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## Three new combinations and one lectotypification of fern and lycophyte taxa from the French overseas territories

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With the exception of French Guiana and Adélie Land, the French Overseas Territories (FOTs) are islands and their biodiversity is remarkable in many ways. Notably, they harbour numerous unique taxa leading to exceptionally high rates of endemism. Among French endemic plants, 95% occur in the FOTs, accounting for ca. 4000 species of tracheophytes and 'bryophytes' (Gargominy *et al.* 2020).

We recently initiated a project entitled "Flore Endémique des Territoires d'Outre-Mer" (i.e., Endemic Flora of the French Overseas Territories; FEnTOM) to summarize the present state of knowledge of plant endemism in the FOTs. Using the most current information and data, we intend to build an up-to-date checklist of all known strict and regional endemic spermatophytes, 'pteridophytes' and 'bryophytes' known in the FOTs (Veron *et al.* in prep.). In compiling this list, we discovered that three nomenclatural combinations remain outstanding for ferns and lycophytes, and we here present them to avoid the use of invalid combinations in the FEnTOM project and to also make appropriate names available in the French national taxonomic database TAXREF (Gargominy *et al.* 2020), as well as international taxonomic databases. These new combinations are consistent with the classification presented in PPG I (2016).

***Antrophyopsis gigantea*** (Bory) Rouhan, Boullet & Schuettp., *comb. nov.*

Basionym: *Antrophyum giganteum* Bory (1833: 36)

Type:— Mauritius. Le Pouce, *C. Bélanger s.n.* (lectotype P [P00483382!], *hic designatus*; isolectotypes P [P00483381!], P [P01482666!]).

Notes:— This species was not included in the study of vittarioid ferns by Schuettpelz *et al.* (2016) and its placement in the phylogeny has yet to be assessed. Nonetheless, it is morphologically most similar to *Antrophyopsis boryana* (Willdenow 1810: 128) Schuettpelz (2016: 717) that was included in the molecular analysis and confirmed as belonging to

*Antrophyopsis* (Benedict 1907: 447) Schuettpelz (2016: 717). It is distinguished from *A. boryana* by sessile, subelliptic to suboblanceolate fronds, but both share the generic characters, notably spherical apical cells of the soral paraphyses and ecostate laminae (i.e. lacking midribs). Although *A. gigantea* was described from Mauritius, it was never observed there again (Badré 2008) and is today known only from La Reunion. As there are three sheets housed at P, we designated as lectotype the sheet with complete leaves given that the base of fronds is critical for distinguishing the species; also, the same sheet bears the more complete labels.

***Lepisorus mucronatus*** (Fée 1852: 82) Li Wang (2010: 35) var. ***durus*** (Copel.) Rouhan, *comb. nov.*

Basionym: *Hymenolepis dura* Copeland (1938: 69, t.20).

Synonym: *Belvisia mucronata* (Fée 1852: 82) Copeland (1947: 192) var. *dura* (Copel.) Hovenkamp & Franken (1993: 523).

Type:—French Polynesia: “Australes”, Rapa, versant sud du Mont Lekie, 330 m, 20 July 1934, *H. St. John & J. Maireau 15621* (holotype BISH [BISH1000333, online image]; isotypes BISH [BISH1000335, online image], BO, K [K000880383!], MICH [1191320, online image], P [P00717795!], UC [UC 542661, online image], US [00134710, online image], W).

Notes:— *Belvisia* Mirbel (1803: 65) is entirely subsumed in *Lepisorus* (Smith 1846: 13) Ching (1933: 47, 56) following studies by Wang *et al.* (2010). The variety *durus* is known from Rapa Island in French Polynesia.

***Phlegmariurus pseudovarius*** (Brownlie) Rouhan & A.R.Field, *comb. nov.*

Basionym: *Lycopodium pseudovarium* Brownlie (1969: 23, t.1, f.13-15).

Synonym: *Huperzia pseudovaria* (Brownlie) Holub (1991: 93).

Type:— New Caledonia. Prov. Sud: Mont Humboldt, 1200 m, February 1872, *B. Balansa 3558* (holotype P [P00523013!]).

Notes:— Following the classification proposed by Field *et al.* (2016) and later retained by PPG I (2016), this species formerly placed in *Huperzia* Bernhardt (1801: 126) belongs in *Phlegmariurus* Holub (1964: 21). It is endemic to New Caledonia, but may possibly also occur in French Polynesia according to recent observations (J. Nitta, pers. com.).

The type at P was determined in 2015 by A. Field as *Phlegmariurus varius* (Brown 1810: 165) A.R.Field & Bostock (2013: 49) due to the lack of the combination *P. pseudovarius*, and because he thought it may be a synonym of *Phlegmariurus varius*. More recent work provides evidence supporting *P. pseudovarius* as distinct, along with at least two other species in this complex (Field, unpublished data).

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## References

- Badré, F. (2008) Ptéridophytes 1. Psilotacées à 26. Marsiléacées. In: Bosser, J., Badré, F. & Guého, J. (eds.) *Flore des Mascareignes - La Réunion, Maurice, Rodrigues*. IRD, MSIRI, RBG-Kew, Paris. 454 pp.
- Benedict, R.C. (1907) The genus *Antrophyum*—I. Synopsis of subgenera, and the American species. *Bulletin of the Torrey Botanical Club* 34(9): 445–458.  
<http://dx.doi.org/10.2307/2479065>
- Bernhardi, J.J. (1801) Tentamen alterum filices in genera redigenda. *Journal für die Botanik (Schrader)* 1800: 121–136.
- Bory de Saint-Vincent, J.B.G.M. (1833) In: Bélanger, C., Bory de Saint-Vincent, J.B.G.M. & Montagne, C. (eds.) *Voyages aux Indes-Orientales par le nord de l'Europe : les provinces du Caucase, la Géorgie, l'Arménie et la Perse, suivi de détails topographiques, statistiques et autres sur les Pégot, les îles de Java, de Maurice et de Bourbon, sur le Cap-De-Bonne-Espérance et Sainte-Hélène ; pendant les années 1825-1829, Botanique II*. Paris. 192 pp.
- Brown, R. (1810) *Prodromus Florae Novae Hollandiae et Insulae van-Diemen*, exhibens characteres plantarum quas annis 1802-1805 per oras utriusque insulae collegit et descripsit Robertus Brown; insertis passim aliis speciebus auctori hucusque cognitis, seu evulgatis, seu ineditis praesertim Banksianis, in primo itinere navarchi Cook detectis, 1. J. Johnson & Co., London. 590 pp.
- Brownlie, G. (1969) N°3 Ptéridophytes. In: Aubréville, A. (ed.), *Flore de la Nouvelle-Calédonie et Dépendances*. Muséum national d'Histoire naturelle, Paris. 308 pp.
- Ching, R.-C. (1933) The studies of Chinese ferns IX. *Bulletin of the Fan Memorial Institute of Biology* 4(3): 47–110.
- Copeland, E.B. (1938) Ferns of southeastern Polynesia. *Occasional Papers of Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History* 14(5): 45–101.
- Copeland, E.B. (1947) *Genera Filicum: the genera of ferns*. Chronica Botanica Company of Waltham, Mass. 247 pp.
- Fée, A.L.A. (1850–1852) *Mémoires sur les Familles des Fougères; Cinquieme Mémoire, Genera Filicum*. Paris, Strasbourg, 387 pp.
- Field, A. & Bostock, P. (2013) New and existing combinations in Palaeotropical *Phlegmariurus* (Lycopodiaceae) and lectotypification of the type species *Phlegmariurus phlegmaria* (L.) T.Sen & U.Sen. *PhytoKeys* 20: 33–51.  
<https://doi.org/10.3897/phytokeys.20.4007>
- Field, A.R., Testo, W., Bostock, P.D.B., Holtum, J.A.M. & Waycott, M. (2016) Molecular phylogenetics and the morphology of the *Lycopodiaceae* subfamily *Huperzioidae* supports three genera: *Huperzia*, *Phlegmariurus* and *Phylloglossum*. *Molecular Phylogenetics and Evolution* 94: 635–657. <https://doi.org/10.1016/j.ympev.2015.09.024>
- Gargominy, O., Terceirie, S., Régnier, C., Dupont, P., Daszkiewicz, P., Léotard, G., Antonetti, P., Ramage, T., Vandell, E., Petiteville, M., Leblond, S., Idczak, L., Bouillet, V., Denys, G., De Massary, J.C., Lévêque, A., Jourdan, H., Rome, Q., Dusoulier, F., Touroult, J., Savouré-Soubelet, A., Barbut, J., Canard, A., Simian, G., Le Divelec, R., Haffner, P., Meyer, C., Van Es, J., Poncet, R., Demerges, D., Mehran, B., Horellou, A., Moulin, N., Ah-Peng, C., Bernard, J.-F., Caesar, M., Comolet-Tirman, J., Courtecuisse, R., Delfosse, E., Dewynter, M., Hugonnot, V., Kondratyeva, A., Lavocat Bernard, E., Lebouvier, M., Lebreton, E., Malécot, V., Moreau, P.A., Muller, S., Noblecourt, T., Pellens, R., Robbert Gradstein, S., Rodrigues, C., Rouhan, G. & Véron, S. (2020) TAXREF v14.0, référentiel taxonomique pour la France. UMS PatriNat, Muséum national d'Histoire naturelle, Paris. Archive de téléchargement contenant 8 fichiers.

Available from:

<https://inpn.mnhn.fr/telechargement/referentielEspece/taxref/14.0/menu/> (accessed 28 Feb. 2021)

- Holub, J. (1964) *Lycopodiella*, nový rod radu Lycopodiales. *Preslia* 36: 16–22.
- Holub, J. (1991) Some taxonomic changes within Lycopodiales. *Folia Geobotanica & Phytotaxonomica* 26(1): 81–94. <https://doi.org/10.1007/BF02912943>
- Hovenkamp, P.H. & Franken, N.A.P. 1993. An account of the fern genus *Belvisia* Mirbel (Polypodiaceae). *Blumea: Biodiversity, Evolution and Biogeography of Plants* 37(2): 511–527.
- Mirbel, C.F.B. de (1803) *Histoire naturelle générale et particulière des plantes* 4. Paris, 431 pp.
- PPG I (2016) A community-derived classification for extant lycophytes and ferns: PPG I. *Journal of Systematics and Evolution* 54: 563–603. <https://doi.org/10.1111/jse.12229>
- Schuettpelez, E., Chen, S.-W., Kessler, M., Pinson, J.B., Johnson, G., Davila, A., Cochran, A.T., Huiet, L. & Pryer, K.M. (2016) A revised generic classification of vittarioid ferns (Pteridaceae) based on molecular, micromorphological, and geographic data. *Taxon* 65(4): 708–722. <http://dx.doi.org/10.12705/654.2>
- Smith, J. (1846) Additions to the “Hortus Kewensis”. *Botanical Magazine* 72 (Comp.): 1–42.
- Veron, S., Rodrigues-Vaz, C., Lebreton, E., Ah-Peng, C., Boulet, V., Chevillotte, H., Gradstein, S.R., Jérémie, J., Lavocat Bernard, E., Lebouvier, M., Meyer, J.-Y., Munzinger, J., Poncy, O., Thouvenot, L., Viscardi, G., Léotard, G., Gargominy, O., Leblond, S., Pignal, M., Rouhan, G., Terceirie, S., Invernón, V. & Muller, S. (accepted). *Biodiversity and Conservation*.
- Wang, L, Wu, Z.Q., Xiang, Q.P., Heinrichs, J., Schneider, H. & Zhang, X.C. (2010) A molecular phylogeny and a revised classification of tribe *Lepisoreae* (Polypodiaceae) based on an analysis of four plastid DNA regions. *Botanical Journal of the Linnean Society* 162: 28–38.
- Willdenow, C.L. (1810) *Species Plantarum*. Editio Quarta, 5. Berolini [Berlin], 542 pp.