris farinosa*, but it is doubtful that he saw any types. I must admit that the Himalayan plants do look like those from East Africa, which are presumed to be typical, but there may be some minute differences.

Type: Nepal, 1822, Wallich no. 284. There may be a specimen of this number in 
Presl’s herbarium in Prague, which will be the holotype. Duplicates are in 
the East India Company Herbarium at Kew, and elsewhere, including US.

The authority for this species is usually cited, as in the “Index Filicum,” as “Wallich” or “Wallich ex Mett.,” but from the citations 
above it is clear that Presl must be considered as the author of the 
epithet, since he was the first to give a description. It cannot be “Wall. 
ex Presl” because Wallich had it under Polypodium, whereas Presl 
described it as a Colysis. It is still retained in Colysis by those recog-
nizing this genus, such as Ching, even though the sori are not confluent 
and linear, as they ought to be in this genus.

There is a Wallich specimen of this species in the British Museum 
(Natural History) (Morton photograph 7616) that is labeled in Don’s 
own hand as “Polypodium membranaceum D. Don,” but it does not 
represent that species as usually considered, and it does not agree with 
Don’s description. Don’s description calls for a very large frond about 
four inches wide, very membranous, and with scattered, rotund sori, 
characters that agree with the common Himalayan species usually 
identified as P. membranaceum. Polypodium hemionitideum is a 
smaller plant of thicker texture, with the often somewhat elongate 
sori in a single median row.

amylacea (Copel.) Morton, comb. nov. 
Type: Cargadira, Bolivia, L. Williams 1134 (US 700281).

fragillima (Copel.) Morton, comb. nov. 
Type: Mount Roraima, Steyermart 58882. The holotype is in US, although not 
so stated by Copeland.

herrerae (Copel.) Morton, comb. nov. 
Type: Copeland cited two collections, Bues 1209 and 1209, but without indi-
cating a type or providing locality data. In the United States National 
Herbarium, he indicated no. 1209 as the type, and it is here designated lectotype; 
it is from Huadquiña, Department of Cuzco, Peru, collected November, 1920 
(US 1515537). The other collection would not have been a suitable type because 
it is sterile.

rhizophorae (Copel.) Morton, comb. nov. 
Type: “Colombia, in mangrove swamp along Rio Dagua, alt. 0 to 5 m.” is all 
that Copeland cited, the rest having somehow been lost in the manuscript or 
printing. The holotype is in the United States National Herbarium (no. 1140069); 
the remaining data are: Buenaventura, Dept. El Valle, May 7, 9, 1922, B. P. 
Killip 5334.
45. 


**Type:** Copeland's citation of the type is somewhat defective in that he omits the collector's number, omits an indication of the herbarium where the type is deposited, and cites the collector as "L. A. Brade," in which the "L" is not an initial but stands for the Latin word "Legit" (i.e., collected by). The holotype is A. C. Brade 5833, collected at Campo Grande, Serra do Mar, São Paulo, Brazil, November, 1913 (US 1198707).


**Type:** Boridi, Papua, Carr 13039 (holotype BM, not seen; isotype L, Morton photograph 826).

This rather common New Guinea species is distinguished by the sori being sunken in pits.

47. **Davallia scabra** D. Don, Prodr. Fl. Nepal. 9. 1825. =**Microlepis marginata** (Houtt.) C. Chr. Ind. Fil. 427. 1906.

*Davallia villosa* Wallich, Num. List. no. 244. 1829, nom. nud., non *D. villosa* D. Don, 1825. Based on Nepal, Wallich in 1821.


*Davallia villosa* Wallich ex Hook. Sp. Fil. 1:172, t. 48A. 1846. Since Hooker cited *Davallia scabra* D. Don as a synonym and since this name was legitimate, prior, and available, Hooker's *D. villosa* must be considered a superfluous renaming of *D. scabra* and based on the same type. Also, *D. villosa* Wallich exHook. is an illegitimate later homonym of the different species *D. villosa* D. Don, 1825.

**Microlepis villosa** (Wallich ex Hook.) K. B. Prestl, Eplm. Bot. 95. 1849 [1851].

**Type:** Nepal, Wallich (holotype BM, Morton photograph 6901, a sheath with a full frond with a detached stipe and a single detached pinna in the upper right hand corner; the label in the upper right hand corner may be in Don's hand).


**Gleichenia palmata** Moore, Ind. Fil. 380. 1882, nom. nud.

**Type:** Orizaba, Veracruz, Mexico, Pringle 6129 (NY; isotypes B, US). Distributed originally as *G. pubescens* H.B.K.

The first valid publication of this species was by Underwood as *Dicranopteris palmata*, who designated the type as *Pringle 6129*. Since this is a different collection from the Schaffner specimen intended as the basis for the nominate nuda *Mertensia palmata* Schaffn. and *Gleichenia palmata* Moore, the species must be considered as wholly Underwood's. The first acceptance of the species under the name *Gleichenia* after Underwood's description was by Christensen in the Corrigenda (1913) to the "Index Filicum," where the species is accepted under the name *Gleichenia palmata* (Schaffner) Moore. These authorities are
not in accordance with the Code, since they refer to nomina nuda and also to a species based on a different type. The proper authority is *Gleichenia palmata* (Underw.) C. Chr. Ind. Fil. Suppl. 1:113. 1913 [incorrectly attributed to “(Schaffn.) Moore”]. Other collections referable to this species in the Berlin herbarium are: Orizaba, Veracruz, Mexico, Müller; San Andres, Veracruz, Mexico, Schiede & Deppe 727; Jalapa, Veracruz, Mexico, Ehrenberg 843; Mexico, Schaffner; and Mabess River, Jamaica, Harris 7597. All of these are filed as *G. furcata*, following identifications of Hieronymus, but they are not close to the true *furcata* of the Lesser Antilles.

*Athyrium melanopodium* (Fée) Copel. Fern Fl. Phil. 401. 1900 [wrongly attributed to Fée].  

**Type:** Since *D. cumulatum* J. Smith is a nomen nudum, it does not strictly speaking have a type, but it was intended to be based on Luzon, Philippine Islands, Cuming 158.

Christensen was in error in taking up the same *Diplozia caudatum* J. Smith, for this was a nomen nudum only. As a synonym he cited *Athyrium meyenianum* Copel. (Phil. Journ. Sci. 3C:295. 1908), but this was an error also, for *A. meyenianum* was not a new species of Copeland but merely a new combination based on *Diplozia meyenianum* K. B. Presl, which Christensen specifically excluded from his concept of *D. caudatum*. Doubtless, Christensen intended *Athyrium meyenianum* sensu Copel. excl. synon., but there was no description by Copeland at the place cited that would serve to validate the name *D. caudatum*. The other synonym cited by Christensen, *D. melanopodium* Fée, was cited only with a query, and so this cannot validate the publication of the name *D. caudatum* J. Smith either. Hieronymus (Hedwigia 59:337. 1917) believed that *D. meyenianum* K. B. Presl was identical with the Hawaiian *D. arnottii* Brack., of the Hawaiian Islands, but Holttum, in his recent paper on Presl types, indicates that this is doubtful and that the species needs further study.

*Diplozia celtidifolium* sensu auctt. as to plants from the Lesser Antilles.  
*Diplozia callipteris* sensu auctt. as to plants from the Lesser Antilles.  
**Type:** Guadeloupe, L’Hermier 67 (holotype K, Morton photograph 18581).
Diplazium crenulans is mentioned by Baker only in an observation, but there is enough description to validate the name. This species has usually been called D. callipteris, as by Fée himself, who kept that species distinct from D. cellidifolium Kunze, which he also attributed to the Antilles. Proctor, however, states that the type of D. callipteris came from Venezuela, rather than from Cuba as stated by Fée, and that it represents D. cellidifolium. He does not state that he has seen authentic material, but that is the inference. He is very likely right, because no species closely allied has ever been collected since in Cuba.

There are two other specimens at Kew of D. crenulans, but they came from the T. Moore Herbarium, which was purchased in March, 1885, and so these were not studied by Baker presumably; they are also from Guadeloupe, collected by L’Herminier, and may be part of the same gathering (Morton photographs 18582, 18582a) although the pinnae are merely crenate-dentate in one (rather than lobulate) and subentire in the other; this species appears to vary in these respects, perhaps according to the size of the plants or the position of the pinnae gathered. It would appear that the lowest and largest pinnae are lobulate, the middle crenate-dentate, and the upper subentire. Another specimen mounted on two sheets is also at Kew, collected in Guadeloupe by L’Herminier (Morton photographs 18533, 18584); it is identified by Fée as D. callipteris var. undulatum, an unpublished name, probably intended originally to have something to do with Diplazium undulosum Swartz, which was based on Plumier, Tract. Fil. t. 107, and which is listed in the “Index Filicum” as a dubious species. Plumier’s illustration is one of his most esoteric ones, but it is clear that it cannot possibly represent a Diplazium. The illustration and the accompanying description show large sized pinnae and many transverse veinlets. Among the plants known from Martinique it can only represent Thelypteris [Meniscium] reticulatum (L.) Proctor. Fée (Mém. Foug. 11:40. 1866) indicated that D. undulosum Swartz was probably a Meniscium.


Hemionitis falcatula Buch.-Ham. mss. ex. D. Don, loc. cit.


Coniogramme falcatula (D. Don) Salomon, Nomencl. 139. 1888.

Type: Naranikhetty, Nepal, March 1, 1803, Buchanan-Hamilton (holotype BM, Morton photograph 6691).

In his monograph of Coniogramme, Hieronymus (Hedwigia 57:325. 1916) considered D. falcatum as a dubious species, perhaps a synonym of C. fraxinea, which appears to be true. It seems odd that Don would
describe the same species twice, but this is explained by the fact that his D. fraxineum had the lower pinnae ternate or pinnate and his D. falcatum had them simple. It seems that this species varies in this respect, but the matter deserves study in the field. If the form with simple pinnae should be considered different, the name C. falcata (D. Don) Salomon is available for it.


Type: Mauritius, Bélangier (holotype presumably P; isotype Fl, Morton photograph 16154).

This is a form of the widespread Diplazium proliferum with the pinnae rather deeply lobed; consequently, the venation is simpler, most of the veins being connivent to the sinususes and only occasionally Anastomosing. Madame Tardieu, who has seen abundant material from Mauritius and Réunion, however, considers it not specifically distinguishable from typical D. proliferum. Whether the Javan D. aecedens Blume is specifically different remains an open question.


Syntypes: Coast of China, Gaudichaud (Fl. with the name in Fée's hand, Morton photograph 16218), and Amboina, Labillardière (Fl. with the name in Fée's hand, Morton photograph 16219).

Christensen (Dansk. Bot. Ark. 6(3):46, 47, 86. 1929) discussed the identity of D. subcordatum. He had not seen the syntypes, but decided that Fée's description agreed best with material from China, and so chose the Gaudichaud collection as lectotype. Judging from the locality "Amboina," he believed that the second syntype represented an entirely different species, Drymoglossum fallax van Alderw., van Rosn., and from my photograph of the Labillardière specimen it appears that he is right, although there is only one fertile frond on the sheet and the photograph is not sufficiently detailed to show the arrangement of the sporangia, which is very peculiar in D. fallax, the sporangia being arranged in a single row, as Christensen expresses it "like cakes in a tinbox." Christensen thought that Fée's figure (Gen. Fil. t 9A, f. 1. 1852) represents the Amboina plant, but it does not seem so to me; judging from the disposition of the sporangia, it seems that the fertile leaf at least is Lemmaphyllum microphyllum, and I think that the sterile leaves are also L. microphyllum. The stellate hair shown was probably not drawn from material of D. subcordatum at all, since it is indicated as representing the hairs of three different species. The sterile fronds of the Labillardière specimen are definitely cuneate at
the base, and therefore Fée's description of these as subcordate is not applicable, nor is the specific epithet subcordatum. But sometimes Chinese specimens of *L. microphyllum* from Hong Kong really are subcordate, another point indicating that the Gaudichaud plant is the correct lectotype.

**Type**: Luzon, Philippine Islands, *Cuming* 122 (isotype FI, Morton photograph 16028).  

*Drynaria stenophylla* Fée (1853) is usually mentioned (if at all) as though it were the same as *D. stenophylla* J. Smith (1841), but it is not. Smith's name was a new combination based on *Polypodium stenophyllum* Blume, and the type is therefore the same as Blume's type from Java. Fée attributed his *D. stenophylla* to J. Smith, but he described it as a new species based on *Cuming* 122 from Luzon, Philippine Islands, and made no mention of Blume. Therefore, *Drynaria stenophylla* Fée must be considered as nomenclaturally a different species since it has a different type; it is thus a legitimate name under *Drynaria*. The Philippine Island plant represented by *Cuming* 122 is considered by Copeland as taxonomically the same as the Javan *P. stenophyllum* Blume (*Java, Blume*, holotype L, Morton photograph 1969), but Copeland did not see the Blume type, which may or may not be the same.

**Type**: Morne Cabajo, near Robergeau, Nouvelle Touraine, Selle, Haiti, *Ekman* 1889 (isotype US).  

Collected several times by Ekman but not otherwise.

**Type**: Six collections were cited, all from Bermuda, none of which was designated as the type. As lectotype I choose: Sink hole, Paynter's Vale, Bermuda, Aug. 3-Sep. 20, 1905, S. Brown & N. L. Britton 266 (US 524898). This is a good specimen, identified by Christensen.

Theleyteris sancta var. portoricensis (Kuhn) Morton, Amer. Fern Journ. 53:64. 1963, nom. nud.

Type: There were three syntypes cited, but no lectotype has been designated. As lectotype I choose the second syntype: Utuado, Puerto Rico, Sintensis 5956 (US, with the name in Christensen's hand). The third syntype, Underwood & Griggs 60 is also in US, as is a duplicate of the first syntype, Sintensis 403, the latter, however, without the name in Christensen's hand.

It has been pointed out to me that when, in 1963, I attempted to publish a new combination for this variety under Theleyteris that I wrongly cited a nomen nudum as the basionym. Although the epithet portoricense originated with Kuhn the variety was really first described later by Christensen.


S. C. Ching, Sinensia 7:94. 1936, non Theleyteris asplenioideae (Swartz) Proctor.

Syntypes: Christensen cited Szechuwan, China, H. Smith 2116, and Khasia, India, collector not stated. Ching chose Khasia, Griffith as lectotype.

Christensen indicated the author of his var. asplenioideae as “(J. Sm.) C. Chr.,” as though it were a new combination of some validly published name, but I cannot find that Smith ever published any name that could be a basionym, and therefore the variety must be attributed to Christensen only. Similarly, Ching in transferring this variety to Stegnoagramma attributed the name Stegnoagramma asplenioideae to “J. Sm. mss.,” but since the first describer was Christensen, the proper authority must be “(C. Chr.) Ching.” As to the distinctness of Stegnoagramma as a genus, see my remarks in Amer. Fern Journ. 56:177-179. 1966. Since the epithet “asplenioideae” has already been used in Theleyteris, a new name is necessary for this species.


In my previous paper on fern types (Contr. U. S. Nat. Herb. 38:44. 1967) I stated that Elaphoglossum alatum Gaud. was a synonym of E. gorgoneum (Kaulf.) Brack. When this was written I had not seen the paper “A Revision of the Hawaiian Species of Elaphoglossum,” by W. R. Anderson and M. R. Crosby (Brittonia 18:380-387. 1966), in which it is indicated that a study of the type specimen has shown that Acrostichum gorgoneum Kaulf. does not represent E. gorgoneum as usually named but is a synonym of Acrostichum aemulum Kaulf. [=Elaphoglossum aemulum (Kaulf.) Brack]. Anderson and Crosby were probably the first to unite these two species, and therefore their choice of the epithet aemulum must be followed; this is the best anyway for avoiding confusion, since the epithet gorgoneum has been so
widely used for the different species *E. alatum* Gaud., which is the correct name for this species. *Aconiopteris obtusa* Fée (1845) is perhaps earlier, but the epithet *obtusa* may not now be transferred to *Elaphoglossum* because of the different *E. obtusum* A. Peter (1929).


In a paper entitled "Addenda ad Floram regionis Chaco Australis," N. Rojas Acosta published a new genus and species called peculiarly enough *Epidypoteris lycopodioides*, based on material from Paraguay, presumably collected by himself. In 1958, I wrote asking about this plant to the Jardin Botanico in Asuncion, where the Rojas herbarium is presumably preserved, but I never received a reply. Although Christensen in the "Index Ficulm," Supplement III, referred the genus to *Polypodium* with a query, the species has never been definitely placed. The original description is as follows:

Scandens, filiformis, ramosa, setoso-paleacea vel albida, 20-60 cm. longa, frondibus alternis, gibris, rotund-ellipticis, supra nitis, fertillibus linearibus, soritis solitariis.


There are not many epiphytic ferns in Paraguay, and the only one that agrees with the description in having an elongate, scendent, epiphytic, whitish-scaly rhizome, rotund-elliptic and shining sterile blades, and linear fertile blades is *Polypodium vacciniifolium* Langsd. & Fisch. The identification can be considered certain, even in the absence of type material.


**Type:** Boerengracht, Java, Blume (holotype L, with the name in Blume's hand, Morton photograph 1421).

This species was overlooked in Holttnm's account of *Gleichenia* in the "Flora Malesiana" (II, 1(1):4-27. 1959), but the type was annotated by Holttm in 1957 as *G. truncata*.


**Type:** Rosenstock gave no description, but his varietal name is validated by his reference to Hooker and Baker's characterization of *G. bracteata* Blume (Syn. Fil. 14. 1865); the Hooker and Baker description was based on Java, *Blume in Herb. Hook.*, and the holotype is therefore at Kew.

Holttm considered the species *Gleichenia bracteata* Blume ex Hook. & Bak. validly published, and consequently cited "Blume ex Hook. &
Bak.” as the parenthetical author. However, even though Hooker and Baker did mention a few of the characters of Blume’s G. bracteata, they did not accept the species; since it was published as a synonym only it cannot be valid. Holttum indicated that the holotype of G. bracteata is in Leiden, but the description by Hooker and Baker was of a Blume plant in the Hooker Herbarium at Kew, and this must therefore be the holotype.


Type: Sirinagar, India, Kamroop (not seen).

There is in the British Museum (Natural History) a sheet annotated Gleichenia lamigera Don but this is from “in alpibus Nepaliae,” not Sirinagar. It was probably collected by Wallis and is a part of his no. 157, i.e., Gleichenia gigantea Wallis. Not only is the locality different but the plant is also different, apparently, for this sheet is one of the pinnate type like G. glauca (Thimb.) Hook., whereas Don described his species as variously dichotomous. Don’s species is considered to be Dicranopteris linearis (Burm. f.) Underw., according to J. Smith (quoted by Hooker, Sp. Fil. 1:5. 1844, under Gleichenia dichotoma).


Type: Several syntypes were cited; of these I have seen Bünemelder 7581, from Mount Djantran, Poeloe Karimon Island, Blouw Archipelago (L, Morton photograph 1425).

This variety was overlooked in Holttum’s revision of Gleichenia in the “Flora Malesiana.” From the photograph of the syntype cited above it appears that the variety can be safely referred to var. linearis.


Type: Foramadialhi, Ternate Island, Mar. 11, 1921, Beguin 1501 (holotype L, Morton photograph 1426).

This variety was overlooked in Holttum’s revision of Gleichenia in the “Flora Malesiana.” The occurrence of var. rigida in Ternate is not mentioned either, but it was to be expected since it occurs in Tidore and the Celebes. Another variety that was overlooked is Gleichenia linearis var. irregularis van Alderw. van Rosenb. (Malay. Ferns Suppl. 84. 1917); no collections were cited for this variety and so the type (or a lectotype) can be determined only by consultation with van Alderwerelt’s material so named in Bogor and Leiden; the variety appar-
ently can be referred to *Dicranopteris linearis* var. *alternans* (Mett.) Holttum going on description and probability.

   **Type:** Java, Blume (holotype L, with the name in Blume’s hand, Morton photograph 1441).

   This is apparently a form in which the segments are even more strongly glaucous beneath than usual. The varietal name was overlooked by Holttum in the “Flora Malesiana.”

   *Grammitis scolopendrina* Bory in Duperrey, Voy. Monde Coquille, Crypt. 267, t. 59, f. 1, Nov. 1829. **Type:** New Ireland, d’Urvillette (holotype P, Morton photograph 21514). The locality was originally stated as “New Zealand,” but this was surely a slip, for the species is not known from New Zealand, and the holotype clearly came from New Ireland, in the New Hebrides.
   **Type:** Rawak (=Lawak) Island, near New Guinea, Gaudichaud (holotype P, with the name in Gaudichaud’s hand, Morton photograph 21512).

   In the “Index Filicum,” Christensen indicated that *Grammitis scolopendrioides* Gaud. was probably the same as *G. scolopendrinum* Bory, but apparently no one has ever studied the type and confirmed this. These two species were published at about the same time, but Stafleu’s “Taxonomic Literature” shows that Gaudichaud’s name clearly has priority by over a year. The species is close to *Loxogramme involuta* (D. Don) K. B. Presl but is kept distinct by Copeland in his “Grammitidaceae of New Guinea” (Phil. Journ. Sci. 81:117. 1952).

   *Anogramma eggersii* Christ in C. Chr. Ind. Fil. 58. 1905.
   *Asplenium mortoni* Duck, Adansonia 11:718. 1971. Based on *Anogramma eggersii* Christ, non *Asplenium eggersii* Sodiro.
   **Types:** Jagüey, Oriente, Cuba, alt. 500 m., March, 1880, Eggers 4882a (holotype P, Morton photograph 3593).

   Christ failed to see the indusia and so referred this plant to *Gymnogramma*; however, the indusia are quite obvious, and the specimen differs in no way from the type of *Asplenium monteverdense* (Wright 1029), which came from Monteverde, Oriente, Cuba, not very far from Jagüey, which was misread by Christ as “Jaquei.” In its rather elongate ultimate segments *A. monteverdense* Hook. is only slightly different from *Asplenium myriophyllum* (Swartz) Presl, to which it has been referred as a synonym; however, it may tentatively be maintained as a species, pending cytological study.
In his paper on *Pityrogramma* (Contr. Gray Herb. 189:65. 1962), Tryon stated that *Hemionitits dealbata* Willd. is a superfluous and illegitimate name, a renaming of *Acrostichum tartareum* Cav., but this is an error, due to Tryon's having cited the wrong place of publication. *Hemionitits dealbata* was not first published in Willdenow's edition of the "Species Plantarum" in 1810, but was published in 1805, with a detailed description. In this 1805 publication, *Acrostichum tartareum* Cav. is not mentioned. *Acrostichum ebenum* L. is cited as a synonym, but only with a query, showing that the species was based on a specimen. The locality is cited as "in America australi ad fluvium nigrum."

The description and plate of Willdenow were based on material cultivated in the botanical garden in Berlin. No cultivated material collected by Willdenow is known. In the Willdenow Herbarium in Berlin there are three sheets determined as *H. delabata* under the number 19568, two of them collected by Humboldt and one by Swartz. I translate Willdenow's locality "ad fluvium nigrum" as referring to the Rio Negro in Brazil. Swartz never collected in South America, and so the cultivated material could not have been obtained from his collection. According to the account of *H. dealbata* in Humboldt, Bonpland, and Kunth's "Nova Genera," Humboldt collected this species near Guanajuato, Mexico, and so the Humboldt collection cannot have been the original source of the material either. Therefore, there is no herbarium specimen available as a holotype or lectotype, and the species must be typified on the original description and plate, which are fortunately rather good and complete. These show that Tryon was right in considering this species a synonym of *Pityrogramma tartarea* (Cav.) Maxon. The plant described and depicted was, however, a very small one of this species, probably due to its being unhappy under cultivation.


In my first paper on fern types (Contr. U.S. Nat. Herb. 38:76. 1967), I placed *H. capillare* Desv. as a synonym of *Hymenophyllum aeruginosum* (Poir.) Carm., going on the locality Tristan d'Acunha, since that is the only species of this alliance on that island. Dr. E. A. C. L. E. Schelpe kindly drew my attention to a note by Christensen in his paper "The Pteridophytes of Tristan da Cunha" (1940), in which it is indicated that the holotype in Paris has the locality corrected from Tristan d'Acunha to Bourbon. I have photographed this holotype (Morton photograph 4548). It is identical with *H. pendulum* Bory (1833) and
is the correct oldest name for that species of the Mascarene Islands. It is thus to be excluded from the flora of Tristan d’Acunha.


A specimen in the Hamburg herbarium collected at Fusugasuga, Bogotá, Colombia, 2,700 m. alt. by H. Karsten is probably the type. It agrees with the illustration by Karsten (Fl. Col. 2:t. 155, f. 1–8. 1862–69) and with my delimitation (Contr. U.S. Nat. Herb. 29:186. 1947), but as I have shown (Amer. Fern Journ. 43:175. 1953), this species should be called *H. tomentosum* Kunze var. *fusugasugense* (Karsten) Morton.


*Type:* Pampayacu, Peru, Poeppig 1104.

A specimen in the Hamburg herbarium merely indicated as collected in Peru by Poeppig is probably an isotype. It is a detached and somewhat depauperate frond that matches closely a frond on the collection Schunke 183, from Chanchamayo Valley, Junín, Peru, as cited by me (Contr. U.S. Nat. Herb. 29:178. 1947). It will not key out very well, however, because the rachis is, exceptionally, alate to the base, and even the stipe is a little alate at the apex. Still, there is no doubt as to the correctness of the usual concept of this species.


A specimen in Hamburg collected at Agapata, Peru, by Lechler is typical of this local Peruvian species. It bears the name *Hymenophyllum myriocarpum* Hook. and is doubtless *Lechler 2250a*, listed by Mettenius as "*H. myriocarpum* Hooker ?" (Filices Lechleriæ 1:26. 1856). It is, however, by no means *H. myriocarpum*, which is a glabrous species belonging to a different subgenus. Someone, probably C. Müller, has written "*H. myriocarpoides* C. Müll. n. sp.," but this name is unpublished.


*Type:* Costa Rica, without specific locality, Wercklé 249 and 252. Syntypes presumably F; two apparent isosyntypes BR, Morton photographs 19806, 19807.

The two apparently authentic collections that I have seen in Brussels agree with the brief original description. They are clearly typical *H. crispum* as it grows in Costa Rica. In my revision of the section
Sphaerocionium I omitted this species, believing at the time that it belonged in section Mecodium.


_Hymenophyllum exsertum_ Wallich, Num. List. no. 170, 1829, nom. nud. Based on Nepal, Wallich in 1821.


_Syntypes:_ H. _exsertum_ Wallich Cat. no. 171, Nepal, Wallich, and H. _densum_ Wallich Cat. no. 170, Nepal, Wallich. Hooker here has the names reversed from those in Wallich’s “Numerical List,” where _H. exsertum_ is no. 170 and _H. densum_ no. 171. This is surely a slip of the pen, and the species should be considered based on the plant called _exsertum_ by Wallich, namely no. 170; the specimen of this number in Kew is here designated lectotype. An isoselectotype is in US. Another reason for not choosing no. 171 is that this number perhaps does not represent the species described. At least the specimen in US of this number, which bears the name _Hymenophyllum densum_ Wallich, is not a _Hymenophyllum_, but is _Trichomanes bipunctatum_ Poiret.; our specimen is so annotated by Copeland. I do not know what the Kew material of this number may be. _Trichomanes bipunctatum_ does resemble this species of _Hymenophyllum_ a little, and so it could be that both Wallich and Hooker were mistaken in referring their plants to _Hymenophyllum_; the _Trichomanes_ can be distinguished at once by the thicker rhizome, which is densely covered by short, black trichomes.


_Lectotype:_ Nepal, Buchanan-Hamilton (BM, Morton photograph 6592). The other syntype is Nepal, Wallich, which I have not seen. Presumably it is a part of the same collection that was the basis of Wallich List no. 170, i.e., _H. exsertum_ Wallich.

In the “Index Filicm,” _Hymenophyllum tenellum_ D. Don is listed as a dubious species. Copeland in his revision of the Old World _Hymenophyllum_ listed it as a synonym of _H. polyanthos_ (Swartz) Swartz; he had not seen the type but merely says: “Wallich 172 must be discussed, because, as it is recognized as _H. polyanthos_ by Hooker, Sp. Fil. 1:102, I see no reason to doubt that it is _H. tenellum_ Don, which Hooker listed, page 112, as a ‘dubious species.’” This is a non sequitur, for the fact that Hooker listed _H. tenellum_ as a dubious species is no reason for associating it with the plant called _H. polyanthos_ by Hooker. Apparently it did not occur to Copeland that there are other species in Nepal to which Don’s name might apply, in particular _H. exsertum_. This species is somewhat similar to _H. polyanthos_, but the division of the blade is a little different, and a distinguishing character is the presence of hairs on the rachis; the rachis of _H. polyanthos_ in all its many forms is entirely glabrous.


_Aspidium shepherdii_ Kunze ex Mitt. Fil. Hort. Lips. 94. 1854. Mettenius was the first to give a description of _Aspidium shepherdii_ Kunze, a nomen
nudum when first published (Linnæa 23:239. 1850). Kunze's plants were
cultivated at Kew in 1822, Berlin in 1842, and Leipzig in 1843. The syn-
types were destroyed in Leipzig during the war, but there are probably
some isosynatypes in Berlin that will provide a suitable lectotype, presumably
one in the Mettenius Herbarium. Dr. Tindale indicates that the
holotype is in the Christensen Herbarium in the British Museum (Natural
History), but this is impossible. As indicated above there was no holotype,
only three syntypes, and none of these could be in the Christensen Herbarium
(unless Christensen stole one from Leipzig before the war, which
is not likely).

_Lastreya atrovirens_ J. Smith, Cat. Cult. Ferns 50. 1857. Type: Cultivated at
Kew (holotype J. Smith Herbarium, BM 2 sheets, Morton photographs
6403, 6461).


_Type_: A plant cultivated by Loddiges in 1842 (holotype Herb. Houlston, BM,
2 sheets, Morton photographs 6711, 6772).

In her fine "A Monograph of the Genus Lastreopsis Ching" (Contr.
New South Wales Nat. Herb. 3:249–339. 1965), Dr. Tindale has over-
looked _Lastreya acuminata_ Houlston, perhaps because in Supplement 3
of the "Index Filicium" (p. 117. 1934) the locality is given as "Nepal." 
Houlston's plant, however, was cultivated from some unknown source
and he only guessed that it might be from Nepal. His type, now in the
British Museum (Natural History), is identical with the type of
_L. atrovirens_ J. Smith, and their plants probably came from the same
source. It is indeed quite likely that the original cultivated plants of
_Aspidium shepherdiidae_ Kunze also came from the same source at Kew,
where it was said by Kunze to be in cultivation as early as 1822.
Houlston described his _L. acuminata_ as a new species, with no refer-
ence or suggestion that it might be the same as _Aspidium acuminatum_
Willd. The confusion with Willdenow's _A. acuminatum_ was due to
Lowe, who later illustrated Houlston's species (Ferns Brit. & For.
6:tt. 11. 1857) but attributed the name to Willdenow, for what reason
cannot be imagined, because _Aspidium acuminatum_ Willd. is an utterly
different plant, considered to be a synonym of _Nephrolepis biserrata_.

Inasmuch as the original description was published in a rather rare
journal, rare at least outside of England, I give below a transcript
of it:

_L. acuminata_ J. H.—An evergreen warm greenhouse Fern, the native country
of which is doubtful; prob. from Nepal. Frond glabrous, triangularly elongate,
biplanate, a foot or more long, dull green; pinnæ triangularly elongate-acuminate;
pinnules oblong-ovate, lower ones entire, and slightly pinnatifid, upper ones
decurrent at the base, and rather rigidly toothed. Sori medial. Stipes scaly at
the base, terminal, adherent to a somewhat tufted rhizome.

73:183. 1957.

This species is omitted in Dr. Tindale’s monograph of Lastreopsis, but she wrote me some years ago that L. spinescens was probably a synonym of L. decomposita. An examination of the type shows that this is indeed the case. Houlston believed that his species was from the “East Indies” but it was surely from Australia. Since the original journal is rare, I give below a transcript of the original description:

**L. spinescens** J. H.—An ornamental, evergreen stove Fern, from the East Indies. Fronds pubescent, deltoid, one and a half to two feet long, dull green, tripinmate; pinnules linear-lanceolate, pinnatifid, decurrent at the base, with rather ovate slightly dentate segments, terminating in a long spiny mucro. Sori submarginal. Stipes scaly. Fronds lateral, adherent to a scaly creeping rhizome. This species is also rare in cultivation, although introduced ten years ago, among some orchids, by S. Rucker, Esq., of Wandsworth.


Cheilanthes lucida Wall. in Num. List. no. 69. 1829, nom. nud.

**TYPE:** Narainnhetty, Nepal, Feb. 22, 1803, Buchanan-Hamilton (holotype BM, Morton photograph 6097, right-hand plant; the left-hand plant is Kumaon [Kamaoun], Duthie 3675).

There has been some doubt about the identity of this species, the type and only species of the genus Leptostegia D. Don. For a long time it was considered a synonym of Onychium japonicum. In 1894, Christensen and Ching, working entirely independently, came to opposed conclusions. Christensen in the third supplement of the “Index Filicum” took up the name O. lucidum (D. Don) Spreng as a valid species, with Onychium contiguum (Wall.) Hope as a synonym. Ching on the other hand, recognized O. contiguum as a valid species and placed L. lucida as a variety of O. japonicum. Apparently neither Christensen nor Ching ever saw the type of Leptostegia lucida, but Ching was right in his placement. Don’s type is not at all like the type of Cheilanthes contigua Wall., judging by two sheets of Wallich 72 in the U.S. National Herbarium. They represent a species with the blade very finely cut, with the ultimate segments linear, and the sori short. The type of L. lucida is like Wallich 69, which has broader segments and large sori, these mostly 5 mm. long or more. Ching is very likely right in considering this as merely a variety of O. japonicum, although further study may show that it is specifically distinct from the Japanese plants. The matter is complicated by numerous Chinese specimens, some of which resemble typical O. japonicum and some O. lucidum.

Blechnum microbasis (Baker) C. Chr. var. biforme (Baker) Tardieu in Humbert, Fl. Madag. Fam. 5, 2:14. 1900.

Type: Antananarivo, Madagascar, April, 1876, Pool s.n. (holotype K, 2 sheets, Morton photographs 11422, 11423).

Lomaria biformis Baker has priority by four years over L. microbasis Baker (1880), and so Madame Tardieu has the names backward, since biformis should be the species and microbasis the variety. It seems somewhat doubtful if these species represent more than forms of each other, however, and so the following combination seems preferable: Blechnum biforme (Baker) Christ f. microbasis (Baker) Morton, comb. nov. (Lomaria microbasis Baker, Journ. Bot. Brit. & For. 18:328. 1880. Type: between Tamatave and Antananarivo, Madagascar, May, 1880, L. Kitching (holotype K, Morton photograph 11382; isotype B, Morton photograph 10193).


Pteris siliculosa Desv. Naturforsch. Freundl. Berlin Mag. 5:324. 1811. Type said by Desvaux to be from South America, but Weatherby confirms (Contr. Gray Herb. 124:18. 1939) that it represents the Asiatic species known since the time of the "Index Filicum" as Onychium siliculorum, which had been generally called Onychium auratum Kaulf.

Pteris chrysocarpa Hook. & Grev. Icon. Fil. 1: t. 107. 1828. Syntypes: Nepal, Buchanan-Hamilton, and Katmandu, Nepal, Wallich (presumably K but possibly E). These two collections are doubtless duplicates of the same two collections that served as the syntypes of Lomaria decomposita D. Don. Hooker and Greville noted the similarity of their species to that of Don, but remarked that so careful an observer as Don would not have failed to describe the yellow coloration (but Don was not all that careful and, furthermore, his descriptions were very brief).

Syntypes: Namihetty, Nepal, Buchanan-Hamilton (BM, Morton photograph 6996); Nepal, Wallich (not seen). The Buchanan-Hamilton specimen is here designated lectotype.

In the "Index Filicum," Lomaria decomposita D. Don is left as a dubious species, perhaps a synonym of Onychium japonicum (Thunb.) Kunze. It was correctly placed by Ching (Lingnan Sci. Journ. 13:495. 1934) as a synonym of O. siliculorum; however, Ching did not designate a lectotype.


Acrostichum erythrodes Kunze, Flora 22(1): Beibl. 46. 1839. Type: Ilheos, Bahia, Brazil, Martius 366 (holotype presumably M; isotypes BR, Morton photographs 5077, 5078, and L, Morton photographs 2259, 2260).
Stenochlaena marginata (Schrad.) C. Chr. Ind. Fil. 624. 1906.

**Type:** Brazil, Prince Neuwied (holotype BR, Morton photograph 19835).

In the "Index Filicum," Christensen correctly placed Lomaria marginata Schrad. under Stenochlaena, and indicated Acrostichum japurensense Mart. and A. erythrodos Kunze as synonyms, but for some unexplained reason in the first supplement he indicated that L. marginata was a Blechnum, and in the third supplement he equated it with Blechnum regnellianum Kunze with a query. It must be that a specimen in Copenhagen or Stockholm named L. marginata is really a Blechnum. But the holotype in Brussels is a Stenochlaena, or a Lomariopsis as Holtum now delimits these genera. The type itself is annotated by Kunze as equaling his own A. erythrodos, and Kuhn in his transfer of L. marginata to Lomariopsis also indicates that he has seen the type and that it is the same as A. erythrodos, which I can now confirm. In his brief synopsis of American Lomariopsis (Kew Bull. 1939:618. 1939), Holtum adopts the name L. erythrodos, presumably not having inquired further into the identity of L. marginata Schrad. Lomariopsis marginata is confined to southern Brazil. The closely allied L. japurensis (Mart.) J. Smith of northern Brazil and the Guianas differs in having more numerous and closer veins in the sterile pinnae.


**Type:** Summit of the volcano, Ternate, August, 1821, Reinwardt 1712 (holotype L. Morton, photograph 731).

This species was considered as possibly the same as Lomaria vestita Blume in the "Index Filicum," and also in Backer and Posthumus, but the type shows that it is different in its fewer pinnae, these rounded at the apex and not long acuminate, in its thicker texture, and in its dark rachis, this only sparingly scaly. The type of L. vestita is also in Leiden (Java, Blume, Morton photograph 732); it shows a much larger plant of thin texture, the pinnae being elongate and long-acuminate, and the rachis pale and densely scaly. Lomaria vestita Blume var. β (Blume. Enum. 203) from Mount Tjerimai, Java, Blume (Morton photograph 733) is less scaly and has the veins not raised beneath, but it is doubtless a form of the same species. The proper status of L. vestita remains to be determined; it is close to Blechnum procerum (Forst. f.) Swartz, of which it may be a geo-
graphical race. It is rather unfortunate that the name *Blechnum pyrophilum* is so much like *B. pyrophillum* Blume, but I think that they must be considered different names, because they have different derivations and meanings and because they differ in spelling by two letters. The epithet "pyrophila" was evidently chosen because of the plant having been found growing by the crater of the volcano on Ternate Island.


*Blechnum xiphophillum* (Baker) C. Chr. Ind. Fil. 161. 1905.


**Syntypes:** Madagascar, Humbold 257 and 442 (K, Morton photographs 11391, 11392, 11393).

Following Madame Tardieu, it seems best to consider this plant as only varietally distinct from *B. biforme*, which Madame Tardieu calls *B. simillimum*.


*Selaginella muscosa* Spring in Mart. Fl. Bras. 1(2):120. 1840. **Type:** Macaohé, Sebastianopolis, Brazil. Luschnath (presumably BR or M, not seen).


**Type:** "Habitat in Brasilia."

In Alston's "The Brazilian species of Selaginella" (Repert. Sp. Nov. Fedde 40:313. 1936) the earliest available epithet *crassinervia* was rejected, apparently on the ground that the type specimen is infected with a fungus. This is true and was even noted in the original description by Desvaux, but this does not mean that the name is based on a "monstrosity" and so must be rejected. Many plants are affected more or less by fungi, but if this does not cause so much distortion that the plant is unidentifiable (as in a "witches' broom"), the names are legitimate. Therefore the name *S. crassinervia* should be restored for the common south Brazilian species and the name *S. muscosa* considered a synonym. For additional synonymy, see Alston.


In the "Index Filicum" this is indicated as a validly published but dubious species, but there is no such thing. The words "*puncta lunula-"
"tum" are merely the first words of Richard's generic description of *Meniscium*.


In the "Index Filicum" this is indicated as a nomen nudum, but it is not. The genus *Meniscium* Schreber dates from 1791 and Richard must have known of it even though he does not cite a reference to it, for he is unlikely to have invented the generic name independently. In fact, it is quite evident that he did know of Schreber's work, for he names the species after him, misspelling the specific name as "screberi." Schreber himself did not name a species, and Richard was providing a name. He cites for *M. screberi* "Plumier Fil. t. 110," and since Plumier had both a plate and a full description the species *screberi* is validly published by reference to this "pre-Linnaean" description, which refers to the plant described later as *Polypodium reticulatum* L.

**Type:** Guadeloupe, L'Hermier (Herb Mougeot).

In the "Index Filicum" *Microlepia incisa* Fée is regarded as a dubious and unplaced species. The present location of the Mougeot fern herbarium has not been ascertained, although Dr. Lellinger has followed several leads. There is in Paris a L'Hermier specimen from Guadeloupe (Morton photograph 21327) that has a label in Fée's own hand with the name *Microlepia incisa* Fée. It came from the Houllet Herbarium. I do not know anything about B. Houllet (1815–1890), whose herbarium is now partly in Paris and partly in Brussels, but it seems possible that the specimen of this species from the Mougeot Herbarium (or the whole Mougeot Herbarium?) came to Houllet, and that this specimen is actually the holotype of *M. incisa*. In any case it can be considered the lectotype until another specimen is discovered. It represents the same species as that later described (in 1866) by Fée as *Dicksonia incisa* Fée. Fée having apparently chosen the epithet "incisa" independently for both the *Microlepia* and the *Dicksonia*. The latter is *Dennstaedtia incisa* (Fée) Kuhn, which Tryon considers to be synonymous with *D. obtusifolia*; it is perhaps not quite identical and it may be that the material from the Lesser Antilles deserves some taxonomic recognition.

**Phymatoses myriocharpum** Presl. Tent. Pterid. 198. t. 8, f. 12. 1836, nom. nud.  
TYPE: Luzon, Cuming 66 (isotype FI Morton photograph 16016).

Under the genus *Microsorium*, the name *M. longissimum* Fée is correct, but the epithet *longissimum* is not available under *Polypodium* because of *P. longissimum* Blume (1828). The basis of Presl’s *Phymatodes myriocarpa* is unknown, but very likely it was a Haenke collection from the Philippine Islands; there is no description, and the figure given is an analysis only rather than the figure with analyses which would be required for valid publication. *Polypodium myriocarpum* Mett. was validly published with a description; it was based partly on *Cuming 66* and partly on a Mérat collection from Cochin China. In the “Fern Flora of the Philippines,” Copeland placed *Drynaria rubida* J. Smith as a synonym of *Microsorium longissimum* Fée, but this is wrong, a confusion with the quite different *Polypodium longissimum* Blume, of which *D. rubida* has been considered a synonym. The true identity of *D. rubida* remains to be established; it was originally a nomen nudum but was validly published as *Polypodium rubidum* Kunze, later, although Kunze included in his species material from Java collected by Zollinger as well as the original Cuming material of *D. rubida* J. Smith. A second sheet of *Cuming 66* at Firenze (Morton photograph 16015) shows a form with deeply lobed blades; it is just a monstrosity or possibly is a hybrid with one of the regularly pinnatifid species.


*Polypodium sparsum* Buch.-Ham. mss. ex D. Don, loc. cit.


*Lasieca sparsa* (D. Don) Moore, Ind. Fil. 104. 1858.

*Aspidium densum* Wallich ex Mett. Abhandl. Senkenb. Naturf. Gesell. 2:349. 1858, pro parte, at least as to Wallich no. 390. Mettenius cited as synonyms *Aspidium cataphorom* Kunze (1848) and *Aspidium weigleianum* Kunze (1851), both of which were legitimate and available names. *Aspidium densum* Wallich was therefore an unnecessary name, superfluous and illegitimate by Art. 63 of the Code. *Aspidium densum* Wallich ex Mett. is therefore to be typified as a renaming of the oldest available name that ought to have been adopted, namely *Aspidium cataphorom* Kunze and based on the same type as that. *Nephroidium densum* D. Don was cited not as a straight synonym but as a variant or perhaps possible synonym, according to Mettenius’ usual way of disposing of names that were doubtful or unknown to him.


This species has generally been understood correctly, as by Ching in his treatment of Sikkim–Himalaya *Dryopteris* (Bull. Fan. Mem.
Inst. Biol. Bot. 8:470. 1938), at least as to plants from Nepal and the Himalayas. The species is variable and possibly an aggregate in the wide range stated by Ching—India, Japan, Formosa, China, Indo-China, Philippine Islands, Malesia, and Polynesia.


Dryopteris subfuscus (Baker) kuntze, Rev. Gen. Pl. 2:813. 1891.

Type: Cayenne [French Guiana], Leprieur 23 bis (holotype K!).

In his monograph of Dryopteris (p. 167), Christensen remarked on this species and indicated that the type could not be located at Kew; it is there, however, with the name on a label at the side of the sheet where it could be easily overlooked. The name Nephrodium leprieurii Hook. var. a is also on the sheet in Hooker’s hand, and it is indeed possible that this same sheet is also the type of Hooker’s species, although I think not. Hooker says that his plant was collected in marshy woods of central French Guiana by Leprieur, but there is no information of this sort on this sheet. Moreover, Hooker comments especially on the false vein recurrent from the sinus [typical of this section Steiropteris], but this vein is not evident on this specimen.

Baker’s N. subfuscum may indeed be a different species from T. leprieurii, for it differs not only in the absence of the recurrent false vein, but in having a rachis that is only slightly pubescent (rather than densely short villous as in leprieurii), and fewer pairs of veinlets (about 8 pairs in subfuscum and about 12 pairs in leprieurii, according to Baker, Syn. Fil. 266). Still, T. leprieurii appears to be a variable species, at least as treated by Christensen, and Hooker’s var. β from Peru appears even more different than subfuscum.

91. Nephrolepis trichomanoides J. Smith ex Presl, Epim. Bot. 44. 1849 [1851].

=Arthropteris palisotii var. trichomanoides (J. Smith ex Presl) Morton, comb. nov.

Syntypes: Luzon, Cuming 101 and Java, Zollinger 2812. Since the name was attributed to J. Smith, the Cuming specimen is the suitable lectotype, for it was named by Smith. This specimen is presumably in the Presl Herbarium in Prague, but it is not mentioned in Holttum’s recent paper on the Presl types that he found. There are two isolectotypes in Paris (Morton photographs 3613, 3614).

The proper citation for this species is omitted in the “Index Filicum” and its supplements; at the reference cited there, “J. Smith in Hook. Journ. Bot. 3:413. 1841,” the name is a nomen nudum. In Copeland’s “Fern Flora of the Philippines,” N. trichomanoides is placed as a synonym of Arthropteris obliterata (R. Brown) J. Smith, but the basis of that (Nephrodium obliteratum R. Brown) is actually a Nephrolepis, the identity of which is being studied by Dr. Jarrett. The
Philippine specimens in general have the pinnae smaller and narrower (often only 4–7 mm. wide) than in the typical African specimens of *A. palisotii*, and they are often obviously crenate rather than entire or subentire. They can conveniently be recognized as a variety. The holotype of *Aspidium palisotii* Desv., from Oware, Nigeria, Africa, *Palisot de Beauvois*, is in the Desvaux Herbarium in Paris (Morton photograph 3620); it consists of a piece of rhizome with one frond attached and a broken part of another frond; it is likely that this was removed from the holotype sheet of *Aspidium ramosum* Palisot de Beauvois (Fl. d’Oware 2:54, t. 91, f. i. 1818), which is a better specimen with six fronds attached to a rhizome, one of these broken in a way that suggests that the broken fragmentary frond on the Desvaux type was removed from this sheet (Morton photograph 3619). There is a good isotype of *A. palisotii* in the Jussieu Herbarium (Cat. 1106, Morton photograph 2955).


*Dryopteris atroviridis* (van Alderw. van Rosenb.) C. Chr. Ind. Fil. Suppl. 2:13. 1917. At this place, Christensen attributes this combination to v. A. v. R., but van Alderwerelt published it only as a synonym and did not accept it; therefore as an accepted combination it must be attributed to Christensen himself.

**Type:** Gunong Tandittat, Sumatra, in a damp ravine at 6,000 feet elevation, Jan. 21, 1913, C. G. Matheu 678 (holotype presumably BOG; isotype K, Morton photographs 18912, 18913, 18914).

From the isotype at Kew, this is clearly not a *Phegopteris* or *Dryopteris* but a *Diplazium*, one of the compound-leaved types. The middle pinnae closely resemble those of *D. polypodioides* Blume, but the lower are quite unlike, being tripinnate, with the ultimate segments elongate and strongly lobed. It is a distinct species thus far known only from the type collection.


**Type:** "Mexico: San Marcos, M. B. Jones 21. VI. 1892, no. 513a (H. Dom. ex Nut. H. Wash.)."

I have received on loan from Pomona College, through the kindness of Dr. Lyman Benson, the specimens of *Jones* 513 and 513a, both of which bear the same data. *Jones* 513 is small and juvenile but rather typical *P. tartarea* (Cav.) Maxon. *Jones* 513a, the isotype of var. *fallax*, is a large, mature specimen that agrees with Domin’s description and comments. This specimen is designated lectotype. There is in
the U.S. National Herbarium a specimen with the same data and with the number 513; this does not agree with Jones 513 in Pomona College but rather with 513a, and it is thus an isotype of var. fallax, and an "isolectotype."

Domin's var. fallax is not typical P. tartarea, for the specimen differs in aspect, in the more oblique pinnae and segments, the more acuminate pinnae, and the softer texture. It appears to represent a hybrid between P. calomelanos and P. tartarea, which is known as Ptyrogramma × distans (Link) Domin. The original Gymnogramma distans Link was not considered by Link as a hybrid; it was based on cultivated material in the botanical garden in Berlin of unknown origin. From the illustration of an isotype of G. distans given by Domin in his paper on hybrid Ptyrogramma, it appears that he is right in considering this taxon as representing the hybrid P. calomelanos × tartarea. This photograph agrees quite well with var. fallax, which probably represents a naturally occurring hybrid. The two species P. calomelanos and P. tartarea are both common and frequently grow in the same areas, and so natural crosses are to be expected.

Type: Bourbon Island [Réunion], Bory (holotype B, Herb. Willd. no. 19660, microfiche photograph US).

The holotype is a poor specimen, a single detached frond lacking a rhizome. It agrees with a topotype collected in Bourbon by Commerson (P, Herb. Jussieu cat. 1091, right-hand plant, Morton photograph 2946). In their white-ceraceous blades and spongy texture, this species and two others of the Mascarene Islands and Madagascar show a clear and unexpected relationship to several tropical American species such as Grammitis curvata (Swartz) Ching, and the following allied species: G. amyloacea (Copel.) Morton, G. fragillima (Copel.) Morton, G. herrerae (Copel.) Morton, and G. subcrassa (Copel.) Morton.

Type: Pangoa, Peru, Mathews 1103 (K).

This distinctive species has been known only from the type and two other collections: Río Lachac, Valle de Lares, Cuzco, Peru, Bues 1822 (US), and Cerros Calla Calla, 26 km. above Leimebamba, on the road to Balsas, Province of Chachapoyas, Department of Amazonas, Peru, 3360 m., Hutchison & Wright 6988 (UC). Superficially, this species rather resembles Polypodium chochetangense Rosenst., but this is an
instance of a parallel evolution apparently, for the latter belongs in *Polypodium* subg. *Polypodium* in the group of *P. pectinatum* L. The rhizome of *Grammitis athyroides* has been unknown until the recent collection of Hutchison and Wright. It is short-creeping and about 2 mm. in diameter. The rhizome scales are abundant. They are castaneous, 3–4 mm. long, 0.5–0.6 mm. broad near the base, narrow-lanceolate, acuminate, clathrate, the cells in about 8 rows near the base, the cells toward the apex of the scales with thickened walls and obscure lumina, and the scale margins with several conspicuous, brown, stiff, one-celled setae 0.3–0.4 mm. long.


Type: Madagascar, Humboldt 307 (K).


*Blechnum umbilicatum* C. Chr. Ind. Fil. 155. 1905. Based on *Lomaria stenophylla* Baker, 1884, non Klotzsch, 1847.


Type: Madagascar, Lyall (holotype K, Morton photograph 11303).

Madame Tardieu reduced *Blechnum binevare* to a form of *B. simillimum*, but that may not be, for the basionym *Polypodium binevare* Hook. dates from 1862, whereas the basionym of the other, *Lomaria simillima* Baker, dates from 1884. Doubtless she was influenced not by the dates of publication of the species but because *P. binevare* Hook. was based on juvenile plants. The fact that the type of a species is juvenile, however, does not mean that the species loses its priority. It is rather unfortunate perhaps that the type of the species should be an atypical, juvenile plant, but that cannot be helped. Since the juvenile and mature forms of the same species cannot be recognized as different forms, it follows that *Lomaria simillima* is a synonym of *B. binevare*. *Lomaria stenophylla* Baker was based also on a juvenile plant of this species.


*Polypodium roemerianum* Rosenst. Nova Guinea 8:725. 1912. Lectotype: Hellwig Mountains, Dutch New Guinea, 1800–2300 m., November 1909, *von Roemer* 1227. The other syntype in Leiden, *von Roemer* 741 (Morton photograph 1969) is a poor specimen bearing the same data as the lectotype; this sheet is annotated by Rosenstock and it is thus truly the syntype, the published number “744” being a typographical error. The
true 744 is a quite different plant, cited by Rosenstock (op. cit. p. 727) as *Pseudopygium rupestre* Blume var. *leucolepis* Rosenst.


**Type**: Mount Suckling, New Guinea, *Maegregor* (holotype K, not seen).


*Niphobolus flocculosus* (D. Don) Spreng. in *L. Syst. Veg.* ed. 16, 4:45. 1827.

*Cyclophorus flocculosus* (D. Don) C. Chr. Ind. Fil. 199. 1905.


This species has been generally understood. It was well described by Giesenhagen (Die Farngattung *Niphobolus* 125. 1901).


**Type**: Near Morelia, Michoacán, Mexico, *Galeotti* 6432 (holotype BR, Morton photograph 5024, left-hand plant and right-hand label).

In Maxon's revision of the group of *Polypodium squamatum*, this variety was overlooked. There is only one sheet at Brussels that could be the holotype. It contains two specimens—a large plant at the right that is *Polypodium pyrrhrolepis* (Fée) Maxon and a smaller plant that represents *P. rosei* Maxon. This smaller plant agrees with the brief diagnosis of Martens and Galeotti. The sheet bears two labels, which are mounted in such a way that they seem to refer to the wrong plants. The label for *Galeotti* 6432, from Morelia, is the one at the right, whereas the one at the left is *Galeotti* 6276 from Mirador, Veracruz, referring to the large plant of *P. pyrrhrolepis*. The labels must go this way because *P. rosei* does occur near Morelia, where the type of var. *sericeum* came from, and *P. pyrrhrolepis* does occur at Mirador, in Veracruz, but not near Morelia in western Mexico. Another sheet of *P. pyrrhrolepis* in Brussels from Mirador bears the number *Galeotti* 6432, evidently an error for *Galeotti* 6276.


**Syntypes**: Barranca, Guadalajara, Jalisco, Mexico, *Galeotti* 6438 and 6443. Weatherby stated (*Contr. Gray Herb.* 124:34. 1939) that he could not find either of these two numbers in the Galeotti Herbarium in Brussels, and he therefore indicated *Galeotti* 6443 in Paris as the suitable type (i.e., lectotype). But there is a collection of no. 6438 in Brussels from the Martens Herbarium. This agrees with the original description and is here designated lectotype, on the reasoning that a lectotype ought to be chosen from among the original syntypes rather than
from an isosyntype. It appears that no. 6438 is a mixture, for Weatherby states that the specimens under this number in Kew and Paris are different, being *P. polyplotoides* var. *aciculare* Weatherby.


**Type:** Abbeokuta, southern Nigeria, *Irving 41* (K, holotype, Morton photograph 13895).

In the “Index Filicum,” *P. irvingii* Kuhn is indicated as a “nomen.” Kuhn, however, cited *P. glaucophyllum* var. *β* Hook. as the basis of the species, and since Hooker did give a description of his var. *β*, the name *P. irvingii* Kuhn must be considered as validly published by a reference to this description and not as a nomen nudum. In proposing var. *irvingii*, Ballard indicated this as a new variety with himself as author; but since he cites *P. irvingii* Kuhn as a synonym, this must be considered as a transfer rather than a new variety, and the authority should be “(Kuhn) Ballard.”

102. POLYPODIUM **LIGUSTIFOLIUM** Poir. in Lam. Encycl. Méth. 5:553. 1804. =Rumohra adiantiformis* (Forst.) Ching, Sinensia 5:70. 1934.

**Type:** Buenos Aires, Argentina, Commerson (holotype P, Herb. Lam., Morton photograph 17237).

In the “Index Filicum,” *Polypodium ligustifolium* Poir. was referred to the synonymy of *Polystichum denticulatum* (Swartz) J. Smith, which is now generally known as *Arachniodes denticulata* (Swartz) Ching (Acta Bot. Sinica 10:260. 1962). Christensen in his monograph of American *Dryopteris* (Dansk. Vid. Selsk. Skrft. VIII, 6:126. 1920) listed *P. ligustifolium* among the “Species Inquirendae,” with the remark that it was probably *Polystichum adiantiforme* sens. lat. The type in the Lamarck Herbarium shows that this is right, for it is identical with specimens of *Rumohra adiantiformis* collected near Buenos Aires by others. This variable species is widespread throughout the world; possibly someone may be able to distinguish segregates sometime. In that case, *P. ligustifolium* will not be the earliest name for the Argentine plant, for it is antedated by *Tectaria calaguata* Cav. (Descr. 252. 1802), described two years previously also on material from Buenos Aires. In the Jussieu Herbarium (Cat. no. 1197B, Morton photograph 2996) is another specimen labeled *P. ligustifolium*, but not by Poiret. It is a sterile specimen from Montevideo, Uruguay, also collected by Commerson, and represents the same species as the Buenos Aires collection; it is, however, not a type. There are in Firenze two specimens determined as *P. ligustifolium* that appear to be authentic; they are labeled as having been collected by Commerson in the
Ile de France, i.e., Mauritius, but doubtless they were also really collected either near Buenos Aires or Montevideo (Morton photographs 16476–78).


In the “Index Filicum,” Supplement III, the species is left as dubious. The original description is as follows:

Radice fibrosa, gracili, tereti; fronde simplici, subcoriacea, angustate, elongate, integro, glabro, acuminato, basi attenuato, subtus reticulatovenoso, bipedali et ultra; soris sparsis.

Forêts et sur les vieux troncs, près de Cangayam Quitilipi. Intermédiaire entre *P. tachiosum* H. B. et *P. crassifolium* de la Jamaïque et du Venezuela.

Remède populaire aux missions du Corrientes du temps de Bonpland.

An inquiry to the Jardin Botánico in Asunción, where the type is doubtless conserved, was without response. The species, however, is identifiable from the description by the process of elimination, for **Polypodium phyllitidis** L. is the only epiphytic species in Paraguay with scattered sorus and elongate, simple, entire, glabrous blades two feet long and more. N. Rojas Acosta gave the common name as “Calaguala,” a name commonly applied to *P. phyllitidis* and other species of *Polypodium* with simple blades, as well as apparently to various glabrate species of *Elaphoglossum* also, the blades of which resemble *Polypodium* casually.


*Physmatodes normalis* (D. Don) K. B. Presl, Tent. Pterid. 196. 1836.

**Polypodium longifrons** Wallich, Num. List. no. 274. 1829, nom. nud.

**Polypodium longifrons** Wallich ex Hook. & Grev. Icon. Fil. 1: t. 65. 1829.

Syntypes: “India orientalis,” Wallich; Nepal, Buchanan-Hamilton. Since the specific epithet was adopted from Wallich, I designate the Wallich specimen (K) as lectotype.


**Pleopeltis normalis** (D. Don) Moore, Ind. Fil. 347. 1862.

**Pleopeltis longifrons** (Wallich ex Hook. & Grev.) Moore, Ind. Fil. 346. 1862.

**Colysis normalis** (D. Don) J. Smith, Hist. Fil. 100. 1875.


**Type:** Nepal: Buchanan-Hamilton (holotype BM, a single frond mounted at left on same sheet as the holotype of *Polypodium socalopendrium* Buch.-Ham. ex D. Don, Morton photograph 7612).
From the fact that this species has been referred to so many different segregate genera—Phymatodes, Pleopeltis, Colysis, Microsorium, Neolepisorus, and Neochiroleptis—one might assume that this is very strange species of uncertain relationships, but actually it is rather nondescript without any very distinctive characters. I would suppose that the latest combination proposed, under Neochiroleptis, is probably right if one accepts all the microgenera suggested. Two species may be passing as *P. normale*; the type has the sori irregularly scattered in two or three rows, but there are some plants referred to *P. normale* in which the sori are strictly in a single row.


*Polypodium oxylobum* Wallich, Num. List. no. 294. 1829, nom. nud.

*Phymatodes oxyloba* K. B. Presl, Tent. Pterid. 196. 1836, nom. nud. Although no description had been published of *Polypodium oxylobum* Wallich or *Phymatodes oxyloba* K. B. Presl, Ching adopted the name as validly published by Presl in 1836.

*Pleopeltis oxyloba* (Wallich ex Kunze) Beddome, Ferns So. Ind. t. 175. 1863–65.

*Pleuridium oxylobum* (Wallich ex Kunze) J. Smith, Ferns Brit. & For. 96. 1866.


**Syntypes:** Nepal, Wallich 294; Emodo, near Mossuril, Hügel: Nilgiris, Schmid-Koch 5 and 151; Nilgiris, Kurr. The valid publication of *P. oxylobum* has generally been attributed to Mettenius, but Sledge pointed out that the species was published previously by Kunze. Sledge remarked that the species was based on collections by Wallich and Hügel and that Kunze also reported it from the Nilgiris, but this is a little misleading. Kunze adopted the name from Wallich, but he did not indicate a type and he referred the Schmid-Koch and Kurr specimens from the Nilgiris to the species without any question, and so they are as much a part of the protologue as the Wallich and Hügel specimens. Sledge removed these Nilgiris specimens to his new species *Crypsinus montanus*, thus leaving the Wallich and Hügel specimens to typify *P. oxylobum*. Since no lectotype has been formally designated, I choose Nepal, Wallich no. 294 in the East India Company Herbarium, Kew. Kunze's own original specimen was destroyed in Leipzig. Isolectotype, US.

The proper disposition of this species is a little doubtful to me. Sledge transferred it to *Crypsinus* without any question. But it seems to me that if *Crypsinus* can be maintained as a group it can only be on the character of the notched margins of the blades, as it is keyed out in Copeland's key to Polypodiaceae in his "Genera Filicium" and as is required by Copeland's description of *Crypsinus*. Copeland did include two species with entire margins in his *Crypsinus*, noting them as aber-
runt, but their inclusion was not justified by any arguments. Copeland did not mention *P. oxylobum*, and he presumably included it in *Microsorum*, which in his opinion included *Phymatodes*. The supposed relationship between *P. oxylobum* and *P. hastatum* Thunb., a true *Cryptopus*, is not obvious, even though Clarke had the former as a variety of the latter. There is perhaps sufficient likeness in a general way to *Polypodium scolopendrium* Burm. f. to indicate that that might indeed be the relationship.

   = *Grammitis parvula* (Bory) Morton, comb. nov.
   *Ctenopteris parvula* (Bory) J. Smith, Hist. Fil. 185. 1875.
   **Type**: Bourbon [Réunion], *Bory* (B, not seen; isotype Fl, Morton photograph 16017).

This species belongs in *Grammitis* sect. *Cryptopus* (Fée) Fourn. (cf. Morton, Contr. U.S. Nat. Herb. 38:90. 1967) but is less deeply pinnaed than most species of the section. It is probably confined to the Mascarene Islands, although it has been reported from Africa. It is given the wrong citation of "*Ctenopteris parvula* (Willd.) Tardieu, Notul. Syst. 15:445. 1959" in the fourth supplement of "Index Filicum"; this combination was validly published by J. Smith in 1875.


In the "Index Filicum" this is listed as though it were a validly published but dubious species, and in Backer and Posthumus’ "Varenflora voor Java" (p. 210. 1939) it is given as a synonym of *Polypodium obliquatum* Blume. This was, however, originally a nomen nudum only, based on Zollinger 3012, from Mount Salak, Java. A specimen in Brussels (Morton photograph 20960) is authentic, for it has the right data and the name is in Kunze’s own hand. This specimen shows that the plant is not at all a synonym of *P. obliquatum* Blume, but rather is identical with *Prosapta alata* (Blume) Christ.

   *Polypodium propinquum* Wallich, Num. List. no. 293. 1829, nom. nud.
   **Type**: Nepal, Wallich List no. 293 (presumably holotype B; isotype US).

In the "Index Filicum," the combination *Drynaria propinqua* is attributed to J. Smith in 1841, but obviously it is impossible to have a valid combination published in 1841 prior to the valid publication of
the basionym in 1856. J. Smith republished the combination in 1857 shortly after Mettenius had provided a description. He did not refer to Mettenius, but the basis of his new combination is obvious.


Type: Chontales, Nicaragua, 1867–68, Tate 44 (holotype, Morton photograph 15430). There is a fragment of the type collection in US, kindly sent by the Director of Kew to Dr. Maxon.

This apparently distinct species is still known only from the type collection. It is a small plant; the fronds are only 1–2 inches long, rather broad, and broadly round-lobed, each lobe having two sori. The blades have minute, white hairs on the upper surface, and the margins are obviously ciliate.


Type: From “Caroline merid.” in Herb. Lamarck, Paris (Morton photograph 2691). The locality “Caroline merid.,” i.e., South Carolina, is an error, and the specimen undoubtedly came from the West Indies.

The small stellate hairs present on the surfaces of the pinnae, both above and beneath, show that this species is a synonym of *Theleptepis reptans*, as it is currently recognized, although that may be an aggregate, since it is so highly variable. The present plant belongs to the form with elongate leaves radicant at the apex but with the upper pinnae (segments) all fully adnate. The more typical form has the upper pinnae all sessile or even short-petiolulate. Poiret cites *Polypodium rhizophyllum* Swartz as a synonym, but the species *P. radicans* Poiret may not be considered as based on that species, for in his comments Poiret says that he merely suspects that his species is the same as that of Swartz. The Poiret name is illegitimate, being a later homonym of *P. radicans* Burm. f., i.e., *Nephrolepis radicans* (Burm. f.) Kuhn.

111. **Polypodium saffordii** Maxon, Amer. Fern Journ. 2:19, fig. 1912. =**Grammitis saffordii** (Maxon) Morton, comb. nov.

*Polypodium minimum* Brack. U.S. Expl. Exped. 16:5, t. 1, f. 3. 1854, non Aublet, 1775.

Type: Mountains behind Honolulu, Oahu, Hawaiian Islands, Wilkes Exped. (holotype US).

This is a species of the sect. *Xiphopteris* endemic to the Hawaiian Islands, where, apparently, it is not uncommon.
This species has been omitted from the supplements of the "Index Filicum," but I think it must be considered validly published. The entire publication is as follows: "Le Dr. Plukenet l’avait nommé Dryopteris scandens jamaicensis. It serait plutôt a rattacher au genre Polypodium: P. scandens Lévl. et Roj." This is thus a new species based on a reference to a pre-Linnæan publication of Plukenet.

The Plukenet reference is obviously to the Almagestum Botanicum 156, 1696, t. 290, f. 3. 1694, where the plant appears as Filix sarmentosa bifrons s. Bryopteris [sic! = Dryopteris] scandens jamaicensis inter silicem et Lyco podium media." Plukenet also quotes as a synonym Phyllitis scandens cardiculis squamosis Plumier t. 42, a reference to Plumier, Deser. Plant. Amér. 29, t. 42, 1693. Plukenet has no description, but the reference to Plumier’s long description [reprinted and enlarged in Plumier, Tract. Fil. 104., t. 119. 1705] serves to validate the name P. scandens Lévl. & Roj, which is a later homonym of P. scandens Forst. f. (1786).

The Plukenet figure and the Plumier plate both represent the species Polypodium lycopodioides L., and in fact both references were cited by Linnaeus in publishing this species in 1753. Since Linnaeus had additional material and cited additional references, however, P. scandens must be considered as a segregate rather than a simple renaming of the Linnæan species. The rather quaint and naive remark of Plukenet that the plant is intermediate between a fern and Lycopodium is due to the numerous spreading scales on the elongate rhizome; when the fronds have fallen, the rhizome thus resembles slightly the leaves and stem of a Lycopodium.


Pictopetalis scoLOpendrium (Buch.-Ham.) Alston & Bonner, Candollea 15:207. 1966.

Leioporous scoLOpendrium (Buch.-Ham.) Tagawa ex Hara, Fl. East. Himal. 494. 1996.

Type: Nepal, Buchanan-Hamilton (holotype BM, Morton photograph 7612, right-hand plant; the left-hand plant is the holotype of Polypodium normale D. Don).

Polypodium scoLOpendrium was for a long time considered to be only a variety of the African Polypodium excavatum Bory, but recent authors Alston and Bonner, and Tagawa have considered it specifically
different. The epithet "scolopendrium" has been used, but to me it seems too close to the earlier *P. scolopendra* Burm. f., a conclusion with which Dr. Stafleu and Dr. Rickett agree. In my opinion *P. scolopendra* Burm. f., although validly published, is incorrect orthographically. It must have been proposed because of the similarity of the simple-bladed fronds to the European Hart's-tongue, *Scolopendrium vulgare*, but if so then the specific epithet ought to have been "scolopendrum," the old generic name unchanged. "Scolopendria" would be the same name in the plural; but specific epithets must be in the nominative singular, and so in my opinion the Burmann species ought to be corrected to *Polypodium scolopendrium* Burm. f., in which case Buchanan-Hamilton's later *P. scolopendrium* would be identical with it. But whether corrected or not the earlier *P. scolopendria* must make the later *P. scolopendrium* illegitimate. I have considered *P. leiopteris* Kunze the same on the authority of Ching; I have not seen any authentic material myself. The syntypes were doubtless destroyed in Leipzig.


Since the original publication of this species is in a rather uncommon periodical, I reproduce the description below:

An ornamental evergreen stove species from the East Indies. Fronds three to five feet high, hairy, terminal, adherent to a thick, creeping rhizome, bi-tripinnate, fragile, pale green, with linear-lanceolate pinnae, the pinnules pinnatifid, with somewhat ovate, bluntly lobed segments. Sori round, medial. Stipes and rachis covered with a fine powder; stipes scaly, especially near the rhizome. This fern is in cultivation under the name *Lastrea paludosae*.

The name is attributed to Reinwardt, but there is no real reason to do so. *Polypodium trichodes* Reinw. ex J. Smith, Journ. Bot. Hook. 3:394. 1841, was a nomen nudum, and there is reason to think that perhaps J. Smith interpreted Reinwardt's herbarium name wrongly. Apparently no one has ever really examined Reinwardt's original specimen to which he applied the name *trichodes*; it is presumably in Leiden, but it was not the basis for Smith's use of the name or Houlston and Moore's use either. The latter authors do not give the origin of their material, other than that it was cultivated, but Lowe (Ferns: Brit. & Exot. 2:1.2. 1872), who also describes the species and attributes it to Reinwardt, says that it appeared spontaneously at Kew in 1848.

Holttum (Blumea 17:28. 1969) states that the epithet *trichodes* was always a nomen nudum until used by Rosenstock as *Dryopteris trichodes* in 1917, but as shown above the epithet was validly published in 1851. The identity of Houlston and Moore's species, however, is not quite certain. I could not find any possible type at Kew, but there may
be one in Moore’s own herbarium, also at Kew, which I did not consult, or there may be one at the British Museum (Natural History), which also has many plants from Moore’s herbarium. Very likely, however, the species is a synonym of Thelypteris torresiana (Gaud.) Alston. Dryopteris trichodes Rosenst. was based on entirely different material. According to Holtsum, the material was mixed, partly T. torresiana and partly a related species that he calls Macrothelypteris polypodioides (Hook.) Holtsum. Holtsum did not select a lectotype. Since Rosenstock stresses the soft hairs and the nonasperous rhachises, his name should apply to the torresiana element. Therefore, I designate Java, Zollinger 354 (L) as lectotype, which fixes D. trichodes as a taxonomic synonym of T. torresiana.


Type: Nepal, Wallich (holotype BM, with the name in the hand of Don, Morton photographs 7618). The type is the two small plants, trifid and bifid, in the lower left-hand corner; the other large, pinnafrigid plants on the type sheet are also Nepal, Wallich, and are doubtless duplicates of the original specimens of Polyodium oxylobum Wallich.


Type: Île de France [i.e., Mauritius], 1774, Commerson 131 (holotype Herb. Lamarck, P. Morton photographs 2680, 2681).

This species is mentioned here merely to point out the need for further study. In the “Index Filicum” it is referred to Dryopteris flix-mas (L.) Schott, but this species is not reported from Mauritius by Baker in his “Flora of Mauritius and the Seychelles” nor by Madame Tardieu in her list of the ferns of the Mascarene Islands. The type specimen shows that P. umbilicatum is indeed a close ally of the European D. flix-mas. It is perhaps the same as D. puleacea (Swartz) C. Chr. var. madagascariensis C. Chr. The proper name for the latter is doubtful, since D. puleacea (Swartz) C. Chr. (1911) is an illegitimate later homonym of D. puleacea (D. Don) Hand.-Mazzet. (1908).


Type: Java, Blume (holotype L, with name in Blume’s hand, Morton photograph 2158).

In the “Index Filicum” and in Backer and Posthumus’ “Varenflora voor Java” (p. 179. 1939), Pteris amoena Blume is listed as a synonym of P. biurita L., following Agardh (Rec. Gen. Pterid. 27. 1839), but Agardh placed it there only with a query, for he had not seen any material. The holotype in Leiden shows that P. amoena is not the same as P. biurita, for the veins are free and not joined to form
costal areoles as they are in *P. biaurita*. In its broad pinnae with cuneate bases and rather broad costal wings (the pinnae not being cut to the base), venation, and other characters it agrees with *P. longipinnula* Wall. ex Agardh var. b of Holtum's "Ferns of Malaya" (p. 405, 1954), which differs from typical *longipinnula* in having the lowest pinnae basally forked. The typical *P. longipinnula*, with unforked basal pinnae, may be known as *Pteris amoena* var. *longipinnula* (Wall. ex Agardh) Morton, comb. nov. (*Pteris longipinnula* Wall. ex Agardh, Rec. Gen. Pterid. 19. 1839. Type: Penang, Wallich Cat. 108. Agardh saw two specimens of *Wallich 108*, one in the Hooker Herbarium and one in the East India Company Herbarium, both now at Kew. I designate the one in the Hooker Herbarium as the lectotype, the sheet bearing the indication "Wallich 1829," which is the date of receipt of the specimen and not the date of collection, which was 1822).


*Pteris aspericaulis* Wallich, Cat. 107. 1828, nom. nud.


**Lectotype:** The specimen of *Wallich 107* in the general herbarium at Kew (Morton photograph 14805) is here designated lectotype. Agardh saw this sheet and also the sheet of *Wallich 107* in the herbarium in the Linnaean Society in London, which is now in the East India Company Herbarium at Kew. In the "Index Filicum" no description of *P. aspericaulis* is indicated until that of Hieronymus (Hedwigia 55: 348, 1914), but Agardh accepted the species and gave a description in 1839.


The holotype is in the Hooker Herbarium at Kew, collected in Tahiti ("Otaheite") by Menzies (Morton photograph 14810). Agardh erroneously stated that it was collected by "Mathews."


**Type:** Agardh cited merely "Hab. in sylvaticis umbrosis Insulae Norfolk (Hh. Hookeri!)." The only specimens in the Hooker Herbarium at Kew that could be the types are two collections from shady woods ("sylvaticis umbrosis"), Norfolk Island, A. Cunningham 39 and 60 (Morton photographs 14922, 14923). These are surely both syntypes, no. 39 being a blade apex (Agardh describes the upper pinnas from this sheet) and no. 60 being four lower pinnas (and Agardh describes these). Dr. Tindale has marked no. 39 as the "holotype," but it is clear that there is no holotype but two syntypes. I choose no. 60 as lectotype, because it is more identifiable, consisting of fully grown lower pinnae, and especially because it has the name *endlicheriana* in the hand of Agardh; no. 39 does not have the name *endlicheriana* on it, only *Pteris comans*. Cunningham did not think his two collections the same species, for he wrote on no. 60 "Hab. of no. 39 but distinct" and he may possibly be right. Agardh did not compare his new species with *comans* but with *berteroana*. 

**Type:** Molucca Islands, Labillardière (holotype FI-Webb, Morton photograph 16404).

In the “Index Filicum,” *P. indica* Poir. is considered dubious, a synonym of either *P. longifolia* L. or *P. moluccana* Blume. It was based on two specimens collected by Labillardière, and the other from the Moluccas; the latter is indicated and described as “variety A,” without a varietal epithet. Both specimens must be considered as syntypes of *P. indica*, since they were included within the circumscription, but the one indicated as a variety cannot be the lectotype. The Java specimen that must be the lectotype of *P. indica* was cited by Poiret as being in the Desfontaines Herbarium, which is now incorporated in the Webb Herbarium in Florence, but I did not find it when I was there in 1967. It is doubtless there, however, but some doubt still remains whether it is properly *P. vittata* (*P. longifolia* in part of the “Index Filicum”) or *P. moluccana*. One indication that it may be *P. moluccana* is provided by a specimen of *P. moluccana* collected on Didang Island, Indonesia, by Gaudichaud, and identified by him as *P. indica* Poir. (cf. Morton photograph 16408).


**Type:** Bourbon Island [=Réunion], G. Neville (holotype K, Morton photograph 14920).

This rather characteristic bipinnate-pinnatifid species of the section *Litobrochiae* is confined to the Mascarene Islands. *Pteris nevillei* was recognized as a valid species in the “Index Filicum.” It was overlooked in Madame Tardieu’s list of the ferns of the Mascarene Islands (Notul. Syst. 16:162–164. 1960).


*[Notations]*: Pteris biaurita L. Sp. Pl. 1076. 1753, sens. lat.

**Holotype:** Nepal, Wallich (BM, Morton photograph 6710). A specimen (US) of Wallich 106 from Nepal, originally identified as *P. nemoralis* Willd. by Wallich, agrees with Don’s holotype and is in all probability an isotype. However, Wallich 106 at Kew is free-veneled and is *P. quadrifurca* Retz., sens. lat.). Wallich ignored *P. pectinata* Don in his List.

There has been confusion about the identity of *Pteris pectinata* D. Don. Agardh placed it as a synonym of his *Pteris aspercicalis* Wallich, not adopting Don’s name because of its being a later homonym of *Pteris aspercicalis* Wallich ex Agardh, Rec. Pterid. 22. 1889, is a validly published name that has never yet appeared in the “Index Filicum” or its supplements with its correct earliest citation. In the original “Index Filicum,” the only (Continued)
P. pectinata Cav.4 Agardh stated that he had seen an authentic specimen of P. pectinata in the herbarium of the Linnean Society of London, now the East India Company Herbarium at Kew. This specimen, however, is apparently not authentic, for P. aspericaulis, as described by Agardh, has free veins. The specimen in the British Museum (Natural History) with the name P. pectinata in Don’s own hand is by no means the same thing; Don’s description does not mention the venation, but this holotype shows that the venation is of the Campteria type, i.e., with a single transverse costal areole between the adjacent lateral midribs of the segments. Thus, P. pectinata D. Don is a synonym of P. biurrita L. in a broad sense, as it applies to specimens from Nepal and the Himalayas generally. This species is characterized also by having the lowest pair of pinnae with a pectinate basal segment, by having raised veinlets beneath, and by entire segments. The holotype sheet bears also the identification P. wallichiana Agardh, but this is an error; the true P. wallichiana also has the venation of Campteria, but the blades are very large and pedately divided, the basal pinnae being twice-parted. The veins are not raised beneath and the segments are toothed at the apex. The type of P. wallichiana is P. umbrosa Wall. List. no. 109. 1829, nom. nud., from Kumaon, India, Wallich in Herb. Hook. (K) and East India Company Herbarium (K). Wallich 109, however, is evidently a mixture, for the specimen distributed by the British Museum (Natural History) to the United States National Herbarium does not represent this species, but is P. aspericaulis; it is from Kumaon, collected by R. Blinkworth, and thus evidently mis-numbered; it ought to be no. 106–6. A specimen in Leiden (Morton photograph 2171) distributed as P. umbrosa Wall. no. 109 is also free-veined; however, it is from Penang and represents the species called P. asperula J. Smith in Holtum’s “Ferns of Malaya”; this sheet

(Continued)

reference is to Wallich “List,” no. 107. 1829, where it is a nomen nudum; in Supplement II, there is a reference to the later description of Hieronymus in 1914. Pteris aspericaulis cannot be considered as a renaming of P. pectinata D. Don, for as indicated Agardh misunderstood Don’s species; the type must be a specimen that agrees with Agardh’s description, namely Nepal, Wallich in Herb. Hooker (K) and Herb. Linn. Soc., i.e., East India Company Herbarium (K); the specimen in the Hooker Herbarium is here designated lectotype.

4 Pteris pectinata Cav. is not a dubious species from the Mascarene Islands, as indicated in the “Index Filicum,” but represents a species that occurs only in the Andes of South America, namely Blechnum loxense (H.B.K.) Hieron., the original locality being thus an error. (Cavanilles, however, did not indicate “Mascarene Islands” but “Marianne Islands,” a very different place indeed.) (cf. C. Christensen, Ark. för Bot. 9(11) :43. 1910, and Dan. Bot. Ark. 9(3) :22. 1937). Fortunately, the epithet pectinata cannot now be transferred to Blechnum because of the existence of B. pectinatum K. B. Presl (1825).
doubtless represents Wallich 106–2, which was identified by Wallich as
P. nemoralis Willd., which is doubtless the alliance.

   Pteris subquinata Wallich, Cat. 104. 1828, nom. nud.
   Pteris quadriaurita var. subquinata (Wallich ex Agardh) Bedd. Handb.
   Ferns Br. Ind. Suppl. 23. 1892.

Agardh accepted and described this species, but in the “Index
Filicum” no description is indicated until that of Hope in 1901. Agardh
saw specimens of Wallich 104 in the Hooker Herbarium and in the
herbarium of the East India Company; the better of these two speci-
mens should be designated lectotype.


Syntypes: “The same collectors [i.e., MacGillivray and Milne] and by Dr.
Harvey. Society Islands, Nightingale.” There are at Kew collections named var. γ
[i.e., milneana] by Hooker from Maaulu, Fiji, Milne (Morton photograph 14910)
and Fiji, Harvey (Morton photographs 14911, 14912), from woods above Makerie
Harbour, San Cristoval Island, Solomon Islands, Milne 511 (Morton photograph
14909), and Society Islands, Nightingale (Morton photograph 14913). On page
227 Hooker indicated his variety γ as from the Feejee [Fiji] Islands, and this
would eliminate the San Cristoval Island specimen from being the lectotype
(although it was doubtless included in the concept by Hooker). Also on page
227 Hooker commented on the Nightingale specimen as being peculiar and some-
what different, and this also eliminates it as lectotype. One might think that the
Milne specimen from Fiji would be the logical choice of lectotype, since the
variety was named for Milne. Hooker’s drawing of the variety (t. 138B), how-
ever, shows the lower pinnae forked, and this Milne specimen has no lower
pinnae. The illustration must have been drawn from the Harvey specimen that
does have forked lower pinnae, and this specimen is here designated lectotype.

In the above discussion I have termed the lower pinnae “forked”
for convenience, but they are really not forked; the lowest inferior seg-
ment is elongate and again pinnatifid, in the manner of P. biaurita
and P. quadriaurita. The venation is, however, not like these species
but is of the fully areolate Litobrochia type.

126. Pteris villosa Baker, Ann. Bot. 5:218. 1891, non Swartz, 1802, nec Fée
1852. =Pteris decurrens K. B. Presl, Del. Prag. 2:183. 1822. Type:
Brazil, Pohl (not seen).

Syntypes: Hort. Linden, 1859 and 1861. Lectotype: Hort. Linden, 1859 (K,
Morton photograph 14919).

Pteris villosa Baker (in the “Index Filicum” erroneously as “Lin-
den”) has never been placed, being listed as dubious in the “Index
Filicum.” It was said to have been introduced from Assam, India,
but no similar species is known from India. In its cutting and pubes-
ence the type matches Pteris decurrens K. B. Presl, a rather common
Brazilian species distinguished among other things by having the costae sparsely (or sometimes densely) villosulous beneath.

127. SAGENTIA HETEROCARP A Bedd. Ferns Brit. Ind. t. 47. 1866. =Tectaria heterocarpa (Bedd.) Morton, comb. nov.
Based on Sagentia heterocarpa Bedd., non Nephrodium heterocarpum (Blume) Moore, 1858.
Apidium heterocarpum (Bedd.) Bedd. Ferns Brit. Ind. Suppl. 16. 1876, non A. heterocarpum Blume, 1828.
Apidium heterosorum (Baker) Bedd. Handb. Ferns Brit. Ind. Suppl. 46. 1892.
Tectaria heterosora (Baker) Ching, Sinensia 2:20. 1931.
Type: Khasya Hills, India, Thomson (Holotype K).

In transferring this species to Nephrodium, Baker was quite right to rename it N. heterosorum, because the epithet heterocarpum was not available under Nephrodium. When Ching transferred the species to Tectaria in 1931, however, he ought to have used the earlier epithet heterocarpa, which was available under the generic name Tectaria, and which must now be restored.

=Limnonium laevigatum (Humb. & Bonpl.) Morton, comb. nov.
Type: Santa Fé de Bogotá, Colombia, Humboldt & Bonpland (holotype not seen; isotype P–Humb. Herb., Morton photograph 3351).

It has been known, for instance in the “Index Filicum” and Reed’s “Index Marsileata et Salviniesta,” that Salvinia laevigata Humb. & Bonpl. was not a Salvinia but an aquatic flowering plant of the family Hydrocharitaceae. The fact that this plant was wrongly ascribed to the ferns does not make the epithet laevigata illegitimate and unavailable; since it has priority, it must replace bogotensis as the correct name. It is possible that L. laevigatum is the same as Hydromystria stolonifera G. F. W. Meyer (Prim. Fl. Essexq. 152. 1818), which is Limnonium stoloniferum (G. F. W. Meyer) Griseb (Fl. Brit. W. Ind. 506. 1862), but the epithet laevigatum is older than stoloniferum also.


In the “Index Filicum,” Christensen had an entry “Lindsaya pulchra var.” of Mettenius in 1861 and gave the author of L. pulchra as a species as “Carr. in Seem. Fl. Vit. 387. 1873.” It is obviously impossible nomenclaturally to have a variety published 12 years prior to a specific combination. In point of fact, the entry of Mettenius’ is “27. L[indsaea]
pulchra var.? (Synaphlebium Brach. [sic!], expl. 223). ‘Balade’ (1553).’ This is in Mettenius' paper on the ferns collected by Vieillard in New Caledonia, and the locality “Balade” and the number “1553” refer to Vieillard’s collecting locality and collection number. The “var.” refers to Mettenius thinking that this Vieillard collection was a doubtful variety of L. pulchra; it does not mean that Mettenius considered L. pulchra itself as a possible variety of something else, for it is given a species number and accepted as a valid species the same as the preceding “26. L. lanceolata Billard.” and “27. L. vieillardii n. sp.” Therefore, Mettenius is the author of the specific combination and not Carruthers.


Type: Rocky banks of the Río Lacanja, Chiapas, Mexico, *Leandro Martinez* 1103 (not seen).

Type: Tabasco, Mexico, 300 ft., *Linden*. Van den Bosch cited no number or specific locality in Tabasco. I have seen a specimen from Tepa, Tabasco, *Linden* 1508 (K, Morton photograph 19047); it is very likely an isotype, for it agrees with the description, and also with the description of *T. martinezii* Rovira, which seems surely a synonym.

This species has been little known, most specimens probably having been identified as *T. radicans* Swartz, from which it differs in having a definitely two-lipped flaring involucre instead of a truncate one. The fronds are usually short-stipitate, whereas those of *T. radicans* usually are long-stipitate, but there is some variation. *Trichomanes collariatum* occurs from Tabasco and Chiapas in Mexico south to Colombia, and is not at all rare in Central America.


Alston renamed *T. crenatum* van den Bosch believing that it was an illegitimate later homonym of *T. crenatum* Gilibert. McVaugh, however, has convincingly shown that names published in Gilibert’s “Exercitia Phytologica” are not validly published by Art. 23 of the Code, because Gilibert did not consistently employ the Linnaean system of binary nomenclature. On the contrary, as McVaugh shows, Gilibert changed some Linnaean binomials into polynomials, such as renaming *Anthericum lithago* L. as “Anthericum non ramosum” and *Lythrum salicaria* L. as “Lythrum salicis folio.” Gilibert also described species with names like “Agaricus totus luteus,” “Samolus beccabungae facie,”
“Jasione scabiosae capitulo,” and so forth. This being so, the name T. crenatum van den Bosch is correct and the name T. crispiforme Alston is superfluous.

   Type: Carabobo, Venezuela, Funck & Schlim 596 (not seen).

In the “Index Filicum” this is recognized as a distinct species. I have not seen the type, but there is a sheet at Kew identified by van den Bosch; it contains two collections, one from Ecuador, Jameson, and one from Venezuela, Fendler 459. These plants are similar and both can be matched with rather small, less divided, exiguous forms of T. diaphanum H. B. K., as it is currently recognized.

133. Trichomanes idoneum Morton, nom. nov.
   Based on Mount Ophir, Malacca, Cuming 400.
   Trichomanes bifidum Presl, Hymen. 43. 1843, non Vent. ex Willd., 1810.
   Type: Mount Ophir, Malacca, Cuming 400 (holotype presumably PR).
   Trichomanes gemmatum sensu Copel. Phil. Journ. Sci. 51:239. 1933, non
   Baker, 1867.

The name T. gemmatum J. Smith was never validated by anyone until, for some reason not readily understandable, Baker took it up (in Hooker & Baker, Syn. Fil. 87. 1867), citing as synonyms T. cellulosum Sturm, T. filiforme Sturm, T. longisetum Brack., T. asae-grayi v.d. Bosch, and T. foeniculaceum Hook. (p.p.). Of these, T. longisetum is merely a misidentification by Brackenridge (a “sensu” name) and T. foeniculaceum sensu Hooker was only “pro parte,” but the other three species cited as synonyms were all validly published and legitimate, and there was no reason to displace them by accepting a nomen nudum in their place. Thus T. gemmatum Baker is a nomen abortivum, a superfluous name. Baker’s description was based probably in part on Cuming 400, the plant assigned the name gemmatum by Smith, but it was based also on varied plants from Venezuela, Brazil, Polynesia, Java, and the Philippines, and so it cannot be said that all these synonyms were cited by Baker in error. Copeland ignored all this and adopted the name gemmatum for a local species native to Malaya and Borneo, saying merely “As Baker takes up the name of J. Smith, the type is the only specimen cited by Smith, Cuming 400, from Malacca.” In fact, Baker did not cite Smith’s publication of 1841, nor did he mention Cuming 400. Since T. gemmatum Baker is a superfluous name, it must be lectotypified on the basis of the earliest name that ought to have been adopted, T. cellulosum, which Baker cites as “Sturm, Hk. 2nd Cent. Ferns, t. 63.” But a check of this reference shows that the
plant described and figured by Hooker is *T. cellulosum* Klotzsch, Linnaea 18:531. 1844, a species which had been adopted by Sturm in Martius' "Flora Brasiliensis." The type of *T. cellulosum* Klotzsch is *Schomburgk* 1180, from the Kanuku Mountains, British Guiana, and this must therefore be the lectotype of *T. gemmatum* Baker. Holtum in his "Ferns of Malaya" adopted Copeland's concept of "*T. gemmatum*," apparently without looking into the nomenclature carefully. One further important point to be mentioned is that Presl described *Cuming* 400 as a new species, *T. bifidum* Presl, a name which has been overlooked in the "Index Filicium," presumably because it was described only in a footnote; Presl's name is a later homonym of *T. bifidum* Ventenat ex Willd. (1810). Presl's description, though brief, is fully adequate to validate his name.


**Type:** "In America calidore" (holotype P ex Herb. Desvaux, Morton photograph 22003).

In the "Index Filicium," *T. longifolium* Desv. is indicated as a synonym of *T. crispum* L., possibly on the basis of Desvaux's comparison of his species with *T. crispum*. An examination of the types, however, shows that the species is clearly a synonym of the common and widespread *T. pinnatum* Hedw.


**Type:** Nepal, Buchanan-Hamilton (holotype BM, Morton photograph 8578).

In the "Index Filicium," *Trichomanes striatum* is considered dubious but is referred with a query to *T. bipunctatum* Poir., which is a wild guess, for the type as well as the original description shows a plant widely different from *T. bipunctatum*.

The type sheet has an annotation indicating that the plant on the right-hand side is the type of *T. striatum* (which it is) and that the plant at the left is probably the type of *Hymenophyllum ramosissimum* D. Don. This it clearly is not, for it does not bear the name in Don's hand, does not have the locality data, and quite disagrees with the original description; this plant is sterile, whereas Don described the sori and indusia of *H. ramosissimum*. This left-hand plant is in fact the sterile part of the holotype of *T. striatum*. Don indicated that he saw both sterile and fertile fronds, for he commented: "fructiferæ sunt opaciores et tenuius sectae," which is true. The holotype shows that *T. striatum* belongs to the group of *T. radicans* Swartz. From the nonulate stipe and rhachis and the somewhat greater division of
the blade, I take it to be the plant called *T. giganteum* Bory by Copeland (Phil. Journ. Sci. 51:220. 1933) in his revision of Old World *Trichomanes*. This may well be correct, but neither Copeland nor I have seen the type of that species or any material from the type locality. The holotype agrees with a specimen (US) from Mongpo, Sikkim, 5,500 ft. alt., Oct. 7, 1884, Clarke 36382A, originally distributed as *T. radicans* Swartz, and identified by Copeland as "*T. giganteum* Bory?.”


*Trichomanes trichoides* Swartz was a renaming of *T. tenellum* Hedw., seemingly due to a misunderstanding. In the unnumbered Hedwig plate the habit illustration of *T. tenellum* is so placed that it might seem to belong with the name *T. pusillum* rather than with *T. tenellum*. Since this does not by any means represent *T. pusillum* Swartz (1758), Swartz renamed this plant *T. trichoides* in 1802, citing *T. pusillum* Hedw. as a synonym. In Hedwig’s plate, however, *T. pusillum* is represented by figs. 5, 5g, and 5h, an entirely different plant of the sect. *Didymoglossum*. Swartz evidently realized his error later and corrected it in his “Synopsis Filicum” by citing *T. tenellum* Hedw. as a synonym of his own *T. trichoides* and omitting the “*T. pusillum*” Hedwig. Since *T. tenellum* was validly published and had priority, however, Swartz ought to have adopted that name and reduced his own *T. trichoides* to synonymy. The matter is not of importance, since both names are presumably synonyms of the older *T. capillaceum* L.
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