

Heed, W.B. University of Arizona, Tucson, Arizona. Distribution extensions and gene arrangements for *D. parthenogenetica* and *D. montana*.

Three specimens of *D. parthenogenetica* were collected July 27 and 28, 1971, by banana traps near highway 15, 4 miles south of the state line of Sonora - Sinaloa, Mexico, in tropical thorn forest along with 456 *D. arizonensis*, 34 *D. mojavensis*, 6 *D. simulans*, and 2 *D. aldrichi*.

The morning collection was better. At 7 A.M. the rel. humidity was 80% and the temp. was 90° F. This represents a northern range extension of almost 900 miles for *D. parthenogenetica* (from Atlixco, Puebla). Chromosome 2L, the only polymorphic arm, was fixed for inversion A' which is the more common sequence north of Panama. (Heed and Russell, 1971, Univ. Texas Publ. 7103).

One fertile *D. montana* female was collected at dusk (7:45 P.M.) under hot windy conditions July 10, 1971, by banana traps at the Radar Collecting Station (9000') on the north slope of the Santa Catalina Mts., Tucson, Arizona, in a Douglas Fir community among 2,429 specimens representing 7 other species and among 15,700 specimens for the 2 week period. This represents a western range extension of approximately 120 miles from Glenwood, N.M. The strain was homozygous and was checked for specific inversions by hybridizing with strain 1218.8d from Cottonwood Canyon, Utah, with which it was also homozygous. Therefore, the *montana* female was fixed for inversions 4g and 4h, the typical arrangements in Utah, Colorado, and New Mexico (Moorhead, 1954, Univ. Texas Publ. 5422). This record is probably the result of long distance dispersal from the north or west. Only 1 other *montana* has ever been captured in the Santa Catalina Mts. over a more than 10 year collecting period. (Thanks to M.R. Wheeler for providing the Utah strain.)

Heed, W.B. and S.R. Heed. University of Arizona, Tucson, Arizona. Ecology, weather, and dispersal of *Drosophila* on an island mountain.

The breeding sites of 75% of the 36 described species of *Drosophila* inhabiting southern Arizona and the Gulf Coast of Sonora, Mexico, are now known. Fermenting cactus accounts for 37%, rotting fungus for 26%, and slime flux from trees and fermenting bark for 22% of the 27

species. The remaining few were bred from flowers and fruits. The only substrates of any importance in the mountains are the fungi (*Hirtodrosophila*, *macroptera* gp., *rubrifrons* gp., *quinaria* gp.) and tree fluxes (*obscura* gp., *melanica* gp.). However, the second most abundant species in the Santa Catalina Mts., Tucson, is *D. hamatofila*, which breeds in *Opuntia* pads on the desert floor, where it is the most abundant form (Heed et al., 1962, DIS). The Basin and Range Province in S. Arizona permits the treatment of its mountains as islands for distribution studies since they are surrounded by deserts and grasslands.

It is proposed that the vast majority of *D. hamatofila* (and *D. longicornis*) in the Catalina Mts. are transients transported by air currents from the desert below at 2500 ft. elevation. Table 1 illustrates the sensitivity of these flies to daily weather conditions. Col-

1971	<i>pseudoobscura</i> & <i>lowei</i>	<i>hamatofila</i> & <i>longicornis</i>	total flies	location	weather
June 22	26%	73%	4365	Mt. Bigelow	clear, dry
June 24	9%	90%	2919	Radar Station	clear, strong wind from below
July 5	76%	22%	1783	" "	cloudy
July 8	84%	14%	1995	" "	light rain
July 10	28%	70%	2430	" "	clear, warm strong wind from below

lections were made by banana bait in 5 gallon containers in Douglas Fir communities at elevations of 8500 ft. (Mt. Bigelow) and 9000 ft. (Radar Station). All collections were in the late afternoon until dark. There is an age effect by the bait but it was strongly outweighed by weather. Intense observations were made of moving flies silhouetted against the sky over the traps from above on a hill slope with binoculars in the evening of July 10. Flies disturbed from the traps rose 30 to 40 ft. in the air before dispersing (actively or passively ?) in the wind. The "cross-traffic" between the tree tops was noticeable.

The importance of these observations lies in the fact that *D. hamatofila* and *D. longicornis*