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A NEW SUBSPECIES OF *OMPHALODES LUCILIAE* (BORAGINACEAE) FROM TURKEY

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Omphalodes luciliae Boiss. subsp. *pisidica* R.R.Mill *subsp. nov.* (Boraginaceae, tribe Cynoglosseae) is described from Isparta and Antalya vilayets, Turkey. Its relations with the other subspecies of *Omphalodes luciliae* are discussed.

Keywords. Antalya, Boraginaceae, Isparta, *Omphalodes*, new subspecies, Turkey.

Introduction

While examining some material of *Omphalodes luciliae* Boiss. (Boraginaceae, tribe Cynoglosseae), it became clear that three specimens previously assigned to *Omphalodes luciliae* subsp. *luciliae* differed from that subspecies, and indeed all others recognised in the species by Edmondson (1977), in having short setules on the calyx instead of the more or less well-developed dish-like tubercles (which do not bear trichomes) that are characteristic of all the other taxa within the species. Further examination revealed other distinguishing characters, and hence these specimens are described below as the new subspecies *Omphalodes luciliae* subsp. *pisidica* R.R.Mill. In specimen citations, Turkish vilayet (province) names are preceded by the relevant grid square reference used in Davis (1962–1988) to facilitate cross-reference to that work and the associated papers by Edmondson (1977).

Description

Omphalodes luciliae Boiss. subsp. **pisidica** R.R.Mill, **subsp. nov.**

Ab aliis subspeciebus *Omphalidis luciliae* Boiss. marginibus loborum calycis parce et breviter setulosis, eorum laminis parce strigosis (non tuberculis patelliformibus munitis) differt. – Type: Turkey, C3 Isparta, distr. Sütçüler, Dedegöl Dağ at Dedegöl Tarn, shady rocks, 2300 m, 3 viii 1949 (in flower and fruit), *P.H. Davis* 16027 (holo E). **Fig. 1A–D**.

Omphalodes luciliae Boiss. subsp. *luciliae* sensu J.R.Edm. in P.H.Davis, Fl. Turkey 6: 281–282 (1979 [‘1978’]) p.p. excl. typ.

Perennial. *Stems* several, ascending from decumbent base, 6–10 cm at early anthesis, lengthening to 25 cm in late anthesis and fruit, slender, narrowly winged, angled,

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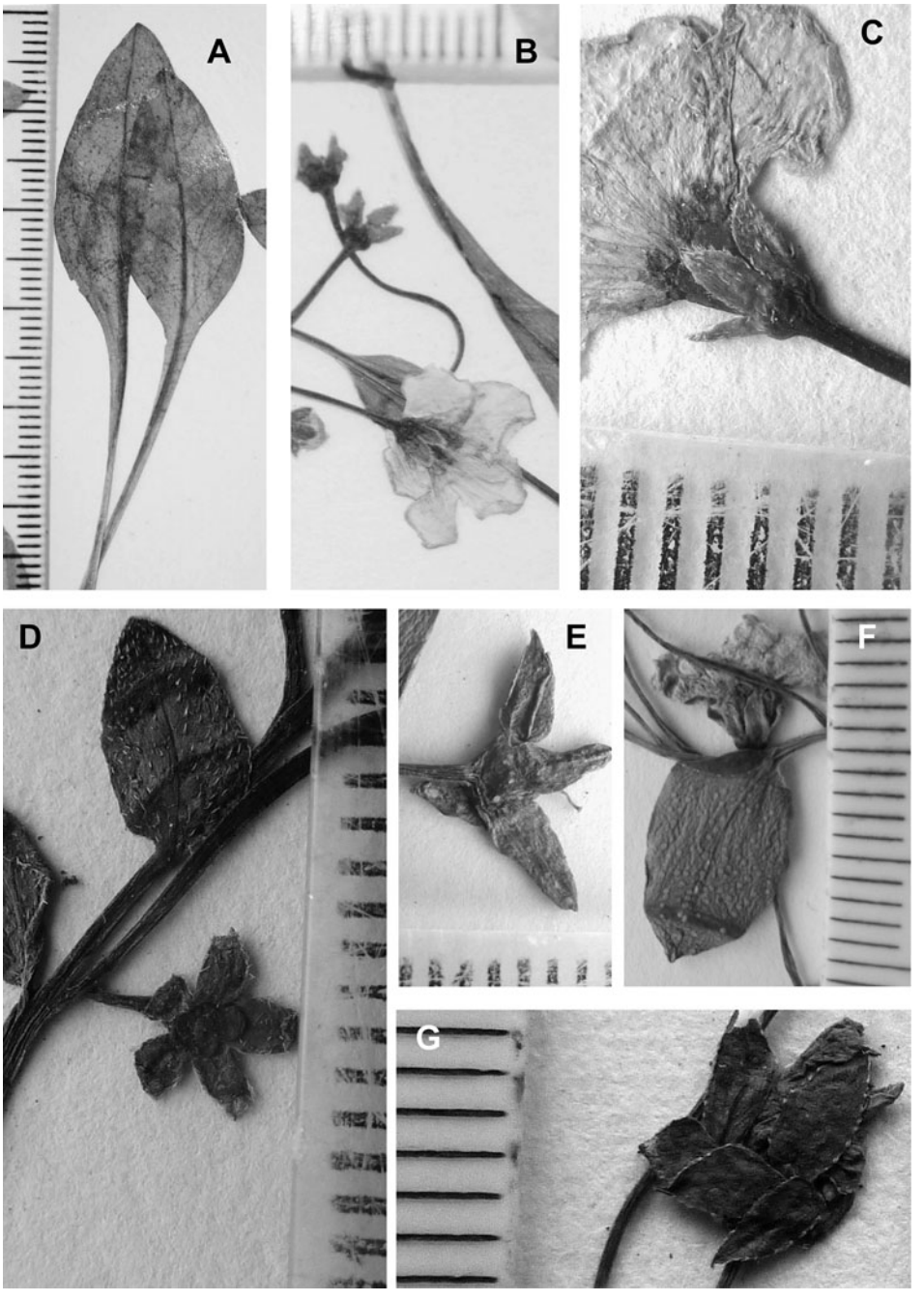

FIG. 1. *Omphalodes luciliae* subsp. *pisidica* R.R.Mill. A, basal leaves; B, flower; C, flowering calyx showing setules; D, young fruiting calyces. A–C from the holotype, *Davis* 16027 (E); D from *Davis* 15609 (E). *Omphalodes luciliae* subsp. *cilicica* (Brand) Bornm. E, young fruiting calyx from *Findlay* 118 (E), collected from Turkey, C5 Niğde, Ala Dağ at Demirkasyk; F, leaf

glabrous. *Leaves* radical and cauline; radical leaves long-petiolate (petiole 20–70 mm, usually much longer than lamina); cauline alternate, remote, very shortly petiolate (petiole 1–5 mm, much shorter than lamina); lamina of all leaves chartaceous, elliptic to orbicular-elliptic, the radical 12–30 × 6–12 mm, the cauline 5–15 × 5–11 mm; apex obtuse, base cuneate (cauline more obtuse), margin entire; midrib distinct, lateral veins 2–3 pairs, indistinct; upper surface subglabrous, lower surface with scattered very short white setules from tuberculate bases. *Flowers* (1–)3–8 per stem, axillary in upper leaf axils; pedicels 8–12 mm and ascending-erect at anthesis, becoming decurved and lengthening slightly in fruit. *Calyx lobes* ovate-elliptic, 2.5 × 1.2 mm, shortly setulose on margin, and lacking dish-like trichomes; surfaces strigose. *Corolla* rotate, powder blue; tube white, very short, c.2 mm and subequalling calyx; limb 8–10.5 mm in diameter, the lobes spreading, suborbicular, 3.5–4.5 × 3–4.5 mm, broadly rounded. *Faucal scales* c.0.8 × 0.8 mm, yellow. *Nutlets* broadly elliptic-ovate, c.3.5 × 3 mm, chestnut brown; disc with narrow central ridge, glabrous; wing very narrow, c.0.3 mm wide, subentire.

Distribution. Turkey: Isparta, Antalya.

Habitat and ecology. Shady conglomerate rocks; 1900–2300 m. Flowering July onwards; fruiting early August onwards.

Proposed IUCN conservation assessment. Endangered (EN B1ab(iii)). The population of the taxon is known from two subpopulations on two mountains separated by about 50 km. Both subpopulations must undoubtedly be small although no data on actual subpopulation sizes are available. Actual and potential threats include grazing by goats, trampling by cavers and climbers, and seed collecting; *Omphalodes* is an attractive genus horticulturally and seeds of a diverse range of plant species collected in the wild on these mountains are known to be offered for sale via internet seed lists such as Euroseeds (www.planteliste.net/euroseeds.doc, accessed 3 August 2010). Even though the part including Bozburun Dağ is a National Park that is being proposed as a biosphere reserve, the goat population in that part of the location alone is at least 22,000 (Çetinkaya, 2002) and over-grazing is a problem.

Additional specimens examined (paratypes). TURKEY. **C3 Isparta**: distr. Sütçüler, Dedegöl Dağ in the cirque Anici, N. cliffs, fl. powder blue, 2200 m, 2 viii 1949, *P.H. Davis* 15990 (E, flowers and immature fruits). **C3 Antalya**: Bozburun Dağ above Tozlu Çukur Yayla, in shady conglomerate rocks, fl. powder blue, 1900–2200 m, 25 vii 1949, *P.H. Davis* 15609 (E, flowers and immature fruits).

This new subspecies of *Omphalodes luciliae* is more or less confined to the ancient Roman province of Pisidia, now the Turkish vilayets of Isparta and adjacent

and flower from *Parry* 1 (E), collected from Turkey, C5 Niğde, Narpiz gorge. *Omphalodes luciliae* subsp. *scopulorum* J.R.Edm. G, young fruiting calyx from *Davis* 13429 (E), collected from Turkey, C2 Denizli, Boz Dağ.

Antalya, hence the specific epithet. It has a more easterly distribution than *Omphalodes luciliae* subsp. *luciliae* and the collection localities of the three specimens seen, on two different mountains, are very close together. The holotype and *Davis* 15990 had both previously been determined as *Omphalodes luciliae* subsp. *luciliae*, by myself (6 June 1985) and J. R. Edmondson (6 June 1975), respectively; the paratype from Antalya had not previously been determined to subspecies level. However, all three specimens can be easily separated from all the other four subspecies of *Omphalodes luciliae* [*O. luciliae* subsp. *luciliae*, *O. luciliae* subsp. *cilicica* (Brand) Bornm., *O. luciliae* subsp. *kurdica* Rech.f. & Riedl and *O. luciliae* subsp. *scopulorum* J.R.Edm.] by the presence of short setules, not dish-like trichomes, on the calyx lobe margins [compare Figs 1C and 1D, which show *O. luciliae* subsp. *pisidica*, with Figs 1E–F (*O. luciliae* subsp. *cilicica*) and 1G (*O. luciliae* subsp. *scopulorum*), as representative of the state found in the other four subspecies]. This character had previously been overlooked by workers on the group. Edmondson (1977, 1979) understood that the four subspecies then recognised had more or less vicariant, allopatric distributions, which he mapped (Edmondson, 1977: 301). The recognition of this new fifth subspecies further clarifies the distribution of the other four subspecies, particularly *Omphalodes luciliae* subsp. *luciliae* which becomes restricted to the ancient region of Caria (now the vilayets of Aydin and Denizli together with SW Antalya, in western Turkey). The plants from the eastern part of the range of *Omphalodes luciliae* subsp. *luciliae* sensu Edmondson (1977, 1979), i.e. those from Isparta and Pisidian Antalya, belong to *Omphalodes luciliae* subsp. *pisidica*. *Omphalodes luciliae* subsp. *scopulorum* occurs chiefly in Greece (Olympos, Parnassos and Kiona) with two records from the Manisa Dağ massif in westernmost Anatolia, while *O. luciliae* subsp. *kurdica* is distributed in extreme SE Turkey, NW Iran and N Iraq (Edmondson, 1977).

The area in which the new subspecies occurs is one of fairly high endemism. Bozburun Dağ, where *Davis* 15609 was collected, is also the type locality of the related species *Omphalodes ripleyana* P.H.Davis (Davis, 1956). This was collected at a different area of alpine grazing pasture (Kuruca Ova Yayla, not Tozlu Çukur Yayla), in deeply shaded limestone rocks. It differs from all the taxa within *Omphalodes luciliae* by its milk-white (not typically blue) corollas, its very strongly accrescent fruiting calyx and its nutlets which have an incurved and fimbriate, not entire, margin; these characters are maintained in cultivation (P. H. Davis, pers. comm. in Edmondson, 1979: 282). Southwest Anatolia is clearly one of the major centres of diversity for the *Omphalodes luciliae* species complex.

The following specimens examined belong to *Omphalodes luciliae* subsp. *luciliae* in the restricted sense adopted here: TURKEY. **C2 Denizli**: Cadmi orientalis supra Colossam [Honaz Dağ above Honaz], 1842, *Boissier* (lecto of *Omphalodes luciliae*, G–BOIS, photo; isolecto E, K; designated by Edmondson, 1977: 300); Cadmus orientalis ad rupes, vi 1842, *Boissier* (GOET, photo seen, probably another isolectotype; NY, det. L.C. Higgins, photo seen, probably another isolectotype although someone [not Higgins] has annotated the sheet that this 'Cadmus orientalis'

is Baba Dağ); Cadmi occidentalis supra Gheyra [Ak Dağ above Geyre], 1842, *Boissier* (syntype of *Omphalodes luciliae*, G–BOIS, photo); 'Caria', otherwise unloc., *Pinard* (syntype of *Omphalodes luciliae*, G–BOIS, photo; isosyntype GOET, photo); Baba Dağ, 2130 m, *Davis* 254 (E). **C3 Antalya**: Tahtali Dağ, 2200–2300 m, *Davis* 14138 (E).

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