

TAXONOMIC AND DISTRIBUTIONAL NOTES ON SOME FUNGUS-FEEDING NORTH AMERICAN *DROSOPHILA* (DIPTERA, DROSOPHILIDAE)¹

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ABSTRACT: Comparison of type specimens and examination of variation in natural populations indicates *Drosophila ordinaria* Coquillett, *D. melanderi* Sturtevant, and *D. magnafumosa* Stalker and Spencer to be synonymous species designations. *Drosophila recens*, previously known only from northern states, is reported to be present in the Great Smoky Mts., Tennessee. The known distribution of *D. chagrinenensis* is also extended, with the report of a specimen collected in Ithaca, New York.

During recent studies of fungus-feeding Drosophilidae in eastern North America, it became apparent that three species names, *Drosophila ordinaria*, *D. melanderi* and *D. magnafumosa*, might be synonymous. Below are the formal synonymy, a discussion of the evidence which led to this taxonomic revision, and a more complete description of the species. Also given are notes extending the known distributions of *Drosophila recens*, and *D. chagrinenensis*. Extensive lists of the host fungi of the mycophagous drosophilid fauna of eastern North America will be published later in papers dealing with the ecology of these flies.

Drosophila ordinaria

Drosophila ordinaria Coquillett 1904, Proc. Ent. Soc. Wash. 6:190, female. Type locality: White Mountains, New Hampshire. Type in USNM.

Drosophila melanderi Sturtevant, 1916, Ann. Ent. Soc. Amer. 9:337, female type and paratype. Type locality: Tacoma, Washington State. Type in USNM. *Syn. nov.*

Drosophila magnafumosa Stalker and Spencer, 1939, Ann. Ent. Soc. Amer. 32:112, male. Type locality: Great Smoky Mountains National Park, Tennessee. Type in USNM. *Syn. nov.*

BASIS FOR THE SYNONYMY. The lack of characteristics for clearly distinguishing among flies of the *melanderi* group and the possible synonymy of the American species has been noted in the past by Marshall R. Wheeler (personal communication to Peter F. Brussard). The published differences are slight, and are fully encompassed by the range of variability within populations that I have sampled in Tompkins County, New York and the Great Smoky Mountains, Tennessee. A study was therefore undertaken to compare specimens of *ordinaria*, *melanderi*, and *magnafumosa* for all morphological characters commonly used in *Drosophila* taxonomy. The

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type specimen of *magna fumosa* was kindly loaned by Harrison Stalker; specimens of larval, pupal and adult *melanderi* from Trinidad, California were supplied by Herman Spieth; the type and other specimens of *melanderi* and the type of *ordinaria* were made available by Don Davis of the USNM. No consistent differences were noted among these flies or the collections I made in New York and Tennessee. Some eggs, larvae and pupae were obtained during attempts to establish stocks of New York and Tennessee flies. Comparison with the *melanderi* larvae and pupae from California revealed no differences in mouth hook structure, puparium color or size, or spiracle morphology. Egg filaments appeared identical in the Tennessee and New York populations.

Drosophila ordinaria was known previously only from female specimens, while *magna fumosa* was described from a male specimen. Perhaps this hindered earlier attempts to verify the synonymy. *Ordinaria*-like females and *magna fumosa*-like males have been reared in my lab from single wild-caught females. Breeding tests comparing *melanderi* with the other forms have not been possible due to a lack of success in maintaining, for more than one generation, cultures from flies collected in New York and Tennessee. Spieth (pers. comm. to Peter F. Brussard) was similarly unsuccessful in retaining a culture of *melanderi* from California.

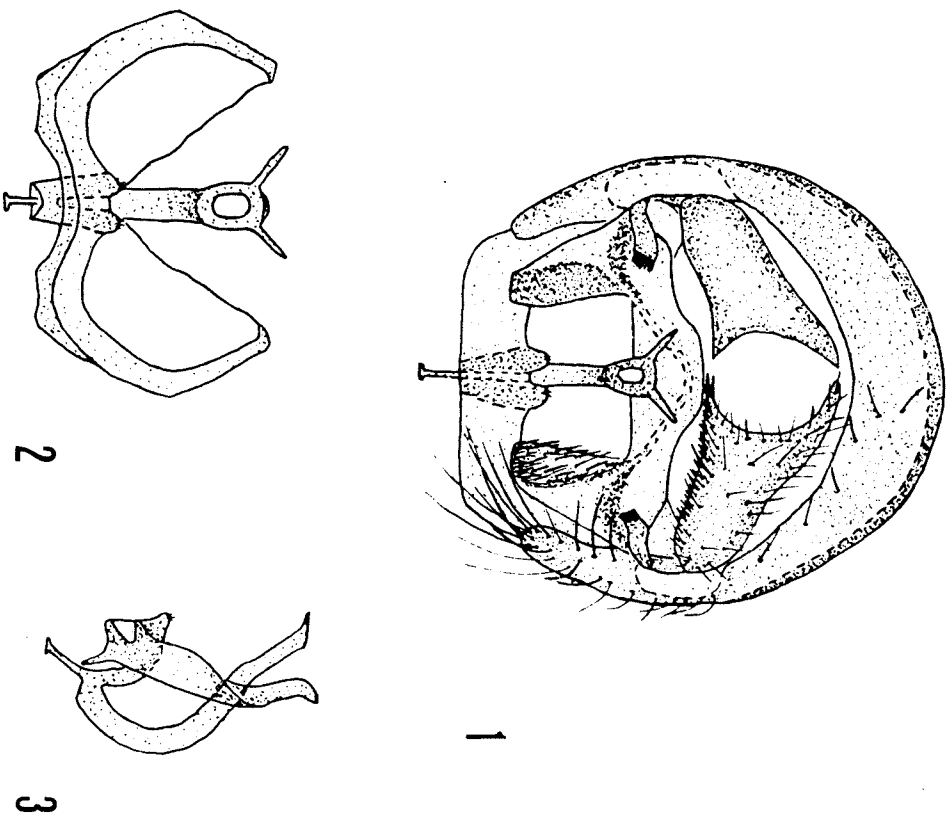
Preparations of the external male genitalia have been made from specimens collected in Tennessee, from specimens collected in New York, and from Spieth's specimens from California. The male genital region is found no differences in the genital morphology of flies from the different populations. Hsu (1949), however, illustrated differences in the male genitalia of *melanderi* and *magna fumosa*. *Melanderi* was shown as having two large teeth at the corner of the anal plate, while *magna fumosa* was stated as lacking these teeth. All specimens that I have examined, whether from Tennessee, New York or California, have the two larger bristles as shown in Hsu's figure of *melanderi* and in Fig. 1 of this paper. Hsu also stated that *melanderi* has 10 teeth on the secondary clasper (the stalked structure with a row of short, closely spaced teeth in Fig. 1), while *magna fumosa* has only seven. Each specimen I examined clearly has 8 teeth in the row.

Drosophila ordinaria

Female. Arista with about 5 branches above and one below, in addition to the terminal fork. Head and antennae brownish yellow. Front over one-third width of head. Only one prominent oral bristle (the vibrissa). Cheeks brownish yellow, their greatest width one-fourth the greatest diameter of the eyes. Eyes with sparse blond pile. Second orbital one-third size of the other two.

Acrostichal hairs in six rows. Anterior dorsocentrals close to posterior dorsocentrals. Mesonotum, scutellum, pleurae and legs brownish yellow. Mesonotum with a median darker stripe. Anterior scutellars parallel to divergent. Apical and preapical bristles on first and second tibia, preapical on third.

***Erratum:** ... more complex than that in many *Drosophila* and is shown in the figures. I ...



Figures 1-3. Male genitalia of *Drosophila ordinaria* Coquillett. Specimen from Ithaca, N. Y. 1. The entire copulatory apparatus in semiventral view. 2. The penis apparatus in ventral view. 3. The penis apparatus in lateral view.

