

A new species of *Petrorhagia* (Caryophyllaceae)

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A new species of *Petrorhagia* (Caryophyllaceae)

A. LISTON

RÉSUMÉ

LISTON, A. (1986). Une espèce nouvelle de *Petrorhagia* (Caryophyllaceae). *Candollea* 41: 179-181. En anglais, résumé français.

Petrorhagia zoharyana A. Liston (Caryophyllaceae) d'origine israélienne est décrite. Ce taxon a été précédemment reconnu comme distinct, mais il a été confondu depuis avec *P. cretica* (L.) Ball & Heywood et *P. arabica* (Boiss.) Ball & Heywood avec lesquels il est apparenté.

ABSTRACT

LISTON, A. (1986). A new species of *Petrorhagia* (Caryophyllaceae). *Candollea* 41: 179-181. In English, French abstract.

Petrorhagia zoharyana A. Liston (Caryophyllaceae) is described from Israel. The taxon has been previously recognized as distinct, but was misidentified with the related *P. cretica* (L.) Ball & Heywood and *P. arabica* (Boiss.) Ball & Heywood.

Petrorhagia zoharyana A. Liston, **sp. nov.** (sect. *Pachypleura* (Jaub. & Spach) T. Post & Kuntze; cf. RABELER, 1984). Ic. Zohary, Fl. Pal. vol. 1, t. 141 as *P. cretica*.

- = *Tunica pachygona* Fisch. & Mey. var. *scabrida* Post, Fl. Syr. Pal. Sin. 127 (1883-1896) excl. syn.
- = *Petrorhagia arabica* sensu P. W. Ball & Heywood in Bull. Brit. Mus. Bot. 3: 143 (1964) non Boiss. (1849).
- = *Petrorhagia cretica* sensu Zohary in Fl. Pal. 1: 105 (1966) non L. (1762).

Species *P. arabicae* (Boiss.) Ball & Heywood affinis sed caulibus altis, foliis latis, calyce scabrido, petalis longis, seminibus magnis differt.

Erect annual 10-25 cm high. Stems finely glandular, dichotomously branched in upper part. Leaves up to 4 × 0.1-0.4 cm; the radical ones oblong-linear, wilted at flowering time; cauline leaves linear-subulate, 3-nerved, margins scabridulous. Inflorescence repeatedly dichotomous, forming a loose, open cyme. Flowers erect, solitary at the end of 1-2 cm long, rigid pedicels. Calyx obconical, 0.7-0.8 cm long; with 15 nerves arranged in five groups of three and membranous interspaces between the nerve groups; with scabrous hairs primarily on nerves; teeth short, ovate triangular, acute-mucronate, scarious margined. Petals 1.0-1.2 cm, linear-spatulate, entire, eligulate, constricted at the point of extension beyond the calyx, claw slightly longer than limb; 3-nerved below, the nerves cream-colored at anthesis later turning red. Stamens 7 mm long, elongating sequentially and thus appearing unequal; anthers lilac, soon deciduous. Style filiform, 2 mm long. Capsule exceeding calyx; seeds strongly flattened, 2.7-3.0 mm long, testa dark brown, minutely papillose.

Type: Israel. Lower Jordan Valley, Wadi el Auja, above the spring, W. exposure, rocky slope, with *Retama raetam* and *Phlomis brachyodon*, altitude 50 m, 1.5.1985, A. Liston & G. Sagi 317-1 (holo: HUJ).

Selected specimens

Israel. In collibus petrosis inter Tiberiadum et Safed, 9.6.1881, *Letournex* (G-BOIS, K); Khit-tim Plain, 26.4.1886, *G. E. Post* (Z); N. of Nablus, 1.6.1935, *Eig, Feinbrun, Leinkram* exs. 320 (E, Z); Mt. Gilboa, on the pass from Heftsi-Bah to Jaqu'a, 17.5.1942, *P. H. Davis* 4740 (HUJ); N. Negev, Mishor Rotem, 10 km E.S.E. of Dimona, sandy ground, 24.4.1965, *M. Kislev* s.n. (HUJ). **Jordan.** Ammon, ascent to Es-Salt, km 13, 6.5.1927, *Eig, Zohary & Feinbrun* s.n. (HUJ). **Syria.** Chaaba, between Damascus & Souweida, amphitheatre, 21.6.1932, *A. Eig & M. Zohary* s.n. (HUJ).

The distinguishing characters and geographical distributions of *P. zoharyana* and the closely related *P. cretica* and *P. arabica* are summarized in Table 1. It can be seen that *P. zoharyana* is situated geographically between *P. cretica* and *P. arabica*. Morphologically, however, it is not intermediate, having longer petals and larger seeds than the other two species. The indumentum of the calyx is more similar to that of *P. arabica*. The scabrous hairs of *P. zoharyana* are 4-celled, whereas the glandular hairs of *P. arabica* are 5-celled.

Petal form is another character useful in distinguishing the three species (Fig. 1). In *P. zoharyana* the limb is almost as long as the claw, while in *P. cretica* the limb is much shorter than the claw. The limb is as wide as or wider than the claw in both species. In *P. arabica* the limb is shorter and narrower than the claw. The illustration of the petal of *P. zoharyana* (as *P. arabica*) in BALL & HEYWOOD (Fig. 9, p. 144, 1964) is inaccurate in not differentiating between the limb and the claw.

Specimens of *P. zoharyana* are generally robust plants, with wider leaves and larger calyx than *P. arabica*. These differences, while helpful in distinguishing the species, are likely to a large

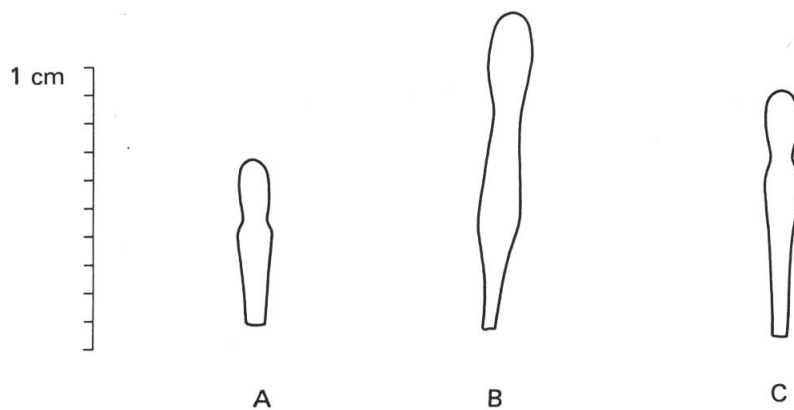


Fig. 1. — *Petrorhagia* species: petal outlines $\times 3$.
A, *P. arabica*; B, *P. zoharyana*; C, *P. cretica*.

	<i>P. cretica</i>	<i>P. zoharyana</i>	<i>P. arabica</i>
Height	10-25 cm	10-25 cm	5-15 cm
Cauline leaves	1-2.5 \times 0.15-0.2 cm	1-2.0 \times 0.1-0.15 cm	1-2.0 \times 0.1 cm
Stem indumentum	glandular hairy but glabrous at base	entirely glandular hairy	entirely glandular hairy
Calyx indumentum	glabrous	scabrous	glandular
Calyx length	5-9 mm	7-8 mm	6-7 mm
Calyx shape	narrowly campanulate	obconical	cylindrical-obconical
Petal length	7-9 mm	10-12 mm	6-7 mm
Petal shape	narrowly oblanceolate	oblanceolate	oblanceolate-ventricose
Anther colour	yellow	lilac	unknown
Seed length	2.5 mm	2.7-3.0 mm	2.0-2.1 mm
Geographical distribution	Greece, Turkey, N. Iran, Iraq, Syria, Cyprus	S. Syria (Djebel Druz), Israel, Jordan	S. Israel, S. and E. Jordan, Sinai

Table 1. — Differential characters of *Petrorhagia zoharyana* and related species.

extent environmentally determined and thus unreliable. On the other hand, petal length, seed size and calyx indumentum are constant and correlated in all specimens examined.

Ecologically *P. zoharyana* is a rare plant of semi-steppe batha on the Mediterranean-Iranian-Turanian border. Mean annual rainfall is 200-400 mm. Its primary habitat is mountain slopes.

A review of the taxonomic history of these three species explains why *P. zoharyana* was until now undescribed: the nomenclature of the species long known as *Tunica pachygonia* Fisch. & Mey. (cf. BOISSIER, 1867) was clarified by DAVIS (1957) as *T. cretica* (L.) Fisch. & Mey. A second species, *T. arabica*, was described by BOISSIER (1849) from Arabia Petraea (type G-BOIS!). In the supplement to "Flora Orientalis", BOISSIER (1888) refers an additional collection (inter Tiberiadum et Safed, 9 Juni 1881, *Letournex* 328 (G-BOIS!, K!) to *T. arabica*.

BALL & HEYWOOD (1964) transferred both species to *Petrorhagia* in their revision of the genus. The description of *P. arabica* offered, however, does not fit the type (not seen by them), but is based on the Letournex specimen and other material from northern Israel (which is, in fact, *P. zoharyana*). Boissier's inclusion of the Letournex collection in *Tunica arabica* is apparently what misled Ball & Heywood and previous researchers.

POST (1883-1896) recognized a taxon with a scabrous calyx (*Tunica pachygonia* Fisch. & Mey. var. *scabrida* Post), which he synonymized with *T. arabica*. BORNMÜLLER (1898) also considered these taxa synonymous, but notes that Post probably did not see the Boissier type. As such ZOHARY (1966) was the first who recognized as distinct from *P. arabica* the taxon which now commemorates his name. He, however, erroneously assumed it to be *P. cretica*.

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