

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

Author: Al-Shehbaz, Ihsan A.

Source: Willdenowia, 43(1) : 121-123

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

URL: <https://doi.org/10.3372/wi.43.43114>

The BioOne Digital Library (<https://bioone.org/>) provides worldwide distribution for more than 580 journals and eBooks from BioOne's community of over 150 nonprofit societies, research institutions, and university presses in the biological, ecological, and environmental sciences. The BioOne Digital Library encompasses the flagship aggregation BioOne Complete (<https://bioone.org/subscribe>), the BioOne Complete Archive (<https://bioone.org/archive>), and the BioOne eBooks program offerings ESA eBook Collection (<https://bioone.org/esa-ebooks>) and CSIRO Publishing BioSelect Collection (<https://bioone.org/csiro-ebooks>).

Your use of this PDF, the BioOne Digital Library, 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 Digital Library 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 is an innovative nonprofit that 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.

IHSAN A. AL-SHEHBAZ¹

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

Abstract

Al-Shehbaz I. A.: *Dryopetalon stenocarpum* (Brassicaceae), a new species from Coahuila, Mexico. – Willdenowia 43: 121–123. June 2013. – ISSN 1868-6397; © 2013 BGBM Berlin-Dahlem.
Stable URL: <http://dx.doi.org/10.3372/wi.43.43114>

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;

¹ Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166-0299, U.S.A.; e-mail: ihsan.al-shehbaz@mobot.org

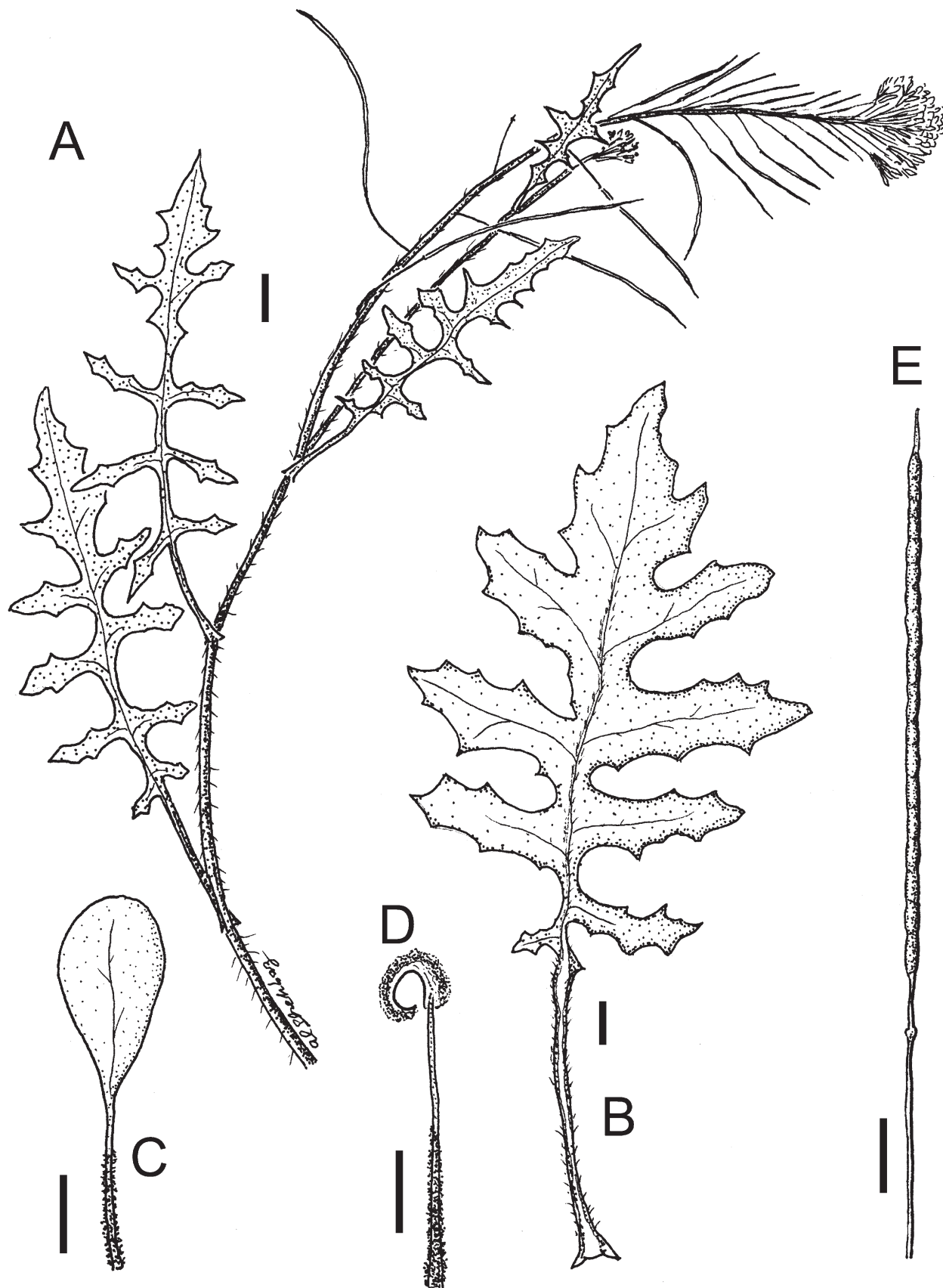


Fig. 1. *Dryopetalon stenocarpum* – A: part of plant; B: lower cauline leaf; C: petal; D: stamen; E: fruit and fruiting pedicel. – Scale bars: A–B = 1 cm, C–E = 1 mm. – Drawn from the holotype by I. Al-Shehbaz.

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.

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.

Acknowledgements

I am grateful to Dr M. Socorro González-Elizondo, director of the CIIDIR herbarium, for sending a gift of specimens for determination.