

Data Sheets on Forest Pests

Hylobius albosparsus

IDENTITY

Name: *Hylobius albosparsus* Boheman

Taxonomic position: Insecta: Coleoptera: Curculionidae

Common names: White-spotted weevil, Big larch weevil (English); белоточечный долгоносик, большой лиственничный долгоносик, большой прикорневой слоник (Russian)

Bayer computer code: HYLOAP

HOSTS

H. albosparsus attacks all available species of conifers within its natural range, but prefers *Larix* and *Pinus*.

GEOGRAPHICAL DISTRIBUTION

EPPO region: Russia (North-East of the European part, Siberia, Transbaikalia, Far East).

Asia: Russia (North-East of the European part, Siberia, Transbaikalia, Far East, including Kamchatka and Magadan), China, Japan, Korea, Mongolia (Pavlovskii et al., 1955; Issaev & Tarassova, 1965; Issaev, 1966; Egorov, 1976; Korotyaev, 1977; Kondanov et al., 1979; Lindeman, 1979; Egorov & Bereznykh, 1987; Liu et al., 1989; Ler, 1996).

EU: Absent

BIOLOGY

H. albosparsus occurs in forests up to an altitude of 1100 m (Zemkova, 1965). The mass flight of *H. albosparsus* usually occurs from mid May to the beginning of September. Adult beetles often live more than 1 year, sometimes overwintering 2 or 3 times. Young adults leave the forest litter, where they overwinter, and begin feeding mainly on young plants and seedlings but also occasionally on branches of mature trees. They make deep wounds in bark. Adult feeding continues after mating and egg-laying. Females lay eggs on the lower part of trunks, root collars and root spurs of trees and stumps. The pest usually attacks dying trees and trees stressed by *Dendrolimus sibiricus*, *Zeiraphera diniana*, other defoliators and forest fires. Each female may lay from 60 to 100 eggs.

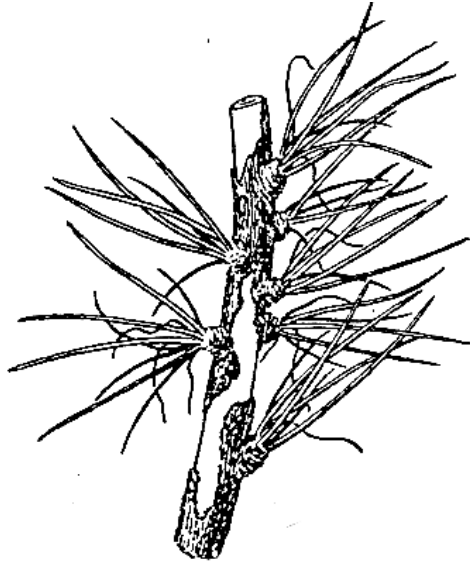


Fig. 1. Larch branch damaged by feeding of *Hylobius albosparsus* adults (Rozhkov *et al.*, 1966)

Larvae hatch after 2 to 3 weeks and make vertical galleries and filled with borings in the bark, in the phloem and, later, in the sapwood. In thin roots, a gallery may reach 1.5 m. Larvae overwinter in galleries and, in spring, they continue feeding and making galleries. For pupation, they prepare oval chambers in the wood. Normally, pupation takes place in these chambers in June or July. Young beetles appear in August and overwinter in forest litter. The developmental cycle of *H. albosparsus* takes, in this case, 2 years. Sometimes, however, larvae overwinter for a second time and the developmental cycle takes 3 years. Populations are mixed and it is possible to see beetles of different generations at the same time (Rozhkov *et al.*, 1966; Egorov & Berezhnykh, 1987; Vorontsov, 1995).



Fig. 2. Larch bark damaged by larvae of *Hylobius albosparsus* (Rozhkov, Raigorodskaya and Byalaya, 1966)

DETECTION AND IDENTIFICATION

Symptoms

The characteristics of symptoms of *H. albosparsus* are: flow of resin coming from the places of feeding by adult insects, larval galleries in bark and wood filled with borings and holes in the bark.

Morphology

Larva

The larva is big, up to 24 mm long, white or yellowish-white. The head is orange-red or light chestnut-red 3.3 mm long with dark brown double toothed mandibles. On the top of the frons, there is a dark longitudinal line.



Fig. 3. Larva of *Hylobius albosparsus* (Rozhkov, Raigorodskaya and Byalaya, 1966)

Pupa

The pupa is yellowish-white and up to 18 mm long. On the frons, there is a pair of nipple-shaped outgrowths, each with a strong thorn. On the rostrum, there are 4 pairs of small thorns. On the pronotum, small thorns are distributed in the following manner: two pairs on the front border of the pronotum, two pairs on the back border, three thorns on each lateral border, two pairs on the middle. Thorn-shaped outgrowths are well developed on the tergites of the abdomen, especially on 5th – 7th segments. The end of the abdomen has two long and thin outgrowths.



Fig. 4. Pupa of *Hylobius albosparsus* (Rozhkov et al., 1966)

Adult

The adult is big, 11 – 16 mm long, and has the typical morphology for beetles of the genus *Hylobius* (similar to *H. abietis* L.). The body is resin-brown-black or dark brown covered with white or yellowish hair-shaped scales. Young adults are resin-red-brown. The rostrum is covered by deep points and has no well developed longitudinal keel. The first segment of the antennal club is equal in length to the second segment or is shorter than it. The prothorax is much narrower than the base of the elytra and has rounded borders and a short bright longitudinal keel with cavities from both side along it. The front part of the prothorax is covered by small points. On the middle and back parts of prothorax, points are larger and sometimes interflow between them. The scutellum is smooth with small weak points. The elytra have parallel borders or are a little narrowed at the base. Their length is not more than twice their common width. Rows of points on the elytra are deep, intervals between rows are a little wider than rows. White or yellowish hair-shaped scales on the elytra are concentrated into distinct spots located between rows of points. There are rare hair-shaped scales between spots (Rozhkov *et al.*, 1966; Mozolevskaya *et al.*, 1991).

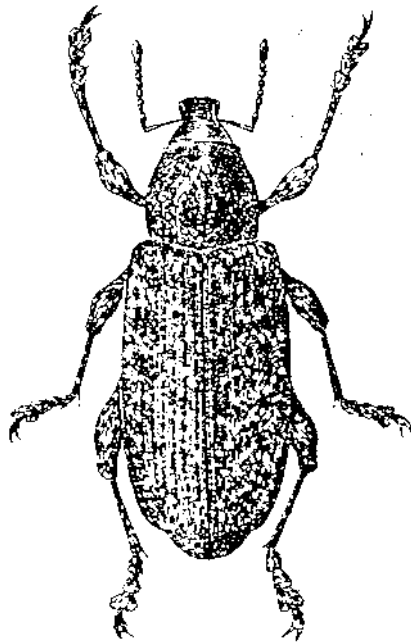


Fig. 5. Adult *Hylobius albosparsus* (Rozhkov *et al.*, 1966)

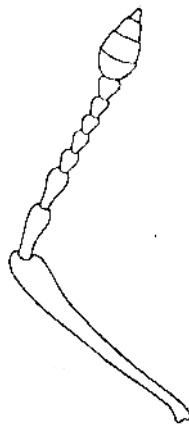


Fig. 6. Antenna of the adult *Hylobius albosparsus* (Rozhkov *et al.*, 1966)

MEANS OF PEST MOVEMENT AND DISPERSAL

The natural spread of the pest with flying adults occurs only in the beginning of the flight period, in May and June. Because *H. albosparsus* may be hidden in the wood and therefore difficult to detect, its eggs, larvae and pupae may be easily transported with untreated coniferous wood products moving in trade. The adults may be carried as a hitchhiker on planting material and cut branches (including Christmas trees).

PEST SIGNIFICANCE

Economic Impact

H. albosparsus is one of several important pests of conifers in the region of its present distribution. It attacks stressed, dying or cut trees of different ages. On living trees, its larvae usually feed in the bark and do not destroy the phloem but on dead trees and stumps, they feed mainly in the phloem and wood. For this reason, the larvae usually do not cause important losses in healthy forests. Nevertheless, they may cause some decrease of wood and seed production as well as reduction in wood marketability. The most severe damage from larval feeding is usually observed in coniferous forests previously attacked by *Dendrolimus sibiricus*, *Zeiraphera diniana* and other defoliators or damaged by forest fires. The main damage by *H. albosparsus* is caused by adult beetles during their feeding on seedlings and young (less than 10 years old) trees. Beetles destroy the bark of young plants and branches and often encircle them causing their death and making difficult the reforestation. So, *H. albosparsus* may be classified as mainly a pest of nurseries and undergrowth (Pavlovskii et al., 1955; Issaev, 1966; Rozhkov et al., 1966; Bogdanova, 1976; Kondanov et al., 1979; Egorov & Bereznykh, 1987; Liu et al., 1989; Vorontsov, 1995; Ler, 1996).

Environmental Impact

Because it kills young trees and seedlings, *H. albosparsus* limits reforestation and thus alters ecological relationships where coniferous are an important component of the ecosystems.

Control

Official control efforts are undertaken in the area of the present distribution of *H. albosparsus*. Control measures include survey, forestry and sanitary measures (improving the resistance of forests, cutting and elimination all infested trees and stumps), treatments with chemical and biological preparations. Young plantations are protected by special trapping trenches. Natural enemies may play an important role in biological control of *H. albosparsus*, especially parasitic nematodes (Korenchenko, 1992).

Phytosanitary risk

H. albosparsus is not a quarantine pest for any individual country (as far as is known) or any regional plant protection organization. It is considered as a serious forest pest in areas where it occurs. It is very likely to establish in all coniferous areas within EPPO region. It is very likely to be transported with untreated wood with bark. It is also likely to be transported in planting material since the species attacks thin branches and small trunks and adults may be resting on the surface of such material. Coniferous trees are important forest components in many parts of the EPPO region.

PHYTOSANITARY MEASURES

The major risk of spreading *H. albosparsus* is with coniferous wood, in which eggs, larvae and pupae may be under the bark. Adults may also be transported on the surface of trunks or on young branches. Wood should be debarked and inspected. Cut branches and plants for planting should be inspected.

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