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Rupert C. Barneby
New York Botanical Garden

James L. Reveal
University of Maryland; Smithsonian Institution

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A NEW SPECIES OF *LATHYRUS* (FABACEAE)
FROM THE DEATH VALLEY REGION OF
CALIFORNIA AND NEVADA

RUPERT C. BARNEBY

*New York Botanical Garden
Bronx, New York 10458*

AND

JAMES L. REVEAL

*Department of Botany, University of Maryland
College Park, Maryland 20742*

and

*U.S. National Herbarium, Smithsonian Institution
Washington, D.C. 20560*

In a summary discussion of *Lathyrus lanswertii* Kell. ssp. *aridus* (Piper) Brads., C. L. Hitchcock (1952, p. 28) mentioned a probably undescribed species of the genus collected by botanists of the Death Valley Expedition at Wood Canyon in the Grapevine Mountains, Inyo County, California. Hitchcock evaluated the entity as "more or less intermediate in character" between *L. lanswertii*, *L. pauciflorus* Fern. ssp. *brownii* (Eastw.) Piper, and *L. graminifolius* (Wats.) White, but having only one example (*Coville & Funston 1760*, listed by Coville 1893, p. 88, as *L. paluster* L.), he postponed describing it until more material became available. This desideratum is now fulfilled by rediscovery of the plant in southern Nye County, Nevada, in two low mountain ranges immediately east of the Grapevines, the further not more than 40 miles distant from Wood Canyon. These modern gatherings provide a clear picture of the species described below, which we take pleasure in dedicating to Dr. C. Leo Hitchcock of the University of Washington, Seattle, the foremost student of North American *Lathyrus*.

The characters of *Lathyrus hitchcockianus* that we find taxonomically significant in the context of its group are the weak, scattered pubescence of the stems and leaves, the relatively few (2-8) narrow leaflets, the well-developed prehensile tendrils surpassing the last pair of leaflets, and the small purplish flowers borne in almost always 2-flowered racemes on short individual pedicels.

Of the three entities mentioned by Hitchcock as akin to the Death Valley species, *L. graminifolius* is the most easily distinguished, its greatly elongated leaflets combined with well-furnished racemes of 4-several flowers being decisively different. This species is fully allopatric, an element of the Sierra Madrean flora that extends northward into the summer-rainfall areas

of southwestern United States, but no further north than the Mogollon Escarpment in Arizona.

A comparatively rare variant of *L. pauciflorus* ssp. *brownii* with linear-lanceolate leaflets does resemble *L. hitchcockianus* in habit, but the whole plant is glabrous and the flowers are substantially larger, the banner 13–17 (not ± 10.5) mm long. The range of ssp. *brownii* extends south along the cismontane slope of the Sierra Nevada interruptedly to the Tehachapi Mountains in southern California, but its center of abundance is in the sagebrush zone of northeastern California and adjoining Oregon. It is not known (and cannot reasonably be expected) to approach the Mojave Desert. Other forms of *L. pauciflorus* are as distantly allopatric and in addition larger-flowered.

The entity closest to *L. hitchcockianus* in habit, pubescence, and flower-size is *L. lanswertii* ssp. *aridus*, but it differs in having short tendrils, mostly simple and bristle-like, or if forked and incipiently prehensile then shorter than the last pair of leaflets. Furthermore, the flowers, usually paler in color though of about the same size, are borne on much longer, flexuous pedicels. The range of ssp. *aridus* as worked out by Hitchcock (1952, map 8) extends along the east piedmont of the Cascade Ranges from southern Washington into northeastern California, with a southerly extension along the west slope of the Sierra Nevada to Tuolumne County. Like *L. pauciflorus* ssp. *brownii* it is not transmontane southward from Lake Tahoe, and does not approach the Mojave Desert.

In a genus like *Lathyrus* which, at least in North America, is lamentably poor in reliable differential characters in the external morphology of the plants, factors of dispersal assume an unusual importance in the evaluation of species. We therefore feel it fair to emphasize, in support of *L. hitchcockianus*, that it is the only known member of the genus found within the borders of the Mojavean floristic province. That it occurs in a region celebrated for local endemism (Stebbins and Major, 1965) is probably no coincidence.

Lathyrus hitchcockianus Barneby & Reveal, sp. nov.

Lathyrus lanswertii Kell. ssp. *aridum* (Piper) Brads. simulans, ab eo imprimis foliorum cirrho majusculo prehensili saepissime furcato foliola summa superanti, pedicellis brevibus (1–1.7 nec 2–4.5 mm longis), necnon patria desertica aliena absimilis.

Diffuse perennial herbs, thinly villosulous with weak loose tapering hairs up to 0.3–0.5 mm long, the foliage bluish green, the leaflets more densely pubescent above than beneath; *stems* arising from buds near the apex of an oblique woody root up to 2 mm diam, simple and subterranean for 3–10 cm, on emergence stouter, aerial through (1–)1.5–3.5 dm, simple or commonly few-branched, prominently ribbed but not winged; *leaves* (including tendril) 3–7 cm long; *stipules* sagittately 2-partite, the lanceolate entire ascending lobe 4–7 mm long, the slightly shorter and often broader descending one entire or denticulate; *leaflets* 1–4, mostly 2 or 3 pairs, opposed or

not, very shortly petiolulate, narrowly lanceolate to linear-acuminate, 1.2–4 cm long, (0.8–)1.5–4 mm wide (width : length ratio 1: (4–)5.5–30, 3-nerved from base to apex, the costa pinnate, the nerves prominent beneath, the margins plane or involute; *tendrils* 2–3-forked or rarely simple, prehensile, longer than last pair of leaflets; *racemes* 2 (exceptionally 1 or 3)-flowered, the peduncle and axis together 2–7 cm long; *bracts* minute caducous; *pedicels* 1–1.7 mm long; *calyx* thinly pilosulous at base and ventrally, the prominently 5-costate, campanulate tube 3.2–3.8 mm long, 2.7–3 mm wide, gibbous dorsally at base, oblique at orifice, the teeth triangular, unequal, the dorsal one narrowest, 0.9–1.4 mm, the ventral pair shorter and broader; *petals* lilac-purple when fresh, drying blue or bluish, the wings paler; *banner* broadly obovate-flabellate, emarginate, recurved through $\pm 80^\circ$, 10.2–10.8 mm long, 8–9 mm wide; *wings* 9–10 mm long, the oblong obtuse blade 3.4–4 mm wide, surpassing the keel by 1–1.6 mm; *keel* 8–9 mm long, the half-orbicular blade 4.8–5.2 mm long, 3.2–3.5 mm wide, its outer curve passing through $\pm 135^\circ$ to the sharply deltate apex; *style* compressed and ventrally barbellate through 1.5 mm below the minute capitate stigma; *pod* oblanceolate, tapering downward into the calyx, ± 2.5 –3 cm long, up to 6 mm wide, light green to dark green or greenish-black, glabrous; ovules 8–11.

Type.—NEVADA: in a shallow wash among low shrubs on rocky volcanic soils, 0.5 mile up road from Bullfrog-Gold Bar road toward a radar installation atop Sawtooth Mountain, at base of a volcanic point northeast of Bullfrog Mountain and southwest of Sawtooth Mountain, central Bullfrog Hills, elev. 1380 m (4600 ft), T. 12 S., R. 46 E., sec. 6, ± 6 airline miles west-northwest of Beatty, Nye County, 4 May, 1970, *Reveal* 2202. Holotypus, NY; isotypi, DS, LV, NTS (Nevada Test Site Herbarium, Mercury), RENO, RSA, US, and other major herbaria. *Paratypes*.—NEVADA: Yucca Mountain, 0.5 mile below divide between Forty-Mile Wash and Beatty Wash, elev. 1510 m (5200 ft), Nye County, 24 May, 1967, *Bostick* 4586 (DS, NTS). CALIFORNIA: Wood Canyon, Grapevine Mountains, Inyo County, 9 June, 1891, *Coville & Funston* 1760 (NY, US).

In the type area *Lathyrus hitchcockianus* occurs in tangled association with *Salvia dorrii* (Kell.) Abrams ssp. *gilmanii* (Epling) Abrams, *Purshia glandulosa* Curran, *Ephedra viridis* Cov., and *Lycium pallidum* Miers var. *oligospermum* C. L. Hitchc. The plants occupy protected positions, often under shrubs, through which their long greenish stems clamber by means of curled grasping tendrils. The woody root system penetrates the cracks of volcanic rocks, and the plants are difficult to collect entire. On Yucca Mountain, as very likely in the Grapevine Mountains, the plants are found in the pinyon-juniper association, but in the Bullfrog Hills in a zone below it.

The type collection was obtained by the junior author during work performed under Contract No. AT (0.4-1) Gen-12 between the University of California and the Division of Biology and Medicine, United States Atomic Energy Commission, while he was stationed at the Nevada Test Site. His work is also supported by N. S. F. grant GB-22645 for studies on the genus *Eriogonum* and the Intermountain Flora.

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