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Wong Sin Yeng
Flora of Borneo:
The vascular plant genera



Journal of Plant Taxonomy and Geography (Webbia) is a peer-reviewed journal on Plant Taxonomy, Nomenclature, Phylogeny, Phytogeography and Palaeobotany of the Vascular Plants.

The journal aims to allow research in botanical topics such as taxonomy, systematics, nomenclature, molecular phylogeny, conservation, biogeography, and history of botany, and botanical collections.

It was founded in **1905** in Florence by **Ugolino Martelli** (1860-1934), a botanist well known for his studies of and contributions to the systematics of the tropical genus *Pandanus* and on the Flora of Sardinia.

In the 19th century Florence represented one of the most important European centres in Plant Taxonomy and Phytogeography with several notable Italian botanists worth mentioning such as Filippo Parlatore, Teodoro Caruel, Eugenio Baroni, Stefano Sommier, Odoardo Beccari and Ugolino Martelli himself. In 1842 **Filippo Parlatore** (1817-1877) founded in Florence the *Herbarium Centrale Italicum (FI)*, which soon became one of the most important herbaria in the world. Most of the specimens described and/or cited in *Webbia* are still kept in it.

In 1905, and as a consequence of this multitude of activities in Plant Systematics and Phytogeography, Ugolino Martelli established the journal *Webbia-Raccolta di Scritti Botanici*, firstly published annually in a single issue, and later twice a year. *Webbia* also began to be a place of publication of contributions from Tropical Botany, especially after the Royal Colonial Herbarium founded in 1904 in Rome was moved to Florence in 1914, currently named Tropical Herbarium Study Center (Centro Studi Erbario Tropicale - Herbarium FT) belonging to the Department of Biology of the University of Florence.

Webbia had been created in honor of **Philip Barker Webb** (1793-1845), a close friend of Filippo Parlatore, who before passing away entrusted his personal herbarium and a library rich of old botanical books and publications to the then Botanical Museum in Florence.

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Forewords

The journey towards a flora of Borneo relentlessly continues. Whereas specialists in specific taxonomic groups (see the many contributions in the Flora Malesiana and journals such as *Blumea*, *Gardens' Bulletin Singapore*, *Journal of the Arnold Arboretum*, *Kew Bulletin*, *Reinwardtia*, *Sandakania*, *Webbia*, and the *Tree Flora of Sabah and Sarawak*) are always involved, spurred on by their passionate interest in various aspects of the plant life, it is a different matter altogether to contribute to the systematic management of regional floristic accounts. Few contemporary scholars of Bornean botany, even with modern approaches to plant taxonomy, could dispense with the work of Merrill (1921), who advanced what would be the most complete catalogue of the flora up to his time. Taxonomic enumerations, typically in the form of checklists, while extremely tedious to compile, are still very much among our best starting points in addressing how to draw specialist attention to a flora, or in working out the plant diversity present. This wisdom grows on the botanist who appreciates the botanical enormity of Borneo and works on its flora, which had so captivated great natural history explorers and collectors such as Beccari (1877–1883 et seq.) and others around and after his time.

The present effort, checklisting the vascular plant genera, born of such antecedence, comes just after something of a century following Merrill's masterly account of an attempted species enumeration. Not only have the number of known taxa increased, but their taxonomy, often necessitating name changes, has, naturally, become of considerable complexity. It is surely time to stock-take the many taxa described and accounts published over these hundred years or so, particularly over an ever-widening horizon of publication avenues with an (fortunately) increasing retinue of botanists. Whatever philosophical arguments apply, the family and the genus are still veritable 'handles' to inventorying diversity. An endeavour like this certainly benefits from 'insider' experience and energy in plant taxonomy and classification, so this compilation by the author, herself an acknowledged specialist of the Araceae and other plant groups, and centred in the ultra biodiversity-rich territory of Sarawak, is of great moment. This product of so many years of tireless research would have pleased Merrill. It is a giant step forward for the botany of Borneo.

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It is an honour and a pride for me, as Editor in Chief of *Webbia*, to host this powerful work by Sin Yeng Wong on the vascular plant genera of the Flora of Borneo. In addition to its scientific importance and significance for insiders, I believe it is a tribute to those who have dedicated themselves, and still do, to the study and defence of an area considered one of the richest biodiversity hotspots in the world. With this contribution *Webbia* returns to celebrate its initial vocation which saw among the authors Ugolino Martelli, founder and scholar of Paleotropical Botany, and Odoardo Beccari, perhaps one of the most prolific Italian botanists of Tropical Botany and above all known for his contributions to the Flora of the South East Asia including, and celebrated Borneo in his fascinating work entitled "*Nelle Foreste del Borneo*" published shortly before his death in 1920, a milestone in the history of the Natural Sciences of Far East Asia. For the accurate taxonomic and nomenclatural reconstruction and related bibliographic documentation, the author demonstrates not only competence, but above all a declared love for the territory she deals with, suggesting an invitation to the new generations of Plant Taxonomists, Tropical in particular, to carry out their researches with a rigorous method not forgetting the historical layout of the Flora of each territory, before arriving at new interpretative proposals also on advanced technological bases.

From the abstract, the importance of this contribution is clearly evident, as a basis for further studies and discoveries, and a warning not to lose one's often lost orientation in Plant Taxonomy.

For this I thank Sin Yeng Wong for having given *Webbia* the honour of hosting this important work, worthy of every attention also in the name of those Italian botanists such as Beccari who have given a lot to the knowledge base of the Flora of Borneo.

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Flora of Borneo: The vascular plant genera

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Abstract. A checklist of all genera of ferns and fern allies, gymnosperms, and angiosperms that are found in Borneo is presented. The native, introduced, and endemic status for all taxa is given. This checklist comprises 271 families: 39 families (ferns and fern allies), 5 families (gymnosperms), and 227 families (angiosperms) of 1877 genera and 12590 species. There are 1592 native genera, 192 introduced genera, 73 endemic genera, and 20 genera with both native and introduced species present.

Keywords: ferns & fern allies, Gymnosperms, Angiosperms.

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INTRODUCTION

Borneo, with a total land area of c. 740 000 km², is the third largest island and second largest tropical island, composed in the north by the eastern states of Malaysia – Sabah and Sarawak together with the Malaysian Federal Territory of Labuan Island, and the Sultanate of Brunei, while the remainder, a little more than 73% of the land area, is Indonesian Kalimantan. Borneo is recognized as one of the twelve mega biodiversity centres of the world, conservatively estimated to harbour between 12 000 and 15 000 species of flowering plants of which about 3 500–5 000 are tree species (Soepadmo 1995; Soepadmo and Wong 1995; Soepadmo 1999; Soepadmo et al. 2006).

There is no recent overall survey of Bornean plant families. The most recent attempts at complete enumeration are those of Merrill (1921) and Masamune (1942, 1945). The aim of the current publication is to give current information on the genera of vascular plants occurring on Borneo. This is a first step towards a comprehensive treatment of the plant families for the island.

The history of the exploration, cataloguing, and published accounts of the extraordinarily rich and diverse flora of Borneo has been well-summarised on previous occasions, beginning with Moulton (1915) and Merrill (1915, 1931, 1950), and de Wit (1948), and from the 1950s especially by the extraordinary efforts of Maria Johanna van Steenis-Kruseman, the wife of the botanist and biogeographer Cornelis Gijsbert Gerrit Jan van Steenis (van Steenis-Kruseman 1950, 1958, 1974; see www.nationaalherbarium.nl/FMCcollectors/). In 1995 Wong Khoon Meng provided an excellent synopsis and update (Wong 1995).

During this current project obscure and overlooked records came to light such that some notes additional to Wong (1995) are judged useful. Of particular interest are references for Georg Müller, the earliest of those to gather botanical samples from Borneo, later used by Blume and Miquel, and whose life was cut short in an ambush in the Ulu Kapuas, and for the similarly ill-fated James Motley, a civil engineer-cum-naturalist. Additionally, references for Pieter Korthals, and for Hubert Winkler's four published parts of his *Beiträge zur Kenntnis der Flora und Pflanzengeographie von Borneo* are included; perhaps the most intriguing are the published portions of a now seemingly forgotten work initiated in 1927 by Irmscher.

The start of botanical exploration in Borneo can be traced back to the 1820s with Georg Müller, a German-Dutch engineer and explorer who, having served in the French army during the Napoleonic wars, came to the then Dutch East Indies towards the end of 1816 to enter the Royal Netherlands East Indies Army as captain of the infantry. Müller accompanied a military expedition to Sambas in West Borneo in September 1818 and was later that year appointed Acting Resident for Sambas. In late 1819 or early 1820 he was appointed Inspector of the nutmeg and clove plantations in Banda, but owing to considerable problems was unable to reach the island before the end of 1820 or early in 1821, and even then, at his own expense! In 1822 following his appointment as Inspector of the Interior he sailed for West Borneo to begin natural history and topographical investigations. From about 1821 Müller undertook several exploration and mapping trips, during which time he made botanical collections for Carl Ludwig Blume who had arrived in Jawa (Java) two years earlier and was at the time at

the start of his botanical career (van Steenis 1984). Müller's work was cut short when he was ambushed and killed while on an expedition to explore the upper Kapuas River early in 1826 (Blume 1843; Helbig 1941; Hoëvell 1849; Müller 1843a,b,c).

Pieter Korthals together with Salomon Müller and Ludwig Horner arrived in SE Borneo in July 1836 and for five months were more-or-less continuously in the field. The first scientific publications for Borneo resulted largely from this work (Korthals 1837), including those of a specifically botanical nature (Korthals 1839, 1839–1842, 1848a,b,c,d, 1851a,b, 1851, 1854a,b).

Both Georg Müller and Pieter Korthals were employed specifically to undertake exploration. The next significant botanical work, however, was undertaken as a hobby by James Motley, the Leeds-born civil engineer who went to Labuan in 1849 in connection with coal-mining and after considerable problems with his employers resigned and in 1854 was appointed Superintendent of the coal-mining operations of a private company's mine 'Julia Hermina' in the territory of the Sultan of Bandjermasin in SE Borneo. As with Müller, Motley's time was curtailed by murder (Bastin 1987; Burkill 1918; Walker 2005).

Although Johannes Gottfried 'Hans' Hallier, the botanist attached to Nieuwenhuis' 1893–1894 Borneo expedition (Sellato 1993), is often credited as being the first to attempt a general flora of Borneo, his 34-page *Beiträge zur Flora von Borneo* (Hallier 1916), is preceded by Korthals' botany volume for the *Verhandelingen over de natuurlijke geschiedenis der Nederlandsche overzeesche bezittingen* (Korthals 1839–1842), the three volumes of Beccari's *Malesia* (Beccari 1877–1883, 1884–1886, 1886–1890), and the 156 pages of the four published parts of Hubert Winkler's *Beiträge zur Kenntnis der Flora und Pflanzengeographie von Borneo* (Winkler 1910, 1912, 1913, 1914).

While checking dates of a reference in Robbins (1958), a biographical memoir of Merrill, two publications by Merrill dealing with Myrtaceae and Rubiaceae for *Beiträge zur Kenntnis der Flora von Borneo* edited by Irmscher (1927a,b, 1928, 1931, 1937a) in *Mitteilungen aus dem Institut für allgemeine Botanik in Hamburg* attracted curiosity since this was the first reference to this account I had ever seen although, on further checking it was mentioned by de Wit (1948: CXLVI), but subsequently seems to have been completely forgotten — certainly Merrill (1950) makes no mention of it despite having contributed two families (Merrill 1937a,b) while Wong Khoon Meng, one of the leading researchers for the Rubiaceae had never encountered the publication (WKM *pers. comm.*) Other published accounts are for Selaginellaceae

(Alston 1937), mosses (Brotherus 1928), *Nepenthes* (Danser 1931), Annonaceae (Diels 1927), Magnoliaceae (Diels 1937), liverworts (Herzog 1931), Combretaceae (Irmscher 1937b), Gentianaceae (Irmscher 1937c), plankton (Kolkwitz 1931), Gesneriaceae (Kränzlin 1927), Gnetaceae (Markgraf (1937), Euphorbiaceae (Pax & Hoffmann (1931); Cyperaceae (Pfeiffer 1928), Poaceae [as Gramineae] (Pilger 1928), Podocarpaceae (Pilger 1937), Urticaceae (Schröte & Winkler 1937), Apocynaceae (Schwartz 1931a), Asclepiadaceae (Schwartz 1931b), Melastomataceae (Schwartz 1931c), Meliaceae (Schwartz 1931d), Piperaceae (Schwartz 1931e), Simaroubaceae (Schwartz 1931f), Symplocaceae (Schwartz 1931g), Amaranthaceae (Schwartz 1937a), Bixaceae (Schwartz 1937b), Asteraceae (as Compositae) (Schwartz 1937c), Opiliaceae (Schwartz 1937d), Polygalaceae (Schwartz 1937e), Sapindaceae (Schwartz 1937f), Orchidaceae (Smith 1927), and a report on Winkler's fieldwork in Borneo (Winkler 1927).

Concerning this *Beiträge der Kenntnis der Flora von Borneo* nothing further seems to have been produced after 1937 (there is nothing in Heft 8, 9 and 10 of *Mitteilungen aus dem Institut für allgemeine Botanik in Hamburg*), and after Heft. 10 (1939) the journal ceased publication until 1957, by which time Irmscher, although continuing to publish (mostly on *Begonia*) until 1967, seems to have never rekindled his interest in general Bornean botany.

The first attempt at a comprehensive preliminary catalogue of the entire Bornean flora is that of Merrill (1921) in the introduction of which Merrill (1921: 12–13) writes: “In the present list 4,924 species of flowering plants are credited to Borneo, yet judging from the 5,000 species of spermatophytes from the much smaller island of Java, and the great number known from the Malay Peninsula and the Philippines not more than 50 or 60 per cent of the actual Bornean flora is now known... With about 5,625 species of pteridophytes and spermatophytes reported from Borneo to-day... an estimate of 10,000 species for Borneo, for these two groups, would be a conservative one.” Merrill (1921) was simply a bibliographic task, as Merrill (1921) only had access to only a limited amount of Bornean species of flowering plants that he could locate in the literature available in Manila and limited amount of Bornean botanical material. The publication, however, apparently justified itself, as it brought together in compact form all the then-known references to those species described from, or credited to Borneo. The total then recorded, plus the 120 additional species of orchids described by Ames & Schweinfurth (1920), and mentioned in the postscript to the volume, p. 590, was about 5050 species, distributed into about 1162 genera and 156 families (Merrill 1950).

The subsequent enumeration by Masamune (1942), listing 7,201 species of seed plants, reproduces Merrill's list with additional data gleaned from the intervening period, in particular that of Endert (1927). Masamune (1945) also published a list of Bornean pteridophytes which enumerates 963 species of ferns and fern-allies. Taken together, Masamune's lists amount to 8,164 species of vascular plants (Merrill 1950).

Since 1940 a considerable literature has appeared on the tree flora of Borneo. Up to 2014, a total of 2,223 species in 78 families and 332 genera have been revised and published in eight volumes of the *Tree Flora of Sabah and Sarawak* (Tan et al. 2009, *Tree Flora of Sabah and Sarawak* vols. 7 and 8). These publications coupled with the *Kalimantan* volume of the *Tree Flora of Indonesia* (Whitmore et al. 1989–1990) and checklist by Coode et al. (1996) are the only available references in recent years coupled with several monographs (refer to individual families in text).

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METHODS

First, all taxonomic and systematic literature relevant to each family and subsequently, each genus on Borneo were compiled and reviewed. To obtain a preliminary list of plant genera occurring on Borneo, an excel file was initiated to list all the genera recorded in Merrill (1921). The compiled list was then compared and updated with Winkler (1910-1914), Irmscher (1927-1937), Masamune (1942), *Flora Malesiana* (vol. 1-24), *Tree Flora of Sabah and Sarawak* (vol. 1-8), and Whitmore et al. (1988-1990). The work then refers to WCSP (2022) when available for many families, but when not available, to POWO (2022). However, by end of 2022, WCSP (2022) was no longer updated and combined with POWO (2022). The present work has been greatly aided by online resources such as the International Plant Names Index (IPNI), the Biodiversity Heritage Library (BHL), JStor Global Plants, and Tropicos.

To compile genera that were described in recent years and revisions on generic transfers, additional literature searches were performed. This included a query of Google Scholar using the search term combinations 'genus' or 'new species' and/or 'Borneo', 'Sabah', 'Sarawak' to look for publications pertaining to any taxa for Borneo. Large-scale taxonomic and systematic studies and revisions pertaining to the Malesian region were also checked, as was relevant botanical literature not available online (e.g., the *Malesian Orchid Journal*, the *Orchids of Borneo* book series, *Heart of Borneo Series* (Pearce 2006; Rantai and Chai 2007; van der Ent et al. 2014, Chai and Rantai 2023, etc.).

The taxonomic arrangement follows Hassler (2022) for ferns and fern allies, Christenhusz et al. (2011) and Hassler (2022) for gymnosperms, and APG IV (2016) for

angiosperms. This checklist follows Chase et al. (2015) for Orchidaceae, Larridon et al. (2021) for Cyperaceae, LPWG (2021) for Fabaceae, and Wong and Puff (1993) for Rubiaceae. The family Taccaceae is recognized.

Each genus that is considered to be endemic, native or introduced to Borneo is stated for its current taxonomic status. Total species are stated for Borneo and worldwide for each genus by following WCSP (2022) and POWO (2022) but cross-checked with monographs and floristic works (when available) (refer to each genus).

The taxa are arranged by each of the major plant groups: ferns and fern allies, gymnosperms and angiosperms. Within each plant group, the taxa are arranged alphabetically by family and then genus. When species were recorded previously and have been transferred into a different genus, the species name is provided in alphabetical order with the transferred name indicated. Notes are included on disagreement in generic recognition, synonyms, number of species, among others.

CHECKLIST AND BIBLIOGRAPHY

The currently accepted name is followed by any synonyms arranged in alphabetical order. Then, there is a coded indication of revision status:

A = recently revised or currently under active revision at an advanced stage;

B = partially revised recently;

C = not revised for 40 years or more.

At the end of each entry, the endemic, native or introduced status of each genus is given.

This checklist comprises 271 families: 39 families (ferns and fern allies), 5 families (gymnosperms), and 227 families (angiosperms) of 1877 genera and 12590 species (Supplementary file: List of genera and synonyms [http://dx.doi.org/10.13140/RG.2.2.21974.01606]). There are 1592 native genera, 192 introduced genera, 73 endemic genera, and 20 genera with both native and introduced species, although this needs to be further refined in future. Neo et al. (2020) listed 65 endemic genera including Orchidaceae: *Kalimantanorchis* Tsukaya (sunked under *Tropidia* Lindl.) and *Nabalua* Ames (sunked under *Coelogyne* Lindl.). *Boycea* A.Hay (Araceae) is a recently described genus (Hay 2022). *Nabalu* S.Y.Wong & P.C.Boyce (Araceae) was not included. Neo et al. (2020) also excluded genera which require further work: *Gamogyne* N.E.Br. (Araceae), *Ooia* S.Y.Wong & P.C.Boyce (Araceae), *Rhynchopyle* Engl., *Aulandra* H.J.Lam (Sapotaceae), and *Myxochlamys* A.Takano & Nagam. (Zingiberaceae) and genera which are insufficiently known: *Boerlagea* Cogn. (Melastomataceae),

Lecariocalyx Bremek (Rubiaceae), and *Streblosiopsis* Valetton (Rubiaceae). *Potoxylon* Kosterm. (Lauraceae) is shown to be closely related to *Eusideroxylon* Teijsm. & Binn. and its transfer to this genus was recommended (Rohwer et al. 2014). *Burbidgea* Hook.f. has recently been found in the Philippines (Mazo et al. 2022).

A total of 112 genera are not listed to occur on Borneo in WCSP (2022) and/or POWO (2022).

This checklist further provides the bibliographic references and species count for a wide range of potential users of botanical data for Borneo. It also provides a list of the Borneo-related literature.

FERNS AND FERN ALLIES

This generic account follows Hassler (2022).

1. **Aspleniaceae** Newman

1.1 *Asplenium* L., Sp. Pl.: 1078 (1753).

(= *Acropteris* Link, Hort. Reg. Bot. Berol. 55 (1833).



Figure 1. *Asplenium* sp. [Aspleniaceae]. Sarawak, Kuching, Bau. Photo: PC Boyce.

(=) *Amesium* Newman, Hist. br. Ferns ed. II: 10 (1844), *nom. superfl.*
 (=) *Antigramma* C.Presl, Tent. Pterid. 120 (1836).
 (=) *Arcasplenium* T.Moore ms. ex Baker, Kew Bull. 145 (1901).
 (=) *Asplenidictyum* (Hook.) J.Sm., Hist. Fil. 333 (1875).
 (=) *Biropteris* Kümmerle, Mag. Bot. Lapok 19: 2, 1920 (1922).
 (=) *Boniniella* Hayata, Bot. Mag. (Tokyo) 41: 709 (1927).
 (=) *Caenopteris* Berg, Acta Acad. Sci. Imp. Petrop. 6: 249 (1782).
 (=) *Camptosorus* Link, Hort. Reg. Bot. Berol. 69 (1833).
 (=) *Ceterach* Willd., (1804) (*nom. cons.*, frequently considered to be a valid genus).
 (=) *Ceterachopsis* J.Sm., Hist. Fil. 317 (1875).
 (=) *Chamaefilix* Hill, Brit. Herb. 526 (1756), ex Farw., Amer. Midl. Naturalist 12: 268 (1931).
 (=) *Cheilosorum* J.Sm., Hist. Fil. 317 (1875).
 (=) *Cryptostigma* A.Braun ms. ex Mett., Fil. Hort. Bot. Lips. 80 (1856).
 (=) *Darea* Juss., Gen. pl. 15 (1789).
 (=) *Dareastrum* Fée, Gen. Fil. 190 (1850-52).
 (=) *Diellia* Brack., U.S. Expl. Exp. 16: 217 (1854).
 (=) *Diplora* Baker, J. Bot. 235 (1873).
 (=) *Eremopodium* Trevis., Atti Ist. Veneto V, 8: 589 (1877).
 (=) *Glossopteris* Raf., Anal. Nat. Tabl. Univ. 205 (1815), Amer. Monthly Mag. & Crit. Rev. 2: 268 (1818), *nom. superfl.*
 (=) *Glossopteris* Raf., J. Phys. 89: 262 (1819).
 (=) *Hemionites* J.Sm., Hist. Fil. 318 (1875).
 (=) *Hemionitidastrum* Fée, Gen. Fil. 190 (1850-52).
 (=) *Holodictyum* Maxon, Contr. U.S. Nat. Herb. 10: 481 (1908).
 (=) *Homatoneuron* Klotzsch, Linnaea 20: 354 (1847).
 (=) *Lobium* Keyserl., Pol. Cyath. Hb. Bung. 15 (1873).
 (=) *Loxoscapha* (Blume) C.Presl, Tent. Pterid. 214 (1836).
 (=) *Macrophyllidium* Rosenst., Repert. Spec. Nov. Regni Veg. 13: 216 (1914).
 (=) *Micrasplenium* Keyserl., Pol. Cyath. Hb. Bung. 15 (1873).
 (=) *Micropodium* Mett., Ann. Mus. Bot. Lugd.-Bat. 2: 232 (1866) (non Saporta 1861).
 (=) *Neottopteridastrum* Fée, Gen. Fil. 190 (1850-52).
 (=) *Nephrodium* J.Sm., J. Bot. 3: 409 (1841).
 (=) *Notolepeum* Newman, Hist. br. Ferns ed. II: 9 (1844).
 (=) *Onopteris* Neck., Element. Bot. 3: 316 (1790).
 (=) *Parasplenium* Keyserl., Pol. Cyath. Hb. Bung. 15 (1873).
 (=) *Phyllitis* Hill, Brit. Herb. 525, t. 74 (1756).
 (=) *Pleurosorus* Fée, Mém. Foug. 5 (Gen. Fil.):179 (1852).
 (=) *Schaffneria* Fée, Mém. Foug. 7: 56 (1857).

(=) *Scolopendrium* Adans., Fam. Pl. 2: 20 (1763).
 (=) *Sinephropteris* Mickel, Brittonia 28(3): 326 (1976).
 (=) *Stormesia* J.Kickx fil., Fl. Crypt. Env. Louvain 8 (1835).
 (=) *Tarachia* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5, 6: 74 (1851).
 (=) *Thamnopteris* (C.Presl) C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5, 6: 68 (1851) (non Brongn. 1849), *nom. superfl.*
 (=) *Trichomanes* Bubani, Fl. Pyr. 4: 424 (1901).
 (=) *Triphlebia* Baker, Malesia (Beccari) 3: 41 (1886).
 (=) ×*Asplenoceterach* D.E.Mey., Ber. dt. Bot. Ges. 70: 61 (1957).
 (=) ×*Asplenophyllitis* Alston, Proc. Linn. Soc. 152: 139 (1940).
 (=) ×*Asplenosorus* Wherry, Amer. Fern J. 27: 56 (1937), *nomen.*
 (=) ×*Ceterophyllitis* Pic.Serm., Webbia 34(1): 208 (1979).
 (=) ×*Phyllitopsis* Reichst., Bot. Helv. 91: 107 (1981).

Revision status – B.

Borneo: 41 (native). Winkler (1910), Christensen (1928), Hassler (2022). World: 765. Hassler (2022).

1.2 *Hymenasplenium* Hayata, Bot. Mag. (Tokyo) 41: 712 (1927).

Revision status – B.

Borneo: 8 (native). Hassler (2022). World: 63. Hassler (2022).

2. Athyriaceae Alston

2.1 *Athyrium* Roth, Tent. Fl. Germ. 3(1): 31, 58 (1799).

(=) *Hypochlamys* Fée, Gen. Fil. 200 (1850-52).
 (=) *Neoathyrium* Ching & Z.R.Wang, Acta Phytotax. Sin. 20(1): 76 (1982).
 (=) *Pseudocystopteris* Ching, Acta Phytotax. Sin. 9: 76 (1964).
 (=) *Solenopteris* Zenker ms. ex Kunze, Linn. 24: 267 (1851).
 (=) ×*Cornoathyrium* Nakaike, New Fl. Japan, Pterid. 840 (1992).

Revision status – A.

Borneo: 6 (native). Wardani and Adjie (2018), Hassler (2022). World: 181. Hassler (2022).

Notes. Wardani and Adjie (2018) listed seven species.

2.2 *Cornopteris* Nakai, Bot. Mag. (Tokyo) 44: 7 (1930).

(=) *Athyrium* subgen. *Cornopteris* (Nakai) Seriz., J. Jap. Bot. 56(7): 194 (1981).

Revision status – A.

Borneo: 2 (native). Hassler (2022). World: 14. Hassler (2022).

Notes. A synonym under *Athyrium* Roth (POWO, 2022). However, this remains to be accepted in Hassler (2022).

2.3 *Deparia* Hook. & Grev., Icon. Fil. 2(8), pl. 154 1829 (1830).

(=) *Athyriopsis* Ching, Bull. Fan Mem. Inst. 9: 63 (1964).

(=) *Deparia* sect. *Athyriopsis* (Ching) M.Kato, (1984).

(=) *Deparia* sect. *Dryoathyrium* (Ching) M.Kato, (1977).

(=) *Deparia* sect. *Lunathyrium* (Koidz.) M.Kato, (1977).

(=) *Dictyodroma* Ching, Acta Phytotax. Sin. 9: 57 (1964).

(=) *Dryoathyrium* Ching, Bull. Fan Mem. Inst. Biol. Bot. 11: 79 (1941).

(=) *Lunathyrium* Koidz., Acta Phytotax. Geobot. 1: 30 (1932).

(=) *Lunathyrium* sect. *Athyriopsis* (Ching) Ohba, (1965).

(=) *Lunathyrium* sect. *Dryoathyrium* (Ching) Ohba, (1965).

(=) *Neotriblemma* Nakaike, J. Nippon Fernist Club 3(Suppl. 2): 128 (2004).

(=) *Parathyrium* Holttum, Kew Bull. 1958: 448, f. 1(b) (1959).

(=) ×*Depazium* Nakaike, New Fl. Japan, Pterid. 840 (1992).

(=) ×*Neotripleparia* Nakaike, J. Nippon Fernist Club 3(Suppl. 2): 128 (2004).

Revision status – A.

Borneo: 5 (native). Hassler (2022). World: 79. Hassler (2022).

2.4 *Diplazium* Sw., J. Bot. (Schrader) 1800(2): 4, 61 (1801).

(=) *Allantodia* R.Br., Prodr. Fl. Nov. Holl. 149 (1810).

(=) *Allantodia* Wall., Pl. asiat. rar. 1: 44, t. 22 (1830), non R.Br. (1810).

(=) *Anisogonium* C.Presl, Tent. Pterid. 115 (1836).

(=) *Asplenium* grex *Triblemma* J.Sm., Ferns Brit. & Fore. 209. (1866).

(=) *Brachysorus* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5, 6: 70 (1851).

(=) *Callipteridastrum* Fée, Gen. Fil. 213 (1850-52).

(=) *Callipteris* Bory, Voy. 1: 282 (1804).

(=) *Didymochlamys* T.Moore, Ind. Fil. 55 (1857).

(=) *Digrammaria* C.Presl, Tent. Pterid. 116 (1836).

(=) *Lotzea* Klotzsch & H.Karst., Linnaea 20: 358 (1847).

(=) *Microstegia* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5, 6: 90 (1851).

(=) *Monomelangium* Hayata, Bot. Mag. (Tokyo) 42: 343 (1928).

(=) *Ochlogramma* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(6) (Epim. Bot.): 93 (1851).

(=) *Oxygonium* C.Presl, Tent. Pterid. 117 (1836).

(=) *Pteriglyphis* Fée, Dix. session du Congr. Sci. France 1: 178 (1843), et Mém. Foug. 5 (Gen. Fil.):219 (1852).

(=) *Triblemma* (J.Sm.) Ching, Acta Phytotax. Sin. 16(4): 23 (1978).

Revision status – A.

Borneo: 55 (native). Winkler (1910), Christensen (1928), Hassler (2022). World: 486. Hassler (2022).

3. **Blechnaceae** Newman

3.1 *Austroblechnum* Gasper & V.A.O.Dittrich, Phytotaxa 275(3): 202 (2016).

Revision status – A.

Borneo: 2 (native). Hassler (2022). World: 34. Hassler (2022).

Notes. A synonym under *Blechnum* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022). *Blechnum* is now mostly neotropical and a few southern Africa species (Hassler 2022).

3.2 *Blechnopsis* C.Presl, Abh. Königl. Böhm. Ges. Wiss., ser. 5, 6: 115 (1851).

Revision status – A.

Borneo: 2 (native). Winkler (1910), Chambers & Farrant (2001), Hassler (2022). World: 2. Hassler (2022).

Notes. A synonym under *Blechnum* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

3.3 *Cranfillia* Gasper & V.A.O.Dittrich, Phytotaxa 275(3): 207 (2016).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 24. Hassler (2022).

3.4 *Diploblechnum* Hayata; Bot. Mag. (Tokyo) 41: 702. 192 (1928).

(=) *Pteridoblechnum* Hennipman, Blumea 13: 397 (1966).

(=) *Steenisiolechnum* Hennipman, Blumea 30: 17 (1984).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 6. Hassler (2022).

Notes. A synonym under *Blechnum* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

3.5 *Oceaniopteris* Gasper & Salino, Phytotaxa 275(3): 214 (2016).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 8. Hassler (2022).

Notes. A synonym under *Blechnum* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

3.6 *Parablechnum* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5, 6: 109 (1851).

(=) *Lomaria* subgen. *Paralomaria* Fée, Gen. Fil. 68 (1850-52).

(=) *Orthogramma* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5, 6: 121 (1851).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 65. Hassler (2022).

Notes. A synonym under *Blechnum* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

3.7 *Stenochlaena* J.Sm., J. Bot. (Hooker) 3: 401 (1841).

(=) *Cafraria* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(6) (Epim. Bot.): 166 (1851).

(=) *Leptophyllum* Blume, Fl. Jav. Fil. Suppl., t. 95. 96.

(=) *Lomariobotrys* Fée, Gen. Fil. 45 (1850-52).

Revision status – A.

Borneo: 1 (native). Winkler (1910), Christensen (1928), Chambers (2013), Hassler (2022). World: 5. Hassler (2022).

3.8 *Telmatoblechnum* Perrie, D.J.Ohlsen & Brownsey, Taxon 63: 755 (2014).

(=) *Blechnopsis* Sect. *Diafnia* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(6) (Epim. Bot.): 119 (1851).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 2. Hassler (2022).

4. Cibotiaceae Korall

4.1 *Cibotium* Kaulf., Berlin. Jahrb. Pharm. Verbundenen Wiss. 21: 53 (1820).

(=) *Dicksonia* sect. *Cibotium* Hook. & Baker (citation is missing).

(=) *Hiatea* Menzies ms. ex Hook., Sp. 1: 82 (1844).

(=) *Microcibotium* Hayata, Bot. Mag. (Tokyo) 43: 316 (1929).

(=) *Pinonia* Gaudich, Ann. sc. nat. 3: 507 (1824).

Revision status – A.

Borneo: 3 (native). Hassler (2022). World: 10. Hassler (2022).

5. Cyatheaceae Kaulf.

5.1 *Alsophila* R.Br., Prodr. Fl. Nov. Holland.: 158 (1810).

(=) *Amphicosmia* Gardner, Lond. J. Bot. 1: 441 (1842).

(=) *Cyathea* Sm., Mém. Acad. Roy. Sci. (Turin) 5: 416 (1793).

(=) *Dichorexia* C.Presl, Gefässb. Stipes Farrnkr. 36 (1847).

(=) *Nephelea* R.M.Tryon, Contr. Gray Herb. 200: 37 (1970).

(=) *Thysanobotrya* Alderw., Bull. Jard. Bot. Buitenz. II, 28: 669, t. 10 (1918).



Figure 2. *Alsophila contaminans* [Cyatheaceae]. Sabah, Ranau, Mamut Mine. Photo: KM Wong.

Revision status – C

Borneo: 12 (native). Winkler (1910), Christensen (1928), Hassler (2022). World: 251. Hassler (2022).

Notes. *Cyathea* Sm. is accepted in POWO (2022).

5.2 *Gymnosphaera* Blume, Enum. Pl. Javae 2: 242 (1828).

Revision status – A.

Borneo: 3 (native). Dong and Zuo (2018), Hassler (2022). World: 40. Hassler (2022).

5.3 *Sphaeropteris* Bernh., J. Bot. (Schrader) 1800(2): 122 (1801).

(=) *Cyathea* subgen. *Sphaeropteris* (Bernh.) Holttum, Fl. Males. Ser. 2, 1: 124 (1963).

(=) *Eatoniopteris* J.Bommer, Bull. Soc. Bot. France 20: 19 (1873).

(=) *Fourniera* J.Bommer, Bull. Soc. Bot. France 20 (1873).

(=) *Schizocaena* J.Sm., Hook. & Baker, Gen. Fil. t. 2 (1838).

Revision status – A.

Borneo: 19 (native). Hassler (2018), POWO (2022). World: 107. Hassler (2022).

6. Cystodiaceae J.R.Croft

6.1 *Cystodium* J.Sm., Gen. Fil.: t. 96 (1841).

(=) *Cystidium* Lindl., Veg. Kingd.: 80 (1847), *orth. var.*

(=) *Cystodiopteris* Rauschert, Taxon 31: 555 (1982).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 1. Hassler (2022).

Notes. *Cystidium* Lindl. is accepted in POWO (2022).

7. **Cystopteridaceae** (Payer) Shmakov

7.1 **Acystopteris** Nakai, Bot. Mag. (Tokyo) 47: 180 (1933).
 (=) *Cystopteris* subgen. *Acystopteris* (Nakai) Blasdell, Mem. Torrey Bot. Cl. 21(4): 49 (1963).

Revision status – A.

Borneo: 1 (native). Kessler et al. (2001), Hassler (2022).
 World: 3. Hassler (2022).

8. **Davalliaceae** (Gaudich.) M.R.Schomb.

8.1 **Davallia** J.E.Sm., Mém. Acad. Turin 5: 414 (1793).

(=) *Araiostegia* Copel., Phil. J. Sci. 34: 240 (1927).

(=) *Araiostegiella* M.Kato & Tsutsumi, Acta Phytotax. Geobot. 59(1): 6 (2008).

(=) *Colposoria* C.Presl, Tent. Pterid. 128 (1836).

(=) *Davallia* sect. *Araiostegiella* (M.Kato & Tsutsumi) Tsutsumi & M.Kato, Taxon 65(6): 1245 (2016).

(=) *Davallia* sect. *Davallodes* (Copel.) Tsutsumi & M.Kato, Taxon 65(6): 1246 (2016).

(=) *Davallodes* (Copel.) Copel., Phil. J. Sci. 33 (1908).

(=) *Humata* Cav., Descr. Pl. 272 (1802).

(=) *Katoella* Fraser-Jenk., Ferns and Fern-allies of Nepal 1: 33 (2015).

(=) *Microlepia* sect. *Davallodes* Copel., Polyp. Philipp. 55 (1905).

(=) *Pachypleuria* (C.Presl) C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(6) (Epim. Bot.): 98 (1851).

(=) *Paradavallodes* Ching, Acta Phytotax. Sin. 11: 18 (1966).

(=) *Parasorus* Alderw., Bull. Jard. Bot. Buitenz. III, 4: 317 (1922).

(=) *Parestia* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(6) (Epim. Bot.): 99 (1851).

(=) *Pteroneuron* Fée, Gen. Fil. 320 (1850-52).

(=) *Scyphularia* Fée, Gen. Fil. 324 (1850-52).

(=) *Stenolobus* C.Presl, Tent. Pterid. 130 (1836).

(=) *Trogostolon* Copel., Phil. J. Sci. 84: 251 (1927).

(=) *Wibelia* Bernh., Schrad., J. Bot. 1800(2): 122, t. 1, f. 2 (1801), non Fée (1852).

Revision status – A.

Borneo: 23 (native). Winkler (1910), Christensen (1928), Hassler (2022). World: 65. Hassler (2022).

9. **Dennstaedtiaceae** Lotsy

9.1 **Dennstaedtia** T.Moore, Ind. Fil. 97: (1859), *nom. cons.*, non Bernh. (1800).

(=) *Adectum* Link, Fil. Sp. 41, 42 (1841).

(=) *Coptidipteris* Nakai & Momose, Cytologia, Fujii Jub. Vol. 365 (1937).

(=) *Costaricia* Christ, Bull. Soc. bot. Genève II, 1: 229 (1909).

(=) *Emodiopteris* Ching & S.K.Wu, Acta Phytotax. Sin. 16(4): 21 (1978).

(=) *Fuziifilix* Nakai & Momose, Cytologia, Fujii Jub. Vol. 365 (1937).

(=) *Litolobium* Newman, The Phytol. 5: 236 (1854), *nom. superfl.*

(=) *Paradennstaedtia* Tagawa, J. Jap. Bot. 27: 213 (1952).

(=) *Patania* C.Presl, Tent. Pterid. 137 (1836).

(=) *Scyphofilix* Thouars, Nov. Gen. Madag. 1. (1806).

(=) *Sitolobium* Desv., Mem. Linn. Soc. Paris 6: 262 (1827) [altered to *Sitolobium* by J. Sm., J. Bot. 3: 418 (1841)].

Revision status – B.

Borneo: 5 (native). Hassler (2022). World: 59. Hassler (2022).

9.2 **Histiopteris** (J.Agardh) J.Sm., Hist. Fil.: 294 (1875).

(=) *Lepidocaulon* Copel., Univ. Calif. Publ. Bot. 18: 218 (1942).

(=) *Pteris* subgen. *Histiopteris* J.Agardh, Rec. Sp. Gen. Pterid. 76 (1839).

Revision status – B.

Borneo: 2 (native). Hassler (2022). World: 11. Hassler (2022).

9.3 **Hiya** H.Shang, Mol. Phylogen. Evol. 127: 457 (2018).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 4. Hassler (2022).

9.4 **Hypolepis** Bernh., Neues J. Bot. 1(2): 34 (1805).

Revision status – B.

Borneo: 4 (native). Hassler (2022). World: 69. Hassler (2022).

9.5 **Microlepia** C.Presl, Tent. Pterid.: 124 (1836).

(=) *Dennstaedtia* Bernh., Schrad., J. Bot. 1800(2): 124 (1802), non T.Moore.

(=) *Fuziifilix* Nakai & Momose, Cytologia, Fujii Jub. Vol.: 365 (1937).

(=) *Scyphofilix* Thouars, Gen. Nov. Madagasc.: 1 (1806).

(=) *Scypholepia* J.Sm., Hist. Fil. 261 (1875).

(=) *Scyphopteris* Raf., Princ. Somiol. 26 (1814).

Revision status – B.

Borneo: 8 (native). Hassler (2022). World: 52. Hassler (2022).

Notes. POWO (2022) listed *Fuziifilix* Nakai & Momose and *Scyphofilix* Thouars as synonyms but excluded in Hassler (2022).

9.6 **Monachosorum** Kunze, Bot. Zeitung (Berlin) 6: 119 (1848).

(=) *Monachosorella* Hayata, Bot. Mag. (Tokyo) 41: 573, 642f (1927).

(=) *Ptilopteris* Hance, J. Bot. 138 (1884).

Revision status – B.

Borneo: 1 (native). Hassler (2022). World: 4. Hassler (2022).

9.7 *Paesia* A.St.-Hil., Voy. Distr. Diam. 1: 381 (1833).

Revision status – B.

Borneo: 1 (native). Hassler (2022). World: 12. Hassler (2022).

9.8 *Pteridium* Gled. ex Scop.; Fl. Carn. 169 (1760), *nom. cons.*

(=) *Aquilina* C.Presl ms. ex Ettingsh., Farnkr. 91 (1865).

(=) *Cincinalis* Gled., Syst. Pl. 290 (1764).

(=) *Eupteris* Newman, Phytol. 2: 278 (1845).

(=) *Filix* Ludw., Inst. Regn. Veg., ed. 2. 142 (1757).

(=) *Filix-Foemina* Hill, Family Herbal (1755).

(=) *Nymphopteris* Webb & Berthel., Hist. nat. Canar. 82. (1847).

(=) *Ornithopteris* (J.Agardh) J.Sm., Hist. Fil. 297 (1875), non Bernh. (1806).

Revision status – B.

Borneo: 2 (native). Christensen (1928), Hassler (2022). World: 4. Hassler (2022).

10. Dicksoniaceae M.R.Schomb.

10.1 *Calochlaena* (Maxon) M.D.Turner & R.A.White, Amer. Fern J. 78: 91 (1988).

(=) *Culcita* subgen. *Calochlaena* Maxon, J. Wash. Acad. Sci. 12: 459 (1922).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 5. Hassler (2022).

10.2 *Dicksonia* L'Hér., Sert. Angl.: 30 (1789).

(=) *Balantium* Kaulf., Enum. Fil. 228 (1824), *p. p.*

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 32. Hassler (2022).

11. Didymochlaenaceae Ching ex Li Bing Zhang & Liang Zhang

11.1 *Didymochlaena* Desv., Ges. Naturf. Freunde Berlin Mag. Neuesten Entdeck. Gesamten Naturk. 5: 303 (1811).

(=) *Hippodium* Gaudich., Freyc. Voy. 340 (1827).

(=) *Hysterochloa* Langsd. ex Fée, Gen. Fil. 216 (1820).

(=) *Monochlaena* Gaudich., Freyc. Voy. 340 (1828), *nom. superfl.*

(=) *Tegularia* Reinw., Syll. pl. 2: 3 (1824).

Revision status – C.

Borneo: 2 (native). Hassler (2022). World: 12. Hassler (2022).

12. Diplaziopsidaceae X.C.Zhang & Christenh.

12.1 *Diplaziopsis* C.Chr., Index Filic.: 227 (1905).

Revision status – B.

Borneo: 1 (native). Hassler (2022). World: 3. Hassler (2022).

13. Dipteridaceae Seward & E.Dale

13.1 *Cheiropleuria* C.Presl, Abh. Königl. Böhm. Ges. Wiss., ser. 5, 6: 189 (1851).

Revision status – A.

Borneo: 2 (native). Christensen (1928), Hassler (2022). World: 3. Hassler (2022).

13.2 *Dipteris* Reinw., Syll. pl. 2: 3 (1824).

(=) *Phymatodes* C.Presl, (1836), *p. p. min., quoad typum.*

Revision status – A.



Figure 3. *Dipteris conjugata* [Dipteridaceae]. Brunei. Tasek Lama. Photo: PC Boyce.

Borneo: 4 (native). Christensen (1928), Hassler (2022).
World: 8. Hassler (2022).

14. **Dryopteridaceae** Herter

14.1 **Arachniodes** Blume, Enum. Pl. Javae 2: 241 (1828).

(=) *Byrsopteris* Morton, Amer. Fern J. 60: 149 (1960).

(=) *Leptorumohra* (H.Itô) H.Itô, Nakai & Honda, Nov. Fl. Jap. 4: 101 (1939).

(=) *Lithostegia* Ching, Sinensia 4: 2 (1933), fide Fraser-Jenkins (1997).

(=) *Phanerophlebiopsis* Ching, Acta Phytotax. Sin. 10: 115 (1965).

(=) *Rumohra* sect. *Leptorumohra* H.Itô, Nakai & Honda, Nov. Fl. Jap. 11: 579 (1935).

(=) ×*Leptoarachniodes* Nakaike, New Fl. Japan, Pterid. 841 (1992).

Revision status – C.

Borneo: 3 (native). Hassler (2022). World: 73. Hassler (2022).

14.2 **Bolbitis** Schott, Gen. Fil. pl. 13 (1835).

(=) *Campium* C.Presl, Tent. Pterid. 238, pl. 10 (22-23) (1836) emend. Copel., Phil. J. Sci. 37: 341-402 (1928).

(=) *Cyrtogonium* J.Sm., J. Bot. (Hook.) 4: 154 (1841), *nom. superfl.*

(=) *Edanyoa* Copel., Philipp. J. Sci., Bot. 81: 22, pl. 17 (1952).

(=) *Egonolfia* Schott, Gen. Fil. (1835) ad t. 16. (1835).

(=) *Heteroneuron* Fée, Mém. Foug. 2 (Acrost.) 20, 91 (1845).

(=) *Jenkinsia* Hook., Gen. Fil. t. 75b (1841).

(=) *Lacaussadea* Gaudich., Voy. Bonite, t. 118-120 (1846).

(=) *Poecilopteris* C.Presl, Tent. Pterid. 241 (1836).

(=) *Poikilopteris* Eschw., Linn. 2: 117 (1827).

Revision status – A.

Borneo: 4 (native). Hassler (2022). World: 67. Hassler (2022).

14.3 **Ctenitis** (C.Chr.) C.Chr., Notul. Syst. (Paris) 7: 86 (1938).

(=) *Ataxipteris* Holttum, Blumea 30: 10 (1984).

(=) *Dryopteris* subgen. *Ctenitis* C.Chr., Biol. Arb. tilegn. Eug. Warming 77 (1911).

(=) *Pseudotectaria* Tardieu, Not. syst. 15: 87 (1955).

Revision status – C.

Borneo: 7 (native). Hassler (2022). World: 144. Hassler (2022).

14.4 **Dryopteris** Adans., Fam. Pl. 2: 20, 551 (1763).

(=) *Acrophorus* C.Presl, Tent. Pterid. 93 (1836), fide Zhang (2012).

(=) *Acrorumohra* (H.Itô) H.Itô, Nakai & Honda, Nov. Fl. Jap. 4: 101 (1939), fide Zhang (2012).

(=) *Adenoderris* J.Sm., Hist. Fil. 222 (1875).

(=) *Anopodium* J.Sm., Cat. cult. ferns 16 (1857).

(=) *Arsenopteris* Webb & Berthel., Hist. nat. Canar. 82, pars 3: 437 (1847).

(=) *Arthrobotrys* Wall., Num. List no. 395 (1828).

(=) *Catapodium* J.Sm., Cat. cult. ferns 16 (1857).

(=) *Ctenitis* subgen. *Dryopsis* Ching, Bull. Fan Mem. Inst. Biol. Bot. 8: 280 (1938).

(=) *Desmopodium* J.Sm. ex T.Moore, Ind. 308 (1861).

(=) *Diacalpe* Blume, Enum. Pl. Jav. 241 (1828), fide Zhang (2012).

(=) *Dichasium* (A.Braun) Fée, Mém. Foug. 5 (Gen. Fil.):302 (1852).

(=) *Diclidodon* T.Moore, Ind. Fil. 95 (1857).

(=) *Dryopsis* Holttum & Edwards, Kew Bull. 41: 179 (1986), fide Zhang (2012).

(=) *Dryopteris* sect. *Dryopsis* (Holttum & P.J.Edwards) Li Bing Zhang, Phytotaxa 71: 18 (2012).

(=) *Dryopteris* sect. *Stenolepia* (Alderw.) L.Y.Kuo & Y.H.Chang, Syst. Bot. 41(3): 603 (2016).

(=) *Dryopteris* subgen. *Lophodium* (Newman) Tzvelev, Novosti Sist. Vyssh. Rast. 35: 10 (2003).

(=) *Filix* Hill, Family Herbal 171 (1755).

(=) *Filix-Mas* Hill, Brit. Herb. 527 (1756).

(=) *Gleichenia* Neck., Element. Bot. 3: 314 (1790).

(=) *Gymnothalamium* Zenker ms. ex Kunze, Linn. 24: 287 (1851).

(=) *Lophodium* Newman, Phytol. 4: 371, app. XVI (1851).

(=) *Megalastrum* J.Sm., Hist. Fil. 216 (1875).

(=) *Microdictyon* Fée, Mém. Foug. 11 (Hist. Foug. Ant.): 66 (1866).

(=) *Monogonia* C.Presl, Tent. Pterid. 146 (1836).

(=) *Monophlebia* T.Moore, Ind. Fil. 89 (1857).

(=) *Nematopera* Kunze, Bot. Zeit. (Berlin) 797 (1846), *corr. nom.*

(=) *Nephrodium* Rich., Marthe, Cat. Pl. Jard. Méd. Paris 120 (1801)

(=) *Nothoperanema* (Tagawa) Ching, Acta Phytotax. Sin. 11: 25 (1966), fide Zhang (2012).

(=) *Oligocampia* Trevis., Atti Ist. Veneto II, 2: 165 (1851).

(=) *Pachyderris* J.Sm.ms. ex T.Moore, Ind. Fil. 146 (1857).

(=) *Peranema* D.Don, Prodr. Fl. Nepal. 12 (1825), fide Zhang (2012).

(=) *Podeilema* R.Br.ms. ex Wall., Ic. pl. as. rar. 1. 42 (1830).

(=) *Psidopodium* Neck., Element. Bot. 3: 315 (1790).

(=) *Pteris* Gled., Syst. Pl. 289 (1764).

(=) *Pycnopteris* T.Moore, Gard. Chr. 468 (1855).

(=) *Revwattsia* D.L.Jones, Fl. Australia 48: 711 (1998).

(=) *Rumohra* sect. *Acrorumohra* H.Itô, J. Jap. Bot. 11: 583 (1935).

(=) *Sphaeropteris* R.Br. ex Wall., Pl. asiat. rar. 1: 41 (1830), *nom. illeg.*

(=) *Stenolepia* Alderw., Bull. Dépt. agric. Ind. néerl. 27: 45 (1909).

(=) *Syneuron* J.Sm.ms. ex Hook., Ic. Pl. t.950 (1854).

Revision status – C.

Borneo: 15 (native). Winkler (1910), Christensen (1928), Hassler (2022). World: 343. Hassler (2022).

14.5 *Elaphoglossum* Schott ex J.Sm., J. Bot. (Hooker) 4: 148 (1841).

(=) *Aconiopteris* C.Presl, Tent. Pterid. 236 (1836).

(=) *Acrostichum* Fée, Hist. Acrost. 8, 27 (1845), non L. (1753).

(=) *Acrostichum* sect. *Elaphoglossum* Hook., Sp. Fil. 5: 195-241 (1864).

(=) *Condyloneura* Christ, Monogr. Elaph. 22 (1899).

(=) *Craspedoglossa* Christ, Monogr. Elaph. 20 (1899).

(=) *Dictyoglossum* J.Sm., Bot. Mag. 72 (1846) Comp. 18.

(=) *Elaphoglossum* Schott, Gen. Fil. ad tab. 14 (1834).

(=) *Gymnoglossa* Christ, Monogr. Elaph. 22 (1899).

(=) *Hymenodium* Fée, Mém. Foug. 2: 20, 90 (1845).

(=) *Microstaphyla* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(6) (Epim. Bot.): 160 (1851).

(=) *Nebroglossa* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(6) (Epim. Bot.): 166 (1851).

(=) *Olfersia* C.Presl, Tent. Pterid. 232 (1836), *p. max. p.*, non Raddi (1819).

(=) *Oligolepidum* T.Moore, Ind. Fil. 16 (1857).

(=) *Pachyglossa* Christ, Monogr. Elaph. 20 (1899).

(=) *Peltapteris* Link, Fil. Sp. 147 (1841).

(=) *Platyglossa* Christ, Monogr. Elaph. 20 (1899).

(=) *Rhipidopteris* Fée, Mém. Foug. 2: 14, 78 (1845).

(=) *Rhipidopteris* Schott, Gen. Fil. ad t. 14 (1834).

Revision status – A.

Borneo: 16 (native). Christensen (1928), Hassler (2022). World: 755. Hassler (2022).

14.6 *Lomagrumma* J.Sm., J. Bot. (Hook.) 4: 152 (1841).

(=) *Cheilelepton* Fée, Hist. Acrost. 19 (1845).

(=) *Chorizopteris* T.Moore, Gard. Chr. Agr. Gaz.: 854 (1855).

Revision status – A.

Borneo: 2 (native). Hassler (2022). World: 18. Hassler (2022).

14.7 *Pleocnemia* C.Presl, Tent. Pterid. 182 (1836).

(=) *Arcypteris* Underw., Bull. Torrey Bot. Cl. 30: 678 (1903).

(=) *Dictyopteris* C.Presl, Tent. Pterid. 194 (1836).

Revision status – A.

Borneo: 6 (native). Hassler (2022). World: 20. Hassler (2022).

14.8 *Polystichum* Roth, Tent. Fl. Germ. 3(1): 31, 69 (1799).

(=) *Aetopteron* Ehrh., Beitr. 148 (1789), ex House, Amer. Fern J. 10: 88 (1920).

(=) *Acropelta* Nakai, Bull. Natl. Sci. Mus. (Tokyo) 33: 5 (1953).

(=) *Cyrtogonellum* Ching, Bull. Fan Mem. Inst. Biol. Bot. 8: 327 (1938).

(=) *Cyrtomidictyum* Ching, Bull. Fan Mem. Inst. Biol. Bot. 10: 182 (1940).

(=) *Hemestheum* Lev., Flore du Kouy-tcheou 496 (1915), non *Hemestheum* Newman (1851).

(=) *Hemigonum* J.Sm., Hist. Fil. 204 (1875).

(=) *Hypopeltis* Michx., Fl. bor. Amer. 2: 226 (1803), in obs., ex Bory, Bél., Voy. Bot. 2: 63 (1833).

(=) *Papuapteris* C.Chr., Brittonia 2: 300 (1937).

(=) *Plecosorus* Fée, Mém. Foug. 5 (Gen. Fil.):150 (1852).

(=) *Polystichum* sect. *Sorolepidium* (Christ) Tagawa, Acta Phytotax. Geobot. 9: 122 (1940).

(=) *Porpaea* C.Presl ms. ex Ettingsh., Farnkr. 174 (1865).

(=) *Sorolepidium* Christ, Bot. Gaz. 51: 350 (1911).

Revision status – C.

Borneo: 5 (native). Hassler (2022). World: 405. Hassler (2022).

14.9 *Teratophyllum* Mett. ex Kuhn, Ann. Mus. Bot. Lugd.-Bat. 4: 296 (1869).

(=) *Lomariopsis* Fée, Hist. Acrost. 71 (1845), *p. p.*

Revision status – A.

Borneo: 4 (native). Hassler (2022). World: 10. Hassler (2022).

Notes. Hassler (2022) listed *Acrostichum* L. as a synonym of *Teratophyllum* in error.

15. **Equisetaceae** Michx. ex DC.

15.1 *Equisetum* L., Sp. Pl.: 1061 (1753).

(=) *Presla* Dulac, Fl. Dépt. Hautes-Pyrenees 25 (1867), *nom. superfl.*

(=) *Allostelites* Börner, Fl. Deutsche Volk 59, 283 (1912).

(=) *Hippochaete* Milde, Bot. Zeit. (Berlin) 23: 297 (1865).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 15. Hassler (2022).

16. **Gleicheniaceae** C.Presl

16.1 *Dicranopteris* Bernh., Neues J. Bot. 1(2): 38 (1805).

(=) *Mertensia* Willd., Kongl. Vetensk. Acad. Handl. 25: 163 (1804), *p. p.* [non Roth (1797) (Borag.)].

(=) *Acropterygium* (Diels) Nakai, Bull. Natl. Sci. Mus. (Tokyo) 29: 5 (1950).

(=) *Heteropterygium* Diels, Nat. Pfl. 355 (1900).

(=) *Hicriopteris* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5, 6: 26 (1851), non Ching (1940), nec Copel.

(=) *Holopterygium* Diels, Nat. Pfl. 1(4): 353 (1900).

(=) *Mesosorus* Hassk., Fil. Jav. 1: 2 (1856), *p. p.*

(=) *Sticherus* sect. *Hicriopteris* (C.Presl) C.Ch., Verd., Man. Pterid. 530 (1938).

Revision status – A.

Borneo: 5 (native). Hassler (2022). World: 22. Hassler (2022).

16.2 ***Diplopterygium*** (Diels) Nakai, Bull. Natl. Sci. Mus. Tokyo 29: 47 (1950).

(=) *Dicranopteris* Underw., Bull. Torrey Bot. Cl. 34: 249 (1907), *p. p.*

(=) *Hicriopteris* Ching, Sunyatsenia 5: 277 (1940), non C.Presl. (1851).

(=) *Mesosorus* Hassk., Fil. Jav. 1: 2 (1856), *p. p.*

Revision status – A.

Borneo: 4 (native). Hassler (2022). World: 21. Hassler (2022).

Notes. POWO (2022) recognized *Dicranopteris* Underw. and listed *Mesosorus* Hassk. as a synonym of *Dicranopteris*. Hassler (2022) listed *Dicranopteris* and *Mesosorus* as synonym for *Sticherus* C.Presl (16.4 below) and *Diplopterygium* (Diels) Nakai in error.

16.3 ***Gleichenia*** Sm., Mém. Acad. Roy. Sci. (Turin) 5: 419 (1793).

(=) *Calymella* C.Presl, Tent. Pterid. 48 (1836).

(=) *Gleichenia* Copel., Gen. Fil. 26 (1947).

(=) *Gleicheniastrum* C.Presl, Abh. (K.) Böhm. Ges. Wiss., Math.-Naturw. Cl. V, 5: 338 (1848).

Revision status – A.

Borneo: 4 (native). Christensen (1928), Hassler (2022). World: 14. Hassler (2022).

16.4 ***Sticherus*** C.Presl, Tent. Pterid.: 51 (1836).

(=) *Dicranopteris* Underw., Bull. Torrey Bot. Cl. 34: 249 (1907), *p. p.*, non Bernh. (1805).

(=) *Mertensia* Willd., Kongl. Vetensk. Acad. Handl. 25: 163 (1804), *p. p.*, non Roth (1797).

(=) *Mesosorus* Hassk., Fil. Jav. 1: 2 (1856), *p. p.*

Revision status – A.

Borneo: 4 (native). Hassler (2022). World: 91. Hassler (2022).

Notes. Refer to 16.2 above.

17. Hymenophyllaceae Mart.

17.1 ***Abrodictyum*** C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(3): 20 (1843).

(=) *Abrodictyum* subgen. *Pachychaetum* (C.Presl) Ebihara & K.Iwats., Blumea 51(2): 242 (2006).

(=) *Cephalomanes* subgen. *Macroglena* (C.Presl) K.Iwats., Acta Phytotax. Geobot. 35(4-6): 176 (1984).

(=) *Habrodictyon* Bosch, Verh. Konigk. Akad. Wetensch. Amsterdam (Hym. Jav.) 9(4): 17 (1861).

(=) *Macroglena* (C.Presl) Copel., Phil. J. Sci. 67: 82 (1938).

(=) *Pachychaetum* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(3): 16 (1843).

(=) *Selenodesmium* (Prantl) Copel., Phil. J. Sci. 67: 80 (1938).

(=) *Trichomanes* subgen. *Macroglena* C.Presl, Abh. (K.) Böhm. Ges. Wiss., Math.-Naturw. Cl. V, 5: 333 (1848).

(=) *Trichomanes* subgen. *Selenodesmium* Prantl., Unters. Morph. Gefässkr. 1: 53 (1875).

Revision status – A.

Borneo: 10 (native). Hassler (2022). World: 36. Hassler (2022).

Notes. A synonym under *Trichomanes* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

17.2 ***Callistopteris*** Copel., Occ. Pap. Bishop Mus. 14: 49 (1938).

Revision status – A.

Borneo: 2 (native). Hassler (2022). World: 6. Hassler (2022).

Notes. POWO (2022) listed *Callistopteris* Copel. as a synonym of *Trichomanes* L. A synonym under *Trichomanes* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

17.3 ***Cephalomanes*** C.Presl, Abh. (K.) Böhm. Ges. Wiss., Math.-Naturw. Cl. V, 3: 17 (1843).

Revision status – A.

Borneo: 2 (native). Hassler (2022). World: 5. Hassler (2022).

Notes. A synonym under *Trichomanes* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

17.4 ***Crepidomanes*** (C.Presl) C.Presl; Abh. Königl. Böhm. Ges. Wiss. 5, 6: 258 (1851).

Revision status – A.

Borneo: 14 (native). Hassler (2022). World: 55. Hassler (2022).

Notes. A synonym under *Trichomanes* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

17.5 ***Didymoglossum*** Desv., Prodr. 330 (1827).

(=) *Didymoglossum* subgen. *Microgonium* (C.Presl) Ebihara & K.Iwats., Blumea 51(2): 236 (2006).

(=) *Lecanolepis* Pic.Serm., Webbia 28: 449 (1973).

(=) *Microgonium* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(3): 19 (1843).

Revision status – A.

Borneo: 4 (native). Hassler (2022). World: 52. Hassler (2022).

Notes. A synonym under *Trichomanes* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

17.6 *Hymenophyllum* Sm., Mém. Acad. Roy. Sci. (Turin) 5: 418 (1793).

(=) *Ptychomanes* Hedw., Fil. Gen. & Spec. fasc. II (1800).

(=) *Acanthotheca* Nakai, Bot. Mag. (Tokyo) 40: 242 (1926).

(=) *Amphipterum* (Copel.) C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(6) (Epim. Bot.): 258 (1851).

(=) *Apteropteris* (Copel.) Copel., Phil. J. Sci. 67: 34 (1938).

(=) *Buesia* Morton, Bot. Gaz. 93: 336 (1932).

(=) *Cardiomanes* C.Presl, Abh. (K.) Böhm. Ges. Wiss., Math.-Naturw. Cl. V, 3: 12 (1843).

(=) *Charitophyllum* Bosch, Pl. Jungh. 1 (18) (1856).

(=) *Chilodium* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(3): 23 (1843).

(=) *Craspedoneuron* Bosch, Verh. Konigk. Akad. Wetensch. Amsterdam (Hym. Jav.) 9(4): 12, t. 10 (1861).

(=) *Craspedophyllum* (C.Presl) Copel., Phil. J. Sci. 67: 27 (1938).

(=) *Cycloglossum* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(3): 32 (1843).

(=) *Dermatophlebium* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(6) (Epim. Bot.): 258 (1851).

(=) *Diplophyllum* Bosch, Versl. Akad. Wet. Amsterdam 11: 318 (1861), non Lehm. (1814).

(=) *Euphorophyllum* Bosch, Pl. Jungh. 1(19) (1856).

(=) *Gonocormus* sect. *Microtrichomanes* Mett. ex Prantl, Unters. Morph. Gefasskrypt. 1: 1–73, pl. 1–6. (1875).

(=) *Hemicyathea* (Domin) Copel., Phil. J. Sci. 67: 27 (1938).

(=) *Hymenoglossum* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(3): 35 (1843).

(=) *Leptocionium* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(3): 26 (1843).

(=) *Mecodium* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(6) (Epim. Bot.): 258 (1851).

(=) *Meringium* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(3): 24 (1843).

(=) *Microtrichomanes* (Mett. ex Prantl) Copel., Phil. J. Sci. 67: 35 (1938).

(=) *Myriodon* (Copel.) Copel., Phil. J. Sci. 67: 47 (1938).

(=) *Myrmecostylum* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(3): 27 (1843).

(=) *Pachyloma* Bosch, Versl. Akad. Wet. Amsterdam 11: 318 (1861).

(=) *Pleuromanens* (C.Presl) C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(6) (Epim. Bot.): 258 (1851).

(=) *Pseudomecodium* (K.Iwats.) Satou, Hikobia 12(3): 269 (1997).

(=) *Ptychophyllum* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(3): 28 (1843).

(=) *Rosenstockia* Copel., Gen. Fil. 36 (1947).

(=) *Serpyllopsis* Bosch, Versl. Akad. Wet. Amsterdam 11: 318 (1861).

(=) *Sphaerocionium* C.Presl, Abh. (K.) Böhm. Ges. Wiss., Math.-Naturw. Cl. V, 3: 33 (1843).

(=) *Tetralasma* Phil., Linn. 30: 208 (1860).

Revision status – A.

Borneo: 34 (native). Winkler (1910), Christensen (1928), Hassler (2022). World: 316. Hassler (2022).

17.7 *Polyphlebium* Copel., Phil. J. Sci. 67: 55 (1938).

(=) *Phlebiophyllum* Bosch, Versl. Akad. Wet. Amsterdam 11: 321 (1861), non *Phlebophyllum* Nees in Wal. (1832).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 16. Hassler (2022).

Notes. A synonym under *Trichomanes* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

17.8 *Trichomanes* L., Sp. Pl. 2: 1097 (1753).

(=) *Achomanes* Neck., Element. Bot. 3: 313 (1790).

(=) *Bergera* W.Schaffn. ex Fée, Mém. Foug. 9 (Cat. Foug. Mex.): 30 (1857).

(=) *Davalliopsis* Bosch, Versl. Akad. Wet. Amsterdam 11: 323 (1861).

(=) *Feea* Bory, Dict. Class d'Hist. Nat. 6: 446 (1824).

(=) *Hemiphlebium* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(3): 25 (1843).

(=) *Holophlebium* Christ, Farnkr. 27 (1897).

(=) *Homoeotes* C.Presl, Abh. (K.) Böhm. Ges. Wiss., Math.-Naturw. Cl. V, 5: 5: 331 (1848).

(=) *Hymenostachys* Bory, Dict. Class d'Hist. Nat. 6: 588 (1824), 8: 462 (1825).

(=) *Lacostea* Bosch, Versl. Akad. Wet. Amsterdam 11: 320 (1861).

(=) *Lecanium* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(3): 11 (1843).

(=) *Leptomanes* Prantl, Unters. Morph. Gefasskrypt. 1: 52 (1875).

(=) *Leucomanes* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(6) (Epim. Bot.): 258 (1851).

(=) *Maschalosorus* Bosch, Versl. Akad. Wet. Amsterdam 11: 320 (1861).

(=) *Mortoniopteris* Pic.Serm., Webbia 31(1): 243 (1977).

(=) *Muelleria* W.Schaffn. ex E.Fourn., Mex. Pl. 1: 59 (1872).

(=) *Neuromanens* Trevis., Atti Ist. Veneto II, 2: 163 (1851) ex Bosch, Nederl. Kruidk. Arch. 4: 347 (1859).

(=) *Neurophyllum* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(3): 18 (1843), non Torr. & Gray (1840).

(=) *Odontomanes* C.Presl, Epim. bot. 20. 1849 (1851).

(=) *Pteromanes* Pic.Serm., Webbia 31(1): 244 (1977).

(=) *Ptilophyllum* Bosch, Versl. Akad. Wet. Amsterdam 11: 321 (1861).

(=) *Pyxidaria* Gled., Syst. Pl. 291 (1764).

(=) *Ragatelus* C.Presl, Abh. Königl. Böhm. Ges. Wiss. 5(3): 14 (1843).

(=) *Trichomanes* subgen. Davalliopsis (Bosch) Ebihara & K.Iwats., Blumea 51(2): 247 (2006).

(=) *Trigonophyllum* (Prantl) Pic.Serm., Webbia 31(1): 242(1977).

Revision status – A.

Borneo: 33 (native). Winkler (1910), Christensen (1928), Hassler (2022). World: 72. Hassler (2022).

17.9 *Vandenboschia* Copel., Phil. J. Sci. 67: 51 (1938).

(=) *Trichomanes* subgen. Vandenboschia (Copel.) Allan, Fl. New Zeal. 34 (1961).

(=) *Lacosteopsis* (Prantl) Nakaike, Enum. Pterid. Jap., Fil. 21 (1975).

(=) *Vandenboschia* subgen. Lacosteopsis (Prantl) Ebihara & K.Iwats., Blumea 51(2): 242 (2006).

Revision status – A.

Borneo: 3 (native). Hassler (2022). World: 25. Hassler (2022).

Notes. A synonym under *Trichomanes* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

18. Hypodematiaceae Ching

18.1 *Hypodematium* Kunze, Flora 16: 690 (1833).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 26. Hassler (2022).

18.2 *Leucostegia* C.Presl, Tent. Pterid.: 94 (1836).

Revision status – C.

Borneo: 2 (native). Hassler (2022). World: 26. Hassler (2022).

19. Lindsaeaceae M.R.Schomb.

19.1 *Lindsaea* Dryand. ex Sm., Mém. Acad. Roy. Sci. (Turin) 5: 413 (1793).

(=) *Davalliastrum* E.Fourn., Ann. sc. nat. V, 18: 334 (1873).

(=) *Guerinia* J.Sm., Hist. Fil. 272 (1875).

(=) *Humblotiella* Tardieu, Mém. Inst. Sc. Madagascar, ser. B, 7: 38 (1956).

(=) *Hymenolomia* Gaudich., Voy. Uranie [Freycinet] 379 (1827).

(=) *Isoloma* J.Sm., J. Bot. (Hook.) 3: 414 (1841).

(=) *Lindsaenium* Fée, Mem. Soc. Mus. Hist. Nat. Strasb. 4: 201 (1850-52).

(=) *Odontoloma* J.Sm., J. Bot. (Hook.) 3: 415 (1841), *nom. subnud.* [non Kunth (1820) (Compositae)].

(=) *Ormoloma* Maxon, Proc. Biol. Soc. Wash. 46: 143 (1933).

(=) *Paralindsaya* Keyserl., Pol. Cyath. Hb. Bung. 3 (1873).

(=) *Pericoptis* Wall., List sub n. 92 (1828).

(=) *Sambirania* Tardieu, Mém. Inst. Sc. Madagascar, ser. B, 7: 34 (1956).

(=) *Schizolegnia* Alston, Bol. Soc. Broter. ser. 2, 30: 23 (1956).

(=) *Schizoloma* Gaudich., Ann. sc. nat. 3: 507 (1824), *p. p.*

(=) *Synaphlebium* J.Sm., J. Bot. 3: 415 (1841).

Revision status – A.

Borneo: 34 (native). Christensen (1928), Hassler (2022). World: 183. Hassler (2022).

19.2 *Nesolindsaea* Lehtonen & Christenh., Bot. J. Linn. Soc. 163: 336 (2010).

Revision status – A.

Borneo: 1 (native). Winkler (1910), Hassler (2022). World: 2. Hassler (2022).

19.3 *Odontosoria* (C.Presl) Fée, Mém. Foug., 5. Gen. Filic.: 325 (1852).

(=) *Davallia* subgen. Odontosoria C.Presl, Tent. Pterid. 129 (1836).

(=) *Lindsayopsis* Kuhn, Chaetopt. [Festschr. 50jähr. Jubiläum Königst. Realschule zu Berlin] 347 (1882).

(=) *Lourdesia* Barcelona & Hickey, *ined.*

(=) *Odontosoria* (C.Presl) J.Sm., Hist. Fil. 263 (1875), *isonym.*

(=) *Stenoloma* Fée, Mém. Foug. 5 (Gen. Fil.): 330 (1852).

Revision status – A.

Borneo: 4 (native). Hassler (2022). World: 35. Hassler (2022).

19.4 *Osmolindsaea* (K.U.Kramer) Lehtonen & Christenh., Bot. J. Linn. Soc. 163: 335 (2010).

(=) *Lindsaea* sect. Osmolindsaea K.U.Kramer, Blumea 15: 560 (1968).

Revision status – A.

Borneo: 3 (native). Hassler (2022). World: 7. Hassler (2022).

19.5 *Tapeinidium* (C.Presl) C.Chr., Index Filic.: 631 (1906).

(=) *Microlepia* subgen. Tapeinidium C.Presl, Epim. bot. 96 (1849).

(=) *Protolindsaya* Copel., Philipp. J. Sci., Bot.6: 283 (1910).

(=) *Wibelia* Fée, Gen. Fil. 331 (1850-52).

Revision status – A.

Borneo: 9 (native). Christensen (1928), Hassler (2022).
World: 19. Hassler (2022).

19.6 *Xyopteris* K.U.Kramer, Acta Bot. Neerl. 6: 599 (1957).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 1. Hassler (2022).

Notes. A synonym under *Lindsaea* Dryand. ex Sm. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

20. **Lomariopsidaceae** Alston

20.1 *Cyclopeltis* J.Sm., Comp. Curtis Bot. Mag. 72: 36 (1846).

(=) *Hemicardion* Fée, Mém. Foug. 5 (Gen. Fil.):282 (1852), *nom. superfl.*

Revision status – A.

Borneo: 3 (native). Hassler (2022). World: 7. Hassler (2022).

20.2 *Lomariopsis* Fée, Mém. Foug., 2. Hist. Acrostich.: 10 (1845).

(=) *Thysanosoria* A.Gepp, Gibbs, Dutch N. W. New Guinea 19 (1917).

Revision status – A.

Borneo: 2 (native). Hassler (2022). World: 62. Hassler (2022).

21. **Lycopodiaceae** P.Beauv. ex Mirb.

21.1 *Diphasium* C.Presl ex Rothm., Abh. (K.) Böhm. Ges. Wiss., Math.-Naturw. Cl. V, 5: 3: 883 (1845).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 4. Hassler (2022).

Notes. A synonym under *Lycopodium* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

21.2 *Diphasiastrum* Holub; Preslia 47: 104 (1975).

Revision status – A.

Borneo: 2 (native). Hassler (2022). World: 20. Hassler (2022).

Notes. A synonym under *Lycopodium* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

21.3 *Huperzia* Bernh., J. Bot. (Schrader) 1800(2): 126 (1801).

(=) *Mirmau* Adans., Fam. Pl. 2: 491 (1763), *p. p.*, *nom. illegit.*

(=) *Plananthus* P.Beauv. ex Mirb., Hist. Nat. Veg. (Lam. & Mirb.) 3: 476, 4: 310 (1802), *nom. superfl.*

(=) *Selago* Boehm., Ludwig, Def. Gen. Pl., ed. Boehmer 484 (1760) [non L. (1753), nec Browne (1756), nec Hill (1757), *nom. illeg.*].

(=) *Selago* Hill, Brit. Herb. 533 (1757), non L. 1753, nec Browne 1756, *nom. inval.*

(=) *Selago* Schur, Enum. pl. Transsilv. 825. 1866, non L. (1753), nec Browne (1756), nec Hill (1757).

(=) *Urostachys* Herter, Beih. Bot. Centralbl. 39(2): 249 (1922), *nom. superfl.*

Revision status – C.

Borneo: 4 (native). Hassler (2022). Word: 62. Hassler (2022).

Lycopodiella cernua (L.) Pic.Serm. = *Palhinhaea cernua* (L.) Vasc. & Franco

21.4 *Palhinhaea* Franco & Vasc., Bol. Soc. Broter. Ser. 2, 41: 24 (1967).

(=) *Lepidotis* Mirb., Hist. Nat. Veg. (Lam. & Mirb.) 3: 477 (1802), *nom. superfl.*, *nom. rej.*

Revision status – A.

Borneo: 2 (native). Hassler (2022). World: 26. Hassler (2022).

Notes. A synonym under *Lycopodiella* Holub. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

21.5 *Phlegmariurus* (Herter) Holub, Preslia 36 (1): 179 (1964).

Revision status – A.

Borneo: 15 (native). Hassler (2022). World: 307. Hassler (2022).

Notes. POWO (2022) listed *Phlegmariurus* (Herter) Holub as a synonym of *Hyperzia* Bernh. A synonym under *Hyperzia* Bernh. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

21.6 *Pseudodiphasium* Holub, Folia Geobot. Phytotax. 18: 440 (1983).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 1. Hassler (2022).

Notes. A synonym under *Lycopodium* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

21.7 *Lycopodiastrum* Holub ex R.D.Dixit, J. Bombay Nat. Hist. Soc. 77 (3): 540 (1981) [Holub, Preslia 47: 103 (1975)].

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 1. Hassler (2022).

Notes. A synonym under *Lycopodium* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

21.8 *Lycopodium* L., Sp. Pl.: 1100 (1753).

(=) *Clopodium* Raf., Anal. nat. 205 (1815), *nom. inval.*

(=) *Oxynemum* Raf., Amer. Monthly Mag. & Crit. Rev. 2: 44 (1817).

Revision status – C.

Borneo: 1 (native). Winkler (1910), Christensen (1928), Hassler (2022). Word: 7. Hassler (2022).

22. *Lygodiaceae* M.Roem.

22.1 *Lygodium* Sw., J. Bot. (Schrader) 1800(2): 7, 106 (1801).

(=) *Vallifilix* Thouars, Gen. Nov. Madag. 1 (1808).

(=) *Arthrolygodes* C.Presl, Suppl. Tent. Pterid. 101 (1845).

(=) *Cteisium* Michx., Fl. bor. Amer. 2: 275 (1803).

(=) *Gisopteris* Bernh., Schrad., J. Bot. 1800(2): 127 (1801).

(=) *Hugona* Cav. ex Roem., Arch. Bot. 2: 486 (1801 publ. 1802).

(=) *Hydroglossum* Willd., Abh. Kurf. Mainz. Ak. Wiss. Erfurt 2, pt. 4: 13, 20 (1802).

(=) *Lygodictyon* J.Sm., Hook. & Baker, Gen. Fil. (1842).

(=) *Odontopteris* Bernh., Schrad., J. Bot. 1800(2): 127, t. 2, f. 4 (1801).

(=) *Ramondia* Mirb., Bull. Soc. Philom. 2: 179 (1801).

(=) *Ugena* Cav., Ic. Descr. Pl. 6: 73 (1801).

Revision status – C.

Borneo: 7 (native). Winkler (1910), Christensen (1928), Hassler (2022). World: 29. Hassler (2022).

23. *Marattiaceae* Kaulf.

23.1 *Angiopteris* Hoffm., Commentat. Soc. Regiae Sci. Gott. 12: 29 (1796).

(=) *Archangiopteris* Christ & Giesenh., Flora 72: 77 (1899).

(=) *Clementea* Cav., Descr. Pl. 553 (1803).

(=) *Macroglossum* Copel., Philipp. J. Sci., Bot. 8: 342 (1909).

(=) *Protangiopteris* Hayata, Bot. Mag. (Tokyo) 42: 305, 346 (1928).

(=) *Protomarattia* Hayata, Bot. Gaz. 67: 88 (1919).

(=) *Psilodochea* C.Presl, Suppl. Tent. Pterid. 28 (1845).

Revision status – A.

Borneo: 6 (native). Hassler (2022). World: 47. Hassler (2022).

23.2 *Christensenia* Maxon, Proc. Biol. Soc. Washington 18: 239 (1905).

(=) *Kaulfussia* Blume, Enum. Pl. Jav. 260 (1828).

(=) *Macrostoma* Griff., Asiat. Research. 19: 110 (1836).

Revision status – A.

Borneo: 1 (native). Hassler (2022). World: 2. Hassler (2022).

23.3 *Ptisana* Murdock, Taxon 57: 744 (2008).

Revision status – A.

Borneo: 3 (native). Hassler (2022). World: 34. Hassler (2022).

24. *Matoniaceae* C.Presl.

24.1 *Matonia* R.Br., N.Wallich, Pl. Asiat. Rar. 1: 16 (1829).

(=) *Prionopteris* Wall., Num. List no. 184 (1828).

Revision status – A.

Borneo: 2 (native). Hassler (2022). World: 2. Hassler (2022).

24.2 *Phanerosorus* Copel., Philipp. J. Sci., C 3: 344 (1909).

Revision status – A.



Figure 4. *Matonia pectinata* [Matoniaceae]. Sabah, Kinabalu N.P. Photo: PC Boyce.

Borneo: 1 (native). Hassler (2022). World: 2. Hassler (2022).

25. Marsileaceae Mirb.

25.1 *Marsilea* L.; Sp. Pl. 2: 1097 (1753).

(=) *Zalusianskya* Neck., Acta Theod. pal. phys. 3: 303 (1775).

(=) *Lemma* Juss., Hort. Trian. (1759), ex Adans., Fam. d. pl. 2: 21 (1763).

(=) *Marsiglia* Raf., Fl. Tellur. 1: 18 (1837).

(=) *Spheroidea* Dulac, Pl. Dept. Haut-Pyrenees 39 (1867), *nom. superfl.*

Revision status – A.

Borneo: 2 (native). Hassler (2022). World: 50. Hassler (2022).

26. Nephrolepidaceae Pic.Serm.

26.1 *Nephrolepis* Schott; Gen. Fil. pl. 3 (1834).

(=) *Cardiostegia* T.Moore, Ind. Fil. 90 (1857).

(=) *Lepidoneuron* Fée, Gen. Fil. 301 (1850-52) (*Lepidoneuron*).

(=) *Leptopleuria* C.Presl, Tent. Pterid. 136 (1836).

(=) *Lindsayoides* Nakai, Ord. Fam. Trib. Nov. 202 (1943).

Revision status – A.

Borneo: 8 (native). Winkler (1910), Christensen (1928), Hassler (2022). World: 29. Hassler (2022).

27. Oleandraceae (J.Sm.) Ching ex Pic.Serm.

27.1 *Oleandra* Cav., Anales Hist. Nat. 1: 115 (1799).

(=) *Haplophlebia* Griseb., Abh. Ges. Wiss. Gött. 7. 286 (1857).

(=) *Neuronia* D.Don, Prodr. Fl. Nepal. 6 (1825), *nom. superfl.*

(=) *Ophiopteris* Reinw., Syll. pl. 2: 3 (1824).

Revision status – C.

Borneo: 3 (native). Christensen (1928), Hassler (2022). World: 30. Hassler (2022).

28. Ophioglossaceae Martynov

Botrychium daucifolium (Wall.) Hook. & Grev. = *Sceptridium daucifolium* (Wall. ex Hook. & Grev.) Lyon

28.1 *Helminthostachys* Kaulf., Flora 1822: 103 (1822).

(=) *Botryopteris* C.Presl, Rel. Haenk. 1: 76 (1825).

(=) *Ophiala* Desv., Prodr. 195 (1827).

Revision status – A.

Borneo: 1 (native). Winkler (1910), Hassler (2022). World: 1. Hassler (2022).

28.2 *Ophioderma* (Blume) Endlicher, Gen. Pfl. 66 (1836).

Revision status – A.

Borneo: 2 (native). Hassler (2022). World: 6. Hassler (2022).

Notes. A synonym under *Ophioglossum* L. (POWO, 2022). However, this remains to be accepted in Hassler (2022).

28.3 *Ophioglossum* L., Sp. Pl. 2: 1062 (1753).

(=) *Cassiopteris* H.Karst., ms.

(=) *Paraneura* Prantl, Ber. dt. Bot. Ges. 1: 350 (1833).

(=) *Ptiloneura* Prantl, Ber. dt. Bot. Ges. 1: 351 (1883).

Revision status – A.

Borneo: 4 (native). Christensen (1928), Hassler (2022). World: 44. Hassler (2022).

28.4 *Sceptridium* Lyon, Bot. Gaz. 40: 457 (1905).

Revision status – A.

Borneo: 2 (native). Hassler (2022). World: 23. Hassler (2022).

Notes. A synonym under *Sceptridium* Lyon (POWO, 2022). However, this remains to be accepted in Hassler (2022).



Figure 5. *Helminthostachys zeylanica* [Ophioglossaceae]. Sarawak, Sarikei, Wong Ruan. Photo: PC Boyce.