

# TIPULA PALUDOSA MEIGEN AND T. OLERACEA MEIGEN, EUROPEAN CRANE FLIES NEW TO THE EASTERN UNITED STATES: POTENTIALLY SERIOUS TURFGRASS AND PASTURE PESTS

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## Abstract

In early June 2004, grounds personnel of the Niagara County Golf Club in Lockport, NY noticed large numbers of crane flies emerging from the turf. Some flies were collected and sent to the Cornell University Insect Diagnostic Laboratory for identification. They represented one of the European crane flies, *Tipula oleracea* Meigen, which was previously recorded from the Pacific Northwest. This is the first record of this Old World crane fly in eastern North America. In August 2004, the course superintendent of the Niagara Country Club, in Lewiston, NY, also collected crane flies for identification because large numbers were observed emerging from the rough areas of the turf. Interestingly enough, these crane flies were identified as yet another European species, *Tipula paludosa* Meigen, a species previously reported from the Canadian Maritimes, the Pacific Northwest, and the Niagara peninsula of Ontario, Canada. This is the first record of this exotic crane fly from the eastern United States.

*Tipula paludosa*, a widespread northern European species, was accidentally introduced into Newfoundland and reached the mainland of Canada in northern Nova Scotia (Cape Breton Island) as early as 1955. It was rediscovered again in 1965 in British Columbia and in the Niagara peninsula of Ontario in 1997. *Tipula oleracea*, another common species native to Europe, was first reported from the New World, specifically from Andean Ecuador in 1999, and between 1998 and 1999 it was found in a few locations in western British Columbia, western Washington, and western Oregon.

These two European crane fly species are almost identical in appearance—both are large in stature (1 1/4 to 1 1/2 inches; females generally larger), with grayish brown bodies, and wings slightly cloudy. To distinguish the

two from each other, an eye separation character, a wing length character, and genitalic characters can be used. In *T. paludosa*, the eye separation is quite broad, usually several times the width of the basal antennal segment. In sharp contrast, in *T. oleracea* the area between the eyes is very narrow, only as wide as the width of the basal antennal segment. Wings of female *T. paludosa* are shorter than the abdomen. Wings of female *T. oleracea* are clearly longer than the abdomen. Phallic characters are different between the two.

*Tipula paludosa* and *T. oleracea* are extremely similar biologically. *Tipula paludosa* completes a single generation annually, with adult emergence beginning in late August, and their numbers peaking in September and continuing into October. *Tipula oleracea*, on the other hand, completes two generations annually, with adult emergence in the spring (late May to July) and again in the fall (mid August to late September: for 2004 in NY).

European crane flies are largely turf and pasture pests. *Tipula paludosa* is probably the most injurious and widespread crane fly in northern Europe. In the Pacific Northwest and in Nova Scotia, *T. paludosa* has been found feeding on turf grasses and such hosts as annual and perennial flowers and several types of vegetables and small fruits. In portions of the Niagara peninsula of Ontario, large populations have caused destruction of many home lawns. In a few locations in western British Columbia, and in western Washington and Oregon, *T. oleracea* has become the most serious economic pest of lawns, pastures, and hayfields.

Delimiting surveys for the two species will be conducted in western New York in 2005.