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Mildred E. Mathias; Lincoln Constance

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TWO NEW UMBELLIFERAE OF THE CHIHUAHUAN DESERT

MILDRED E. MATHIAS AND LINCOLN CONSTANCE

Mathias, Mildred E. (Botanical Gardens–Herbarium, University of California, Los Angeles, CA 90024) and Lincoln Constance (Department of Botany, University of California, Berkeley, CA 94720). Two new Umbelliferae of the Chihuahuan Desert. Brittonia 33: 342–346. 1981.—Two apparently calcicolous species of apioid Umbelliferae, **Aletes calcicola** and **Donnellsmithia coahuilensis**, are described from the Chihuahuan Desert of Coahuila, Mexico.

We have encountered material of two hitherto undescribed taxa in responding to an invitation to prepare a taxonomic treatment of Umbelliferae (Apiaceae) for Marshall C. Johnston's *Flora of the Chihuahuan Desert*. In both instances, the available material is so limited that we would have preferred to await the procurement of more representative specimens. However, one of the taxa has been collected only once and the other not at all in seven years, so we believe we may hasten their rediscovery by focusing attention on their existence.

Aletes calcicola Mathias & Constance, sp. nov. (Fig. 1)

Plantae caespitosae acaules vel caulescentes scaberulae 1–4 dm altae; foliis ternato-pinnatisectis 3–12 cm longis, 3–15 cm latis, foliolis ovatis vel ovato-lanceolatis pinnatim lobatis vel pinnatifidis, 0.5–4 cm longis, 0.2–4 cm latis; pedunculis 6–15 cm longis, foliis longioribus; involucro 0; radiis 4–7, 1.5–3 cm longis inaequalibus; involucelli bracteolis lineari-acuminatis; pedicellis 10–20, 3–5 mm longis; calycis dentibus evidentibus triangulari-ovatis; petalis viridi-albis; stylis tenuibus, ca 2 mm longis; fructibus in umbellula quoque 2–6, oblongis vel ovoideo-oblongis, 6 mm longis, 3 mm latis, costis prominentibus suberosisque exalatis; vittis tenuibus plerumque in intervallis 3, in commissuris 2 et in costis solitariis.

Plants apparently cespitose from a branching root crown bearing old leaf sheaths, acaulescent or with 1 or 2 stem leaves, 1–4 dm tall, slightly scaberulous on foliage and inflorescence, or glabrate; *leaves* petiolate, ovate to ovate-lanceolate, the blades 3–12 cm long, 3–15 cm broad, ternate-pinnately compound, the leaflets ovate to lanceolate, 0.5–4 cm long, 0.2–4 cm broad, usually pinnately lobed to pinnatifid with oblong to lanceolate, mucronulate ultimate divisions, scaberulous on veins beneath; *petioles* 3–15 cm long, scarious-sheathing at base; *peduncles* 6–15 cm long, longer than leaves, scaberulous at base of umbel; *involucre* usually 0; *rays* 4–7, unequal, 1.5–3 cm long, spreading-ascending, scaberulous; *bractlets of involucel* 2–8, linear-acuminate, scarious- and scaberulous-margined, free to slightly connate at base; *pedicels* 10–20, 3–5 mm long, unequal; *calyx lobes* evident, triangular-ovate; *petals* greenish-white, narrowly ovate with a narrower inflexed apex; *styles* very slender, ca 2 mm long, flexuous; *stylopodium* 0; *carpophore* parted to the base, divergent in upper ⅓; *fruits* in each umbellet 2–6, oblong to oblong-oval, 6 mm long, 3 mm broad, the ribs subequally prominent and corky, but unwinged; *vittae* rather small, mostly 3 in intervals, 2 on commissure, and 1 in apex of each rib; *seed* subterete in transection, the face plane.

TYPE: MEXICO. Eastern COAHUILA: Sierra de la Gloria, SE of Monclova, Jul 1939, *Ernest G. Marsh 1895* (HOLOTYPE: GH; photo: UC).

Habitat: Steep, gravelly limestone slopes in pine-oak woodland and chaparral, 1250–3000 m altitude.

Specimens examined: MEXICO. COAHUILA: NE-facing slope, Cuatro Ciénegas Basin, Sierra de San Marcos, opposite Los Fresnos, 4–5 Apr 1969, *Pinkava et al. 6117* (ASU, UC); ca 6 km S of Ejido

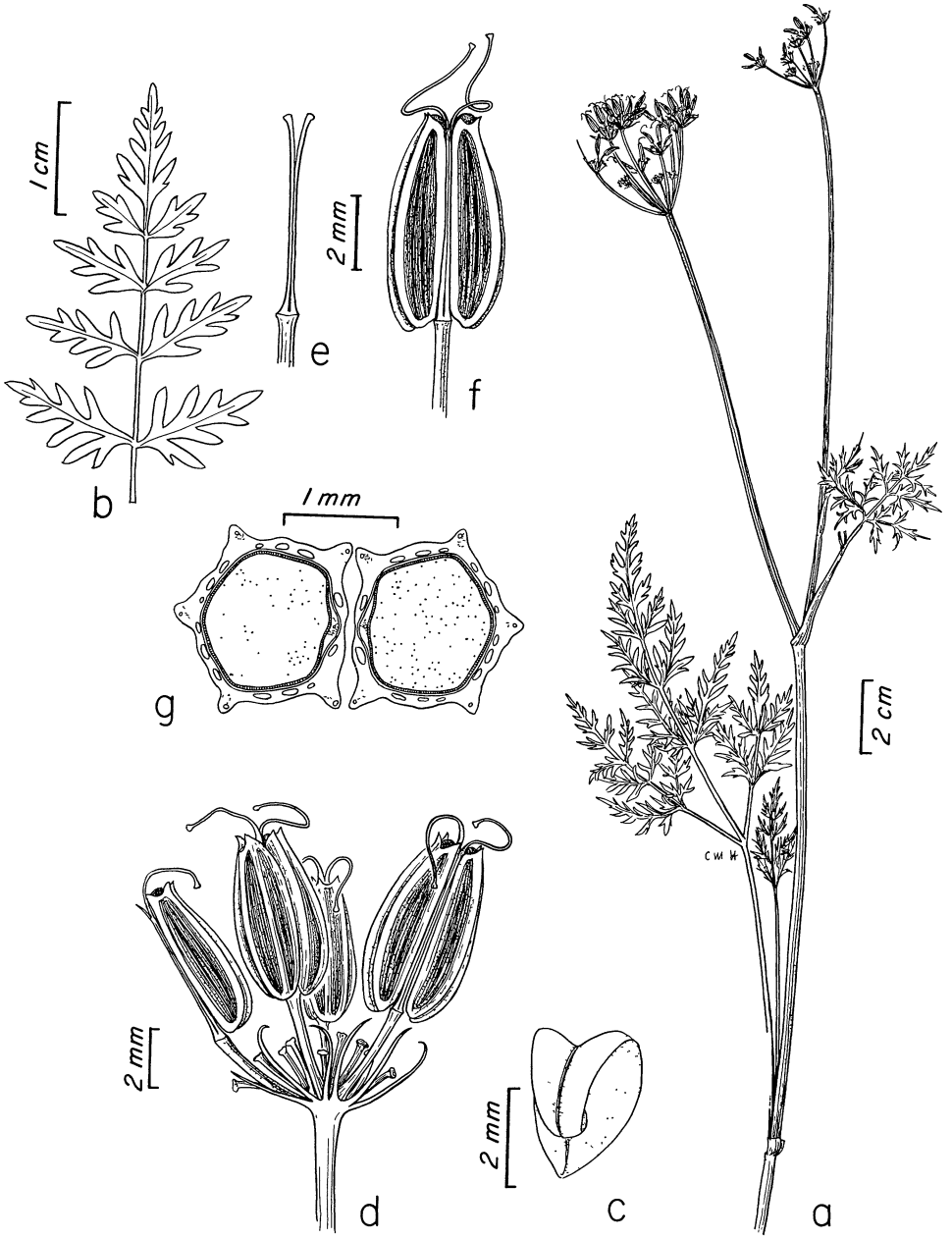

FIG. 1. *Aletes calcicola*. A. Habit. B. Detail of foliage leaf. C. Petal. D. Fruiting umbellet. E. Carpophore. F. Lateral view of fruit. G. Transection of fruit. A, D–G, from *Marsh 1895*; B, from *Johnston et al. 10,952a*; G, from *Pinkava et al. 6117*.

La Noria, E slope Sierra de San Marcos, 26°28′30″–26°26′N, 101°35′W, 20 Mar 1973, *Johnston et al. 10,305a* (TEX); middle and upper reaches of Cañón de la Hacienda, Sierra de la Madera, 27°02′30″–27°03′30″N, 102°26′30″W, 10 May 1973, *Johnston et al. 10,952a* (TEX); Cañón de la Hacienda, Sierra de la Madera, NW of Cuatro Ciénegas, 23 Jun 1976, *Pinkava et al. 13,638* (ASU, UC); Cañón de la Gavia above (S of) Rancho de la Gavia, 26°18′30″–26°20′N, 101°15′–101°18′W, 2–3 Aug 1973, *Johnston et al. 12,059a* (TEX).

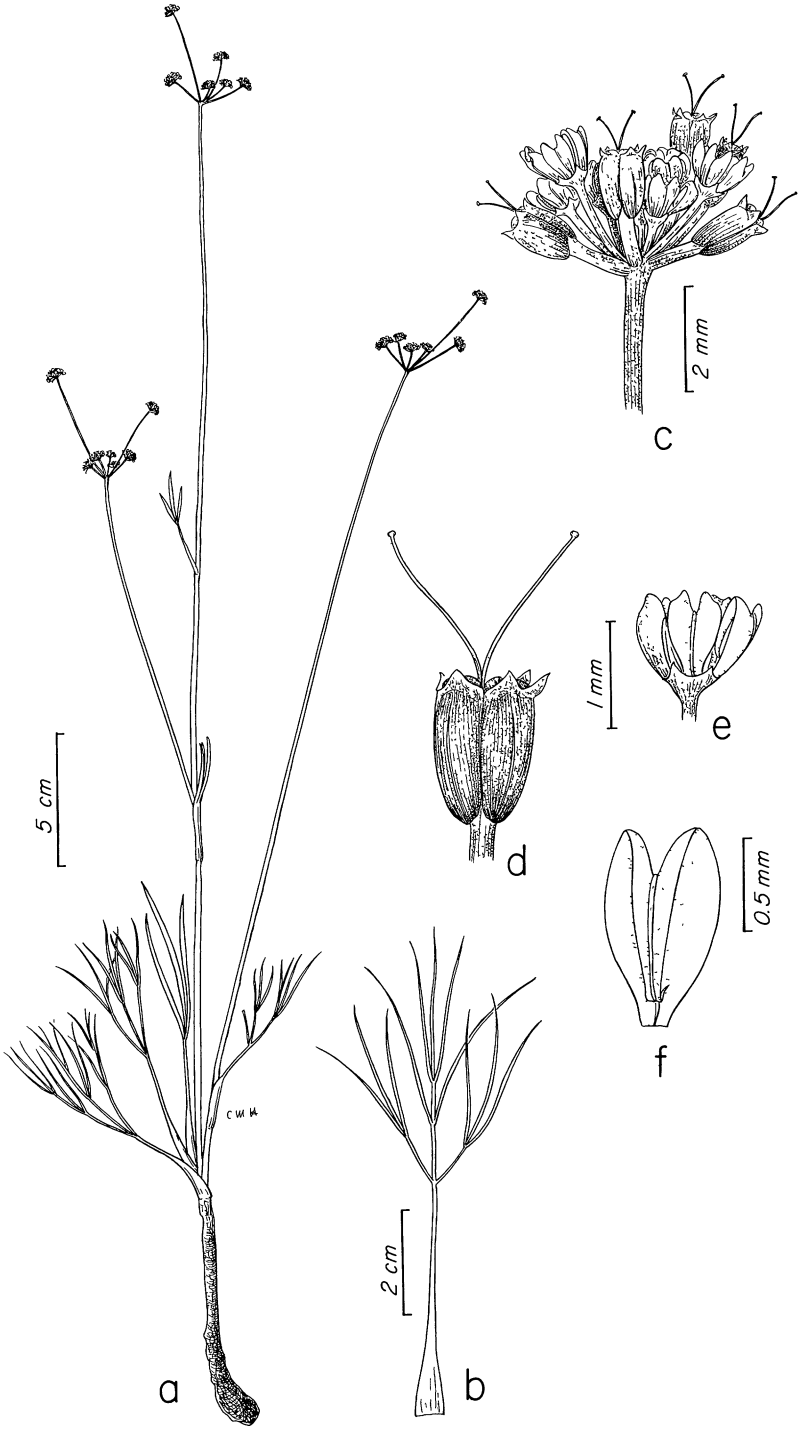

FIG. 2. *Donnellsmithia coahuilensis*. A. Habit. B. Basal leaf. C. Young fruiting umbellet. D. Lateral view of immature fruit. E. Staminate flower. F. Petal. All from *Johnston et al. 11,255a*.

The type specimen has puzzled the junior author for at least thirty years, ever since it was shown to him by the late Ivan M. Johnston. At various times we have attempted to refer it to the genera *Aletes, Musenion, Ligusticum,* and *Tauschia*. Although a similarity to *Aletes* was recognized early, that possible reference appeared to be negated by the facts that the Marsh collection is caulescent and has multiple vittae in the intercostal intervals of the fruit, both features uncharacteristic of the genus as currently understood (Theobald, Tseng & Mathias, 1964). The first of these difficulties, at least, appears to have been overcome by description of *A. filifolius* (Mathias, Constance & Theobald, 1969), which is sometimes caulescent. Despite these discrepancies, the Marsh collection seems best referred to *Aletes*. Theobald writes (pers. comm.): "The differences between *A. calcicola* and other *Aletes* species appear sufficient to definitely warrant its recognition as a distinct taxon, yet they are also sufficiently close to warrant inclusion in the genus."

In addition to the type collection at Harvard, there are three collections in the Lundell Herbarium of the University of Texas, all also unicate and incomplete, obtained in 1973 by Marshall C. Johnston and associates. Two of these are in flower, the third possesses only a single fruit, and all seem to be acaulescent. The fruiting specimen has basal leaves with much larger leaflets than the cauline leaves of all the other collections. Nevertheless, a detailed matching of the four collections reveals similarities in scaberulousness, leaf division, involucel, styles, and carpophore that constitute a strong circumstantial case for their taxonomic unity. The two collections made by Donald J. Pinkava and associates in their survey of the Cuatro Ciénegas Basin provide good flowering material and nicely bridge the gap between acaulescent and caulescent habit.

Donnellsmithia coahuilensis Mathias & Constance, sp. nov. (Fig. 2)

Plantae annuae biennesve 4–4.5 dm altae e radice palari omnino glabrae; foliis triangulari-ovatis biternatis vel ternato-pinnatis 3–4 cm latis, divisionibus linearibus acuminatis integris 2–3 cm longis, 1–2 mm latis; petiolis 3–5 cm longis; pedunculis terminalibus 1.5–2.5 dm longis; involucro 0; radiis plerumque 6 (2–4 fertilibus), 1–4 cm longis, valde inaequalibus; involucello 0; pedicellis immaturis 2–10, usque 1 mm longis; calycis dentibus triangularibus persistentibus usque ad 0.3 mm longis; petalis luteolis; stylopodio depresso; stylis tenuibus patentibus usque ad 1 mm longis; carpophoro incognito; fructibus immaturis oblongo-ovalibus 1.25–1.5 mm longis, 0.8–1 mm latis apice truncatis, costis humilibus filiformibusque.

Plants annual or biennial, slender, 4–4.5 dm tall from a vertical tuberous taproot, the stem alternately branched, sparsely leafy, glabrous throughout; *leaves* triangular-ovate, biternate or ternate-pinnate, 3–4 cm broad, the leaf divisions linear, 2–3 cm long, 1–2 mm broad, acuminate, entire; *petioles* 3–5 cm long, narrowly sheathing below; *cauline leaves* alternate, reduced upward; *peduncles* terminal, 1.5–2.5 dm long; *involucre and involucel* 0; *rays* usually 6 (2–4 fertile), very unequal, 1–4 cm long, slightly scarious-webbed at base; *immature fertile pedicels* 2–10, to 1 mm long; *calyx teeth* triangular, persistent, to 0.3 mm long; *petals* light yellow, oblanceolate, 1 mm long, shallowly bifid at apex; *stylopodium* depressed; *styles* slender, spreading, ca 1 mm long; *carpophore* unknown; *immature fruit* oblong-oval, 1.25–1.5 mm long, 0.8–1 mm broad, truncate at apex, rounded at base, the ribs low and filiform.

TYPE: MEXICO. COAHUILA: Sierra Santa Fé del Pino, W of Hacebuches, 28°12′N, 103°03′W, 2100 m alt., calcareous soil, pine-oak-juniper woodland, broad canyon through limestone between the two main ridges, 26 May 1973, *Johnston, Wendt & Chiang 11,255a* (HOLOTYPE: TEX). Known only from the type plant!

No one likes to describe a new taxon on the basis of a single collection, to say

nothing of a solitary plant. However, no other material is available, and the type specimen appears to us to be sufficiently distinct from any known form to warrant description. Obviously, more and more mature material would be welcome.

The new *Donnellsmithia* is superficially most similar to *D. ternata* (S. Wats.) Math. & Const., also of northern Mexico. It differs most strikingly in the evident and persistent calyx, elongate styles, and differently shaped fruit.

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ANNOUNCEMENT

Plant Population Biologist

The Department of Botany of the University of Georgia is seeking qualified applicants in plant population biology at the assistant/associate professor level. Preference will be given to candidates working in any of the following areas: numerical taxonomy including cladistics; experimental systematics; pollination biology; population ecology. A research program that emphasizes quantitative or statistical approaches is desirable. The successful candidate will be expected to contribute to the teaching program in plant systematics. Candidates must have a Ph.D. and a strong commitment to research as well as teaching. Duties include developing an independent research program and teaching at the graduate and undergraduate levels. Applicants should forward a curriculum vitae, reprints, a brief statement of research plans, and arrange to have four letters of recommendation sent to: Department of Botany, University of Georgia, Athens, Georgia 30602. Screening of applicants will begin October 1, 1981 and will continue until a suitable applicant is identified. Appointment would be effected on or about September 1982. The University of Georgia is an Affirmative Action/Equal Opportunity Employer.