

Dryopetalon stenocarpum (Brassicaceae), a new species from Coahuila, Mexico

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Abstract

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Dryopetalon stenocarpum is described and illustrated, and its distinguishing characters from the other species of the genus, especially *D. paysonii*, are discussed.

Additional key words: *Cruciferae*, *Schizopetaleae*, *Thelypodieae*, *Ornithocarpa*, *Schizopetalon*

Dryopetalon A. Gray (Brassicaceae) includes eight Mexican species two of which, *D. runcinatum* A. Gray and *D. auriculatum* (A. Gray) Al-Shehbaz, extend their ranges into southwestern United States in southern Arizona, New Mexico, and Texas (Al-Shehbaz 2007, 2012). The genus was delimited almost exclusively on having pinnatifid, lacinate, or dentate petal blades (Rollins 1941, 1993). However, a critical evaluation of morphology expanded it to include five species with entire petals (Al-Shehbaz 2007).

Schulz (1936) assigned *Dryopetalon* and two other genera, the Mexican *Ornithocarpa* Rose and Chilean-Argentinian *Schizopetalon* Sims, to the *Schizopetaleae*, a tribe he delimited solely on having divided petals. Recent molecular phylogenetic studies (Warwick & al. 2009, 2010) strongly indicated that divided petals evolved independently in the three genera and supported the placement of *Dryopetalon* in the tribe *Thelypodieae*, *Ornithocarpa* in the *Cardamineae*, and *Schizopetalon* in the *Schizopetaleae*.

The following new species of *Dryopetalon* was discovered among collections from northern Mexico recently sent for determination from Instituto Politécnico Nacional, Durango.

Dryopetalon stenocarpum Al-Shehbaz, **sp. nov.**

Holotype: México, Coahuila, Mpio. Viesca, Viesca, cerca de Cañón de las Viboras, 25°14'43"N, 102°48'9"W, 1233 m, with *Larrea tridentata*, *Agave lechuguilla* and *Fouquieria splendens*, 21 Sep 2008, S. González 7473A, J. Tena, A. Vanzela, M. C. González & A. Mercado (MO; isotype: CIIDIR) – Fig. 1.

Description — *Herbs*, possibly annual. *Stems* 30–45 cm tall, few branched above middle, terete, solid, sparsely pilose with simple trichomes 1–2.5 mm long, moderately pubescent on younger parts. *Basal leaves* not seen; *lowermost cauline leaves* 10–20 × 3–7 cm, pinnatifid, glabrous abaxially, crisped pilose adaxially with trichomes 1–1.5 mm long; *petiole* 2–5 cm long, winged, pilose, minutely auriculate at base; *lateral leaf lobes* oblong, remotely coarsely dentate, smaller than terminal lobe; *uppermost cauline leaves* smaller, narrowly lobed. *Racemes* densely corymbose, becoming considerably elongated in fruit; *rachis* straight, sparsely pilose to subglabrous; *fruiting pedicels* 1–1.5 cm long, slender, glabrous, divaricate to ascending. *Sepals* oblong, 3.2–3.5 mm long, ascending, glabrous, equal and not saccate at base, white at broadly membranous margin;

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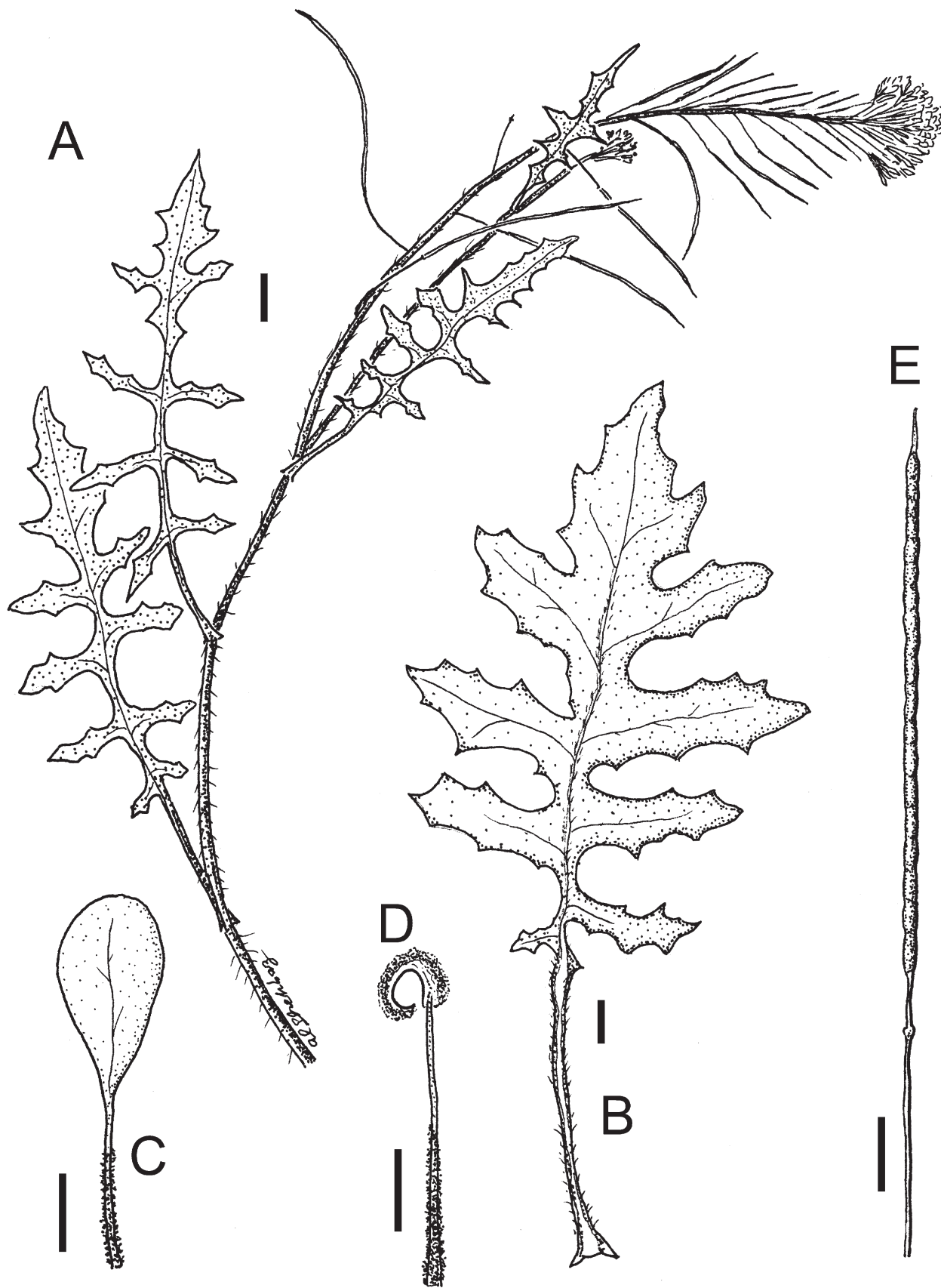


Fig. 1. *Dryopetalon stenocarpum* – A: part of plant; B: lower cauline leaf; C: petal; D: stamen; E: fruit and fruiting pedicel. – Scale bars: A–B = 1 cm, C–E = 1 mm. – Drawn from the holotype by I. Al-Shehbaz.

petals white, spatulate, 5–5.5 × 1–1.2 mm, ascending, margin entire, not crisped, apex rounded; *claw* well differentiated from blade, 2–2.5 mm long, minutely crisped puberulent; *stamens* white, ascending, 4–4.5 mm long, minutely crisped puberulent along proximal half; *anthers* narrowly oblong, c. 2 mm long, coiled at anthesis; *nectar glands* confluent, subtending bases of all filaments; *ovules* 50–65 per ovary. *Fruits* narrowly linear, 3.5–3.7 × 0.5–0.6 mm, torulose, glabrous, with obscure midvein; *gynophore* slender, narrower than fruit, 2.5–3 mm long; *style* slender, 2–2.5 mm long; *stigma* entire, about as wide as style. *Seeds* (immature) uniseriate, c. 1 mm long.

Comparison with other taxa — Four species of *Dryopetalon* have minutely puberulent petal claws and proximal parts of the staminal filaments. Two of them, *D. runcinatum* and *D. crenatum* (Brandege) Rollins, have divided petals and sessile fruits and do not appear to be closely related to *D. stenocarpum*. However, *D. paysonii* (Rollins) Al-Shehbaz, which was treated as an anomaly in *Thelypodium* Endl. (Al-Shehbaz 1973) and later placed in the monospecific *Rollinsia* Al-Shehbaz (Al-Shehbaz 1982; Rollins 1993), seems to be the nearest relative of the new species. Both have slender gynophores to 3 mm long, pinnatifid and petiolate cauline leaves, white flowers, and entire petals. *Dryopetalon stenocarpum* is readily distinguished by having torulose, terete fruits 0.5–0.6 mm wide and minutely auriculate petiolar bases of cauline leaves. By contrast, *D. paysonii* has non-torulose, latiseptate (flattened parallel to septum) fruits 1–1.8 mm wide and non-auriculate petiolar bases of cauline leaves.

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References

- Al-Shehbaz I. A. 1973: The biosystematics of the genus *Thelypodium* (Cruciferae). – *Contr. Gray Herb.* **204**: 3–148.
- Al-Shehbaz I. A. 1982: *Rollinsia*, a new genus of *Cruciferae* from Mexico. – *Taxon* **31**: 421–422.
- Al-Shehbaz I. A. 2007: Generic limits of *Dryopetalon*, *Rollinsia*, *Sibara*, and *Thelypodopsis* (Brassicaceae), and a synopsis of *Dryopetalon*. – *Novon* **17**: 397–402.
- Al-Shehbaz I. A. 2012: A generic and tribal synopsis of the *Brassicaceae* (Cruciferae). – *Taxon* **61**: 931–954.
- Rollins R. C. 1941: The cruciferous genus *Dryopetalon*. – *Contr. Dudley Herb.* **3**: 199–207.
- Rollins R. C. 1993: The *Cruciferae* of continental North America. – Stanford: Stanford University Press.
- Schulz O. E. 1936: *Cruciferae*. – Pp. 227–658 in: Engler A. & Harms H. (ed.), *Die natürlichen Pflanzenfamilien*, **17B**. – Leipzig: Englemann.
- Warwick S. I., Mummenhoff K., Sauder C. A., Koch M. A. & Al-Shehbaz I. A. 2010: Closing the gaps: Phylogenetic relationships in the *Brassicaceae* based on DNA sequence data of nuclear ribosomal ITS. – *Pl. Syst. Evol.* **285**: 209–232.
- Warwick S. I., Sauder C. A., Mayer M. S. & Al-Shehbaz I. A. 2009: Phylogenetic relationships in the tribes *Schizopetaleae* and *Thelypodieae* (Brassicaceae) based on nuclear ribosomal ITS region and plastid *ndhF* DNA sequences. – *Botany* **87**: 961–985.