

Petrorhagia sarbaghiaie (Caryophyllaceae), a new species from Kurdistan, Iraq

Author: Ahmad, Saman A.

Source: Willdenowia, 44(1) : 35-38

Published By: Botanic Garden and Botanical Museum Berlin (BGBM)

URL: <https://doi.org/10.3372/wi.44.44105>

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

SAMAN A. AHMAD¹

Petrorhagia sarbaghia (Caryophyllaceae), a new species from Kurdistan, Iraq

Abstract

Ahmad S. A.: *Petrorhagia sarbaghia* (Caryophyllaceae), a new species from Kurdistan, Iraq. Willdenowia 44: 35–38. 6 March 2014. – Version of record published online ahead of inclusion in April 2014 issue; ISSN 1868-6397; © 2014 BGBM Berlin-Dahlem.

DOI: <http://dx.doi.org/10.3372/wi.44.44105>

Petrorhagia sarbaghia is described and illustrated, its distribution is mapped, and its distinguishing characters from the other species of *Petrorhagia* in SW Asia are discussed. A key to the perennial SW Asian species of the genus is provided.

Additional key words: Hawraman Mountains, Southwest Asia

During 2011–2013, the author conducted extensive floristic fieldwork in the Hawraman Mountains, Kurdistan, Iraq, as part of his Ph.D. research. This mountain series is part of the Zagros Range, and it is located along the Iraqi-Iranian border some 50 km E of Sulaimani City. Several novelties and many additions to the flora of Iraq were discovered during that research, of which one is described herein.

Petrorhagia sarbaghia S. A. Ahmad, **sp. nov.**

Holotype: Iraq, Kurdistan, Sulaimani Province, Dalane Mountain, 35°20'01"N, 46°07'36"E, 2506 m, 18 Jul 2012, S. A. Ahmad 12-1546 (SUFA; isotype: MO) – Fig. 1, 2.

Diagnosis — *Petrorhagia sarbaghia* is easily distinguished from all perennial species of *Petrorhagia* in the Flora of Turkey and Flora iranica areas by possessing the following combination of characters: plants perennial, eglandular, glabrous except for calyx; caudex compactly branched; stems erect, rather slender, rigid; flowers in a monochasium, subsessile; calyx tubular, 5–7 mm long, moderately short-pilose; petals white, linear; fruits obovoid.

Description — Herbs perennial, eglandular. Caudex compactly branched, woody, covered with stem and leaf remains of previous seasons. Stems erect, simple or rarely few branched distally, rather slender, rigid, 15–35 cm long, glabrous throughout. Basal leaves few, not rosulate, linear, 1-veined, often withered at anthesis. Cauline leaves linear, 3–7 × c. 0.5 mm, 1-veined, glabrous, base membranous. Flowers 2–6, forming a monochasium, appressed, subsessile, subtended by 2 or 3 pairs of subulate bracts. Calyx tubular, 5–7 mm long, membranous to base between lobes, obscurely veined, moderately short-pilose; teeth purplish, subacute, c. 0.5 mm long. Petals white, linear, undifferentiated into blade and claw, 7–9 × c. 1 mm, apex obtuse. Stamens exerted, 7–9 mm long. Styles 2. Fruit a capsule, glossy, obovoid, becoming campanulate when dehiscent, c. 5 × 2.5 mm, glabrous, apex 4-toothed. Seeds (immature) peltate.

Phenology — Flowering from April to June; fruiting from June to July.

Distribution — Known thus far only from two localities in the Hawraman Region of Kurdistan, Iraq, mainly

¹ Department of Field Crops, Faculty of Agricultural Sciences, University of Sulaimani, Sulaimani Province, Iraq; e-mail: samanchnaraye@gmail.com



Fig. 1. *Pettorhagia sarbaghia* – photograph of the holotype specimen at SUFA.



Fig. 2. *Petrorhagia sarbaghia* – A: portion of a monochasium. – B–E: dissected flower; B: bracts; C: calyx; D: petals and stamens; E: pistil. – F: immature seed, showing peltate shape, arrow indicating attachment of funicle. – Scale bars: A = 5 mm; B–E = 5 mm; F = 0.5 mm.

above the village of Ahmad Awa and on Dalane Mountain (Fig. 3).

Ecology — Limestone rocky areas and crevices at altitudes of 1100–2500 m.

Conservation status — *Petrorhagia sarbaghia* is known from only two small populations. Its IUCN Red List category (IUCN 2012) remains uncertain and is currently assessed as Data Deficient (DD).

Etymology — *Petrorhagia sarbaghia* is named in honour of Dr Sarbagh Salih, President of the Kurdistan Botanical Organization, in appreciation of her continuous support throughout my Ph.D. research.

Additional specimen examined (paratype) — IRAQ: KURDISTAN: SULAIMANI PROVINCE: above Ahmad Awa, 35°19'07"N, 46°05'48"E, 1050 m, 7 Apr 2011, S. A. Ahmad 11-1110 (SUFA).

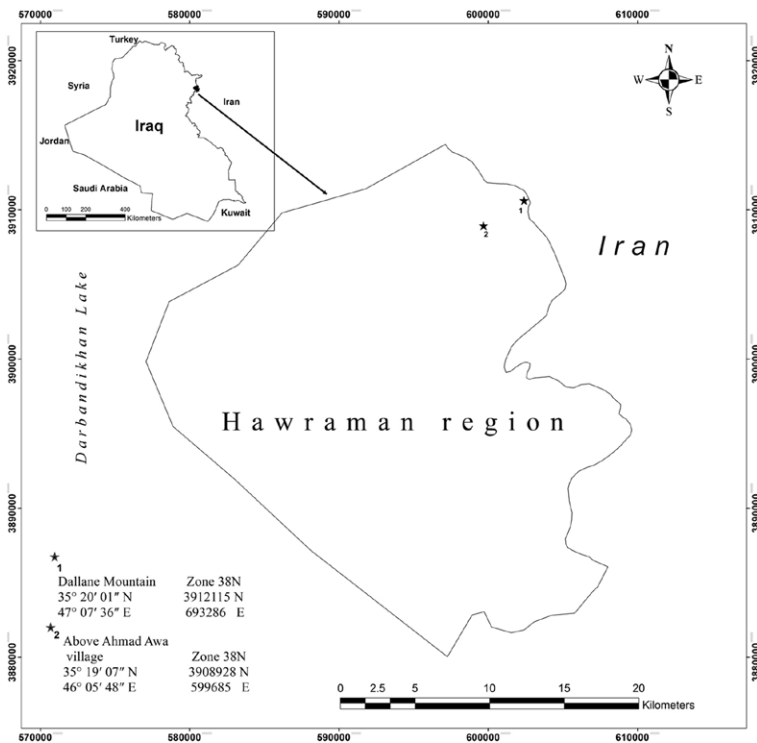


Fig. 3. Map of Hawraman region showing the distribution of *Petrorhagia sarbaghia* (★). – Inset: map of Iraq showing the Hawraman region.

Remarks — The novelty described above was initially misplaced in the genus *Gypsophila* L. as broadly delimited by Barkoudah (1962) to include *Petrorhagia* (Ser.) Link. However, the availability of additional literature (e.g. Ball & Heywood 1964; Rabeler 1985; Bittrich 1993; Rabeler & Hartman 2005), as well as the re-examination of the immature seeds, amply demonstrated that the novelty should instead be assigned to *Petrorhagia*. This genus of some 33 species, which are distributed from the Canary Islands eastward into Kashmir (Mabberley 2008), is readily distinguished from the larger *Gypsophila* (c. 150 spp.) by having bracteate (vs ebracteate) flowers and peltate (vs reniform) seeds (Ball & Heywood 1964; Rabeler 1985; Bittrich 1993). *Petrorhagia* is represented in the Flora of Turkey and Flora iranica areas by 13 species (Coode & Cullen 1967; Rechinger 1988), of which eight are annuals and five, including *P. sarbaghia*, are suffrutescent perennials with woody caudices or short rhizomes. The perennials are easily distinguished by the following key.

1. Flowers in lax 10–30-flowered panicles (SW Turkey) *P. lycica* (P. H. Davis) P. W. Ball & Heywood
- Flowers in dense 2–6-flowered cymes 2
2. Flowers ebracteate; calyx 8–10 mm long; corolla purple veined, 13–15 mm long (NE Iraq)
 *P. wheeler-hainesii* Rech. f.
- Flowers bracteate; calyx 3.5–7 mm long; corolla white or rarely pink, 4.5–10 mm long 3
3. Bracts nearly as long as 3.5–5 mm-long calyx and enclosing it; pedicels 8–14 mm long (C and S Europe, Turkey, Armenia, Iraq and Iran)
 *P. saxifraga* (L.) Link
- Bracts considerably shorter than 5–8 mm-long calyx and not enclosing it; pedicels obsolete or to 5 mm long 4
4. Stems simple or apically short-branched, glabrous throughout; capsules obovoid, becoming campanulate when dehiscent; flowers sessile (NE Iraq)
 *P. sarbaghiae* S. A. Ahmad
- Stems long-branched below middle, glandular puberulent proximally; capsules oblong-cylindrical; flowers distinctly pedicellate (W Iran)
 P. macra (Boiss. & Hausskn.) P. W. Ball & Heywood

Acknowledgements

I am profoundly grateful to my mentor Dr Ihsan A. Al-Shehbaz (MO) for his advice and help throughout my Ph.D. studies and for providing much-needed literature on *Petrorhagia*. I am equally grateful to Dr Sarbagh Salih (President, Kurdistan Botanical Organization) for her continuous support during my research. I am also greatly thankful to two anonymous reviewers for advising on the generic placement of the above novelty into *Petrorhagia*

instead of *Gypsophila*. The help and advice of Dr Shahina Ghazanfar (K) during my two-month visit to the Royal Botanic Gardens, Kew in 2013 is much appreciated. Finally, I thank Mr Nicholas Turland for his editorial advice.

References

- Ball P. W. & Heywood V. H. 1964: A revision of the genus *Petrorhagia*. – Bull. Brit. Mus. (Nat. Hist.), Bot. **3**: 121–172.
- Barkoudah Y. I. 1962: A revision of *Gypsophila*, *Bolanthus*, *Ankyropetalum* and *Phryna*. – Wentia **9**: 1–203.
- Bittrich V. 1993: *Caryophyllaceae*. – Pp. 206–236 in: Kubitzki K., Rohwer J. G. & Bittrich V. (ed.), Families and genera of vascular plants **2**. – Berlin, Heidelberg & New York: Springer.
- Coode M. J. E. & Cullen J. 1967: *Petrorhagia*. – Pp. 131–135 in: Davis P. H. (ed.), Flora of Turkey and the East Aegean Islands **2**. – Edinburgh: University Press.
- IUCN 2012: IUCN Red List categories and criteria: Version 3.1, ed. 2. – Gland & Cambridge: IUCN.
- Mabberley D. J. 2008: Mabberley's plant-book. – Cambridge: University Press.
- Rabaler R. K. 1985: *Petrorhagia* (*Caryophyllaceae*) in North America. – Sida **11**: 6–44.
- Rabaler R. K. & Hartman R. L. 2005: *Petrorhagia*. – Pp. 162–165 in: Flora of North America Editorial Committee (ed.), Flora of North America north of Mexico **5**. *Magnoliophyta: Caryophyllidae* pt. 2. – New York: Oxford University Press.
- Rechinger K. H. 1988: *Petrorhagia*. – Pp. 189–194 in: Rechinger K. H. (ed.), Flora iranica **163**. – Graz: Akademische Druck- u. Verlagsanstalt.