

## TWO NEW SPECIES OF TRIFOLIUM (LEGUMINOSAE) FROM CALIFORNIA AND NEVADA

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In the course of present taxonomic studies of *Trifolium* L. section *Lupinaster* (Adans.) Ser., two new species were found that I am describing in this paper. I take pleasure in dedicating these two new species to the collectors who have kindly supplemented their collection data with additional information through correspondence.

### ***Trifolium dedeckeræ* Gillett, sp. nov.**

*Trifolium* perenne caespitosum, caulibus brevibus, stipulis ovatis persistentibus, foliolis lanceolatis-linearibus serratis, capitulis semiglobosis, pedunculis longis, pedicellis deflexis, lobis calycis 4–6 mm longis, subulatis, vexillo late oblongo, purpureo, ovario glabro. Affinis *T. producto* Greene sed differt haec species a foliolis lanceolatis-linearibus, serratis, calycis lobis tenuis et vexillo lato.

Type in the herbarium of Rancho Santa Ana Botanic Garden (RSA 202326) collected in the Sierra Nevada at 7500 ft. along Horseshoe Meadows Road on a ridge south of Carroll Creek, Inyo County, California. Growing with *Erysimum capitatum* (Dougl.) Greene and scattered pinyon, on steep exposed slope of decomposed granite, May 30, 1968, *DeDecker* 1899.

Glabrous caespitose perennial with few to numerous short stems forming a crown from a thickened woody taproot. Stems clothed in persistent whitened stipules. Leaves with three leaflets, petioles 0.5–1.5 dm long often overtopping the heads, leaflets sessile, 2–4 cm long, 0.1–0.6 cm wide, lanceolate to linear, margins remotely serrate, abaxial face with prominent veins terminating in the serrations, leaflets of extreme basal leaves occasionally ovate-elliptic and smaller. Stipules pale green, ovate, persistent and later chartaceous. Inflorescence initially somewhat elongate, pedicels soon reflexed, the head then broader than long, hemispherical, of 10–18 flowers in 2–4 whorls, the rachis extending beyond the head, the upper peduncle slightly curved below the rachis, the head then slightly tilted. Flowers curved saccate at the base, tubular, pink to purple, about 1.5 cm long. Calyx glabrous, 10-veined, tube 2.5 mm long, the lobes subequal, 4–6 mm long, triangular subulate, the sinuses rounded. Standard 1.4 cm long, 0.6 cm wide when flattened, the terminal portion 0.7 cm long flared upwards. Wing petals about 1 mm longer than those of the keel, blades 6.5 mm long. Staminal filaments fused about  $\frac{1}{3}$  their

length to the claws of the lateral petals, anthers 0.5 mm long, pointed. Ovary glabrous, slender, 6.0 mm long, 2-ovuled, style slender. Legume not seen. Figure 1.



FIG. 1. Type specimen of *Trifolium dedeckerae* Gillett.

Other specimens seen: Wyman Cañon, White Mountains, Inyo N.F., June 13, 1919, *Tidestrom 9901* (NY, US); White Mountains, Inyo County, California, in rock crevices, uncommon; flowers pink. About 3 miles below Roberts Ranch, Wyman Creek, altitude ca 7000 to 7500 feet, Inyo County, California, 20 May 1931, *Duran 3026* (NY, UC, UTC).

*Trifolium dedeckerae* is allied to *T. productum* Greene but differs by the strikingly lanceolate-linear leaflets, the larger calyx with slender lobes and by the broad standard. Geographically, too, the known range is far to the south of that of *T. productum* which is known only as far south as Sonora Pass in the Sierra Nevada. This species is associated with *Pinus monophylla* Torr. & Frem. in the type locality. Climatic and ecological conditions in the mountains west of Owens Lake in Inyo County would be similar to those found in the White Mountains.

***Trifolium rollinsii* Gillett, sp. nov.**

*Trifolium* perenne caespitosum, caulibus brevibus, stipulis ovatis persistentibus chartaceis, foliolis ovatis-rhombeis, dentatis, capitulis semiglobosis, pedunculis longis, pedicellis deflexis, lobis calycis 1 mm longis subulatis purpureis, vexillo angustato, purpureo, ovario glabro. Affinis *T. productum* Greene sed differt haec species a foliis basalibus et foliolis ovatis-rhombiformibus.

Type in the Dudley Herbarium (DS 275618), collected in Nevada, Nye County, flowers reflexed, pink, rocky eastern slope of Toiyabe Dome, Toiyabe Mountains, altitude 10,500 ft., July 13, 1938, *Rollins & Chambers 2526*.

Glabrous caespitose perennial with a somewhat scaly vertical, horizontal, or ascending rhizome (no true root available) bearing persistent stipules. Leaves with three leaflets, nearly all basal, petioles to 6 cm long, petiolules 0.5 mm long, leaflets obovate to rhombic, cuneate, the apex rounded to acute mucronate, dentate, dark green above; pale below with prominent veins terminating in the teeth. Stipules blunt ovate, chartaceous with reticulate veins. Inflorescence hemispherical, the flowers soon reflexed, of up to 15 flowers in 3–4 whorls, the upper flowers reduced or aborted, the rachis extending beyond the head, the upper peduncle slightly curved below the rachis, the head then turned to one side. Flowers curved saccate at the base, tubular, the standard only slightly curved upward near the tip, pink to purple, about 1.3 cm long, calyx glabrous, purpled, 10-veined, tube 3.5 mm long, lobes subulate, 2 mm long, sinuses rounded. Standard 1.4 cm long, 0.6 cm wide, oblong-ovate, the terminal portion flared upwards. Wing petals about 1 mm longer than those of the keel, blades 6.5 mm long. Ovary glabrous, slender, about 6 mm long, style about 4 mm long, 2-ovuled. Legume not seen. Figure 2.

Other specimen seen: Nevada, Nye County, Toiyabe Forest, Head of Crane Creek, altitude 10,000 ft. steep west talus slope, rocky clay soil, fairly common, *Crane*, July 30, 1941 (NY).

The discovery of this species is of interest because in the same area



FIG. 2. Type specimen of *Trifolium rollinsii* Gillett.

Rollins also collected a new species of *Draba*, later named *D. arida* Hitchcock (Hitchcock, 1941). Not far from this locality but further down the slope, he also found a new *Arabis* that subsequently he named *A. fernaldiana* Rollins (Rollins, 1941). Apparently the Toiyabe Range is in

need of more intensive scrutiny and further new items of interest might yet be found. This mountain range is physically somewhat isolated and the mesic upper slopes have become ecologically separated by arid habitats from the related flora of the Sierra Nevada.

*Trifolium rollinsii* is morphologically closely related to *T. productum* and is spatially close to the margin of its range. But the basal position of the leaves and distinctive shape of the leaflets of *T. rollinsii* are attributes which resemble those of *T. macilentum* Greene of southwestern Utah. On the other hand, the calyx of *T. rollinsii* is similar to that of *T. productum* but that of *T. macilentum* is like that of *T. kingii* Watson of central and eastern Utah.

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#### LITERATURE CITED

- HITCHCOCK, C. L. 1941. A revision of the *Drabas* of western North America. Univ. Wash. Pub. Biol. 11:52.
- ROLLINS, R. C. 1941. Monographic study of *Arabis* in western North America. *Rhodora* 43:430 (Contrib. Gray Herb. 138).

#### NOTES AND NEWS

A NEW NAME IN LICEA (MYXOMYCETES).—*Licea deplanata* nom. nov.  $\equiv$  *Licea applanata* Kowalski, Mycologia 62:1058, 1970. Not *Licea applanata* Berk., Lond. J. Bot. 4:67, 1945. = *Dictydiaethalium applanatum* (Berk.) Rost., in Fuckel, Jahrb. Nassauischen Vereins Naturk. 27-28:69, 1873. = *Dictydiaethalium plumbeum* (Schum) Rost., in A. Lister, Mycetezca p. 157, 1894. Because of its flattened sporocarp, I applied the specific epithet *applanata* to this species, but because the combination is a later homonym of *L. applanata* Berk., it is illegitimate. The epithet *deplanata* is equally descriptive and has not, so far as I can discover, been used in *Licea*.—DONALD T. KOWALSKI, Department of Biological Sciences, Chico State College, Chico, Ca. 95926.



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