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Cuscuta rausii (Convolvulaceae), a new species from Greece

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Cuscuta rausii M. A. García, a new species of *Cuscuta* L. subgenus *Cuscuta* (Convolvulaceae) from the southern Aegean island of Karpathos is described and illustrated. A key is proposed to distinguish it from the other species of the subgenus with pedicellate flowers in the Mediterranean area.

Key words: Convolvulaceae, *Cuscuta*, Greece, new species, taxonomy

Cuscuta L. is a subcosmopolitan genus comprising ca. 150 species of annual or perennial holoparasitic plants. The last revision of the genus is the monograph published by Yuncker (1932), where he recognised at the subgeneric level the three groups earlier proposed by Engelmann (1859) based on the morphology of styles and stigmas. The subgenus *Cuscuta* includes species with free styles and botuliform to cylindrical stigmas. In Yuncker's monograph 28 species are accepted, to which he later added four, newly described species. All of the species occur in the Old World, although some of them have become subcosmopolitan weeds spread with crop seeds.

Most of the species of the subgenus *Cuscuta* have a typical inflorescence in compact glomerules with sessile or short pedicellate flowers. Only four taxa from the subgenus with clearly pedicellate flowers are known from the Mediterranean area. Two of them, *C. triumvirati* Lange from the mountains of the SE of the Iberian Peninsula and the Atlas ranges of Morocco, and *C. epithymum* (L) Murray subsp. *corsicana* (Yunck.) Lambinon from the mountains of the island of Corse, are exclusively Mediterranean taxa. They are predominantly parasitic on shrubby species of the genera *Genista* L., *Cytisus* L. and *Erinacea* Adans., and have a typical ramification with thin stems arising from the first buds of the inflorescence. The other two species, *C. babylonica* Choisy and *C. pedicellata* Ledeb. have their western limit of distribution at the eastern Mediterranean sea. *Cuscuta babylonica*, a mainly Irano-Turanian element with the easternmost populations at the Turkestan, is a parasite on shrubs and perennial herbs of different families. *Cuscuta pedicellata* is distributed throughout Central and southwest Asia from Altai and Turkestan to the Nile Valley in Egypt, parasitizing mainly annual herbaceous legumes. According to Yuncker (1932) it is included in the section *Epistigma* because of its reduced or absent styles and irregular dehiscing capsule.

During the preparation of a world-wide taxonomic revision of the subgenus *Cuscuta*, we have found that one specimen with pedicellate flowers, collected on the Greek island of Karpathos and previously identified as *C.* cf. *pedicellata* (Greuter *et al*. 1983: 55) represents a new species.

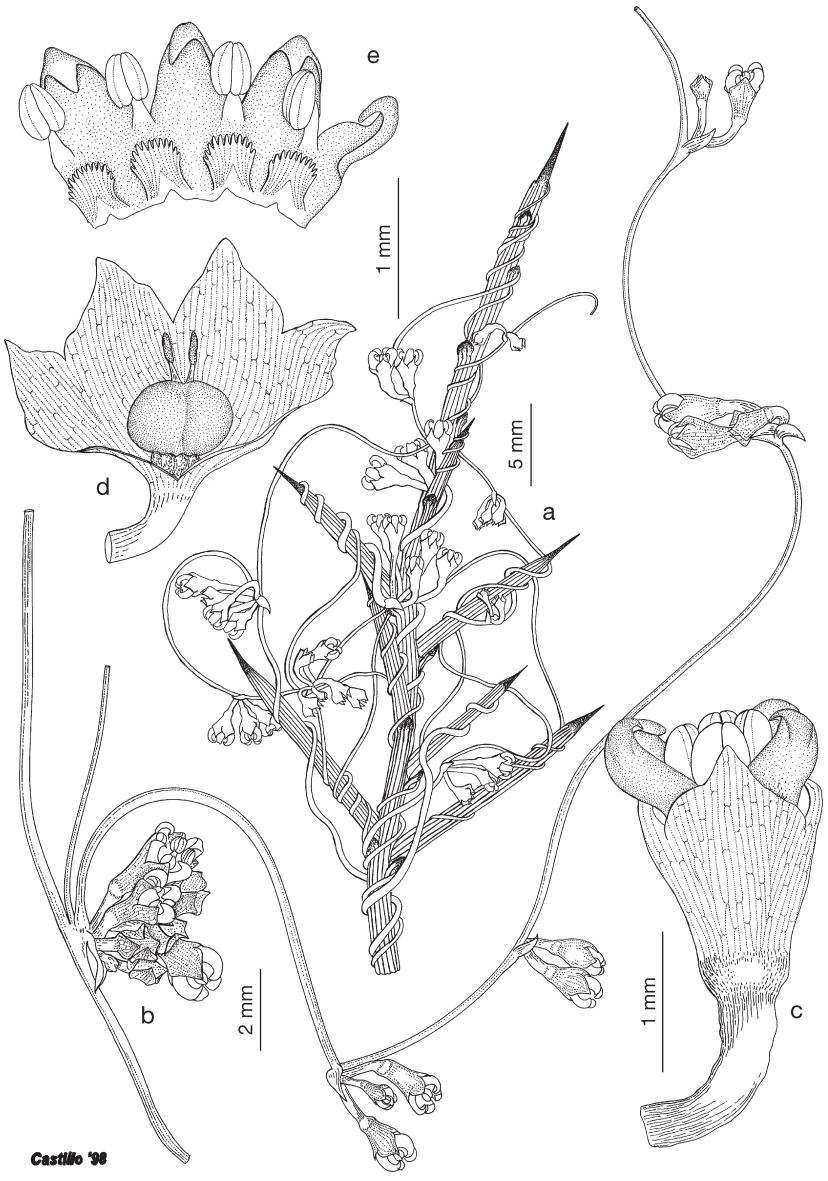

Fig. 1. *Cuscuta rausii* M. A. García (from the holotype). — a: Habit of the plant growing on *Genista fasselata* Decne. — b: Stems and inflorescences. — c: Flower. — d: Open calyx, and ovary. — e: Open corolla showing petals, stamens and corolla scales.

Cuscuta rausii M. A. García, *sp. nov*. (Fig. 1)

Flores tetrameri, pedicello subcylindrico, aequilongo aut longiore. Calyx tubo corollino longior, obconicus atque inferne angulatus, lobulis autem late ovatis aut etiam subtriangularibus. Corolla tubulosa vel campanulata, lobulis ovatis aut eo amplius oblongis, cucullatis.

Dr. Thomas Raus, Horti atque Musei Botanici Berolinensium Curatori praecipuo, de flora graeca studiis dedito, species ex animo dicata.

Type: Greece. Karpathos, 0.5 km südöstl. Lefkos (35°34´30´´N, 27°05´E), flache Felsküste mit anschließender Kleinstrauchvegetation, 10 m, 29. V. 1983, *Th. Raus 8471* (holotype B!, the lower one).

Stems 0.2–0.5 mm in diameter, yellowish to reddish, many-branched, smooth. Bracts 0.8–1.4 × 0.5–0.8 mm, ovate to ovate-lanceolate, obtuse or subacute, with entire margin. Inflorescence in loose glomerules, 3.0–9.0 mm in diameter with 2–10 flowers. Flowers 1.5–2.0 × 1.3–2.0 mm, tetramerous supported by subcylindric, smooth pedi-

cels somewhat thickened at the base of the calyx, 1.5–3.0 mm, as long as or longer than the flowers. Calyx obconical and angled at the sinuses between the lobes, longer than the corolla tube, smooth, whitish or reddish; lobes 0.5–0.7 × 0.7–1.0 mm, broadly ovate or broadly ovate-triangular, acute or subacute, somewhat mucronate, with entire or slightly crenate margins, not thickened, erect, free or very slightly overlapping at the base; calyx tube 0.7–0.9 mm, longer than the lobes. Corolla tubular or campanulate, smooth, whitish; lobes 0.7–0.9 × 0.5–0.6 mm, ovate to oblong, cucullate with an acute point up to 0.4 mm long, not thickened or somewhat thickened above, with the margins involute and entire or slightly crenulate, patent to spreading, free, with broad and long glandular cells; corolla tube 0.6–1.0 mm about as long as the lobes. Stamens 0.7–0.9 mm, as long as or shorter than the corolla lobes; filaments 0.2–0.3 mm long, triangular; anthers 0.5–0.6 × 0.4 mm, ovoid to oblong, yellowish or reddish, longer than the filaments. Corolla scales 0.6–1.0 × 0.3–0.4 mm, ovate, obovate or oblong, well developed, entire and convergent over the subglobose ovary, fimbriate, approximately as long as the corolla tube. Styles about 0.3 mm long, cylindrical; stigmas 0.3–0.4 mm, about as long as the styles, subcylindric, reddish, styles and stigma together approximately as long as the ovary. Fruit a regular circumcissile capsule as seen from immature fruits.

Cuscuta rausii is known only from the type locality, the Greek island of Karpathos, part of the southern Aegean arc of isles and situated between Crete and Rhodas. Karpathos together with Crete and the central Cyclades are sometimes included in a phytogeographical region known as the Cardaegean area (Greuter 1971), a zone of persisting insular isolation during the Pleistocene period, and rich in Tertiary relict species. It has been postulated that at the beginning of the Pliocene the sea invaded the Aegean region and, somewhat later, Karpathos was isolated from Anatolia allowing the evolution or preservation of about 15 endemic vascular plant taxa (Raus 1991); *C. rausii* might be an additional one.

Cuscuta rausii differs markedly from the other taxa of *Cuscuta* in a series of morphological features that make it easy to distinguish. These characters are: (1) thin and many-branched stems, (2) tetramerous and small flowers on pedicels as long as or longer than the flowers, (3) narrow and cucullate petals, (4) an obconic calyx clearly longer than corolla tube with not overlapping lobes, and (5) calyx tube angled at the sinuses. The most evident character is the length of the pedicels, which separates *C. rausii* from the other two species also known from the island, *C. palaestina* Boiss. and *C. planiflora* Ten., both with sessile flowers in compact glomerules. The other Greek taxa with clearly pedicellate flowers — all of them probably introduced — belong to subgenus *Grammica*, with capitate rather than cylindrical stigmas, besides many other differential characters.

Seven extra-Mediterranean species are known in the subgenus to have pedicellate flowers. Three of them, *Cuscuta kotschyana* Boiss., *C. pulchella* Engelm. and *C. capitata* Roxb. are Asiatic taxa; the remaining four species (*C. nitida* Choisy, *C. africana* Willd., *C. angulata* Engelm. and *C. natalensis* Baker) occur in South Africa. There are enough morphological characters to rule out a possible misidentification of *C. rausii* with any of them. *Cuscuta kotschyana*, with sessile or pedicellate flowers in compact glomerules, is mainly a Central Asian taxon; it has larger, (2.5)3.0–5.5(6.5) mm long, pentamerous and papillate flowers with very short styles and acute rather than cucullate corolla lobes. *Cuscuta pulchella* grows in the highlands of Afghanistan and Pakistan; it has papillate, pentamerous, pink flowers, (2.0)2.3–3.0(3.5) mm long and with none or very short styles. *Cuscuta capitata* is a high altitude taxon from Himalaya, Hindu-Kush, Pamir and Tien-Shan ranges; it has papillate, 3.0–4.4 mm long flowers, a very short calyx tube, acute rather than cucullate corolla lobes and very thin, bifid or multifid corolla scales. The South African species of the subgenus with pedicellate flowers belong to the section *Pachystigma* Engelm. characterised by the presence of paniculate inflorescences and broad stigmas. That combination excludes the possibility of a close relationship of *C. rausii* with this section.

General shape and apex morphology of the petals of *Cuscuta rausii* resemble those of *C. palaestina*, but the latter has sessile or subsessile flowers in compact glomerules, and a campanulate or urceolate calyx with thickened lobes. Cucullate petals appear in other species of the subgenus as in *C. gerrardii* Baker (= *C. cucullata* Yunck.). This character might suggest an autogamous syndrome of pollination.

Key to the Mediterranean taxa of *Cuscuta* subgenus *Cuscuta* with pedicellate flowers

1. Calyx truncate, without lobes or lobes reduced to short points up to 0.5 mm ..... *C. babylonica*
1. Calyx not truncate, with distinct lobes of 0.5 mm or longer 2
2. Styles none or reduced to short conical projections of the ovary ..... *C. pedicellata*
2. Styles distinct, slender 3
3. Flowers tetramerous; corolla lobes cucullate; corolla tube clearly shorter than calyx ..... *C. rausii*
3. Flowers pentamerous, less common tetramerous; corolla lobes not cucullate; corolla tube as long as or longer than calyx 4
4. Calyx lobes obtuse ..... *C. triumvirati*
4. Calyx lobes acute ... *C. epithymum* subsp. *corsicana*

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