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NEW SPECIES OF ASTRAGALUS (LEGUMINOSAE) FROM MESA COUNTY, COLORADO

Stanley L. Welsh[1]

ABSTRACT.— Named and described is *Astragalus debequaeus* Welsh from Mesa County, Colorado.

Botanical investigations in central western Colorado during May 1984 yielded several unique taxa, especially endemics from that portion of the Colorado Plateau. The endemic plant taxa are associated with the peculiar habitats available on the raw geological substrates in the region. The Mancos Shale Formation and other fine-textured strata support a phalanx of specially adapted taxa. Thus, it is to be expected that other formations with peculiar physical and chemical properties should support additional rare plants that have been overlooked.

Growing on a varicolored, fine-textured, seleniferous and apparently saline portion (Atwell Gulch Member) of the Wasatch Formation in the De Beque vicinity is an *Astragalus* that is beyond the descriptions of known species in that region (Fig. 1). The plants have white flowers, grow in small to large clumps, and have thinly cartillaginous, inflated pods. Clearly these plants are allied to those taxa in *Astragalus* section Preussiani. The plants key to the couplet dealing with *A. eastwoodae* and *A. preussii* in that section (Barneby 1964). The pods are similar in texture to those of *A. eastwoodae,* but are erect-ascending initially as in *preussii,* although they are ultimately spreading or even descending in pressed material. The white flowers are shared by neither. The pods are proportionately narrower than in those of the allied taxa. The surface of the pods is minutely scabrid-pubescent, becoming almost or quite glabrous in age. This feature occurs sometimes in the allied taxa. Flower number is mostly 7–9 (11) per raceme in the material from De Beque, not 3–7 as in *A. eastwoodae.* In *A. preussii* the flower number varies from few to many. The calyx is conspicuously shorter in the De Beque material than in *A. eastwoodii* (6.3–8 not 10–12.2 mm long).

The De Beque milkvetch lacks the strong scent of selenium characteristic for many species of the section. However, the plant might still be a selenophyte. It grows with the strongly odoriferous selenium indicator, *A. flavus* Nutt., a common inhabitant of the Wasatch Formation in the vicinity.

***Astragalus debequaeus* Welsh** sp. nov. Affinis *Astragalo* sectio Preussiano praesertim *A. eastwoodae* in leguminibus et habitu generali sed in floribus plus numerosis et albis calycibus brevioribus legumine ambito et dispositio et caulibus plus numerosis differt.

Plants perennial from a branching caudex, clump-forming, mainly 2–10 dm across, arising from a woody taproot; stems 14–30 cm long, decumbent and curved-ascending; stipules 3–6 mm long, ovate to triangular, free; leaves 2–10 cm long, the leaflets 13–21, elliptic to oblanceolate, obtuse to rounded, glabrous, flat or somewhat folded, the terminal one not confluent with the rachis; peduncles 4.5–8.8 cm long, ascending; racemes 3–5.5 cm long, little elongating in fruit; flowers spreading to ascending in anthesis, 17–21 mm long; bracts 2–2.5 mm long, ovate-acuminate; pedicels 1–3 mm long; bracteoles 1 or 2, reduced or lacking; calyx 2.3–8 mm long, the tube 5–6 mm long, short-cylindric, stramineus to greenish, sparsely black strigose, the teeth 1.3–2 mm long; flowers 17–21 mm long, white, spreading to ascending at anthesis, the banner not strongly arched, but folded along the margins below the apex of the blade; pods ascending, stipitate, the stipe 2–2.5 mm long, the inflated body oblong- to

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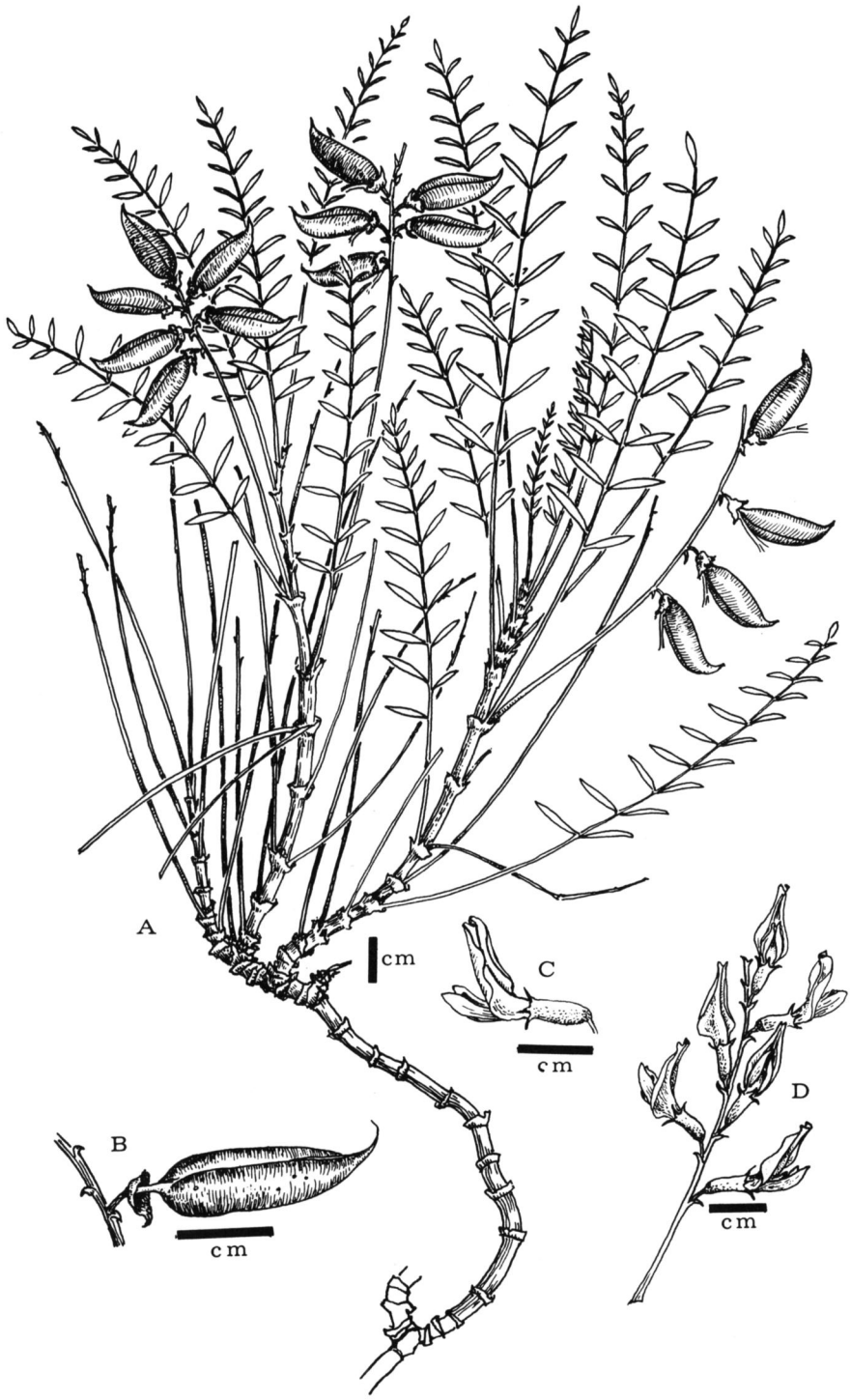

Fig. 1. *Astragalus debequaeus* Welsh: A, Habit of fruiting plant. B, Detail of fruit. C, Flower detail. D, Inflorescence.

lance-ellipsoid, 15–23 mm long, 6–11 mm thick, the valves thinly leathery and straw colored, unilocular, scabrid-pubescent, becoming glabrous; ovules 18–24.

TYPE.— USA Colorado. Mesa Co.: Wasatch Formation, T9S, R97W, S26 (SE/SE), ca 12 km S of De Beque, pinyon-juniper and mixed desert shrub, at 1647 m elevation, 16 May 1984, S. Welsh, B. Welsh, & R. Kass 22792 (Holotype: BRY; Isotypes: POM, CAS, UT, UTC, NY, US, MO, COLO, RM, ISC, CS).

ADDITIONAL SPECIMENS.— Colorado. Mesa Co., same provenience and date, S. Welsh, B. Welsh, & R. Kass 22793 and 22802 (BRY). Mesa County., T9S, R97W, SW 1/2 of S23, 5.7 mi S of I-70, 3.2 mi S of pavement end on De Beque Cutoff Road, Atwell Gulch Member of Wasatch Formation, 12 June 1984, J. Anderson 84-15 (BRY).

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