

EUROPEAN RHAGIONIDAE IN EASTERN NORTH AMERICA: RECORDS OF NEWLY DISCOVERED SPECIES (DIPTERA)¹

L.L. Pechuman, E. Richard Hoebeke²

ABSTRACT: The Palearctic species *Rhagio strigosus* Meigen (Diptera: Rhagionidae) is newly discovered in New York State; this is a new North American record. In addition, *R. tringarius* (L.) is reported from Massachusetts and New York which represent new United States records. Diagnostic characters of *R. strigosus* are illustrated to aid in its separation from other native and introduced species in North America. An existing key to the eastern species of *Rhagio* is modified to include *R. strigosus*. A possible means of introduction is hypothesized.

The discovery of *Rhagio strigosus* Meigen in the Genesee Region of New York State is the first record of this common European species in North America. A collection of 5 specimens at Bergen (Genesee County), New York, in 1981-82, by Patricia Ferris, would seem to indicate that this species may be established here. A male specimen was taken from a garage window around August 8, 1981, and a female specimen was taken September 3, 1982. Three dead and damaged specimens also were taken from sills of garage windows at the same location in early August 1982; one specimen was a male, while the sex of the other specimens were not determined as they lacked the head or most of the abdomen. Further attempts to collect this distinctive species in the vicinity of Bergen in late July and early August 1982 proved unsuccessful.

In eastern North America, the genus *Rhagio* Fabricius is comprised of 15 species, 4 of which are introduced. Chillcott (1965) revised the eastern nearctic species and reported for the first time the presence of the European species *R. tringarius* (L.) (from Lockeport, Nova Scotia) and *R. lineola* F. (from Ottawa, Ontario). Thompson (1969) reported the occurrence in North America of a third European species, *R. scolopaceus* (L.), based on collections of specimens from the metropolitan Boston area (Massachusetts) in June 1949, 1963, and 1968. Our discovery of *R. strigosus* in New York marks the fourth European species of *Rhagio* to be found introduced into North America.

Rhagio strigosus, a species common throughout much of Europe, is easily separated from most other eastern North American *Rhagio*. *R. strigosus* looks like *scolopaceus* in habitus and is likely to be confused with it. Thompson (1969) modified Chillcott's (1965) key to the eastern nearctic species of *Rhagio* to include *R. scolopaceus*. Here, Thompson's

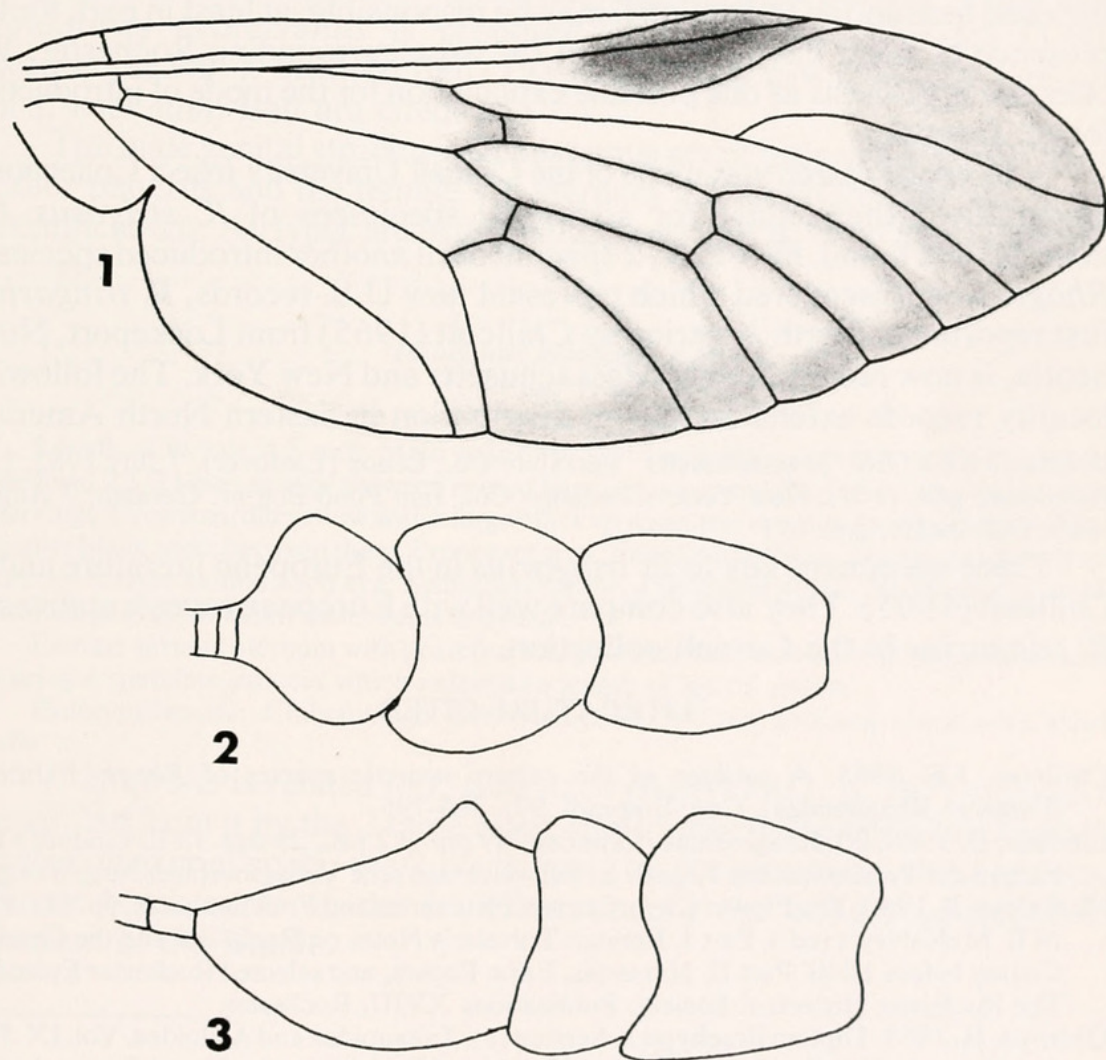
¹Received September 2, 1982. Accepted March 5, 1983.

²Professor Emeritus and Extension Associate, respectively, Department of Entomology, Cornell University, Ithaca, NY 14853.

couplet #4 (p. 142) is modified to incorporate *R. strigosus*.

- 4. Notopleural shelf and metepimeron bare 4a.
- Notopleural shelf and metepimeron haired. 5.
- 4a. Wings strongly patterned; proepisternum bare and haired. 4b.
- Wings clear; proepisternum bare *tringarius* (L.)
- 4b. Proepisternum bare; stigma of wing isolated from radial fork (Fig. 1); third antennal segment smaller than the second, ovate or broader than long (Fig. 2) *strigosus* Meigen
- Proepisternum haired; stigma usually connected to radial fork by dark patch; third antennal segment larger than second, longer than broad (Fig. 3) *scolopaceus* (L.)

The specimens of *R. strigosus* from Bergen, NY, key out readily in the European literature (Lindner, 1925; Oldroyd, 1969). The determination by us was verified by comparison with several European specimens identified



Figs. 1-3. *Rhagio* spp. 1, Wing of *R. strigosus* Meigen. 2, Antennal segments 1-3, *R. strigosus* (after Oldroyd, 1969). 3, Antennal segments 1-3, *R. scolopaceus* (L.) (after Oldroyd, 1969).

by E. Lindner, and given to the Cornell University Insect Collection through the kindness of Wolfgang Schacht (Zoologische Staatssammlung, Munich).

Chillcott (1965) noted that the "larvae of *Rhagio* are frequently intercepted in the soil on imported plant materials. . .". It would then seem probable that *R. strigosus*, like the other introduced *Rhagio* species, was introduced through nursery importation. In the second half of the nineteenth century, the city of Rochester (Monroe County), New York, had the proud claim to the title of "The Flower City: Center of Nurseries and Fruit Orchards." It is well documented (McKelvey, 1940) that some of the prominent nurseries of the greater Rochester area (notably the Ellwanger and Barry nurseries) in the mid-1800's acquired extensive purchases of nursery stock from abroad, especially Europe. This early and extensive importation of nursery and floriculture stock in New York, prior to any U.S. imposed quarantine restrictions, may be responsible, at least in part, for the presence of other exotic species in the area surrounding Rochester. We offer this hypothesis as one possible explanation for the mode of introduction for *R. strigosus*.

A thorough search was made of the Cornell University Insect Collection's unidentified Rhagionidae for additional specimens of *R. strigosus*. No material was found. However, 2 specimens of another introduced species of *Rhagio* were discovered which represent new U.S. records, *R. tringarius*, first reported in North America by Chillcott (1965) from Lockport, Nova Scotia, is now recorded from Massachusetts and New York. The following locality records extend its known distribution in eastern North America:

UNITED STATES: Massachusetts: Berkshire Co., Lenox (Eastover), 7 July 1982, L.L. Pechuman, coll. (1 ♂). New York: Chenango Co., Jam Pond Bog nr. German, 7 August 1980, D.J. Bickle, coll. (♂)

These specimens key to *R. tringarius* in the European literature and in Chillcott (1965). They also compare well with European representatives of *R. tringarius* in the Cornell collection.

LITERATURE CITED

- Chillcott, J.F. 1965. A revision of the eastern nearctic species of *Rhagio* Fabricius (Diptera: Rhagionidae). Can. Entomol. 97: 785-795.
- Lindner, E. 1925. 20. Rhagionidae (Leptidae) 49 pp. + 2 pls., 29 figs. In E. Lindner's Die Fliegen der Palaearktischen Region. E. Schweizerbart'sche Verlagsbuchhandlung, Stuttgart.
- McKelvey, B. 1940. The Flower City: Center of Nurseries and Fruit Orchards, pp. 121-169. In B. McKelvey's (ed.), Part I. Foreign Traveler's Notes on Rochester and the Genesee County before 1840. Part II. Nurseries, Farm Papers, and selected Rochester Episodes. The Rochester Historical Society, Publications XVIII, Rochester.
- Oldroyd, H. 1969. Diptera Brachycera. Section (a), Tabanoidea and Asiloidea. Vol. IX. Part 4, 132 pp. In Handbooks for the Identification of British Insects, Royal Entomological Society of London, London.
- Thompson, F.C. 1969. First record of *Rhagio scolopaceus* (Linne) in North America (Diptera: Rhagionidae). Proc. Entomol. Soc. Wash. 71(2): 141-43.



Pechuman, L L and Hoebeke, E R. 1983. "European Rhagionidae In Eastern North america - Records Of Newly Discovered Species (Diptera)."
Entomological news 94, 86–88.

View This Item Online: <https://www.biodiversitylibrary.org/item/20617>

Permalink: <https://www.biodiversitylibrary.org/partpdf/22536>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Smithsonian

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: American Entomological Society

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.