

## ***Sirex noctilio*: Discovery of a Palearctic Siricid Woodwasp in New York**

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**A** single adult female specimen of *Sirex noctilio* Fabricius (Hymenoptera: Siricidae), an Old World woodwasp, was identified by the first author on 19 February 2005 from a funnel-trap sample collected in New York State on 7 September 2004 (see photo). This specimen was confirmed as *S. noctilio* by the USDA-Agricultural Research Service, Systematic Entomology Laboratory on 23 February. The woodwasp was collected in Fulton, Oswego County, NY, as part of the USDA Cooperative Agricultural Pest Survey (CAPS) for exotic bark beetles. A single trap had been placed at the Fulton site, inside the forest edge of a mixed hardwood-pine stand. The trap was baited with a 3-component lure that included cis-verbenol, ipsdienol, and methyl butenol. Fulton is about 17 km inland from Lake Ontario, and passing through it is the Oswego River, which is part of the New York State Barge Canal that handles both commercial and recreational boat traffic.

*Sirex noctilio* is considered a major pest of pine plantations where it has been introduced. Widespread outbreaks of *S. noctilio* have occurred in New Zealand (Nuttall 1989), Australia (Haugen 1990), South America (Iede et al. 1998) and South Africa (Tribe and Cillie 2004). It was rated a "very high risk" pest in a pest risk assessment for North America (Haugen 2000).

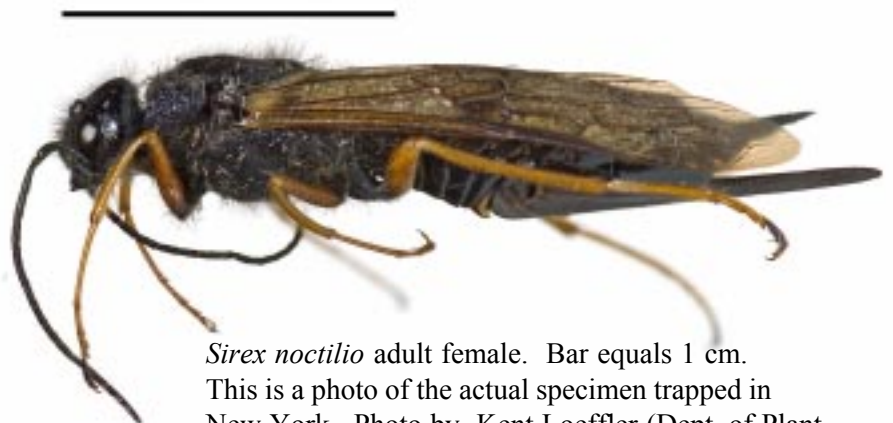
*Sirex noctilio* is native to the pine (*Pinus*) growing areas of Europe, Asia, and northern Africa, but it is seldom a pest in its native range. It attacks primarily pines, but on occasion it will infest conifers in the genera *Abies*, *Larix*, *Picea*, and *Pseudotsuga*. In the Southern Hemisphere, *S. noctilio* has attacked and killed several species of introduced North American pines, including jack pine (*P. banksiana* Lamb.), Caribbean pine (*P. caribaea* Morelet), lodgepole pine (*P. contorta* Dougl.), shortleaf pine (*P. echinata* Mill.), slash pine (*P. elliottii* Engelm.), Jeffrey pine (*P. jeffreyi* Grev. & Balf.), longleaf pine (*P. palustris* Mill.), Mexican weeping pine (*P. patula* Schiede & Schltldl. & Cham.), ponderosa pine (*P. ponderosa* Laws.), Monterey pine (*P. radiata* D. Don.), Chiapas white pine (*P. chiapensis* (Martínez) Andresen), and loblolly pine (*P. taeda* L.) (Haugen 2000).

*Sirex noctilio* usually completes one generation per year, but may require two years

in colder parts of its range. Adults live only one to two weeks. They do not feed but rely only on stored fat reserves. Adult emergence peaks in late summer. Females insert their ovipositor through the bark and into the sapwood, and deposit one to three eggs at a time. They lay between 20 and 500 eggs during their lifetime. During oviposition, females also introduce a toxic mucus and spores of the fungus *Amylostereum areolatum* (Fries) Boidin. Larvae feed only on this specific fungus as they tunnel through the wood. As new adults chew their way out of the tree, they construct round exit-holes that vary from 3 to 7 mm in diameter. Adults typically range from 9 to 35 mm long. Before departing the tree, new adult females acquire fungal spores in special abdominal organs called mycangial sacs. Adult woodwasps are strong fliers, capable of flying many kilometers (Haugen 2000, Madden 1988, Talbot 1977, Taylor 1981).

The principal natural enemies of *S. noctilio* include parasitic wasps in the families Ibalidae and Ichneumonidae, and the parasitic nematode *Deladenus siricidicola* Bedding, which renders females unable to reproduce (Bedding and Akhurst 1974, Spradbery and Kirk 1978). Large-scale biocontrol efforts, using primarily parasitic nematodes, have dramatically reduced losses to *S. noctilio* in many countries where this woodwasp had been introduced in the Southern Hemisphere (Haugen and Underdown 1990, Haugen et al. 1990, Nuttall 1989, Tribe and Cillie 2004). In North America, we have several native species of Siricidae and associated natural enemies (Kirk 1974, 1975, Krombein et al. 1979, Smith and Schiff 2002). We do not know what impact these native natural enemies will have on *S. noctilio* if it is established in North America.

During the years 1985-2000, USDA APHIS (Animal and Plant Health Inspection Service) inspectors made 103 separate Siricidae interceptions at US ports in 14 states (see map; source USDA APHIS Port Interception Network). Most siricids are intercepted at ports of entry as larvae and therefore are seldom identified beyond family. Siricid interceptions were most often associated with crating followed by dunnage. These 103 interceptions were associated with cargo imported from 17 different countries, with the top five being Germany (39), Italy (24), China (9), Spain (7), and France (4). The top five imported products most commonly associated with siricids were, in decreasing order, machinery, tiles, iron, marble, and slate. Of the 103 siricid interceptions, only 7 were identified to species, and all were identified as



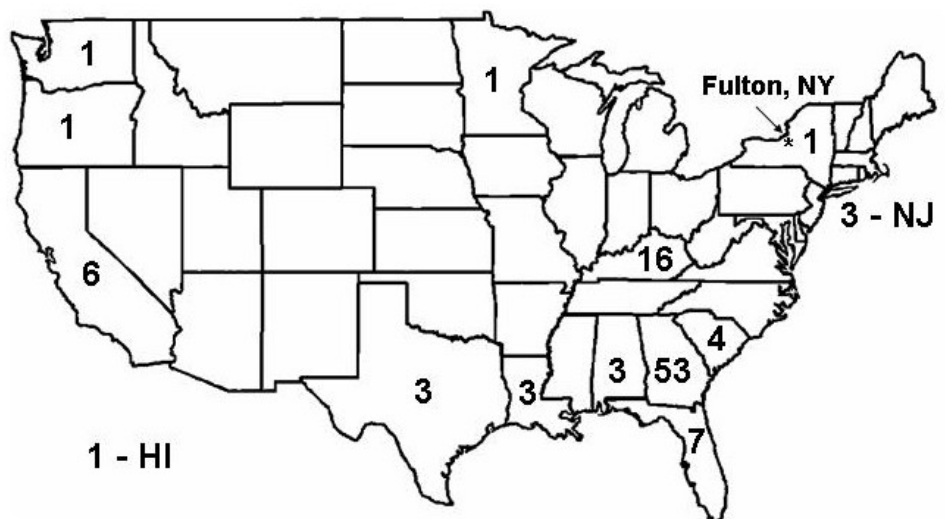
*Sirex noctilio* adult female. Bar equals 1 cm. This is a photo of the actual specimen trapped in New York. Photo by Kent Loeffler (Dept. of Plant Pathology, Cornell University).

*S. noctilio*. These seven interceptions were all made on tile and marble imports from Spain and Italy. In July 2002, a live female *S. noctilio* was found inside a warehouse in Bloomington, Indiana. Subsequent surveys near the warehouse in 2003 and 2004, using both trap trees and trap logs, did not detect any additional woodwasps. Therefore, there is no evidence of establishment in Indiana at this time.

Because only a single adult was collected in New York, and given that funnel traps are not efficient at collecting woodwasps, more intensive surveys are warranted to determine if an established population exists. Detection and delimiting surveys are now being planned for spring and summer 2005. If *S. noctilio* is established, then a rapid response to contain and control the infestation is expected.

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Number of Siricidae interceptions by state during 1985-2000.  
Source USDA APHIS Port Information Network (PIN) database.