

A NEW SPECIES OF TAUSCHIA (UMBELLIFERAE)
FROM CHIHUAHUA, MEXICO

ROBERT A. BYE, JR.

Department of Environmental, Population and Organismic Biology,
University of Colorado, Boulder 80309

LINCOLN CONSTANCE

Department of Botany, University of California, Berkeley 94720

ABSTRACT

Continued taxonomic and ethnobotanical field work in Chihuahua, Mexico, has enabled the senior author to add three species to the list of Umbelliferae (Apiaceae) known to occur in that state, as compiled by the authors in 1976. One of these, *Tauschia allioides*, remarkable for its "rachis-leaves," is described. Differential use of the local *Tauschia* species by the Tarahumara Indians is described.

In a recent summation of our knowledge of Umbelliferae (Apiaceae) occurring in the Mexican State of Chihuahua (Constance and Bye, 1976) we noted that some 30 taxa had been recorded from the state up to that time. In the same publication, which was based largely on materials resulting from ethnobotanical and taxonomic studies of Bye, we proposed four new species and noted that Bye had collected 20 different Umbelliferae in the area. His subsequent field work has added three more species to the overall list, including a new state record for *Tauschia madreensis* C. & R. [Chihuahua: Municipio de Bocoyna, valley of Choguita, NW of Creel, elevation ca 2200 m, 25 Jul 1977, Bye 7671 (COLO, UC), 2 Aug 1977, Bye & Weber 7835 (COLO, UC)], and a remarkable new species of *Tauschia*.

***Tauschia allioides* Bye & Constance, sp. nov.**

Plantae graciles caulescentes ramosae, caulibus gracilibus 1 vel 2, 25–45 cm altis e caudicibus elongatis carnis flavidis, sed nodis inflorescentis exceptis hoc loco scaberulis glabrisque; folia basalia lineari-filiformia subteretia 10–40 cm longa diametro ca 1 mm striata sub-integra, 1 vel 2 foliolis linearibus minutis ad apicem versus exceptis instructa; petioli haud distincti basi anguste scarioso-vaginantes; folia caulina reducta sessilia vaginis conspicue praedita; pedunculi 1–3, 5–15 cm longi terminales graciles infra umbellas scaberulentes; involu-crum plerumque 0; radii 6–13, 5–15 mm longi inaequales scaberuli; involucellum bracteolis 4–6 linearibus 2–4 mm longis; pedicelli fertiles 1–8, 1.5–3 mm longi; flores rhodo-purpurei; styli graciles ca 1 mm longi caduci, stylopodio 0; carpophorum crassum bipartitum; fructus ovoideus 3–4 mm longus, 2–3 mm latus apici obtusus basi rotundatus, costis obtuse angulatis quam intervallis latioribus; vittae magnae unica in intervallis in commissuris 2; seminum superficies sulcata; chromo-somatum numerus $n = 22$; cotyledones lineares (Fig. 1).

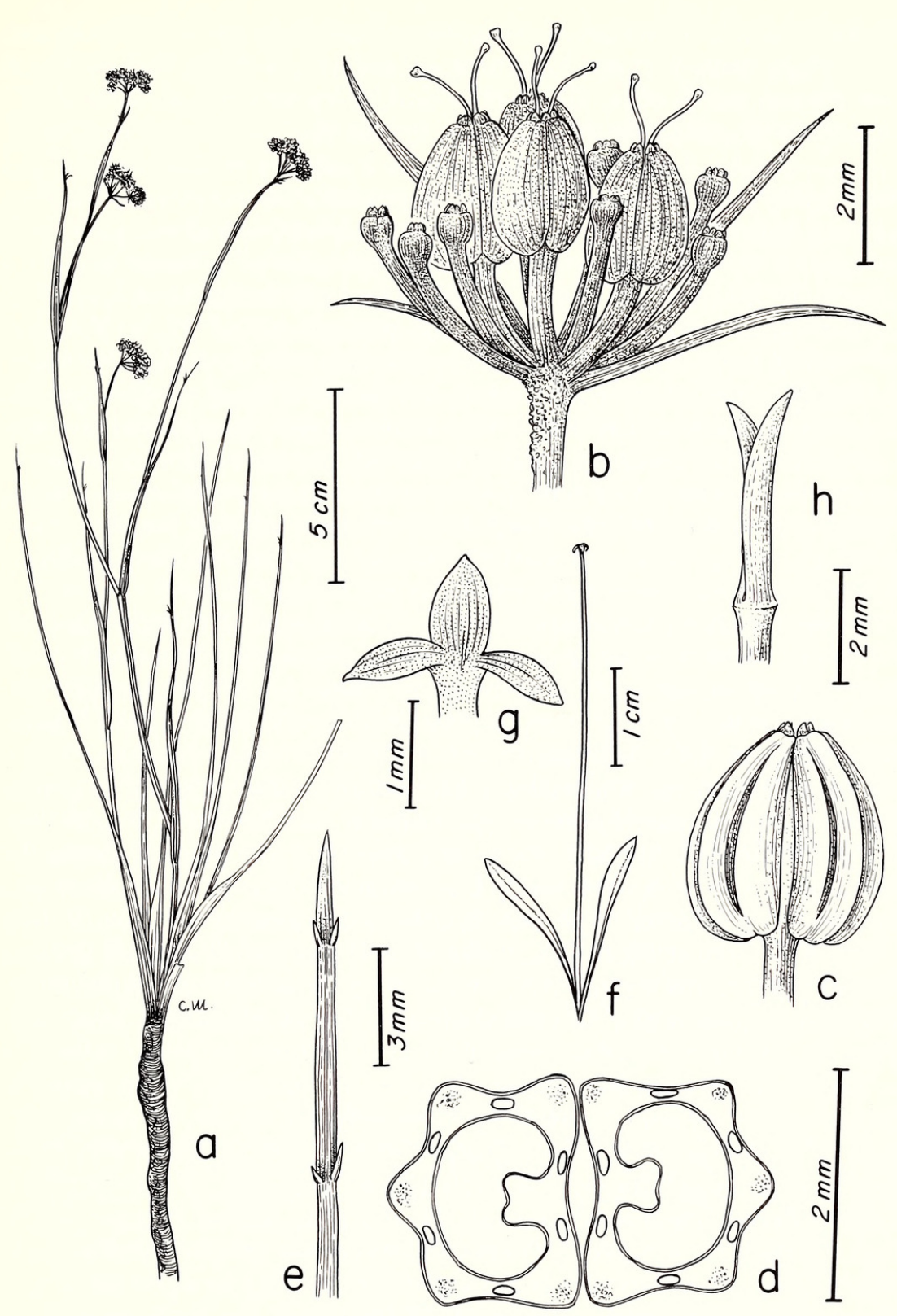


FIG. 1. *Tauschia allioides*. a. Habit. b. Fruiting umbellet. c. Mature fruit, lateral view. d. Mature fruit, transection. e. Apex of foliage leaf. f. Seedling, showing cotyledons and first foliage leaf. g. Apex of first foliage leaf. h. Carpophore. (All from *Bye 7666* and *Bye & Weber 8275*.)

Plants slender, caulescent, branching, the stems slender, 1 or 2, 24–25 cm tall, from a somewhat swollen yellowish vertical rhizome, scaberulous at nodes, beneath umbel, and on rays; basal leaves weakly clustered, linear-filiform, subterete, 10–40 cm long, ca 1 mm in diameter, striate, entire except for usually 2 pairs of minute linear lobes near apex, narrowly sheathing at base; cauline leaves few, ascending, like the basal, the sheaths conspicuously scarious-margined; peduncles slender, 1–3, terminal, 5–15 cm long; involucre of a linear bract, or usually 0; rays 6–13, 5–15 mm long, unequal, scaberulous; involucre of 4–6 linear bractlets 2–4 mm long; pedicels about 12, 1–8 fertile, 1.5–3 mm long; flowers deep red-purple; calyx teeth evident, low and rounded; petals oval, with a narrower inflexed apex nearly equaling limb; styles very slender, ca 1 mm long, purple, deciduous, the disk inconspicuous; carpophore stout, biparted, the halves broad, approximate; fruit ovoid, 3–4 mm long, 2–3 mm broad, truncate at apex, rounded at base, the ribs prominent, obtusely angled, broader than intervals; vittae large, solitary in intervals, 2 on commissure; seed face sulcate; chromosome number $n = 22$; cotyledons linear.

TYPE: Mexico: Chihuahua: Municipio de Bocoyna, E of Gonogochic (N27°45' W107°30'), in llano in pine-oak forest, in *Quercus* cf. *duraznillo* Trel. scrub and under isolated *Pinus ponderosa* Dougl., elevation 2225 m, 12 Aug 1977, Robert A. Bye, Jr. 7936 (COLO: holotype; MEXU, UC: isotypes).

Other collections: Chihuahua: Municipio de Bocoyna, E of Gonogochic (fruiting material from type locality), 17 Oct 1977, Bye & Weber 8275 (COLO, MEXU, UC), ca 1 km N of San Juanito sawmills, elevation 2400 m, 23 Jul 1977, Bye 7666 (COLO, UC—chromosome voucher), ca 5 miles N of San Juanito, elevation ca 2500 m, 3 Aug 1977, Bye 7870 (COLO, UC), and E of Creel, on W side of Laguna Arareco, elevation ca 2225 m, 25 Jul 1977, Bye 7681 (COLO). Municipio de Guachochic, E of Yahuirachic (E of Cusárare), elevation 2134 m, 25 Jul 1977, Bye 7689 (COLO).

This rare and inconspicuous herb occurs in drier, open parts of llanos (moist, upland meadows), often with oak scrub, or along margins of llanos or wide arroyo valleys under isolated pines with such herbaceous associates as *Odontotrichum globosum* (Fern. & Rob.) Rydb., *Pionocarpus madrensis* (S. Wats.) S. F. Blake, *Tagetes lucida* Cav., *Geranium niveum* S. Wats., *Ornithocarpa torulosa* Rollins, and *Rorippa* sp. The deep rootstock (apparently arising as a perpendicular branch of a horizontal rhizome ca 20 cm below the surface) and the bright red-purple flowers resemble those of *Tauschia tarahumara* Const. & Bye, which occurs in wetter portions of some of the same llanos. [The known range of *T. tarahumara* has been extended from the San Ignacio Arareco region (Municipio de Bocoyna) to the Mesa de Aboriachic (Municipio de Guachochic, E of Cusárare and Yahuirachic), elevation 2250 m, 26 Jul 1977, Bye 7694 (COLO, UC).] The

closest relationship of *Tauschia allioides* is, however, doubtless with *T. linearifolia* C. & R., which has recently been rediscovered in Nayarit [Norris & Taranto 14,563 (MICH, UC)]. The latter species has broadly linear, flat, entire leaves, and ovate-orbicular, laterally imbricate involucre bractlets.

The most distinctive feature of the new taxon is undoubtedly its foliage leaf, which, although it simulates an elongated petiole bearing pinnae primordia distally, doubtless represents considerable leaf rachis as well. The resemblance is striking to the leaves of *Oxypolis greenmanii* Math. & Const. figured by Kaplan (1970, figs. 6, 7), and interpreted by him as "rachis-leaves." The prevalence in the llano habitat of narrow-leaved species of many different families including Umbelliferae (e.g., in the northern Sierra Madre Occidental, *Tauschia allioides*, *Eryngium gentryi* Const. & Bye, *E. mexicanum* S. Wats.) invites speculation on their past and present environmental significance, and on whether they may not represent Pleistocene relicts with morphological adaptations for aquatic habitats.

Tauschia allioides and *T. tarahumara* are found in open valleys of the San Ignacio Arareco region. Some Tarahumara Indians apply the name "basiáwari" to both species because of the similarity of the inflorescences. Only *T. tarahumara*, however, was consumed as a cooked green or quelite in the past. The term "basiáwari" and its variants appear to be the common designation for edible umbelliferous greens collected before flowering and prepared for consumption. Other members of Umbelliferae which serve as quelites under the name of "basiáwari" include *Arracacia edulis* S. Wats., *Tauschia bicolor* Const. & Bye, and *T. madrensis*. Tarahumara who are unfamiliar with *T. allioides* because they do not live near the llanos and do not exploit the plant as food indicate that it is a form of "bariguchi." *Eriogonum atrorubens* Engelm., the common edible "bariguchi," is said to be similar to *T. allioides* because of its red flowers and lack of cauline laminar leaves.

ACKNOWLEDGMENTS

The writers express their appreciation to Dr. Tsan-Iang Chuang for obtaining a chromosome count of the new taxon and to Dr. William A. Weber for assistance in both the field and the herbarium. The senior author acknowledges support for field work from the National Geographic Society, the Graduate School of the University of Colorado, and the University of Colorado Museum.

LITERATURE CITED

- Constance, L. and R. A. Bye, Jr. 1976. New Chihuahuan Umbelliferae. Bot. Mus. Leaflet. 24:225-240.
- Kaplan, D. R. 1970. Comparative development and morphological interpretation of 'rachis-leaves' in Umbelliferae. In Robson, N. K. B., D. F. Cutler, and M. Gregory (eds.), New Research in Plant Anatomy, pp. 101-125. (Suppl. 1 to J. Linn. Soc., Bot. 63). Academic Press, New York.



Bye Boettler, Robert Arthur and Constance, Lincoln. 1979. "A NEW SPECIES OF TAUSCHIA (UMBELLIFERAE) FROM CHIHUAHUA, MEXICO." *Madroño; a West American journal of botany* 26, 44–47.

View This Item Online: <https://www.biodiversitylibrary.org/item/185361>

Permalink: <https://www.biodiversitylibrary.org/partpdf/170779>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Biodiversity Heritage Library

Copyright & Reuse

Copyright Status: In Copyright. Digitized with the permission of the rights holder

Rights Holder: California Botanical Society

License: <http://creativecommons.org/licenses/by-nc/3.0/>

Rights: <https://www.biodiversitylibrary.org/permissions/>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.