

Scientific Note

SYNANTHEDON CANADENSIS: A NEW CLEARWING MOTH RECORD FOR BRITISH COLUMBIA WITH NOTES ON ITS RESPONSE TO PHEROMONES (LEPIDOPTERA: SESIIDAE)

Synanthedon canadensis Duckworth and Eichlin, an attractive clearwing moth (relatively slender, wingspan of about 20–25 mm, and mostly blue-black with a prominent orange anal tuft), was originally described on the basis of two males collected in extreme southwestern Alberta (Duckworth, W. D. & T. D. Eichlin. 1973. *Proceedings of the Entomological Society of Washington*, 75: 157). Subsequently, a female was collected in north central Utah (Eichlin, T. D. & W. D. Duckworth. 1988. *The moths of America north of Mexico*, fascicle 5.1). Until now, in spite of its considerable range, no further specimens of this species had turned up, and nothing is known of its biology.

Two of us (RGB and BSL) are currently (1997–2000) operating a sex pheromone-based management program for control of the economically important Douglas-fir pitch moth, *Synanthedon novaroensis* (Henry Edwards), in *Pinus contorta* Douglas ex Loudon var. *latifolia* Engelmann (lodgepole pine) seed orchards. These orchards (and associated conifer clone banks, provenance tests, and silvicultural trials) are located at the Prince George Tree Improvement Station (PGTIS, 53.46N/122.43W) on the west bank of the Fraser River, 10 km south of Prince George, British Columbia. During the first two years of this program, we captured considerable numbers of male *S. canadensis* in traps baited to attract males of *S. novaroensis*. These are the first specimens collected in British Columbia and the only specimens to provide some information on the biology of the species.

(Z,Z)-3,13-octadecadienyl acetate is a known sex attractant for males of *S. novaroensis* as well as at least two dozen other North American sesiid species in several genera in the subfamilies Tinthiinae, Paranthreninae and Sesiinae. To trap male *S. novaroensis*, we baited green Unitraps (Phero Tech Inc., Delta, British Columbia) with 1000 µg each of a commercially available formulation of this pheromone (Phero Tech Inc., lot # 93047, 97% chemical purity) loaded on red rubber septa. Traps were hung from late April to early September each year and checked at biweekly intervals. Captured sesiids were identified to species by TDE (primarily), RGB, and BSL.

In addition to specimens of the target species, during the course of this work we trapped numerous males of the common Betulaceae-feeding Holarctic species *Synanthedon culiciformis* (Linnaeus) and 43 males (1997—4, 1998—37, 1999—0, 2000—2) of *S. canadensis*. In related work at the PGTIS site, but using traps baited with the corresponding alcohol, (Z,Z)-3,13-octadecadien-1-ol, specimens of another rarely captured moth, *Sesia spartani* Eichlin and Taft, were collected for the first time in Canada (Bennett, R. G., L. A. Rocchini, T. D. Eichlin & B. S. Lindgren. 2000. *Pan-Pacific Entomologist*, 76(2): 129–131).

Trap catches suggest that the flight of male *S. canadensis* lasts for about one month in the summer in the Prince George area. In 1997 all *S. canadensis* were

captured in early to mid-June. The following year, specimens were trapped from mid- to late May through late June with the majority of specimens being trapped during the period 28 May to 11 June.

It is interesting to note that no, and very few, specimens of *S. canadensis* were collected in, respectively, the 1999 and 2000 trapping programs. In subjective terms, summer weather in the Prince George area was reasonably "normal" in 1997, hotter than usual in 1998, and uncharacteristically cool and wet in 1999 and 2000. The North American species of *Synanthedon* for which such information is known, utilize a variety of tree, shrub, and herbaceous perennial hosts (Eichlin & Duckworth 1988). The host species of *S. canadensis* remains unknown. We presume that a viable population of *S. canadensis* likely does not exist within the boundaries of the PGTIS but that specimens have flown into our traps from reservoir populations in the surrounding natural stands. These stands range from about 100 m to less than 20 m from individual PGTIS pine orchards. Possibly the unseasonably cool, wet weather during the 1999 flight period prevented adults from flying to the traps within the PGTIS. Additionally, given the tree species present in the orchards and trials at PGTIS, we feel that it is unlikely that any species of Pinaceae is the host for larvae of *S. canadensis*. The surrounding natural stands are dominated by trembling aspen (*Populus tremuloides* Michaux) and other Salicaceae as well as various Betulaceae, lodgepole pine, and interior spruce (*Picea glauca* (Moench) Voss $\times$ *engelmannii* Parry ex Engelmann).

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