

A new natural hybrid of *Phlomis* (Lamiaceae) from Turkey

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Phlomis × *ekimii* M.Y. Dadandı & H. Duman, a natural hybrid between *P. bruguieri* and *P. capitata* from SE Turkey is described as new to science and illustrated. The morphological characteristics of *P.* × *ekimii* are compared with those of its parents.

Key words: hybrid, Lamiaceae, *Phlomis*, taxonomy

The genus *Phlomis* is represented by 34 species, six varieties and ten hybrids in *Flora of Turkey* (Huber-Morath 1982). After the revision of Turkish *Phlomis* for a Ph.D. project of the first author, those numbers were changed to 28 species, 17 varieties and 19 hybrids (M. Y. Dadandı unpubl.). During the specimen collection for the revision of Turkish *Phlomis*, some plants seemed to have intermediate characteristics of *P. bruguieri*, *P. capitata* and *P. brunneogaleata*. After morphological studies and checking of pertinent literature (DeFlippes 1972, Knorring 1977, Feinbrun-Dothan 1978, Huber-Morath 1982, Rechinger 1982) and examination of many other specimens, we concluded that those intermediate specimens represented an hitherto undescribed natural hybrid in *Phlomis*.

The study is based on the herbarium material deposited in GAZI, HUB, ANK, ISTE, ISTF, ISTO and on the plants collected in the field in 1996–2002 and deposited in Erciyes University Herbarium.

Phlomis* × *ekimii M.Y. Dadandı & H. Duman (*Phlomis bruguieri* Desf. × *Phlomis capitata* Boiss.), *nothosp. nova* (Figs. 1 and 2).

Affinis *P. bruguieri* sed *foliis basalibus latioribus* 2–10.5 × 0.7–2.4 cm (non 4–13 × 0.7–1.5 cm); *bracteolis* 8–18, 6–15 mm (non 15–28, 15–27 mm); *dentibus calycis brevioribus* 6–11 mm (non 10–20 mm) differt. A *P. capitatae foliis basalibus longioribus* 2–10.5 × 0.7–2.4 cm (non 1.3–7 × 0.6–3.5 cm); *bracteolis* 8–18, 6–15 mm (non (0–)4–9(–12), 1–5(–11) mm); *dentibus calycis longioribus* 6–11 mm (non 1.5–5 mm) recedit.

HOLOTYPE: Turkey. SE Anatolia, C6 Gaziantep, Sofu Dağı, 1400–1450 m, rocky slopes, steppe, 15.VI.2001 M.Y. Dadandı 1584 & E. Yüzbaşıoğlu (Erciyes University Herbarium; isotypes GAZI, E, ISTE). Paratype: Turkey. SE Anatolia. C6 Gaziantep, Sofu Dağı, 1400–1450 m, 15.VI.2001, rocky slopes, steppe, M.Y. Dadandı 1595 & E. Yüzbaşıoğlu (Erciyes University Herbarium).

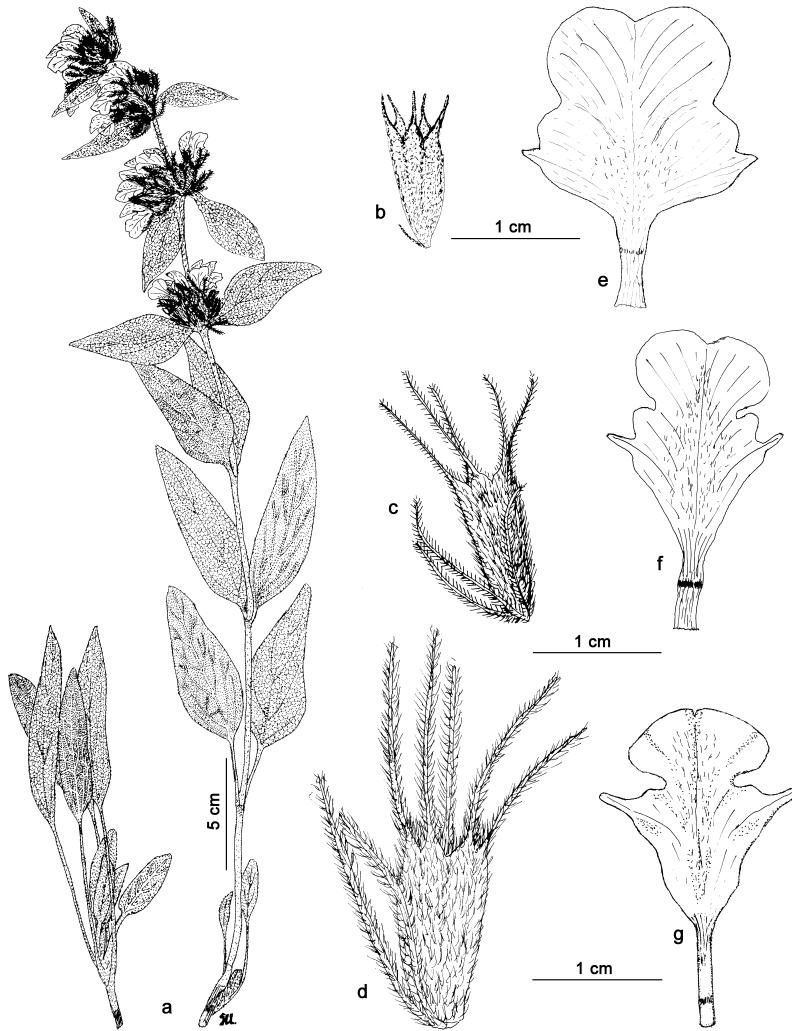


Fig. 1. — a: Habit. — b, c, d: Calyces and bracteoles. — e, f, g: Lower lips of corolla. — a, c, f: *Phlomis* × *ekimii*. — b, e: *P. capitata*. — d and g: *P. bruguieri*.

Perennial, eglandular herb. Stem unbranched, erect, 26–46 cm, bearing a dense whitish tomentum of adpressed, stellate hairs. Leaves greenish, bearing tomentum of stellate hairs adaxially, and a dense whitish tomentum of adpressed stellate hairs abaxially. Basal leaves oval to oblong, 2–10.5 × 0.7–2.4 cm, cuneate or truncate, crenulate, obtuse to broadly acute; petiole to 10 cm. Cauline leaves 3–4-paired, ovate-lanceolate or linear-lanceolate to oblong, 3.5–8.5 × 1–2.3 cm, cuneate, crenulate to entire, acute to obtuse; petiole to 3.3 cm; internodes 5.5–11 cm. Floral leaves ovate-lanceolate to linear-lanceolate, 3–7.5 × 1.1–2.2 cm, cuneate, crenulate to entire, acute, 1.2–2.5 × as long as verticillaster; ±ses-

sile. Verticillasters (1–)2–5, (1–)4–8-flowered. Bracteoles 8–18, subulate, 6–15 mm, bearing a dense, whitish tomentum of long and short, stellate hairs to lanate, sometimes glabrous at apex. Calyx tubular, 17–22 mm, bearing a dense, whitish tomentum of long (to 3 mm) and short stellate hairs to lanate; inside of calyx tube densely hairy, hairs simple; teeth subulate, 6–11 mm, unequal. Upper lip of corolla yellow or light brown, 24–26 mm; lower lip yellow, 25–26 × 12–13 mm; stamens 12–14 mm; style 22–24 mm. Ovaries few, glandular, dotted.

ETYMOLOGY: *Phlomis* × *ekimii* is named in honour of Prof. Dr. Tuna Ekim who is a senior botanist at Istanbul University.

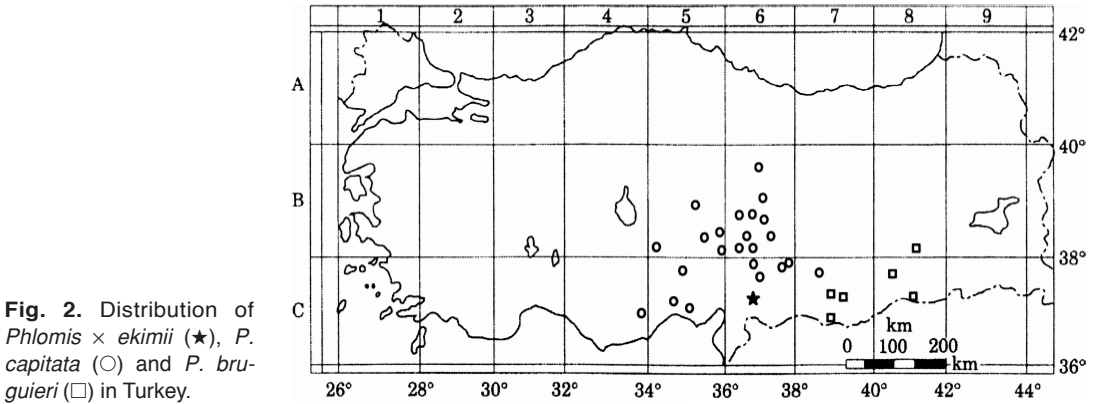


Fig. 2. Distribution of *Phlomis* × *ekimii* (★), *P. capitata* (○) and *P. bruguieri* (□) in Turkey.

DISTRIBUTION AND CONSERVATIONAL STATUS: Known only from the type locality. The conservational status of this hybrid should be “Critically Endangered” (CR; IUCN 2001), because it is known only from one locality and the population size is estimated to be less than 20 mature individuals (criterion B2, D). The estimated “area of occupancy” is smaller than one km² (criterion B2).

The hybrid number and hybridization rate in *Phlomis* are higher than in the other Turkish genera of the Lamiaceae (Davis *et al.* 1988). Ten natural hybrids were recognized in the *Flora of Turkey* (Huber-Morath 1982), but the number was increased to 19 in the Ph.D. thesis of the first author (M. Y. Dadandı unpubl.). We think that if more than one species of the same subsection of *Phlomis* localize sympatrically, they have an opportunity to hybridize. Being perennial, the probability of sampling those hybrids increases. The hybrids are easily

detectable in the field, since they do not constitute a population but just resemble some individuals from the same rootstock among populations of their parents. Their intermediate morphological characters are sufficient to suggest a hybrid origin and to determine the parent species. *Phlomis* × *ekimii* has intermediate morphological characters between *P. bruguieri* and *P. capitata*, mainly in its indumentum of basal leaves and inflorescence, leaf size, number and length of bracteoles, and calyx teeth. A more detailed comparison of the hybrid with its parents is given in Table 1 and the geographic distributions of the three taxa are mapped in Fig. 2.

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Table 1. Comparison of some diagnostic morphological characters of *Phlomis* × *ekimii* with its parents.

Characters	<i>P. × ekimii</i>	<i>P. bruguieri</i>	<i>P. capitata</i>
Basal leaves	Tomentum of adpressed, stellate hairs; 2–10.5 × 0.7–2.4 cm	Tomentum of adpressed, canescent hairs; 4–13 × 0.7–1.5 cm	Tomentum of adpressed, stellate hairs; 1.3–7 × 0.6–3.5 cm
Cauline leaves	3.5–8.5 × 1–2.3 cm	4–11 × 0.7–1.5 cm	2–6.5 × 0.7–3 cm
Floral leaves	3–7.5 × 1.1–2.2 cm	4–8.5 × 1–2 cm	1.5–4.2 × 0.7–2.5 cm
Distance of verticillasters	2.5–6.5 cm	3–7.5 cm	0.5–3(–5) cm
Number of bracteoles and length	8–18; 6–15 mm	(15–)20–28; 15–27 mm	(0–)4–9(–12); 1–5(–11) mm
Teeth of calyx	6–11 mm	10–20 mm	1.5–5 mm

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