

TWO SPECIES OF DIPTERA OF THE GENUS DROSOPHILA.

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The minute flies of the genus *Drosophila* are especially abundant about decomposing vegetables, and fermented fruit, around cider refuse, wine vats, vinegar, etc.; attracted to these substances for food and as places of oviposition, since the larvae live in decaying organic matter. The two species under consideration are *Drosophila busckii* Coq. and *Drosophila funebris* Fab.

The species of this genus are of a dusty red, yellow or black, and somewhat plump appearance. The feathered or comb-like arista of the antennae, the distinct oral vibrissae, and the peculiar venation of the wings are especially characteristic. The arista is plumose or feathered on both sides mostly on the upper from the middle on. The wings are longer than the abdomen, the distance between the anterior and posterior cross-veins less than the third segment of the fourth longitudinal vein. The second basal cell is united with the discal cell and consequently seeming to be absent. The costa reaches to the fourth longitudinal vein.

***Drosophila busckii* Coq.** This species is recorded as reared from rotten potatoes and from the burrows of "Chion cinctus" one of the long-horned beetles whose larva tunnel in the solid wood of hickory trees. The writer succeeded in having this species oviposit in decayed fruit, but was unable to carry the life history any farther than the egg stage. Decaying vegetables seem to be the chief breeding places. The exact period of the different stages was not determined, but about two weeks are required for the development from the egg to the adult. The eggs are laid in the decaying matter and the entire larval period is passed within this. About the time the larva enters the pupal stage it leaves the decaying material and pupates near by within the old larval skin. The adult emerges in a few days.

Description of insect: Egg, Fig. 1c. The egg is elongated in form and white in color. Near the cephalic end are slender appendages varying in number from three to five. The egg with appendages is about five-tenths (.5) millimeters in length, and the whole surface is ornamented with a net-like pattern.

Larva, Fig. 1d. The larva is a slender white maggot and when full grown measures about four (4) millimeters in length. It is widest near the middle and tapering toward each end, more toward the cephalic end than the caudal. The main tracheal trunks are visible, the cephalic spiracle prominent, compound, consisting of several, usually eight divisions, each division opening separately, Fig. 1f. This compound spiracle may be exerted quite a distance or may be withdrawn into the prothoracic segment. Two caudal spiracles project prominently backward. Caudal segment

truncated bearing dorsad a pair of blunt tubercles and a longer pair situated laterad of the caudal spiracles. The dorsal surface of the abdomen bears six rows of tubercles, segmentally arranged, the two outer rows larger than the other four which are very small; laterad of each outer row is a row of small tubercles. The mouth is armed with two strong black curved parallel hooks which are used in rasping the food. The black oral hooks and the two pair of spiracles are visible to the naked eye but their structure can only be made out by the aid of the microscope.

Pupa. Fig. 1e. The pupa is shorter than the larva, about three and seven-tenths (3.7) millimeters in length but much thicker. The cephalic and caudal spiracles projecting, the former very conspicuously; the two larger rows of tubercles visible. There is a large concavity on the dorsal surface of the cephalic end.

Adult. Fig. 1. Head and thorax yellow, with black bristles and hairs; two rusty yellow frontal vittae; two pairs of outer vertical bristles; three pair of orbital bristles, the anterior pair directed forward the others backward; a few short bristly hairs at the base of each antennae. First two joints of antennae dark rusty yellow, the third dark brown. Fig. 1b. Black ocellar dot. Eyes pale red; mouth parts yellow. Dorsal surface of abdomen marked sometimes by five black vittae, usually four, of which the medium one is forked posteriorly; the pleuron marked by three black vittae. Abdomen black, a median yellow vittae, the first segment light rusty yellow, the others marked anteriorly by yellow cross bands; legs yellow; wings hyaline, the costa reaching to the fourth longitudinal vein.

***Drosophila funebris* Fab.** This species is common to Europe and North America and its habits resemble the species *Drosophila ampelophila*, described by Comstock. It is recorded as breeding in rotten cherries and in the waste of pressed olives.

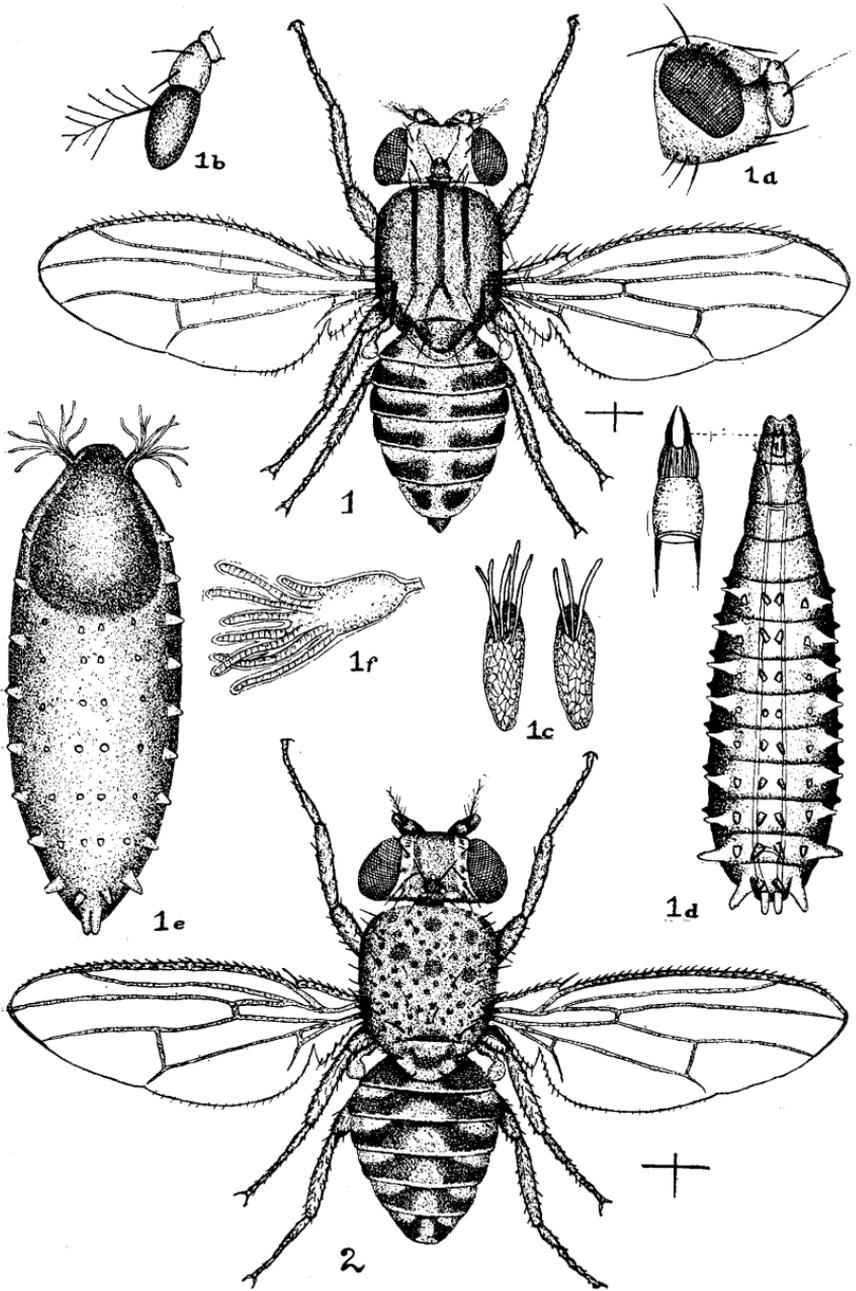
Adult. Fig. 2. Thorax rusty yellow, a little glossy, marked with dark spots giving it a brownish appearance; abdomen broad, black, a median pale yellow vittae, the first segment usually black the others marked at outer angles by yellow cross bands and a pale yellow line, often whitish, at the posterior border; under side of face yellow; front broad dark rusty yellow, above the antennae lighter; a black ocellar dot; three pair of orbital bristles, the two bristles composing the anterior pair directed forward, the others backward; pair of ocellar bristles; two pairs of outer vertical bristles, pair of median vertical bristles; antennae reddish yellow, third segment the longest, often dark; arista long, for a distance plumose, the under side of the basal part naked; legs pale yellow often becoming darker; wings of a very pale yellow tint, veins rusty yellow; the distance between the two cross veins somewhat smaller than the ultimate segment of the fourth longitudinal vein.

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EXPLANATION OF PLATE XVIII.

- Fig. 1. *Drosophila busckii*.
1a. Head from the side.
1b. Antenna enlarged.
1c. Eggs with appendages.
1d. Full grown larva—dorsal view.
1e. Pupa—dorsal view.
1f. Compound spiracle, magnified.
- Fig. 2. *Drosophila funebris*.



NISWONGER on "Two Species of Diptera of the Genus Drosophila.