

17.17. Sciomyzidae

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Mostly cool-adapted, small to medium-sized, dull grayish-brown flies found in a wide variety of freshwater and semi-aquatic habitats that support populations of the aquatic, shoreline, and terrestrial species of snails, slugs, and fingernail clams on which the larvae feed. The family is characterized as follows: lower calypter absent; ptilinal suture clearly defined; no vibrissae; antennae three-segmented, with bare to plumose arista; postvertical orbital setae parallel to divergent; wing with costa unbroken and subcosta reaching the costa; and all tibiae with one dorsal pre-apical bristle. The puparia often have an upturned posterior end. Overwintering is usually as mature larva in the puparium.

The family Sciomyzidae currently includes five subfamilies, 63 genera and 543 valid species (Murphy 2014). Members of the family occur on all continents except Antarctica. A single species is known from Greenland (Narsarsuaq).

Knutson and Vala (2011) reviewed sciomyzid behavior, ecology, life cycles, morphology, and identification; they also provided keys to adults, larvae, and puparia and a checklist of world species. Murphy *et al.* (2012) analyzed key features of behavioral and phenological groups, behavior and development, population biology, bioindicators, ecosystem service provision and conservation, phylogenetics, molecular studies, evolutionary biology, and biocontrol.

Dictya umbroides Curran, 1932. Figs 1–2

Species of *Dictya* are placed in the sciomyzine tribe Tetanocerini, characterized by lack of a proepisternal seta. They have a distinctive white face with a small, black spot in the center. Most setae and many setulae have a dark somatic base, some of which are confluent, presenting a mottled appearance. Some large, dull, brownish spots also are present. The wings are darkened along the front margin, becoming grayish on the posterior half, with small, translucent spots giving a mottled appearance (Fig. 1). *Dictya umbroides* is distinguished from congeners by the setose prosternum, surstylus with dorsal tip angulate and projecting well beyond the dorsal margin of the surstylus, ventral process of the hypandrium strongly bent forward and with an anterodorsal flange, and by the ventral process of the epandrium with a moderately small, narrow



FIGURE 1 Typical adult *Dictya* species (female).

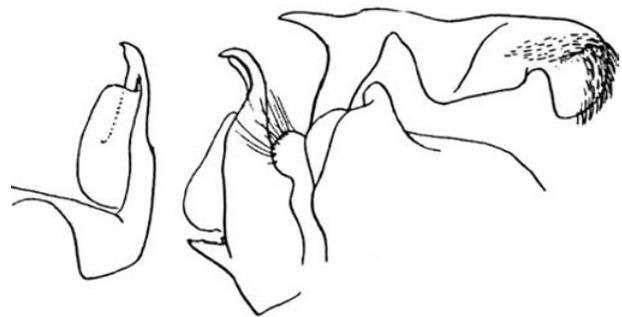


FIGURE 2 *Dictya umbroides* male terminalia, anterior view (left) and lateral view (right) (both inverted).

posterior lobe and a slightly projecting anterior lobe (Fig. 2). Female not described. The combination of pedicel matt on the dorsal side and parafrenal spots much smaller than $1/3$ the diameter of the ocellar triangle identifies *Dictya umbroides* as a member of the “typical group” as characterized by Steyskal (1954). Length 4.1–5.0 mm, one of the smallest members of the genus.

BIOLOGY: The specimens first found in Greenland were collected in a Malaise trap situated in open scrub of about 2.5 m tall *Betula pubescens* on rather dry ground, but about 60 m away from a marshy area with ponds along a small stream. The site is about 1 km east of the easternmost end of the runway of the Narsarsuaq airport. Valley and Berg (1977) reared *D. umbroides* in the laboratory from adults collected in Ontario, Canada, and Oregon, U.S.A. The latter habitat was a small spring that flowed into a lake, with emergent vegetation composed mainly of grasses and sedges growing along its sides. Adults lived for as long as 137 days in captivity.

Females laid eggs as early as six days after emergence. Greatest number of eggs laid by a female was 943. Eggs produced larvae in three days. Duration of larval stages was as follows: first instar, 3–4 days; second instar, 2–9 days; third instar, 5–8 days. Each generation lasted 26–41 days.

DISTRIBUTION: S. Found only in Narsarsuaq, July 2004 and July 2010 (T. Munk).

Alaska east to Northwest Territories, south to British Columbia, east to Newfoundland; also New Mexico, Colorado, Michigan, and Ohio.

References

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