

***Massonia obermeyeae* (Asparagaceae, Scilloideae), a new species from South Africa**

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Abstract

As part of a taxonomic revision of the genus *Massonia*, a new species, *M. obermeyeae* is here described from South Africa. This species is at first sight similar to *M. depressa*, but it differs in the inflorescence and flower morphology, as well as its distribution. A complete morphological description of the new species and data on biology, habitat, and distribution are presented. Comments on typification of *Massonia grandiflora*, a name that has been misapplied to *M. obermeyeae*, are also presented, including the identification of a previously designated lectotype and a newly selected epitype.

Key words: Flora of Southern Africa, Hyacinthaceae, Massonieae, nomenclature, taxonomy, typification

Introduction

Subfamily Scilloideae tribe Hyacintheae is alternatively regarded as Hyacinthaceae subfam. Hyacinthoideae, a treatment that we favour here (cf. Martínez-Azorín *et al.* 2014a). Further information on subfamily Hyacinthoideae and generic circumscriptions can be found in Martínez-Azorín *et al.* (2013, 2014a, 2014b), Pinter *et al.* (2013) and Wetschnig *et al.* (2014).

The genus *Massonia* Houttuyn (1780: 424) was described to include a single species, *Massonia depressa* Houttuyn (1780: 424). The type of this species (Houttuyn 1780: Plate LXXXV), illustrates two flowers that shows the perigone fused for about the lower half forming a wide, funnel-shaped tube, and reflexed free portions of the perigone with a sigmoid curve at the base. The suberect filaments are connate at the base forming a ring above the perigone, the ovary is oblong, and the style is long, narrow and erect, and sharply differentiated from the ovary. For an overview on the generic circumscription of *Massonia* and the number of taxa accepted in this genus see Martínez-Azorín *et al.* (2014b).

Recent studies based on molecular data included *Whiteheadia* Harvey (1868: 396) in the synonymy of *Massonia* (Manning *et al.* 2004, 2011). This proposal was based on the paraphyly of *Whiteheadia* when comprising both *Whiteheadia bifolia* (Jacquin 1791: 215) Baker (1872: 226) and *W. etesianamibensis* Müller-Doblies & Müller-Doblies (1997: 82). We choose here to accept *Whiteheadia* as a monotypic, monophyletic genus to include only *W. bifolia*. A study is in preparation which will present a new alternative proposal for the taxonomy of *W. etesianamibensis* (M. Martínez-Azorín and collaborators, in preparation).

Massonia grandiflora Lindley (1826: t. 958) was described and illustrated (Fig. 1) “from a plant in Mr. Colvill’s Nursery, which had been brought from the Cape of Good Hope by Mr. Synnet [Walter Synnot cf. Gunn & Codd 1981]”. This species is characterized by the large, smooth leaves; large, ovate, acuminate bracts; flowers with a white, funnel-shaped tube and white, reflexed perigone segments; filaments erect, green, fused at the base to form a ring; and a spirally twisted style.

As explained by Obermeyer (1965), Mr. W. Synnot was a magistrate at Clanwilliam (Western Cape of South Africa), so the type locality of this species is likely to be somewhere in the vicinity of Clanwilliam (cf. Müller-

To avoid confusion on the application of that name, we here select the sheet CGE00078 as epitype (Art. 9.8, ICN), in support of the previously designated lectotype, where some distinctive characters are either missing or not detailed enough to ensure unequivocal identification.

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References

- Baker, J.G. (1872) Revision of the genera and species of Scilleae and Chlorogaleae. *Journal of the Linnean Society, Botany* 13: 209–292.
- Gunn, M. & Codd, L.E. (1981) *Botanical exploration of Southern Africa*. Botanical Research Institute, A.A.Balkema, Cape Town, 400 pp.
- Harvey, W.H. (1868) Liliaceae. In: Hooker, J.D. (Ed.) *The genera of South African plants, arranged according to the natural system 2nd edition*. J.C. Juta, Cape Town, pp. 391–403.
- Houttuyn, M. (1780) *Natuurlijke Historie of uitvoerige Beschryving der Dieren, Planten en Mineraalen, volgens het Samenstel van der Heer Linnaeus II*, 12. De Erven van F. Houttuyn, Amsterdam, 558 pp., 10 pl.
- IPNI (2015) *The International Plant Names Index*. Available from: <http://www.ipni.org> (accessed January 2015).
- Jacquin, N.J. (1791) *Collectanea ad Botanicam, Chemiam, et Historiam Naturalem, Spectantia, cum Figuris 4*. Wappler, C.F., Vindobonae, 359 pp.
- Jessop, J.P. (1976) Studies in the bulbous Liliaceae in South Africa 6. The taxonomy of *Massonia* and allied genera. *Journal of South African Botany* 42: 401–437.
- Johnson, S., Pauw, A. & Midgley, J. (2001) Of mice and Massonias. *Veld & Flora* 87: 166–167.
- Knippels, P.J.M. (2011) Een bijzondere vorm van *Massonia depressa*. *Bloembollenvisie* 227: 88.
- Lindley, J. (1826) *Massonia grandiflora*. *Edwards's Botanical Register* 12: t. 958.
- Leistner, O.A. & Morris, J.W. (1976) Southern African place names. *Annals of the Cape Provincial Museum* 12: 1–565.
- Manning, J.C., Goldblatt, P. & Snijman, D. (2002) *The Color Encyclopedia of Cape bulbs*. Timber Press, Oregon, 486 pp.
- Manning, J.C., Goldblatt, P. & Fay, M.F. (2004) A revised generic synopsis of Hyacinthaceae in Sub-Saharan Africa, based on molecular evidence, including new combinations and the new tribe Pseudopropspreeae. *Edinburgh Journal of Botany* 60: 533–568.
- Manning, J.C., Goldblatt, P. & Saunders, R. (2011) *Massonia bifolia*. Hyacinthaceae. *Curtis's Botanical Magazine* 28 (4): t. 721.
- Martínez-Azorín, M., Crespo, M.B. & Juan, A. (2007) Taxonomic revision of *Ornithogalum* subg. *Cathissa* (Salisb.) Baker (Hyacinthaceae). *Anales del Jardín Botánico de Madrid* 64: 7–25.
<http://dx.doi.org/10.3989/ajbm.2007.v64.i1.47>
- Martínez-Azorín, M., Crespo, M.B. & Juan, A. (2009) Taxonomic revision of *Ornithogalum* subg. *Beryllis* (Hyacinthaceae) in the Iberian Peninsula and the Balearic Islands. *Belgian Journal of Botany* 142: 140–162.
- Martínez-Azorín, M., Pinter, M., Crespo, M.B., Pfosser, M. & Wetschnig, W. (2013) *Massonia mimetica* (Hyacinthaceae, Hyacinthoideae), a new remarkable species from South Africa. *Stapfia* 99: 187–197.
- Martínez-Azorín, M., Clark, V.R., Pinter, M., Dold, A.P., Crespo, M.B., Barker, N.P., Pfosser, M. & Wetschnig, W. (2014a) *Massonia dentata* (Asparagaceae, Scilloideae), a new species from the Nuweveldberge, and typification of the Sneeuberg endemic *M. calvata* (southern Great Escarpment, South Africa). *Phytotaxa* 175 (4): 201–215.
<http://dx.doi.org/10.11646/phytotaxa.175.4.2>
- Martínez-Azorín, M., Pinter, M., Deutsch, G., Brudermann, A., Dold, A.P., Crespo, M.B., Pfosser, M. & Wetschnig, W. (2014b) *Massonia*

- amoena* (Asparagaceae, Scilloideae), a striking new species from the Eastern Cape, South Africa. *Phytotaxa* 181 (3): 121–137.
<http://dx.doi.org/10.11646/phytotaxa.181.3.1>
- McNeill, J. (2014) Holotype specimens and type citations: general issues. *Taxon* 63: 1112–1113.
- McNeill, J., Barrie, F.R., Buck, W.R., Demoulin, V., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Marhold, K., Prado, J., Prud'homme Van Reine, W.F., Smith, G.F., Wiersema, J.H. & Turland, N.J. (Eds.) (2012) *International Code of Nomenclature for algae, fungi, and plants (Melbourne Code) adopted by the Eighteenth International Botanical Congress Melbourne, Australia, July 2011*. Koeltz Scientific Books, Königstein, [Regnum Vegetable 154], xxx + 208 pp.
- Mucina, L. & Rutherford, M.C. (Eds.) (2006) *The vegetation of South Africa, Lesotho and Swaziland*. South African National Biodiversity Institute, Pretoria, 807 pp.
- Müller-Doblies, U. & Müller-Doblies, D. (1997) A partial revision of the tribe Massonieae (Hyacinthaceae). *Feddes Repertorium* 108: 49–96.
<http://dx.doi.org/10.1002/fedr.19971080106>
- Obermeyer, A.A. (1965) *Massonia grandiflora*. *Flowering Plants of Africa* 37: t. 1451
- Palmer, E. (2011) *The plains of Camdeboo*. Penguin Books, Johannesburg, 348 pp.
- Pinter, M., Brudermann, A., Crespo, M.B., Deutsch, G., Martínez-Azorín, M., Müller-Doblies, U., Müller-Doblies, D., Pfosser, M. & Wetschnig, W. (2013) *Massonia citrina* (Hyacinthaceae, Hyacinthoideae) - a new species from the Western Cape Province (South Africa). *Phytotaxa* 112 (2): 50–56.
<http://dx.doi.org/10.11646/phytotaxa.112.2.3>
- Thiers, B. (2015) *Index Herbariorum: A global directory of public herbaria and associated staff*. New York Botanical Garden's Virtual Herbarium. Available from: <http://sweetgum.nybg.org/ih/> (accessed January 2015).
- Van der Merwe, A. (2002) *A biosystematic study of the seven minor genera of the Hyacinthaceae*. Ph.D. Thesis, University of Stellenbosch.
- Wester, P. (2011) Sticky snack for sengis. *Veld & Flora* 97: 112–113.
- Wester, P., Stanway, R. & Pauw, A. (2009) Mice pollinate the Pagoda Lily, *Whiteheadia bifolia* (Hyacinthaceae) – First filed observations with photographic documentation of rodent pollination in South Africa. *South African Journal of Botany* 75: 713–719.
- Wetschnig, W., Brudermann, A., Knirsch, W., Pinter, M. & Pfosser, M. (2012) *Massonia pustulata* Jacq. 1791 and *M. longipes* Baker 1897 (Hyacinthaceae), two frequently misunderstood species – or how *M. pustulata* became depressed. *Stapfia* 97: 210–221.
- Wetschnig, W., Martínez-Azorín, M., Pinter, M., Brudermann, A., Deutsch, G., Crespo, M.B., Dold, A.P. & Pfosser, M. (2014) *Massonia saniensis* (Asparagaceae, Scilloideae), a new species from Lesotho, southern Africa. *Phytotaxa* 173 (3): 181–195.
<http://dx.doi.org/10.11646/phytotaxa.173.3.1>