

NOTES ON *LATHYRUS HIRTICARPUS* FROM SYRIA

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Populations of a rare species of *Lathyrus* (Viciae, Leguminosae), *Lathyrus hirticarpus* Mattatia & Heyn were located in Tartous province, Western Syria. A description and discussion of the relationship between this and allied species from *Lathyrus* L. sect. *Lathyrus* are provided.

In recent years much effort has been devoted to the systematic collection of the wild relatives of cultivated forage legumes in one of their main centres of diversity. Several collection and conservation expeditions have been undertaken by the Viciae Project Group, Southampton University, to Syria, Turkey, Yugoslavia and the Southern Republics of the former Soviet Union.

As part of this on-going programme a forage legume collection and conservation mission, sponsored by the International Board for Plant Genetic Resources, was undertaken in Syria in 1986 (Maxted & Bisby, 1986). All collections were made in collaboration with the Syrian Ministry of Agriculture and Agrarian Reform, Douma and the Genetic Resources Unit, ICARDA (the International Centre for Agricultural Research in the Dry Areas). While collecting in Tartous province of Western Syria, a taxon of *Lathyrus* L. sect. *Lathyrus* (*sensu* Kupicha, 1983) was encountered. Following detailed examination these populations were found to be attributable to *Lathyrus hirticarpus* Mattatia & Heyn.

Mattatia & Heyn (1976) describe *L. hirticarpus* as a endemic species from the Judean Hills with a restricted distribution to the vicinity of Nes Harim, Mahseya, Kesalon and Ramat Razi'el. These populations grow at 400–700m, in rocky batha and at the edges of garigue, on the terra rossa or brown rendzina, among limestone rocks. They comment that the species appears to be endemic to this restricted area. The Syrian material was found growing under very similar soil and rock type conditions in Tartous province, but at lower altitudes. The two population were located 8km south of Baniyas on Tartous to Baniyas road at 20m and at Sauda, Tartous, 298m, 26 iii 1986, Maxted, Ehrman & Khultut 1902 and 1921, respectively; both in E, K, MO, SPN, Herbarium of the Syrian Ministry of Agriculture and Agrarian Reform, Douma. Seed of these collections were grown up at the Genetic Resources Unit of the International Centre for Agricultural Research in Dry Areas, Tel Hayda, Syria. Voucher specimens of the cultivated material have been deposited in SPN and the Herbarium of the GRU, ICARDA, Aleppo. For further details of locations, see Fig 1.

A revised description of the species that incorporates the Syrian material is provided:

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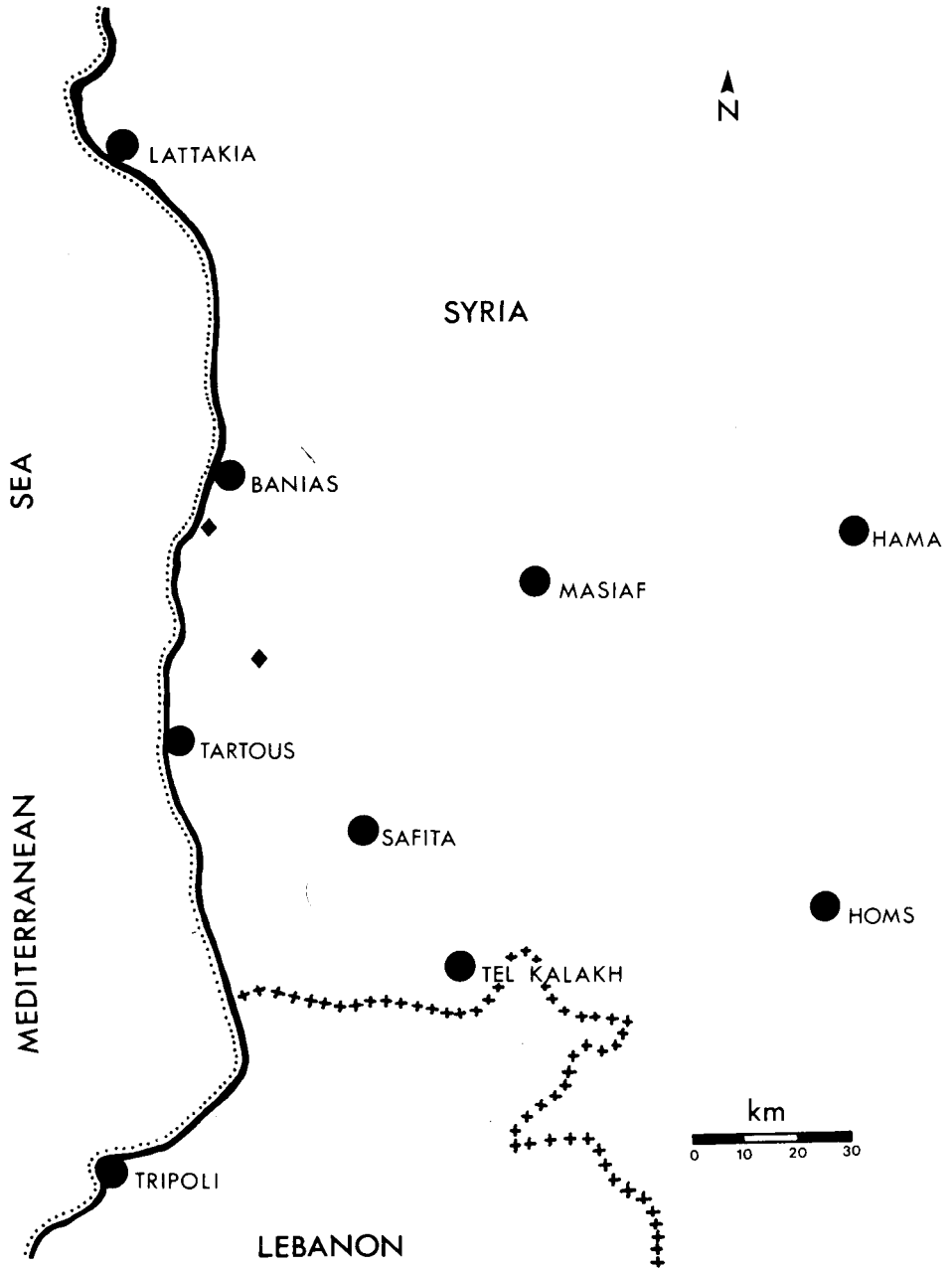


FIG.1. Map showing the two known localities of *Lathyrus hirticarpus* in Syria. ♦ = collection site.

Lathyrus hirticarpus Mattatia & Heyn in Isr. J. Bot. 25: 216 (1976).

Climbing or scrambling annual. *Stem* 8–50cm high, many basal branches, angled to narrowly 2-winged, sparsely pubescent. *Leaves* with 1 pair of leaflets, terminating in a simple or branched tendrill which may be reduced to a mucro on lower leaflets; 5–50 x 1–10mm, elliptic to linear-elliptic with an obtuse, mucronate apex, parallel veins conspicuous beneath; petiole 2–15mm, angled; stipules 2–10 x 1–4mm, semi-sagittate, upper lobe ovate-lanceolate, 2–3 x as wide as stem. *Peduncle* 10–40mm, striate, aristate, about as long as subtending leaves, usually longer in fruit, with a solitary flower; pedicel 2–5mm; bracts 1–2, minute (1–1.5mm), deciduous. *Calyx* 5–8mm, 10-nerved, 5 nerves continued into teeth; teeth equal, approximately twice as long as tube, acute, glabrous, patent in flower partially reflexed in fruit. *Standard* 10–18(–20)mm (including a claw of c.4mm), orbicular with an emarginate apex, brick red; wings 10–13, $\frac{2}{3}$ the length of the standard, oblong, brick red; keel about equalling wings, with rounded basal auricles. *Ovary* densely covered in tuberculate-based hairs and sessile glands; style 4–8 x 0.3–0.5mm, twisted slightly anti-clockwise at apex, apex spatulate, pubescent. *Legumes* 16–28 x 6–10mm, erect to spreading, oblong, tapering gradually toward each end, upper suture with 2 narrow lateral keels, valves with prominent net-veins, suture and valves with tuberculate hairs. *Seeds* 2–5, c.4mm, rounded angular, mottled brown, smooth; hilum elliptical, c.1.5mm long, approximately 10% of seed circumference.

The differences between the Judean and Syrian populations are summarized in Table 1. Overall the Syrian material is smaller in stature than the Judean material. It would be expected that rare, remote populations, such as these two, would have evolved distinct differences. However, the differences are relatively small and further location of material may bridge the apparent gap in stature between the plants of the two populations.

Table 1. Comparison of the Judean and Syrian material of *L. hirticarpus*.

	Judean	Syrian
Stem	10–40cm	8–50cm
Leaves	terminating in branched or unbranched tendrill leaflets 0.5–5 x 0.2–1cm	terminating in mucro or unbranched tendrill leaflets 0.5–4.5 x 0.1–0.4cm
Stipules	0.2–1.5cm	0.2–1 x 0.1–0.3cm
Peduncle	1–5.5cm	1.5–4cm
Bract	present and minute	absent
Standard	1.5–2cm	1–1.4cm
Style	0.5–0.8cm	0.4–0.5cm
Legume	1.5–2.8 x 0.7–1cm	1.6–2.7 x 0.6–0.9cm

Mattatia & Heyn (1976) place *L. hirticarpus* in *Lathyrus* sect. *Cicercula* (Medic.) Gren. & Godr. *sensu* Davis (1970). Characters such as winged stems, the single pair of linear leaflets with parallel veins, semi-sagittate stipule and the possession of a contorted style all clearly place the species in this grouping. However, Kupicha (1983) argues, in the generic revision of *Lathyrus*, that sections *Lathyrus* and *Cicercula* should be united because the distinction between the two sections is based on the presence of a canalicu-

late style, which can be exaggerated by the drying process. So within Kupicha's concept, *L. hirticarpus* would be included in sect. *Lathyrus*. Kupicha does, however, split her sect. *Lathyrus* species into three habit-types. *L. hirticarpus* would be considered a member of type 3, along with *L. cicera* and *L. lentiformis* Plitm., which are described as, delicate annuals with narrowly elliptic leaflets and parallel venation.

The species is characterized by the presence of tuberculate hairs on the legume suture and valves, and a brick red corolla. Tuberculate hairs of varying lengths are found on several species of sect. *Lathyrus*, including: *L. odoratus* L., *L. hirsutus* L., *L. belinensis* Maxted & Goyder, *L. trachycarpus* (Boiss.) Boiss., *L. basalticus* Rech. f., *L. chloranthus* Boiss., *L. chrysanthus* Boiss., and *L. lycicus* Boiss. The distinctive brick-red flower colour is also seen in other species of this section: *L. cicera* L., *L. vinealis* Boiss. & Noë in Boiss., *L. setifolius* L., *L. blepharicarpus* Boiss., *L. marmoratus* Boiss. & Bl. in Boiss., *L. ciliolatus* Sam., *L. basalticus* and *L. sphaericus* Retz. Within these two groups of species, *L. hirticarpus* is most closely related to *L. cicera* and *L. basalticus*, and between these two, the presence of tubercular legume hairs suggest the closest affinities is with *L. basalticus*.

Lathyrus basalticus is an endemic species of Syria and Lebanon and is described in the protologue (Rechinger, 1951: 511) as being found between Tripoli and Homs and Akkari and Tel Kalakh on basaltic soils. Mouterde (1966) describes a similar distribution and soil obligation for this species. Neither author refers to the species being found north of Tel Kalakh in the province of Homs in Syria, or south of the Lebanon. Similar conclusions on the Syrian distribution of *L. basalticus* were drawn by Maxted & Bisby (1986), who found six populations of *L. basalticus* in the vicinity of Tel Kalakh, but none over an altitude of 350m or more than 10km north of Tel Kalakh. Both Syrian locations for *L. hirticarpus* were found about 50km north-west of Tel Kalakh at an altitude below 300m. The mountain range of the Jebel al Nusayriyah lies between the two areas inhabited by the two species. The mountains to the North and the large distances to the South effectively provided a geographical barrier which prevents crossing between *L. hirticarpus* and *L. basalticus* – the geographical isolation allowing the separate evolution of these two distinct, but allied species.

Based on its current distribution, it seems likely that *L. hirticarpus* was once much more widespread in the region. The current restriction of the species to two geographically distant and relatively small areas is apparently the result of extinction throughout the majority of its range. The extinctions could possibly be due to its evolution of an obligate requirement for basaltic soils. These soils, in this region, provide island-like refuges surrounded by alkaline, predominantly calcareous soils (Ehrman & Bisby, 1990). The species is thus able to remain viable only on certain batha enclaves.

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