

**FIRST RECORD OF RHAGIO SCOLOPACEUS (LINNÉ) IN
NORTH AMERICA**
(DIPTERA: RHAGIONIDAE)

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ABSTRACT—The occurrence of the European species *Rhagio scolopaceus* in North America is recorded for the first time from the Boston area (Massachusetts). Its differences from other native species are noted and Chillcott's key (Can. Ent. 97:785) to the eastern nearctic species is emended to include *scolopaceus*. The question of its introduction is also discussed.

Recently while collecting syrphids an unusual rhagionid was noticed. Its large size and striking markings set it off from the local species. Although the fly was recognized as new to me, an intensive search for additional specimens was not made at the time because the abundance of uncommon syrphid flies distracted me. However, after the identity of the fly was learned, I returned to the original area where it was found and made a thorough search for more individuals. No additional specimens were collected.

The original female specimen was collected in a wet grove of deciduous trees opposite Regis College on Wellesley Street in Weston on 7 June 1968. This is the habitat and time of occurrence of the common native *Rhagio mystaceus* (Macquart). The fly's behavior was also similar to that of the common *mystaceus*. When it was disturbed, it made a short flight to another spot and turned around to face the pursuer. The behavior and the coloration of these flies (*mystaceus* and *scolopaceus*) is reminiscent of scorpion flies and is perhaps a form of mimicry of these predaceous insects. Apparently these two species are ecological equivalents on either side of the Atlantic Ocean and are now occupying the same (?) niche in the Weston area.

A search was made of the local collections for additional material, which might help to indicate the time and extent of the introduction. No material of *scolopaceus* (Linné) was found in either the Museum of Comparative Zoology or the University of Massachusetts collection, despite the fact that there were many specimens of *mystaceus* from the greater Boston area, particularly Wellesley. However, two more specimens were found in the private collection of Mr. David Meissner, a local collector. One was from the same spot in Weston as my first and was collected a day earlier, 6 June 1968. The other was a specimen

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from Wellesley collected on 9 June 1963. The Wellesley specimen is particularly interesting in that it was collected in the Wellesley College area, presumably the same area in which A. P. Morse, who taught at the college, in the early part of this century collected the *mystaceus* material now in the Museum of Comparative Zoology. It is hardly likely that a local collector, like Morse, who was collecting rhagionids at the same place and time of year, which is indicated by the *mystaceus* and other material in the MCZ, would have overlooked a larger and more showy species like *scolopaceus*. This fact strongly suggests that *scolopaceus* was not present in Morse's time.

This supposition naturally leads to the question of mode and time of introduction. Chillcott (1965) in his revision of the eastern species of *Rhagio* stated that the "Larvae of *Rhagio* are frequently intercepted in the soil on imported plant materials and the establishment of local colonies of European species is probably more widespread than this paper indicates." He recorded only two European species in North America. They are *lineola* (Linné) (Ottawa, Ontario) and *tringarius* (Linné) (Lockeport, Nova Scotia). The discovery of *scolopaceus* (Linné) in Massachusetts is the partial fulfillment of Chillcott's prediction. Although presently the facts are too meager to say anything with certainty, it seems probable that *scolopaceus* is a recent immigrant introduced through nursery or floricultural importations. Lindroth (1957) stresses ship ballast as the means of introducing various European soil-inhabiting forms into North America. It is very unlikely that *scolopaceus* was introduced by this means for two principal reasons: 1) ballast was not used in the Massachusetts area (Lindroth, 1957, p. 169); 2) the use of ballast virtually stopped when steam replaced sail in the late part of the last century (Lindroth, 1957, p. 157, 161) [whereas *scolopaceus* appears to be a recent introduction]. Since submitting this manuscript, Dr. Wirth has called to my attention still another specimen of *scolopaceus* from the Boston area—Hyde Park, 1 June 1949. Apparently this specimen was overlooked by Chillcott in his revision (1965). In short, *Rhagio scolopaceus*, with a short flight period during the first part of June, appears to be a recent introduction to the metropolitan Boston area.

Rhagio scolopaceus is easily separated from other North American species of *Rhagio*. In habitus it looks like a *vertebratus* (Say) with the wings of *mystaceus*: the abdomen is generally orange with the black lateral margins and a mid-dorsal row of black spots and the wings are strongly patterned with brown. Chillcott's key (1965) to the eastern species can be modified as follows to include *scolopaceus*.

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| 4. | Notopleural shelf and metepimeron bare | 4a |
| | Notopleural shelf and metepimeron haired | 5 |
| 4a. | Wings strongly patterned; proepisternum haired | scolopaceus (Linné) |
| | Wings clear; proepisternum bare | tringarius (Linné) |

The only species that *scolopaceus* is likely to be confused with is *strigosa* Meigen. However, *strigosa* is bare on the proepisternum, extensively yellow on the pleuron and scutellum, and with the medial wing spot restricted to the R_1 cell, whereas *scolopaceus* is haired on the proepisternum, dark on the pleuron and scutellum, and with the brownish color of the medial wing spot extended to r_{4+5} vein. *Strigosa* has not yet been found in North America.

The determination of *scolopaceus* was made with Verrall (1909) and verified by comparison with several European specimens in the Museum of Comparative Zoology (Cambridge, Mass.). The original specimen will be deposited in the Canadian National Collection at Ottawa (Ontario).

ACKNOWLEDGMENTS

I would like to thank Dr. Willis W. Wirth for his suggestions on this manuscript and his records of *scolopaceus*; Dr. John F. Lawrence for the use of facilities of the Museum of Comparative Zoology; and Mr. Charles H. Nelson for his critical reading of this manuscript.

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