

A New Annual Sunflower, *Helianthus deserticolus*, from the Southwestern United States

CHARLES B. HEISER, JR.¹, Indiana University

Helianthus deserticolus, Heiser *sp. nov.*

Herba annua, 1.0 - 4.0 dm. alta, caule virido vel rubro, ramoso, dense hispido; laminis lanceolato-ovatis, hispido-hirsutis, integris, 2.5 - 5.0 cm. longis, 1.0 - 2.0 cm. latis; disco 1.3 - 2.5 cm. diam.; phyllariis lineari-lanceolatis, brevo-acuminatis, hirsutis, discum superantibus, plerumque 1.4 cm. longis, .2 cm. latis; radiis ca. 10, 1.0 - 2.0 cm. longis; paleis receptaculi ad apicem hirsutis vel raro glabris; acheniis 4 - 5 mm. longis, pilosis, pilis 0.5 - 1.0 mm. longis; pappi paleis 2, ca. 2.5 mm. longis, et squamellis ca. 10, 0.5 - 1.0 mm. longis.

Southwestern Utah, northwestern Arizona and Nevada. Chromosome number: $n = 17$ (*Heiser 4518*) (*Stoutamire 2574*). May to October, 2100 to 4500 ft.

Specimens seen:

Utah: Washington Co., 3.3 mi. w. of Hurricane, June 29, 1957, *Warren P. Stoutamire 2574* (IND. TYPE); LaVerkin, *M. E. Jones 5183m* (US); Virgin City, *Jones 5215* (US).

Arizona: Mohave Co., Beaver Dam, *R. H. Peebles 13083* (US).

Nevada: Clark Co., 12 mi. e. of Glendale, *Heiser, 4518* (IND); St. Thomas, *I. Tidestrom 9155* (US); *E. Palmer 243* (GH, NY); 14 mi. n. of Overton, *G. W. Gullion 557* (IND); 1 mi. w. of Logandale, *P. Train 1869* (MO); Churchill Co., 2 mi. e. of Frenchman's Station, *L. E. Mills and K. H. Beach C-10* (IND.); County not certain, Carson Desert, *S. Watson 600* (US).

The new species (fig. 1) is apparently most closely related to *H. anomalus* (fig. 2). Although it is quite different from the other annual species, it resembles *H. petiolaris* ssp. *fallax* more closely than the others. From *H. anomalus* it is distinguished by its smaller size which it maintains under greenhouse conditions, the green or red hispid stem in contrast to the whitish less pubescent stem of *H. anomalus*, the more numerous heads, the much shorter and more densely pubescent phyllaries, the smaller achenes which bear shorter hairs, and the shorter squamellae which are ovate instead of linear. Although only a small number of collections are known from both species, it appears that the two species are allopatric and that *H. deserticolus*, in general, grows at lower altitudes.

Since *H. anomalus* is a little known species it seems worthy to cite all the collections of it which have been seen by the author. The specimens were collected from May to October at altitudes of 4500 to 5000 ft.

Utah: Emery Co., San Raphael, *B. F. Harrison et al. 7434* (UTAH); Juab Co., 6 mi. n. of Lynndyl, *Harrison 11349* (US); Champlin, *Harrison 6548* (US); near Champlin, *Harrison 351 H* (MO); Wayne Co., s. of

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H. DESERTICOLUS

Figure 1

Fig. 1. *Helianthus deserticolus*, x $\frac{1}{2}$. Achene with pappus, x $2\frac{1}{2}$. Phyllary, x 1.



H. ANOMALUS

Figure 2

Fig. 2. *Helianthus anomalus*, x $\frac{1}{2}$. Achene with pappus, x $2\frac{1}{2}$. Phyllary, x 1.
Drawing by Ruth Smith.

Hanksville, *W. D. Stanton 328* (TYPE, US), 17 mi. n.e. of Hanksville, *W. P. Stoutamire 2594* (US).

Arizona: Navajo Co., Hopi Indian Reservation, *D. K. Whiting 864/2730* (US); Old Oraibi *Heiser, 4163* (IND). County unknown; "Plants of the Hopis," *H. R. Voth 7* (CHI).

Of these plants all are fairly typical except *Harrison 351 H*, which shows some approach to *H. deserticolus*. The *Voth* specimen is unique in that some of the disks are 2.7 in diameter. The chromosome number of *H. anomalus* is also $n = 17$ (based on *Heiser 4163*).

The seeds of *H. deserticolus*, like those of *H. anomalus*, are extremely difficult to germinate and only five plants have been obtained from a total of over 100 achenes planted from three different sources. Crosses were attempted with *H. annuus*, *H. anomalus*, and *H. petiolaris* and a few seeds were obtained but these failed to germinate. The reciprocal combinations failed except for *H. petiolaris* x *H. deserticolus* which gave rise to one self. A cross between two strains of *H. deserticolus* (G 13—*Stoutamire 2594* x G 14—*Heiser 4518*) gave good seed set. One seed germinated which produced a plant showing 80% pollen fertility.