

PHYTON

ANNALES REI BOTANICAE

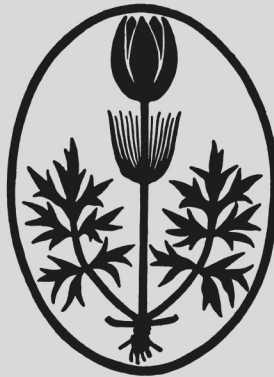
FUNDATORES:

PROF. DR. F. WEBER † (GRAZ) et PROF. DR. F. J. WIDDER † (GRAZ)

EDITORES ET REDACTORES:

PROF. DR. H. GUTTENBERGER et PROF. DR. H. TEPPNER

VOL. 56, FASC. I



HORN (AUSTRIA)
APUD FERDINANDUM BERGER & FIL.

2016

PHYTON 56 (1): 1–128

30. 6. 2016

ISSN 0079-2047

A PDF of the original article is send by the Publisher to the Corresponding Author. Corresponding Authors are allowed to pass electronic copies to all co-authors. All authors may distribute their original article as PDF or hardcopy to interested individuals. Any kind of public distribution, for example, on the internet, requires the permission of the copyright owner
(Publisher: Verlag Ferdinand Berger & Söhne Ges.m.b.H.,
Wiener Straße 21–23, A-3580 Horn, Austria,
www.verlag-berger.at E-mail: verlag@berger.at).

Phyton (Horn, Austria)	Vol. 56	Fasc. 1	111–119	30. 06. 2016
------------------------	----------------	---------	---------	--------------

DOI: 10.12905/0380.phyton56(1)2016-0111

***Massonia thunbergiana* (Hyacinthaceae-Hyacinthoideae), a New Species from the Cold Heart of South Africa**

By

Wolfgang WETSCHNIG*), Mario MARTÍNEZ-AZORÍN and Michael PINTER

With 3 Figures

Received April 5, 2016

Key words: *Asparagaceae*, *Hyacinthaceae*, *Massonieae*, *Massonia thunbergiana* spec. nova, *Scilloideae*. – Systematics, taxonomy. – South Africa, Roggeveld.

Summary

WETSCHNIG W., MARTÍNEZ-AZORÍN M. & PINTER M. 2016. *Massonia thunbergiana* (Hyacinthaceae-Hyacinthoideae), a new species from the cold heart of South Africa. – *Phyton* (Horn, Austria) 56 (1): 111–119, with 3 figures.

As part of a taxonomic revision of the genus *Massonia* (Hyacinthaceae-Hyacinthoideae-Massonieae), a new species, *M. thunbergiana* WETSCHNIG, MART.-AZORÍN & M. PINTER is here described from the Roggeveld, the coldest region of South Africa. This species is at first sight similar to some populations of the heterogenous *M. depressa*-aggregate but it differs in vegetative, floral, and molecular characters as well as by its distribution. A detailed morphological description of the new species and data on biology, habitat, and distribution are presented.

Zusammenfassung

WETSCHNIG W., MARTÍNEZ-AZORÍN M. & PINTER M. 2016. *Massonia thunbergiana* (Hyacinthaceae-Hyacinthoideae), a new species from the cold heart of South Africa. [*Massonia thunbergiana* (Hyacinthaceae-Hyacinthoideae), eine neue Art aus dem kalten Herzen Südafrikas]. – *Phyton* (Horn, Austria) 56 (1): 111–119, with 3 figures.

Als Teil einer taxonomischen Revision der Gattung *Massonia* (Hyacinthaceae-Hyacinthoideae-Massonieae) beschreiben wir hier *M. thunbergiana* WETSCHNIG, MART.-AZORÍN & M. PINTER, eine neue Art aus dem Roggeveld, der kältesten Region

*) Dr. Wolfgang WETSCHNIG, Institute of Plant Sciences, NAWI Graz, Karl-Franzens University Graz, Holteigasse 6, 8010 Graz (Austria, Europe); e-mail: wolfgang.wetschnig@uni-graz.at

Südafrikas. Diese Art ähnelt auf den ersten Blick manchen Populationen des sehr heterogenen *M. depressa*-Aggregates, unterscheidet sich aber von diesem in vegetativen, floralen und molekularen Merkmalen sowie in ihrer Verbreitung. Eine detaillierte morphologische Beschreibung der neuen Art sowie Daten zu Biologie, Habitat und Verbreitung werden präsentiert.

1. Introduction

Hyacinthaceae subfamily *Hyacinthoideae* is alternatively treated as *Asparagaceae* subfamily *Scilloideae* tribe *Hyacinthae* (APG III, CHASE & al. 2009) but, based on morphology and molecular data, we favour the former treatment (SPETA 1998a, 1998b, WETSCHNIG & al. 2012, 2014, MARTÍNEZ-AZORÍN & al. 2013, 2014a, 2014b, 2015a, 2015b, PINTER & al. 2013, 2015).

Our current studies show that the taxonomy of *Massonia* HOUTTUYN 1780: 424 is not satisfactory as several species were reduced to synonymy, although they represent well-defined species based on distinct morphological and ecological differences (WETSCHNIG & al. 2012, 2014, PINTER & al. 2013, 2015 MARTÍNEZ-AZORÍN & al. 2013, 2014a, 2014b, 2015a, 2015b).

In November 2014 we were able for the first time to study in detail the flower morphology of a plant cultivated as WW04898 at HBG (= Hortus Botanicus Graecensis, the Botanical Garden of the Inst. of Plant Sciences of the University of Graz). Bulbs of this plant were purchased from Gordon SUMMERFIELD (Catalogue 2013, section two, bulbs & corms) as “4057 *Massonia pygmaea* subsp. *pygmaea* (Roggefeld)”. Gordon SUMMERFIELD kindly provided more details on the plant locality in two e-mails. In his first e-mail (SUMMERFIELD 2014-10-22) he stated “4057 – This I discovered 30 kms from Sutherland on the Roggeveld, scattered amongst huge boulders over quite a wide area again mostly South facing”. In his second e-mail (SUMMERFIELD 2014-12-22) he gave the more precise locality “... 4057 was in fact collected 30 kms South of Middelpoos, approximately 50 kms North of Sutherland”. At the same time bulbs kindly provided by Paul CUMBLETON as “*Massonia depressa* hairy” (cultivated in HBG under WW05348) were flowering and they obviously were conspecific with the plants from SUMMERFIELD mentioned above. Unfortunately it was not possible to trace back the origin of CUMBLETON’s bulbs (that he had obtained from a german grower) to a natural wild locality. CUMBLETON previously had also presented images of his plants under the name “*Massonia hirsuta*” on the internet (CUMBLETON 2009). Furthermore he earlier had presented images taken in a private collection of non-flowering plants (also under *Massonia hirsuta*) that also belong to this species (CUMBLETON 2007). In literature on the genus *Massonia* (BAKER 1897, JESSOP 1976; MÜLLER-DOBLIES & MÜLLER-DOBLIES 1997, SUMMERFIELD 2004) no plants with the characteristic combination of character states found in this plant were mentioned. An intensive search for morphologically similar plants in south african and international herbaria resulted in only one spec-

imen (NBG 205642.0), collected in August 2000 by H. ROSCH near Botuin in the Roggeveld. This specimen was determined by J. MANNING as *Massonia* aff. *echinata* L. f.

Distinct morphological and molecular features of the plants mentioned above support, however, the introduction of a new species, here described as *Massonia thunbergiana*.

2. Material and Methods

Detailed morphological studies of *Massonia thunbergiana* and a population of *M. depressa* HOUTT. from Karooport (Northern Cape Province) at first sight showing similarities with the new species were undertaken on natural populations and cultivated specimens (MARTÍNEZ-AZORÍN & al. 2007, 2009). Specimens from the following herbaria ABH, B, BLFU, BM, BOL, BR, E, F, G, GZU, GRA, HAL, J, K, L, LI, LINN, M, MO, NBG, NU, NY, P, PRE, S, TCD, UPS, WIND, W, WU, Z, ZSS and ZT (acronyms according to THIERS 2016) were studied. Orthography of geographical names and grid-number system follows LEISTNER & MORRIS 1976. Morphological measurements and illustrations of leaves were performed on fresh and on herbarium material from wild plants. Morphological measurements of flower parameters were done on specimens of cultivated plants. It has been shown that cultivated *Massonia* plants retain the size and proportions of wild flowers (WETSCHNIG & al. 2012, 2014, MARTÍNEZ-AZORÍN & al. 2013, 2014a, 2014b, 2015a, 2015b, PINTER & al. 2013, 2015). SEM-micrographs of the leaf-surface: an 8 × 5 mm section of one fresh leaf was fixed in 70% ethanol. After substitution of ethanol by acetone critical point drying was performed using a Baltec CPD030. The leaf sections then were mounted on aluminium stubs and coated with gold in an Agar sputter coater. Electron micrographs were obtained with a Philips XL 30 ESEM scanning electron microscope (SEM) operating at 20 kV. The SEM-micrographs were performed under supervision of E. STABENTHEINER and the coated vouchers are stored in the collection of the Division of Stress- and Cell Physiology of Plants at the Institute of Plant Sciences, University of Graz. Author names of the cited taxa follow IPNI 2016. *Massonia echinata* L. f. is treated in the sense of MARTÍNEZ-AZORÍN & al. 2015b.

3. *Massonia thunbergiana* WETSCHNIG, MART.-AZORÍN & M. PINTER, spec. nova (Figs. 1–3).

Type: SOUTH AFRICA, Northern Cape Province, 30 km South of Middelpos, approximately 50 km North of Sutherland, purchased from G. SUMMERFIELD Catalogue 2013 (section two, bulbs & corms) number 4057; ex hort. in AUSTRIA, Steiermark, Graz, Botanical Garden of the Institute of Plant Sciences of the University of Graz, leg. 17th November 2014, PINTER M. & MARTINEZ-AZORÍN M., corresponding to WW04898 (holotype GZU-000325332!, isotype GRA!).

Plant a herbaceous perennial bulbous geophyte. Roots usually present for about two vegetation periods. Bulb ovoid, ca. 2.8–3.1 × 1.8–2.4 mm, inner scales fleshy and white, outer tunics papery and brownish. Leaves 2,

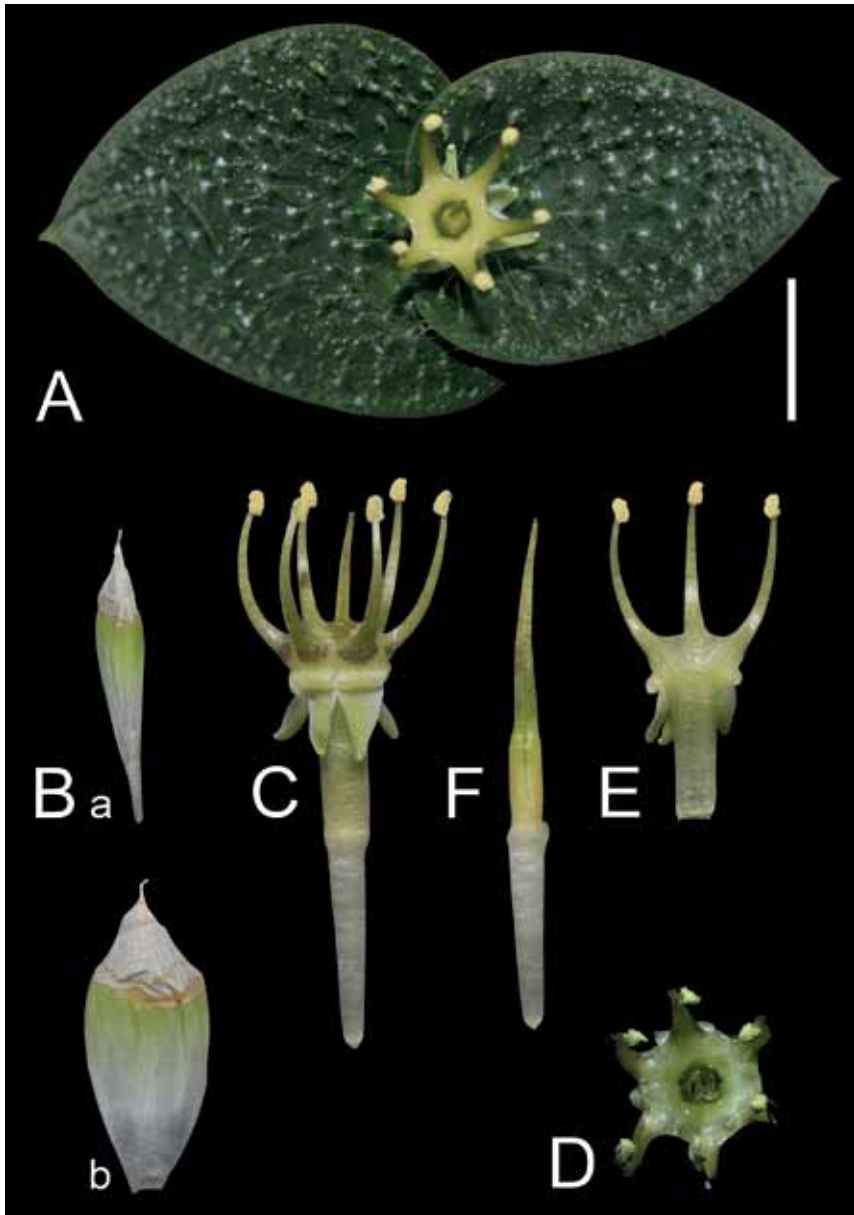


Fig. 1. Habit, flower and bract morphology of *Massonia thunbergiana* WETSCHNIG, MART.-AZORÍN & M. PINTER, flowering in cultivation from Roggeveld (WW04898). – A. Habit of a young plant. – B a. Bract of an upper flower (abaxial side). – B b. Bract of a lower flower (abaxial side). – C. Flower in lateral view. – D. Flower in apical view. – E. Longitudinal section of flower (pistil removed). – F. Pistil. – Scale bar: 1 cm.

deciduous, synanthous, aerial parts of the leaves 3.5–4.5 × 2.3–2.9 cm (often much bigger in cultivated plants), elliptic to ovate, green on both sides, opposite, spreading and appressed to the ground, with acute apex, with a short apicule ca. 1 mm long, narrowed into a subterraneous petiole up to 25 mm long that clasp the inflorescence, adaxial side of all leaves (from first year to mature plants) with scattered, green emergences ca. 0.5–1.3 mm in diameter, 0.5–0.8 mm high, each with one narrowly conical trichome (1.7–5.1 mm long) on the top, with a narrow membranous margin (0.2–0.3 mm wide) bearing very small (up to 0.1 mm long) papillae. In florescence a dense, subcapitate raceme, up to 1 cm long, with 4–15 flowers, shortly overtopping ground level. Bracts membranous, green, sometimes dry and transparent in the upper part, translucent and purplish after flowering, glabrous with entire margins, acuminate; lower bracts obovate, 33 × 22 mm; upper bracts narrowly obovate, up to 20 × 2–3 mm. Pedicels of lower flowers about 8–9 mm long. Flowers pentacyclic, trimerous, proterandrous, tubular, actinomorphic, with a smell somewhat similar to that of roasted peanuts. Perigone of 3+3 tepals, white, free segments artificially spread ca. 10 mm long, naturally enrolled 6–7 × 3.0–3.5 mm, white with a greenish tip, first straight and erect, later spreading and finally reflexed and spirally enrolled at the base, perigone-filaments tube white, cylindrical, ca. 12 × 4.5–5 mm. Androecium consisting of 3+3 stamens. Filaments adnate to the perigone to form a perigone-filaments tube, ending in a green to yellowish green and rather flat filaments funnel above the perigone-filaments tube of ca. 2.2 mm long, with a circular mouth; free filament segments white to cream colored, greenish at the basal parts, speckled with purple, often purple in dry flowers after anthesis, ca. 12 mm long, rather fleshy and thickened, ca. 1.3 mm diam. at the base and ca. 0.5 mm diam. at the tip, erect, curved, narrowly triangular. Anthers ca. 3.2 mm long when closed, oblong, anther wall white to cream colored, speckled with purple, dorsifixed. Pollen yellow. Gynoecium consisting of 3 carpels, coenocarp, syncarp. Pistil narrowly reversed club-shaped (obclavatus), not clearly separated into ovary and style, cream coloured in the basal and apical third, green in the middle, 26–28 mm long at female phase of anthesis, ca. 3 mm wide, ending at about the same level as the anthers. Ovary superior, narrowly oblong, cream colored, 5–6 × 2.5–3.0 mm, prolonged into the style without any ovary shoulder, with ca. 15 ovules per locule. Style white, thickened, gradually tapering to the apex, ca. 20 mm long at female phase of anthesis, ending at about the same level as the anthers. Capsule and Seed unknown. (Figs. 1–3).

Eponymy: The specific epithet '*thunbergiana*' honours Carl Peter THUNBERG (1743–1828). He was the first botanist who collected a *Massonia* species – *M. echinata* (MARTÍNEZ-AZORÍN & al. 2015b) and together with F. MASSON he collected another two species of this genus. He was the first who realized that these species belong to a yet undescribed genus that he described as *Massonia*, honouring his travel companion Francis MASSON.

Due to some unfortunate coincidences the genus and the first species were first described in 1780 by HOUTTUYN (WETSCHNIG & al. 2016 in preparation).

Biology: In wild populations leaves are found from July to September. *Massonia thunbergiana* flowers around August in the natural habitat, whereas in cultivation in a greenhouse in the Northern Hemisphere the leaves appear in October and it flowers from November to December.

Distribution: The new species is known to us only from the Roggeveld west of Middelpos and Sutherland and from several private collections of unknown wild origin.

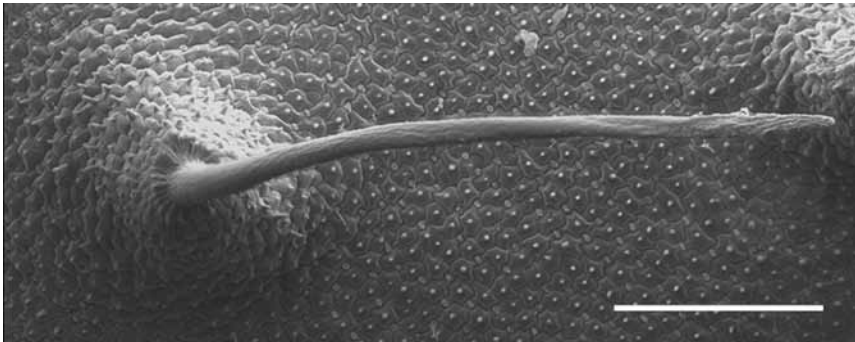


Fig. 2. Micrograph of abaxial leaf surface and emergence morphology of *Massonia thunbergiana* WETSCHNIG, MART.-AZORIN & M. PINTER. Detail of emergence and trichome morphology. – Scale bar: 0.5 mm.

Habitat: *Massonia thunbergiana* seems to be confined to rocky areas in the Roggeveld. It grows at about 1400 m of elevation. The area is a semi-desert under slight influence of a rainshadow with mean annual precipitation around 230 mm. Pronounced precipitation peaks are in March and June, the overall precipitation in December to January is markedly lower than during the rest of the year. With an average of 56 frost days per year, the region has won the reputation as the coldest place in South Africa (MUCINA & RUTHERFORD 2006).

Taxonomic relationships and diagnostic characters: *Massonia thunbergiana* is at first sight related to certain populations of the heterogeneous *M. depressa* aggregate. However, *Massonia thunbergiana* differs from the latter species complex by the pistil not clearly separated into ovary and style (ovary without shoulders), the lower number of ovules per locule (ca. 15 ovules) as well as leaves with emergences each topped by a hair up to 5.1 mm long. The Karooport population of *M. depressa* possesses 26–30 ovules per locule and the leaves lack emergences as in any other population we are aware of this species complex.

Molecular data: In our preliminary phylogenetic studies (Martínez-Azorín & *al.*, unpublished data), our three accessions of *Massonia thunbergiana* form a monophyletic group within the genus clearly separated from the Karooport population of *M. depressa*, that belongs to one of the distinct clades formed by *M. depressa* s.l. A more complete sampling of *Massonia* including a higher number of taxa and additional markers is ongoing.

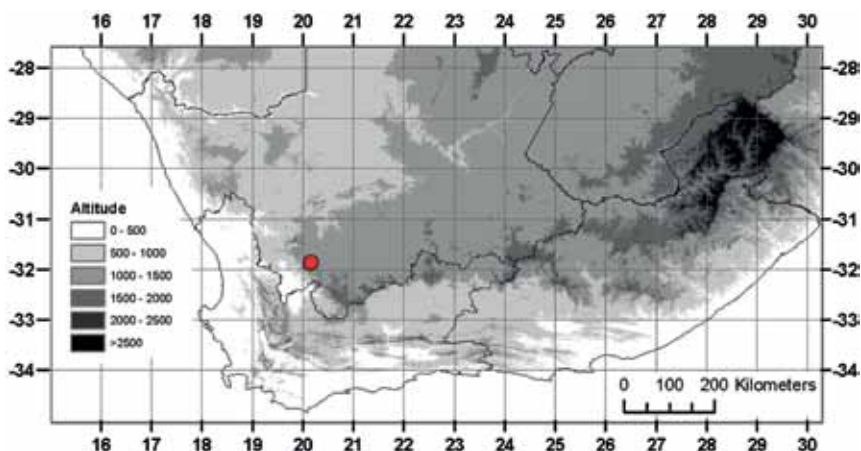


Fig. 3. Known distribution of *Massonia thunbergiana* WETSCHNIG, MART.-AZORÍN & M. PINTER.

Paratypes: *Massonia thunbergiana*: SOUTH AFRICA. Northern Cape. Williston (3120): Roggeveld, Botuin, ... (-CC). 344 m elevation [wrong! according to map: ca. 1368 m]. Fynbos vegetation. Ridge. Well-drained, red-brown, sandy, stony soil. Acocks Veld Type no. 43. Recently burned. N aspect. Gentle slope. Local rare. Perennial, prostrate geophyte. White flowers. No fruit. Plant height 0.01 m. 12 August 2000, H. ROSCH 68 (NBG!). – Locality unknown: Private collection P. CUMBLETON and RHS Garden Wisley (photo only! <http://www.alpinegardensociety.net/diaries/Wisley/+November+/71/> [as *Massonia hirsuta*] and <http://www.alpinegardensociety.net/diaries/Wisley/+November+/238/> [as *Massonia hirsuta*]). – Private collection G. DEUTSCH (photo and plant! personally provided by G. DEUTSCH). – Private collection B. KLEEBERGER (photo only! personally provided by B. KLEEBERGER and on <https://www.facebook.com/groups/184113905126720/> [accessed 2016-03-31]).

4. Acknowledgements

This work was partly supported by Fundación Ramón Areces (Spain), University of Alicante (Spain) and Karl-Franzens-University (Austria). Rhodes University (Dept. of Botany) and the Selmar Schonland Herbarium (GRA) also provided work-

ing facilities to the second author between 2009 and 2011. We thank D. BELLSTEDT and L. MUCINA for their invaluable help on our field trip in 2009. We also thank E. STABENTHEINER, A. BRUDERMANN and S. LAURE for providing the SEM micrographs. We acknowledge the help of all herbaria curators who kindly provided material and information. We thank P. CUMBLETON for showing us the *Hyacinthaceae* collection at RHS Garden Wisley and for providing bulbs of the new species. J. C. MANNING is thanked for allowing us to study the *Massonia* materials on loan at NBG. We also would like to thank all the numerous garden and plant enthusiasts who publish valuable information and images on plants on the internet and who contribute substantially to the increase of knowledge. The provincial nature conservation authorities of the Northern Cape Provinces kindly granted plant collecting permits.

5. References

- APG (Angiosperm Phylogeny Group) 2009. An update of the Angiosperm Phylogeny Group Classification for the orders and families of flowering plants: APG III. – *Botanical Journal of the Linnean Society* 161: 105–121.
- BAKER J. G. 1897. *Liliaceae*. – In: THISELTON-DYER W. T. (ed.) *Flora Capensis* 6: 253–525. – Reeve and Co., London.
- CHASE M. W., REVEAL J. L. & FAY M. F. 2009. A subfamilial classification for the expanded asparagalean families, *Amaryllidaceae*, *Asparagaceae* and *Xanthorrhoeaceae*. – *Botanical Journal of the Linnean Society* 161: 132–136.
- CUMBLETON P. 2007. 08 November 2007: Wisley's Alpine Diary <<http://www.alpinegardensociety.net/diaries/Wisley/+November+/71/>> [as *Massonia hirsuta*].
- CUMBLETON, P. 2009. 19 November 2009: Wisley's Alpine Diary <<http://www.alpinegardensociety.net/diaries/Wisley/+November+/238/>> [as *Massonia hirsuta*].
- HOUTTUYN M. 1780. *Natuurlijke Historie of uitvoerige Beschryving der Dieren, Planten en Mineralen, volgens het Samenstel van der Heer LINNAEUS II*, 12. 558 pp. – Amsterdam.
- IPNI 2016. The International Plant Names Index. Available at <http://www.ipni.org> (accessed April 2016).
- 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.
- LEISTNER O. A. & MORRIS J. W. 1976. Southern African place names. – *Annals of the Cape Provincial Museum* 12: 1–565.
- 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 Sneeu-berg endemic *M. calvata* (southern Great Escarpment, South Africa). – *Phytotaxa* 175: 201–215. <<http://dx.doi.org/10.11646/phytotaxa.175.4.2>>.
- 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., DOLD A. P., PINTER M., SLADE J., CRESPO M. B., MILKUH N. G. & WETSCHNIG W. 2015a. *Massonia obermeyerae* (*Asparagaceae*, *Scilloideae*), a

- new species from South Africa. – *Phytotaxa* 205: 39–50. <<http://dx.doi.org/10.11646/phytotaxa.205.1.3>>.
- 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., PINTER M., CRESPO M. B., SLADE J., DEUTSCH G. & WETSCHNIG W. 2015b. Clarification of *Massonia echinata* and some other frequently misunderstood *Massonia* species (*Asparagaceae*, *Scilloideae*), with the description of *M. pseudoechinata* and *M. roggeveldensis*. – *Phytotaxa* 239 (2): 101–129. <<http://dx.doi.org/10.11646/phytotaxa.239.2.1>>.
- 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: 121–137. <<http://dx.doi.org/10.11646/phytotaxa.181.3.1>>.
- MUCINA L. & RUTHERFORD M. C. (eds.) 2006. The vegetation of South Africa, Lesotho and Swaziland. 807 pp. – South African National Biodiversity Institute, Pretoria.
- 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>>.
- 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: 50–56. <<http://dx.doi.org/10.11646/phytotaxa.112.2.3>>.
- PINTER M., MARTÍNEZ-AZORÍN M., CRESPO M. B. & WETSCHNIG W. 2015. *Massonia bakeriana* (*Asparagaceae*, *Scilloideae*) – a new pustulate species from the Northern Cape Province (South Africa). – *Phytotaxa* 222 (1): 51–60. <<http://dx.doi.org/10.11646/phytotaxa.222.1.5>>.
- SPETA F. 1998a. *Hyacinthaceae*. – In: KUBITZKI K. (ed.), The families and genera of vascular plants 3: 261–285. – Springer, Berlin.
- SPETA F. 1998b. Systematische Analyse der Gattung *Scilla* L. s.l. (*Hyacinthaceae*). – *Phyton*. (Horn, Austria) 38 (1): 1–141.
- SUMMERFIELD A. 2004. A synopsis of the biosystematic study of the seven minor genera of the *Hyacinthaceae*. – *Bulbs Bulletin of the International Bulb Society* 6: 24–36.
- THIERS B. 2016. Index Herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. <<http://sweetgum.nybg.org/ih/>> (continuously updated; accessed: January 2016).
- 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: 181–195. <<http://dx.doi.org/10.11646/phytotaxa.173.3.1>>.

