

**MALAGASY ASCLEPIADACEAE: REINSTATEMENT OF THE
GENUS *PERVILLEA* AND TWO NEW COMBINATIONS**

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ABSTRACT

A species previously placed in *Toxocarpus* Wight & Arnott (Asclepiadaceae, Secamoneae), *T. decaryi* Choux, is outside the morphologic and phylogenetic bounds of this genus. In contrast, it is more closely related to the Malagasy endemic *Pervillea* Decaisne (Secamoneae), a hitherto monotypic genus usually included in *Toxocarpus*, but here reinstated as a separate genus. *Toxocarpus decaryi* is transferred to *Pervillea*. Furthermore, the Malagasy monotypic genus *Menabea* (Secamoneae) shares several advanced androecium characters with *Pervillea* and is merged with this genus.

KEY WORDS: *Pervillea*, *Toxocarpus*, *Menabea*, Secamoneae, Madagascar

During a survey of the tribe Secamoneae in Madagascar for "Flore de Madagascar et des Comores", I have come across three taxa that have been misplaced, viz. *Toxocarpus tomentosus* (Decne.) Jum. & Perr., *T. decaryi* Choux, and the monotypic *Menabea venenata* Baillon.

Toxocarpus Wight & Arnott is a mainly Asian genus with a few species also described from the African mainland and Madagascar. The type species, *T. kleinii* Wight & Arnott, distributed in India and Sri Lanka, is characterized by a two-parted dorsiventrally flattened corona lobe, a stigma head placed directly on the ovary with a thick lower part and a long, thin upper part distinctly projecting above the staminal column. The Asian *Toxocarpus* constitute a fairly well circumscribed group. However, in Madagascar *Toxocarpus* is not unambiguously distinguished from *Secamone*, the other large genus within the tribe Secamoneae. With stress on different features, *Secamone* has been characterized by the minute flowers with ovate corolla lobes overlapping to the right, the coronal folioles with 5 free falcinate or ligulate appendages projecting outwards, the globose pollinia, the broad retinaculum with involute base, and mucous stigmatic apex (Tsiang 1939: 54, see also Klackenberg 1992: 8 for references). However, none of these characters hold true for Malagasy Secamoneae. Most of the Malagasy taxa belonging to the tribe Secamoneae have been placed in the genus *Secamone* although several exhibit characters said to be restricted to *Toxocarpus*, such as dorsiventrally flattened corona lobes, long stigma head, large flowers with the corolla overlapping to the left (see Klackenberg 1992) or ellipsoid pollinia

(see Civeyrel 1994). These characters have been variously combined with the features mentioned above, used to circumscribe *Secamone*. However, a handful of distinctly deviating taxa with large flowers and dorsiventrally flattened corona lobes have been considered to be congeneric with the Asian *Toxocarpus*. Two of those, *T. tomentosus* and *T. decaryi*, plus the monotypic genus *Menabea*, will be discussed below.

Toxocarpus tomentosus was described by Decaisne (1844: 613) as *Pervillea tomentosa* Decne. and placed in the tribe Marsdenieae. This opinion was followed by Schumann (1895: 291), but later it was transferred to *Toxocarpus* by Jumelle & Perrier (1907: 389; 1908: 214), who correctly stated that each corpuscule has four pollinia. It has dorsiventrally flattened corona lobes and large flowers, characteristic for *Toxocarpus*, but is, however, furnished with long projecting connectives. These prolonged connectives should be compared to the anthers in *Secamone/Toxocarpus* that lack any processes at the thecae or are topped by a membranaceous film or some papillae only. *Toxocarpus tomentosus* is also distinguished from *Secamone/Toxocarpus* by its discoid stigma head rather abruptly narrowed into a style and topped by a short and broad upper part. This structure is found also in, e.g., Periplocaceae, but not in *Secamone/Toxocarpus*, which are characterized by a stigma head with a thick lower part situated directly on the ovary without a style. The four ellipsoid pollinia are glued to a very thin U-like folded corpusculum without caudicle. The leaves are covered by an indumentum of curled hairs with very small lumen. These hairs are not found elsewhere in *Secamone/Toxocarpus*. Consequently, this species does not fit in *Toxocarpus* s. str. as it is circumscribed in Asia, nor in *Secamone* s. l. as it is known in Madagascar, and the original name, *Pervillea*, must be reinstated for this taxon.

Toxocarpus decaryi, described by Choux (1927: 197) is characterized by the same structure of the connectives, stigma head, pollinarium, and indumentum as *Pervillea tomentosa*, mentioned above. *Toxocarpus decaryi* must hence be excluded from *Toxocarpus*, and transferred to *Pervillea*.

A third taxon, *Menabea venenata*, exhibits the same structure of the connectives, stigma head, pollinarium, and indumentum present in *Pervillea tomentosa* and *P. decaryi*. It was described, however, as a monotypic genus by Baillon (1890: 825) placed in the Periplocoideae. *Menabea* was not mentioned in Schumann's treatment for *Die Natürlichen Pflanzenfamilien* (Schumann 1895). A few years later it was transferred to the tribe Asclepiadeae ("Cynanchées") by Heckel (1902: 366) who pointed out the presence of pollinia. It was correctly placed in tribe Secamoneae by Jumelle & Perrier (1908: 215), who observed 20 pollinia in each gynostegium, a key character for this tribe. Jumelle & Perrier, however, calling the attention to the similarity between *Menabea* and *Pervillea (Toxocarpus)*, did not merge these genera, due to a supposed absence of a corpusculum. This observation has been repeated by others, e.g. recently by Verhoeven & Venter (1994: 305, 307), who furthermore due to this supposed missing corpusculum placed *Menabea* in Periplocaceae. However, according to my studies, a corpusculum is present, and has the same structure as in *P. tomentosa* and *P. decaryi*, and *Menabea* should thus be merged with *Pervillea*. Being the older name, *Pervillea* has priority. The necessary nomenclature follows:

PERVILLEA DECARYI (Choux) Klack., *comb. nov.* BASIONYM: *Toxocarpus decaryi* Choux, Bull. Mus. Hist. Nat. (Paris) 33:197. 1927. ("decaryi" sphalm.). TYPE: *Decary 2853* (LECTOTYPE [here selected]: P).

PERVILLEA VENENATA (Baillon) Klack., *comb. nov.* BASIONYM: *Menabea venenata* Baillon, Bull. Mens. Soc. Linn. Paris 104:825. 1890. TYPE: S. coll. (Grandidier), Tanghin de Ménabé, MADAGASCAR. (LECTOTYPE [here selected]: P).

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LITERATURE CITED

- Baillon, M. 1890. Sur le Tangin de Ménabé. Bull. Mens. Soc. Linn. Paris. 104:825-826.
- Choux, P. 1927. Nouvelles observations sur les Asclépiadacées malgaches de la région d'Ambovombé. Bull. Mus. Hist. Nat., (Paris). 33:193-200.
- Civeyrel, L. 1994. Variation et évolution des types polliniques du genre *Secamone* (Asclepiadaceae, Secamonoideae). - Compt. Rend. Acad. Sci. Paris, Sér 3, Sci. vie, Evolution. 317:1159-1165.
- Decaisne, J. 1844. Asclepiadaceae. In: de Candolle, A.L.P.P. (ed.), *Prodromus Systematis Naturalis*. 8:490-665.
- Heckel, E. 1902. Sur le *Menabea venenata* Baillon. Compt. Rend. Hebd. Séances Acad. Sci. Paris. 134:364-366.
- Jumelle, H. & H. Perrier de la Bathie. 1907. Note sur la flore de nord-ouest de Madagascar. Ann. Inst. Bot.-Géol. Colon. Marseille, Sér. 2. 5:363-405.
- Jumelle, H. & H. Perrier de la Bathie. 1908. Notes biologiques sur la végétation du nord-ouest de Madagascar; les Asclépiadacées. Ann. Inst. Bot.-Géol. Colon. Marseille, Sér. 2. 6:131-239.
- Klackenberg, J. 1992. Taxonomy of *Secamone* s. lat. (Asclepiadaceae) in the Madagascar Region. Opera Bot. 112:1-127.
- Schumann, K. 1895. Asclepiadaceae. In: Engler, A. & K. Prantl (eds.), *Die Natürlichen Pflanzenfamilien*. 4(2):189-306. Leipzig, Germany.
- Tsiang, Ying 1939. Notes on the Asiatic Apocynales IV. Sunyatsenia 4:31-94.
- Verhoeven, R.L. & H.J.T. Venter. 1994. Pollen morphology of the Periplocaceae from Madagascar. Grana 33:295-308.



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