

**INFRASPECIFIC CATEGORIES IN *THELESPERMA*
FILIFOLIUM (ASTERACEAE: COREOPSIDEAE)**

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ABSTRACT

Based largely upon the doctoral dissertation of Melchert (1963), *Thelesperma filifolium* is accepted as having two widely distributed infraspecific categories: var. *filifolium* in the eastern part of its range; var. *intermedium* in the western part. Populations of the two taxa intergrade near regions of contact, making varietal identifications in such areas difficult. Distinctions between the two taxa are called to the fore, and an account of their chromosomal variation is given. Maps showing the distribution of the complex are provided. *Phytologia* 92(1): 27-30 (April, 2010).

KEY WORDS: Asteraceae, Coreopsideae, *Thelesperma filifolium*, *T. flavodiscum*, Texas, chromosomes.

Strother (2006) treated *Thelesperma* for the Flora of North America. In this he called attention to the fact that some workers recognized a var. *intermedium* (Rydb.) Shinn. within the *T. filifolium* (Hook.) A. Gray complex, Rydberg having described this initially as a species; Shinn. subsequently reducing this to varietal rank. Melchert (1963), in his unpublished doctoral thesis, accepted the treatment of Shinn., noting that the two taxa are quite distinct: populations with yellow disc florets and bright yellow rays having relatively broader leaf segments (var. *intermedium*) occurring in the more western portions of the distribution of the species; the typical var. *filifolium* with non-yellow disc florets occurring in the more eastern portion of its range (Fig. 1). Melchert correctly noted that in those areas where the two taxa overlap, populational intergradation occurs. Strother (2006), unfortunately, did not cite Melchert's work, although he called attention

to the varietal differences noted by Melchert, as well as the distribution of each.

Melchert (1963) understood the *T. filifolium* complex quite well. Indeed, he collected numerous populations of the species from throughout most of its Texas distribution (fig. 2), including chromosome counts from over 50 populations. Chromosome numbers of var. *filifolium* (13 populations), were found to be $2n = 16$, only one population counted as $2n = 18$. Chromosome counts for the var. *intermedium* were more varied: 19 with $2n = 16$; 17 with $2n = 18$; none with $2n = 20$; two with $2n = 22$; and one population having individuals with counts of both $2n = 16$ and 18. Strother (2006) noted the chromosome counts of *T. filifolium* as " $2n = 16, 18$," these presumably from counts taken from the literature (i.e., without consultation of Melchert's thesis).

Thelesperma filifolium clearly contains two well-marked, regional varieties, much as remarked upon by Melchert. Populations of the two varieties intergrade in regions of near contact, this readily seen in traversing the region of overlap along IH 10 between Sonora and Ozona, Texas. In the Sonora area, most of the populations contain *filifolium* type plants, with a few individuals being *intermedium* types; in the Ozona area the populations become otherwise, being predominantly composed of var. *intermedium* type plants. Westward and eastwards from the region of contact, the populations shift by degrees towards the more uniform populations to be expected. Occasionally, a plant resembling one variety or the other may crop up within regions of otherwise morphological homogeneity. But such are the vagaries of evolution and gene flow!

Clearly, the two taxa are worthy of more extended study. It is possible that some genetic contamination between *T. filifolium* and *T. flavodiscum* (Shinners) B.L. Turner has occurred in the recent past in the more eastern portions of the distribution of var. *filifolium*, at least to judge from the habit and vegetative features of occasional plants referred to var. *filifolium* by both Melchert and myself. But, as already noted (Turner 2007), the distinctions between *T. flavodiscum* and *T. filifolium* are not subtle, as maintained by Strother (2006), and are not "better treated as one species," as he suggested might be the case.

ACKNOWLEDGEMENTS

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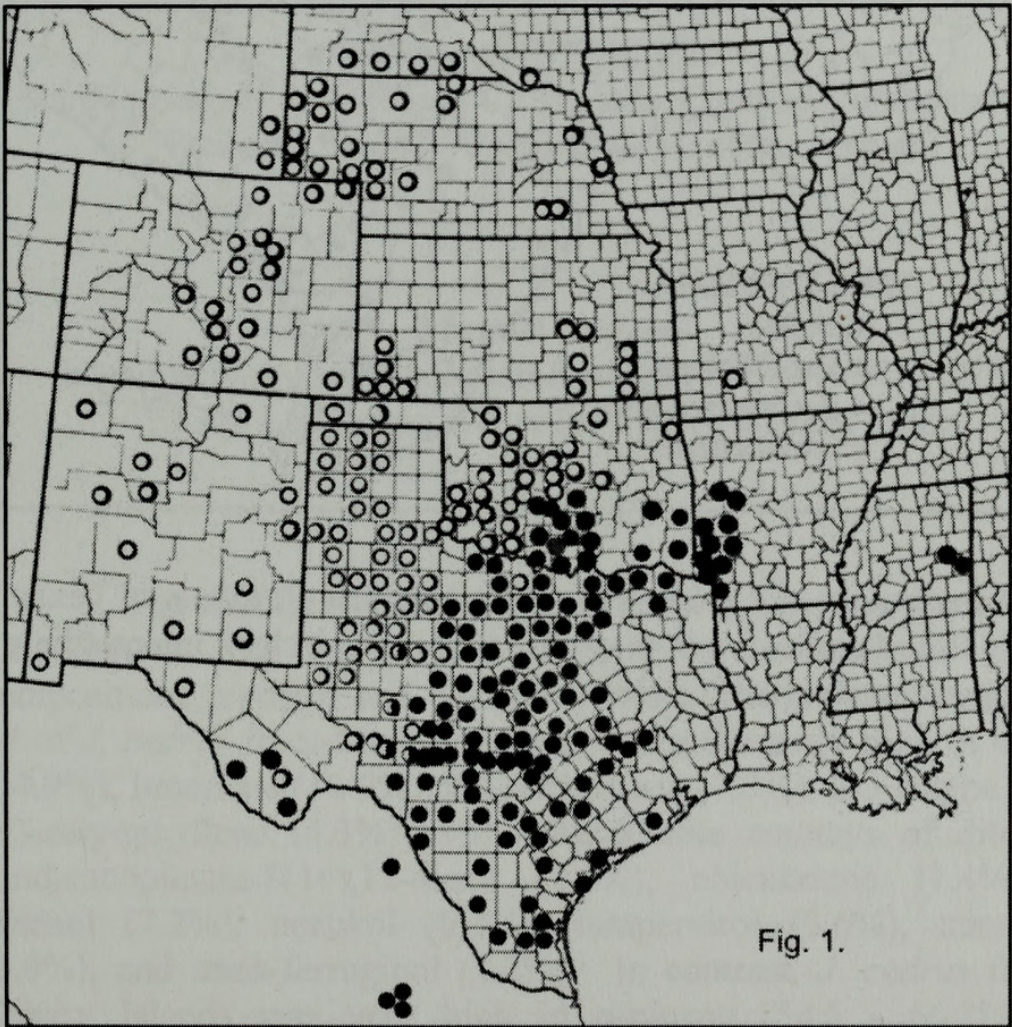


Fig. 1.

Fig. 1. Distribution of *Thelesperma filifolium*: var. *filifolium* (closed circles); var. *intermedium* (open circles); intermediate populations (half circles). Mexican populations are believed to have been recently introduced (Melchert, in prep.).

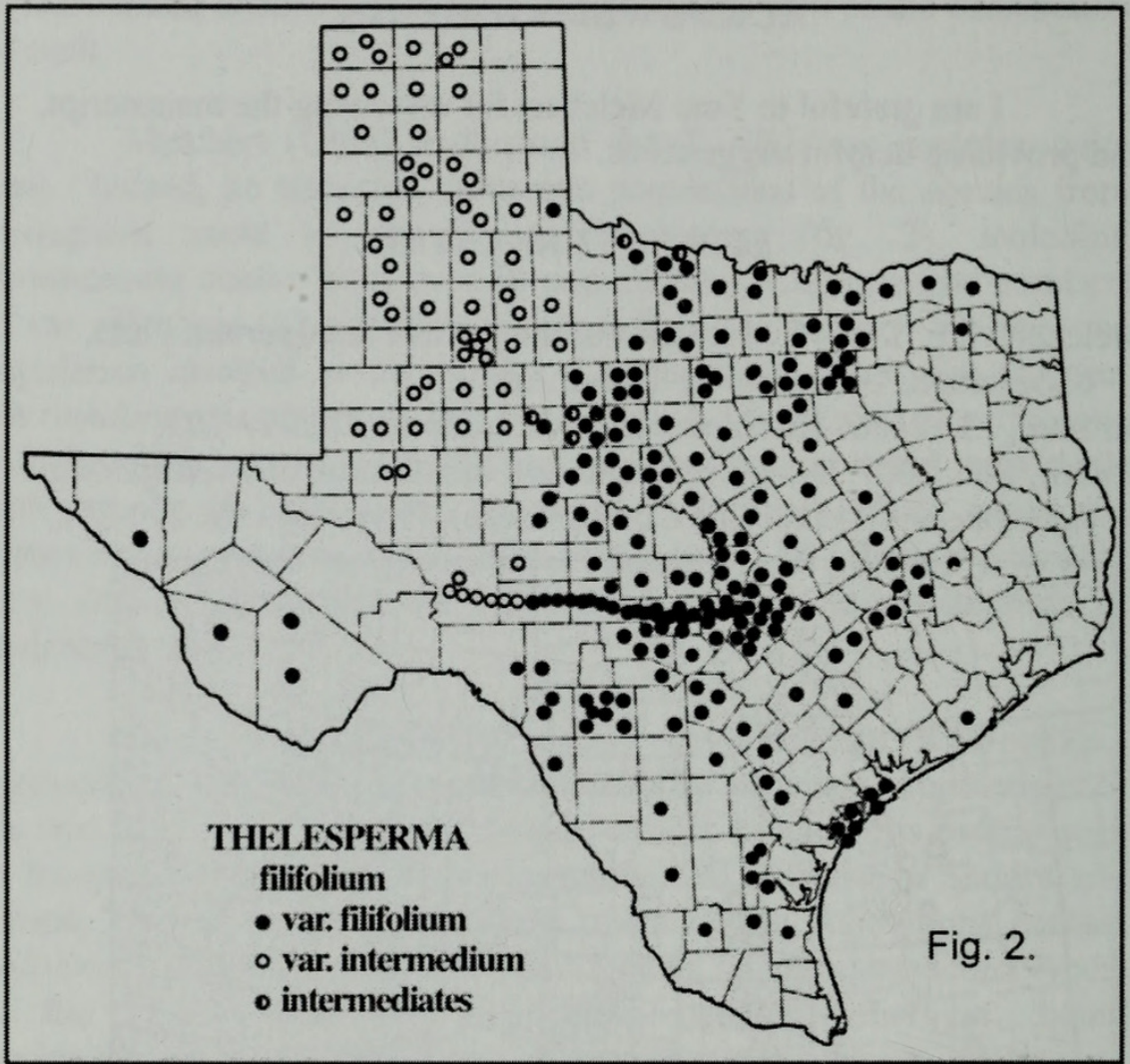


Fig. 2. Distribution of *Thelesperma filifolium*: var. *filifolium* in Texas (closed circles); var. *intermedium* (open circles); intermediate populations (half circles).



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