

DAHLIAPHYLLUM, A NEW ARBORESCENT UMBELLIFER FROM GUERRERO

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RESUMEN

Se describe e ilustra *Dahliaphyllum*, un género "peucedanoide" nuevo de Umbelíferas (Apiaceae, Apioideae) de la región del Cerro Teotepec en la Sierra Madre del Sur del estado de Guerrero. Este nuevo taxon endémico tiene un tallo leñoso y un hábito y follaje similares a *Dahlia* sección *Pseudodendron*.

ABSTRACT

Dahliaphyllum, a new genus of woody "peucedanoid" Umbelliferae/Apiaceae is described from the general area of Cerro Teotepec in the Sierra Madre del Sur of Guerrero. In both habit and foliage, it is reminiscent of *Dahlia* section *Pseudodendron*.

In his recent proposal of "another arborescent umbellifer" from tropical Africa, Thulin (1991) refers to *Steganotaenia araliacea* Hochst. and *Heteromorpha trifoliolata* (Wendl.) Ecklon & Zeyher as "the only previously known arborescent members of the family." Granting the somewhat nebulous definition of "arborescent" - tree-like in size, shape, or substantial accumulation of woody secondary growth? - this statement does not do justice to the existence of the genus *Myrrhidendron* J. Coulter & Rose of Mesoamerica or the manifestly woody members of this predominantly herbaceous family widely scattered around the world (Rodríguez 1957, 1971). In Mexico, alone, genera which contain species developing a significant amount of woody tissue include *Arracacia* Bancr., *Coaxana* J. Coulter & Rose, *Coulterophytum* Robinson, *Enantiophylla* J. Coulter & Rose, *Neonelsonia* J. Coulter & Rose, *Prinosciadium* S. Watson, as well as the recently rediscovered *Mathiasella* Constance & C. Hitchc. [*Hinton et al.* 22234 (TEX, UC), 22393 (TEX)]. The purpose of this paper is to add an additional genus to this select group.

Dahliaphyllum almedae Constance & Breedlove, genus et species novae. Fig. 1.

Plantae robustae suffruticosae foliis inflorescentiisque minute scaberulae 2-4 m altae, caule plerumque solitario fistuloso folioso basi diametro 3-5 cm. Folia triangulari-ovata plerumque bipinnata usque 50-100 cm longa, 35-80 cm lata, foliolis ovatis vel lanceolatis, valde acuminatis, 6-14 cm longis, 1.5-6 cm latis minute duplo spinosi-serratis; petioli rhachidesque teretes, petiolo basi abrupte dilatato ad 20 cm longo; folia caulina alternata sursum diminuta sursum ternata vel integra inconspicue vaginata. Inflorescentia dichotoma ramosa, ramis floriferis gracilibus verticillis divergentibus ad 20 cm longis; umbellae hemisphaericae vel globosae sessiles diametro 6.5-8 cm unaquoque 2 vel 3 foliis viridibus scarioso-vaginantibus patentibus reflexisve lanceolati-acuminatis umbellae excedentibus subtenta; involucrem deficiens; radii ca 20 patentes reflexive subaequales 2-3.5 cm longi; involucellorum bracteolae plures inconspicuae lineares 2-5 mm longae. Flores marroninei, petalis obovatis ± dorsaliter scaberulis, sepala deficientia, stylis brevibus quasi discretibus. Carpophorum ad basim bipartitum. Fructus orbicularis apice rotundatus basi retusus, diametro 8-11 mm, costis dorsalibus filiformibus, lateralibus late alatis, alis quam corpore bis latoribus; vittae magnae 1 vel 2 in intervallis in commissuris 2; semen lunatum profunde sulcatum. Plantulae 5.5-12 cm altae, cotyledonibus ovatis 12-20 mm longis, 4-8 mm latis, trinervis, longepetiolatis, foliis primis trifoliolatis diametro 3-5 mm. Chromosomatum numerus $\underline{n} = 22$.

Plants stout, woody, 2-4 m tall, the herbage minutely scaberulous and slightly *Apium*-scented, the stem usually solitary, glaucous or purple, 3-5 cm in diameter at base, becoming naked and trunk-like with leaf fall. Leaves alternate, triangular-ovate, dull green above, paler beneath, 50-100 cm long, 35-80 cm broad, 2-3 pinnate, the leaflets ovate to lanceolate, 6-14 cm long, 1.5-6 cm broad, finely doubly spinose-serrate, the larger lobed to pinnatifid at base, strongly acuminate, the petiole and rachis terete, unwinged, the former sharply dilated at base, up to 20 cm long, the sheath to 9 cm long, closed, completely encircling the node; lower cauline leaves like the basal, the uppermost reduced, trifid to entire, the sheath inconspicuous. Inflorescence dichotomously branched, a sessile umbel terminal at each junction, the 2-several opposite or whorled flowering branches diverging, up to 20 cm long; umbels hemispherical to globose, 6.5-8 cm in diameter, sessile on the branches, each subtended by 2 or 3 prominent green, scarious-sheathing, spreading or reflexed, lanceolate-acuminate foliage leaves exceeding the umbel; rays ca 20, slender, 2-3.5 cm long, spreading to reflexed; umbellets 20-25-flowered, the involucre of several inconspicuous linear bractlets 2-5 mm long. Flowers maroon; petals obovate with a narrower inflexed apex, ± scaberulous dorsally; calyx teeth 0; stylopodium conical but very short, the styles united less than 0.5 mm at base; anthers maroon. Carpophore parted to base. Mature fruit orbicular, rounded at apex, retuse at base, 8-11 mm in diameter, glabrous, the dorsal ribs filiform, the lateral broadly thin-winged, the wings twice as broad as the narrow body; vittae rather large, 1 or 2 in intervals, 2 on commissure; seed lunate in transection, the face deeply sulcate. Seedlings 5.5-12 cm tall, the cotyledons ovate, acute, 12-20 mm long, 4-8 mm broad, long-petiolate, 3-veined, first foliage leaves triangular-ovate, trifoliolate, 3-5 mm in diameter, the larger divisions incisely lobed. Chromosome number $\underline{n} = 22$.

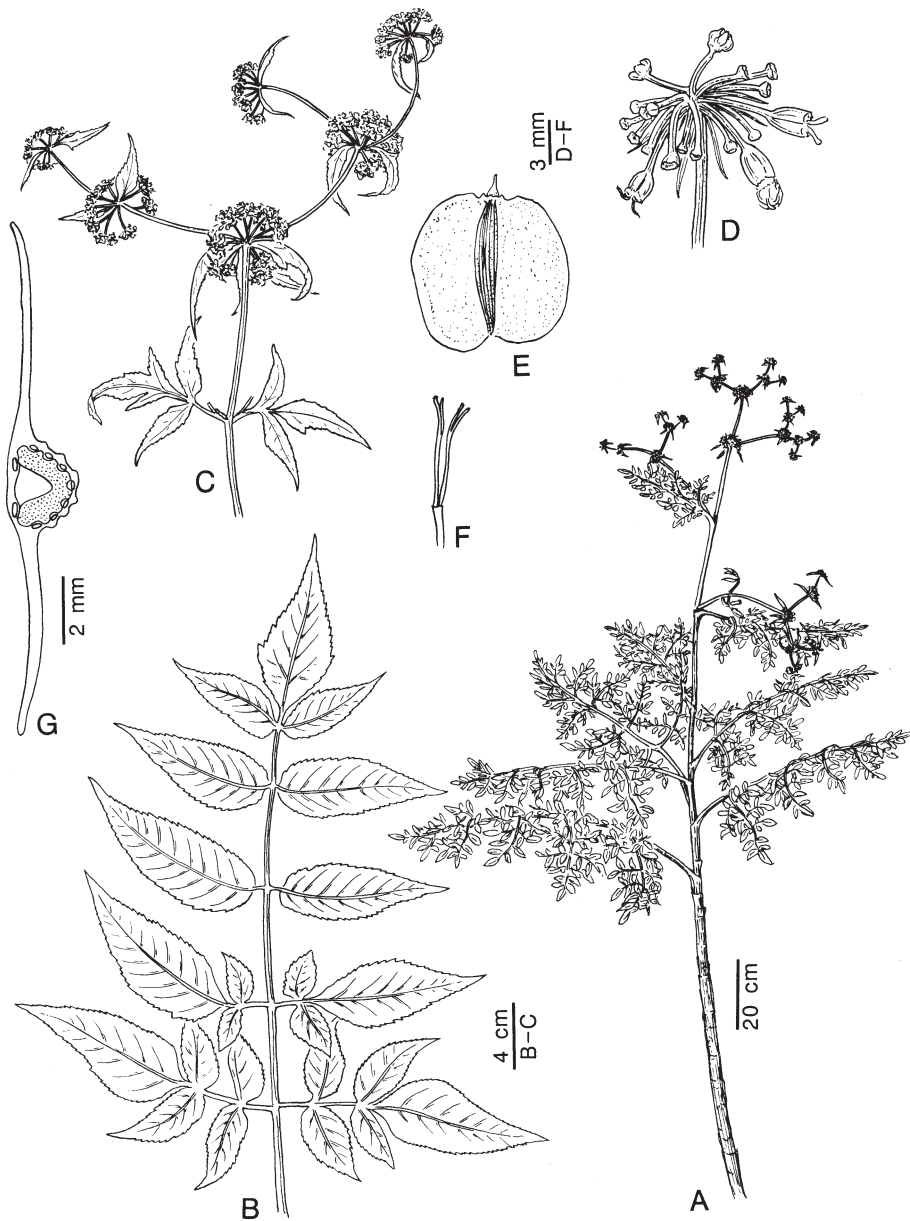


Fig. 1. *Dahliaphyllum almedae* Constance & Breedlove. A. Habit; B. Foliage leaflet; C. Portion of inflorescence; D. Umbellet; E. Fruit, dorsal view; F. Carpophore; G. Fruit transection. (E-G from type; A-D from garden-grown progeny).

TYPE: México, Guerrero: Steep slopes with *Pinus* and *Quercus* between Puerto El Gallo and Atoyac [de Alvarez, Mpio. Atoyac de Alvarez], 1830 m alt., 20 Oct 1984, D. E. Breedlove 61970 (Holotype, CAS). The holotype comprises 2 sheets, one bearing an infructescence, the other a complete foliage leaf. Plants were successfully grown from fruit from the type collection under the cultivation number C-2328 in the University of California Botanical Garden, Berkeley. Duplicates of the progeny will be distributed to FCME and MEXU, among others.

The large orbicular, dorsally flattened, and broadly thin-winged fruit of *Dahliaphyllum* suggests an affinity with such other "peucedanoid" genera as *Prionosciadium* S. Watson, *Rhodosciadium* S. Watson, and *Mathiasella* Costance & C. Hitchc. The presence of a stylopodium points to *Rhodosciadium* and effectively eliminates the other two genera from contention. However, the stout bamboo-like woody stem, the large (to 1 m) 2-3-pinnate leaves with large ovate to lanceolate leaflets 6-14 cm long by 1.5-6 cm broad, and the large sessile, multi-rayed umbels subtended by 2 or 3 scarious-sheathing foliage leaves find no parallel in *Rhodosciadium*. All known species of *Rhodosciadium* are strictly herbaceous, dying back to the ground and renewed annually from subterranean tubers or thickened roots. We believe that the complete difference in life cycle, supported by the morphological points mentioned, fully justifies according *Dahliaphyllum* a generic identity. Conversely, to place it in *Rhodosciadium* would significantly alter the definition of that genus.

It is not surprising to find such a unique plant as *Dahliaphyllum* in this region of the Sierra Madre de Guerrero. The major peak, Cerro Teotepec, rises over 3700 m only some 50 kilometers from the Pacific Ocean. This creates a zone of wet montane forest which is isolated from other such Pacific-facing forests in Michoacán and Jalisco to the northwest and in Oaxaca and Chiapas to the southeast. It is also isolated by the Balsas Basin from the high volcanoes near Mexico City to the north. In the past 50 years, a number of striking endemics have been described from this area. Some of these are: *Bouvardia hintoniorum* B. Turner, *Cleyera velutina* Bartholomew, *Dahlia hintonii* Sherff, *Daphnopsis nevlingii* Jiménez & Contreras, *Fuchsia decidua* Standley, *Geranium hintonii* H. Moore, *Habracanthus harleyi* Wassh., *Lopezia hintonii* R. Foster, *Lophospermum hintonii* Elisens, *Montanoa revealii* H. Robinson, *Populus simaroa* Rzed., *Russelia hintonii* Lundell, *Symplocos hintonii* Lundell, *Utricularia petersonii* P. Taylor, and *Vaccinium wilburii* Alameda & Breedlove.

The site was visited by Breedlove in 1967, 1973, 1984 and 1986. The ridges are forested with *Pinus* and *Quercus*. On the slopes and in the canyons where *Dahliaphyllum* was observed, there occurs a more diverse vegetation. The forest is a dense broad-leaves evergreen stand with many trees as tall as 30 m. The dominant trees include: *Brunellia mexicana* Standley, *Clethra mexicana* DC., *Conostegia vulcanalis* Standley & Steyerf., *Ilex brandegeana* Loes., *Ilex pringlei* Standley, *Meliosma dentata* (Liebm.) Urban, *Oreopanax sanderianus* Hemsley, *Perrottetia ovata* Hemsley, *Phoebe helicterifolia* (Meissner) Mez, *Pinus chiapensis* (Martínez) Andresen, *Pinus leiophylla* Schltdl. & Cham., *Pinus montezumae* Lamb., *Pinus pseudostrobus* Lindley, *Quercus benthamii* A. DC., *Quercus candicans* Née, *Quercus cortesii* Liebm., *Quercus grahamii* Benth., *Quercus laurina* Humb. & Bonpl., *Quercus obtusata* Humb. & Bonpl., *Quercus rugosa* Née, *Quercus salicifolia* Née, *Quercus sororia* Liebm., *Quercus uxoris* McVaugh, *Quercus vicentensis* Trel., *Quercus xalapensis* Humb. & Bonpl., *Saurauia serrata* DC., *Styrax argenteus* var. *ramirezii* (Greenman) Gonsoulin, *Styrax glabrescens* var. *pilosus* Perkins, *Symplocarpon purpusii* (Brandege)

Kobuski, *Symplocos longipes* Lundell, *Turpinia occidentalis* (Sw.) G. Don, *Zinowiewia concinna* Lundell.

The understory is formed by a dense association of vines, shrubs, and small trees. The more common species are: *Arracacia aegopodioides* (Kunth) J. Coulter & Rose, *Calliandra rekoii* (Britton & Rose) Standley, *Celastrus pringlei* Rose, *Clidemia matudae* L. O. Williams, *Coaxana bambusoides* Mathias & Constance, *Fuchsia arborescens* Sims, *Fuchsia cylindracea* Lindley, *Fuchsia encliandra* Steudel, *Fuchsia microphylla* Kunth, *Leandra multiplinervia* (Naudin) Cogn., *Litsea glaucescens* Kunth, *Mahonia lanceolata* (Benth.) Fedde, *Miconia militis* Wurd., *Monochaetum calcaratum* (DC.) Triana, *Philadelphus mexicanus* Schldl., *Phyllonoma laticuspis* (Turcz.) Engl., *Rubus* spp., *Ternstroemia lineata* DC. There is also an almost continuous herbaceous layer, with many species of ferns, salvias, sedges, Asteraceae, and many others. Epiphytes are abundant.

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