



NEWSLETTER

of the
MICHIGAN ENTOMOLOGICAL SOCIETY

Volume 46, Numbers 1 & 2

February 2001

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Hylurgus ligniperda: A New Exotic Pine Bark Beetle in the United States

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Initial Detection. Overwintering adults of the red-haired pine bark beetle, *Hylurgus ligniperda* (F.) (Coleoptera: Scolytidae), were accidentally discovered on 10 November 2000 in a Christmas tree plantation east of Rochester, New York (near Webster). A Cornell University plant pathologist was initially summoned to the site by the grower to determine why so many conifers, of various species, were declining and dying. During his visual survey of the site, and quite by accident, he found a large number of *H. ligniperda* adults in an overwintering aggregation under the thick bark of a single conifer stump. A subsequent survey of the plantation on 20 November 2000 determined that this exotic bark beetle was well established at this site.

Hylurgus ligniperda was first detected in North America as a result of the Cooperative Agricultural Pest Survey (CAPS) exotic bark beetle survey project in New York. In May 1994, a single specimen was identified from a Lindgren funnel trap baited with alpha-pinene near Rochester, NY (Monroe Co., near Greece). Another individual specimen was collected in May 1995 at the same site, using the same type of trap and lure, but no breeding population was ever found in the Rochester vicinity.

Distribution. *Hylurgus ligniperda* is native to Eurasia and north Africa. It has been accidentally introduced into several other countries, including Australia, Japan, New Zealand, South Africa, Brazil, Chile, Uruguay, and now the U.S.

Interception History. *Hylurgus ligniperda* is frequently intercepted at U.S. ports-of-entry on solid wood crating and dunnage (e.g., wood used to brace cargo in ships). There were at least 84 *H. ligniperda* interceptions on wood packing materials at U.S. ports during 1973-1981, and 167 interception during 1985-1998. During 1985-1998, the *H. ligniperda* interceptions originated on goods imported from 12 countries, primarily Italy (76 interceptions), Portugal (29), Spain (26), and Chile (10). *Hylurgus ligniperda* is most frequently associated with imported tiles and quarry products such as granite and marble.

Hosts. This beetle breeds primarily under the bark of unhealthy pines (*Pinus* spp.), usually near the base of the trunk or in large exposed roots

Damage. *Hylurgus ligniperda* has the potential to be a serious vector of diseases associated with intensive pine management, such as blackstain root disease caused by *Leptographium wagneri*. According to Dr. Martin MacKenzie (USDA Forest Service, Morgantown, WV, in litt. and pers. comm.), the detection of both the beetle and the fungus *Leptographium truncatum* in New Zealand in 1974 was

not a coincidence. In a survey of fungi associated with *H. ligniperda*, Dr. MacKenzie found that 106 of 112 dispersing beetles carried *Leptographium* when they landed on freshly-peeled pine logs. Moreover, some of the *H. ligniperda* collected in New York in 2000 were also carrying spores of various fungi, including a *Leptographium* species.

In South Africa, *H. ligniperda* is considered a minor pest. It is known to introduce bluestain fungi in the genus *Ophiostoma* to the wood through their galleries, and it also transmits root pathogens in the genus *Leptographium*.

In Chile, there it concern that the presence of this bark beetle, as well as the exotic scolytid *Hylastes ater*, could adversely affect the establishment of new Monterey pine (*Pinus radiata*) plantations. In Chile, *H. ligniperda* has been reported to reproduce in slash as well as young Monterey pine trees, and through their maturational feeding cause up to 10% mortality of newly established pine plantations.

Biology and Seasonal History. *Hylurgus ligniperda* has just one generation per year in the cooler parts of its range, but 2 to 3 generations per year are completed in the warmer portion of its range. Adult beetles breed in freshly cut stumps, logs, and slash following timber harvesting. Reproduction also occurs in recently dead, dying, and fallen trees. Reproduction can also occur along the root collar region of live trees, but such trees are generally weakened by nutrient deficiencies, mechanical injury, disease, or insect attack.

Females of *H. ligniperda* initiate construction of the egg galleries. After constructing a short entry tunnel into the inner bark, the female enlarges an area that is called the nuptial chamber. A male soon joins her and mating occurs in the nuptial chamber. Each female then constructs a single egg gallery that extends from the nuptial chamber and runs parallel with the wood grain. Egg galleries are typically 10-20 cm long. At times, adults overwinter gregariously in tunnels in the bark of the root collar region of larger trees (see Figure). *Hylurgus ligniperda* also overwinters in the inner bark as fourth instar larvae and then pupates in late spring. Adults emerge in about 2 weeks. Some reports state that newly

emerged adults feed at the root collar area of pine seedlings, often forming a spiral feeding gallery. Other reports do not mention any maturation feeding by this species. During periods of maturation feeding, new adults become sexually mature. If *H. ligniperda* overwinters and conducts maturation feeding on live trees, then fungal pathogens like *Leptographium* could enter through the wounds.

Literature Sources. The above information was mostly gathered from personal communications, unpublished memoranda, and the publications listed below.

Bain J. 1977. *Hylurgus ligniperda* (Fab.), Forest Research Institute, New Zealand Forest Service, Forest and Timber Insects in New Zealand, No. 18.

Ciesla W. 1988. Pine bark beetles: a new pest management challenge for Chilean foresters. *Journal of Forestry* 86(12): 27-31.

Ciesla W. 1993. Recent introductions of forest insects and their effects: a global overview. *FAO Plant Protection Bulletin* 41(1): 3-13.

Haack RA, Cavey JF. 2000. Insects intercepted on solid wood packing materials at United States ports-of-entry: 1985-1998. *In Proceedings: International conference on quarantine pests for the forestry sector and their effects on foreign trade, 27-28 June 2000, Concepcion, Chile.* CORMA, Concepcion, Chile. 16 pp.

Tribe GD. 1984. The red-haired bark beetle *Hylurgus ligniperda* (Fabricius) (Coleoptera: Scolytidae). *Pests and diseases of South African forests and timber, Pamphlet 273.* 6 pp.

Tribe GD. 1991. Phenology of *Pinus radiata* log colonization by the red-haired pine bark beetle *Hylurgus ligniperda* (Fabricius) (Coleoptera: Scolytidae) in the south-western Cape Province. *Journal of the Entomological Society of Southern Africa* 54(1): 1-7.

Tribe GD. 1992. Colonisation sites on *Pinus radiata* logs of the bark beetles, *Orthotomicus erosus*, *Hylastes angustatus* and *Hylurgus ligniperda* (Coleoptera: Scolytidae). *Journal of the Entomological Society of Southern Africa* 55(1): 77-84.

U.S. Department of Agriculture, Forest Service. 1991. Pest risk assessment of the importation of larch from Siberia and the Soviet Far East. *USDA Forest Service Miscellaneous Publication 1495.* Washington, D.C.

U.S. Department of Agriculture, Forest Service. 1993. Pest risk assessment of the importation of *Pinus radiata*, *Nothofagus dombeyi*, and *Laurelia philippiana* logs from Chile. *USDA Forest Service Miscellaneous Publication 1517.* Washington, D.C.

Aggregation of overwintering Hylurgus ligniperda inside pine stump.

