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## A New Astragalus from NYE County, Nevada

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A NEW *ASTRAGALUS* FROM NYE COUNTY, NEVADAR. C. BARNEBY<sup>1</sup>*Astragalus* (sect. *Inflati* subsect. *Aridi*) *beatleyae* Barneby, sp. nov.

*A. Gilmani* Tidest. ut videtur proxime affinis sed pube omnium partium arcte appressa, foliolis minus numerosis (plerumque 2-4 nec 4-6-jugis), carinae apice acute triangulari (nec deltoideo obtuso), necnon leguminis parvuli 7-14 (nec 13-26) mm longi 4.5-7.5 (nec 8-15) mm diam sutura ventrali intus haud producta distinguenda. Ab *A. geyeri* Gray habitu haud absimili foliolis latioribus, petalis violaceis, carina acuta et praesertim legumine vix obliquo, ab *A. sabulonum* Gray leguminis valvulis subdiaphanis parce strigulosis (nec hirtellis) ovulisque paucis (8) ulterius distat.

Dwarf or diminutive, loosely caespitose perennial herbs of rapid growth and short duration, sometimes flowering the first season, strigulose throughout or nearly so with straight, appressed, rather coarse, dorsally flattened hairs 0.2-0.4 mm long, the stems thinly so, greenish, the foliage more densely so, cinereous but not silky, the leaflets pubescent both sides but often more closely so beneath, sometimes medially glabrescent above; *stems* several, prostrate and incurved-ascending from the superficial crown of a taproot (1-)2-4 mm diam, 1.5-13 cm long, from the base repeatedly and closely branching, the internodes all short (up to 1.5 cm long but mostly less), floriferous upward from near or below the middle, together forming circular leafy mats mostly 5-20 cm diam; *stipules* submembranous becoming pallid or brownish, ultimately fragile, deltate to broadly triangular,  $\pm$  semiamplexicaul, 1-2.5(-3) mm long; *leaves* 1.5-3.5 cm long, with very slender, proportionately elongate petiole and (3-)5-9 obovate-cuneate to broadly oblanceolate, emarginate, loosely folded leaflets 1.5-7 mm long spaced along a rachis not over 9 mm long; *peduncles* 2-15 mm long, much shorter than the leaf, incurved-ascending; *racemes* loosely but shortly 2-7-flowered, the flowers in age nodding and variably spreading, the axis little elongating, in fruit not over 1 cm long; *bracts* membranous, pallid, deltate, 0.4-1 mm long; *pedicels* very slender, at anthesis  $\pm$  1 mm long, in fruit not thickened, flexuous, 1.5-2 mm long, disjointing in age; *calyx* 3.1-4.6 mm long, strigulose with short, appressed, white hairs, the subsymmetric disc 0.5-0.8 mm, the campanulate tube 2.1-2.8 mm long, 1.7-2 mm diam, the subulate teeth subequal, up to 1-1.8 mm long, the whole becoming papery, ruptured, persistent; *petals* blue-violet, the banner striate in the pale eye; *banner* abruptly recurved through 60-80°, broadly obovate-cuneate, notched, 6-6.8 mm long,

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4.4–5 mm wide; *wings* nearly as long, the claw 2–2.5 mm, the oblancoolate, slightly incurved blades 4.2–4.6 mm long, 1.6–2 mm wide, both slightly and subequally incurved; *keel* 5–5.7 mm long, the claws 2–2.5 mm, the obliquely triangular blades 3.2–3.7 mm long, 1.7–1.9 mm wide, abruptly incurved through  $\pm 105^\circ$  to the sharply triangular, often slightly porrect apex; *anthers* 0.35–0.4 mm long; *pod* pendulous or (when humistrate) ascending, sessile on and deciduous from the low-conic receptacle, obliquely ovoid, bladdery-inflated, 7–14 mm long, 4.5–7.5 mm diam, rounded at base, contracted distally into a deltate or scarcely differentiated, erect or slightly incurved beak up to 3 mm long, the sutures both filiform, the ventral one less convex than the dorsal, the valves thinly papery, pale green often minutely purple-speckled where exposed to sun (but not mottled), becoming stramineous, subdiaphanous, thin and minutely strigulose with appressed hairs, not inflexed, the funicular flange obsolete; *ovules* 8; *seeds* green turning fulvous, dull, pitted,  $\pm 2$  mm long.

NEVADA. Nye County: common on low flat volcanic outcrop, 0.2 mi E of U20L turnoff along Pahute Mesa Rd, NW Pahute Mesa, South Gold Flat drainage basin, 6200 ft ( $\pm 2070$  m), May 30, 1968, *J. L. Reveal & J. C. Beatley 1071*. Holotype, NY; Isotypes, BRY, DS, MERCURY, RENO, RSA, US, UTC. — Pahute Mesa Rd  $\pm 1$  mi SE of Rd 19-03 and 0.2 mi W of Rd 19-02, June 11, 1968, *J. L. Reveal 1240*. Paratypes, MERCURY, NY. — Pahute Mesa on Plateau Rd 2.5 mi N of Pahute Mesa Rd, July 31, 1968, deflor., *Reveal 1730* (MERCURY, NY).

In the context of sect. *Inflati*, a group of closely interrelated species often difficult to classify, *A. beatleyae* stands out as strongly characterized. It has the short-lived perennial root, few leaflets, few-flowered raceme, and few-ovulate pod of subsect. *Aridi* Jones (cf. Barneby in Mem. N. Y. Bot. Gard. 13: 826, 863, sequ. 1964) and in general appearance recalls *A. gilmani* Tidest., *A. sabulorum* Gray, and some forms of *A. geyeri* Gray, species all known to occur within or close to the Nye County border. Probably its closest relative is *A. gilmani*, known only from the Panamint Mountains, the first high range encountered due southward from Pahute Mesa and distant about 100 km across the California line. This differs in its coarser, less closely branching stems, in its loose, subvillosulous rather than appressed pubescence, in more numerous (4–6 not 2–4) pairs of leaflets, a blunt keel-tip, and a longer pod with a broad funicular flange (1–2 mm wide). In the same latitudes the polymorphic *A. geyeri* is a fugitive annual found mostly on dunes at lower elevations than either *A. beatleyae* or *A. gilmani*; its flower is smaller, whitish, with an obtuse keel, and its pod is so strongly incurved that the ventral suture becomes concave as viewed in profile. The pod of *A. sabulorum* is similarly incurved and furthermore of thicker texture and clothed with spreading hairs; at anthesis it differs from *A. beatleyae* in its hirsutulous vesture, slightly more numerous leaflets, and obtuse keel-tip. An acutely triangular keel-tip is found in *A. serpens* Jones, a species highly localized in mountainous central Utah which at anthesis resembles *A. beatleyae* in several other features also. This is however easily distinguished by its larger, brightly mottled pod elevated on a short gynophore and provided internally with a wide funicular flange. In summary *A. beatleyae* may be

recognized by the combination of short, repeatedly and closely branching stems, appressed vesture, few (2-4) pairs of rather broad notched leaflets crowded toward the end of a subfiliform leaf-stalk, and a small, subdiaphanous, bladderly pod only a trifle oblique and not mottled (though sometimes purple-speckled) enclosing only four pairs of ovules or seeds.

It is a pleasure to associate this delightful little plant with the name of Janice C. Beatley, whose study and exploration of the Atomic Energy Commission's Nevada Test Site has greatly advanced botanical knowledge of a remote and fascinating desert.