DROSOPHILA OF THE MONTGOMERY ARBORETUM, ILLINOIS

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A study of wild *Drosophila* of the Montgomery Arboretum, DeKalb County, Illinois, was undertaken to determine the species present and their relative abundance.

Two collecting sites were established in the Arboretum, which is a "mixed deciduous mesophytic" forest. Along the northern margin of the Arboretum is a small stream that flows in an easterly direction. On the south side of this stream is a flood-plain approximately 12 feet wide. Collecting site No. 1 was located about 100 feet west from the eastern end of the Arboretum and about 8 feet from the stream. Within a 15-foot radius of this site the dominant type of vegetation is basswood (*Tilia americana*), hawthorn (*Crataegus* sp.), members of the mint family *Labiatae*, and various members of the grass family *Graminae*.

Collecting site No. 2 was located in the southwest corner of the Arboretum, approximately 150 feet from the bisection of Lincoln highway and Normal road. Here, the vegetation was fairly dense and afforded protection from wind and sun. The predominant form of vegetation within a 15-foot radius of the site appeared to be black cherry (*Prunus serotina*), buckthorn (*Rhamnus caroliniana*) and wild geranium (*Geranium maculatum*).

Methods

Mashed and fermenting bananas were used as bait, set out in five-gallon cans fitted with covers which were held slightly off the tops of the cans. This gave the flies free access to the food and protected the bait from inclement weather. Collections were made at both sites, approximately at sunset from May 17 through July 8, 1959. Identifications were made from Sturtevant's key (1942).

Results

A total of 2,065 flies was examined from site No. 1, of which 1,925 or 93% were members of the *D. affinis* species group. Next most frequent was *D. robusta* with 77, or 3.7%. The other species found were: *D. melanogaster*, 27 or about 1%; *D. melanderi*, 19; *D. putrida*, 10; *D. transversa*, 5; and *D. buskii*, 2%.

At site No. 2, a total of 2,028 flies was examined; 1,851 or 91% belonged to the *D. affinis* species group. The next most numerous was *D. robusta* with 82, or 4% of the total. Other species found were: *D. melanogaster*, 59, or about 3%; *D. transversa*, 21; *D. immigrans*, 5; *D. putrida*, 4; *D. melanderi*, 3; *D. tripunctata*, 2; and *D. buschii*, 1%.

Discussion

Although *Drosophila* is best known for its use in studies of problems of heredity, it has of recent years become important in investigations of organic evolution through genetic studies of wild populations (Spencer, 1950). However, as a

first step in studies of wild populations, it is necessary to determine species present and ways to collect them.

From June, 1938, through October, 1942, J. T. Patterson made extensive collections of *Drosophila,* primarily in southwestern United States. He made only scattered collections in the South and Midwest; the only state in the Midwest included in his collection records is Ohio. Patterson's list of species for Ohio contains 32 species found throughout that state. This includes six species Spencer found near Wooster, Ohio. Of the nine species identified in the Montgomery Arboretum, eight are found in Ohio.

Further details of site and methods and a more extended discussion are available in Knez (1959).

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