European and Mediterranean Plant Protection Organization
Organisation Européenne et Méditerranéenne pour la Protection des Plantes

Data sheets on quarantine pests
Fiches informatives sur les organismes de quarantaine

Scolytus morawitzi

Identity

Name: *Scolytus morawitzi* Semenow
Synonym: *Eccoptogaster morawitzi* Semenow
Taxonomic position: *Insecta*: *Coleoptera*: *Scolytidae*
Common names: Morawitz's bark beetle (English); russischer Lärchen-Splintkäfer (German); заболонник Моравица (Russian)
EPPO code: SCOLMO
Phytosanitary categorization: EPPO A2 action list no. 309

Hosts

S. morawitzi attacks only *Larix* spp. *Larix gmelinii*, *Larix olgensis*, *Larix kamtschatica*, *Larix sibirica*, *L. x maritima* (*L. gmelinii* × *L. kamtschatica*). It is not specifically reported whether it attacks the *Larix* spp. mainly grown in Europe (*Larix decidua*, *Larix leptolepis* and their hybrids).

Geographical distribution

EPPO region: Russia (centre and north of European Russia, southern Siberia, south of Northern Siberia, Transbaikalia, Far East)
Asia: Russia (southern Siberia, south of Northern Siberia, Transbaikalia, Far East) and Mongolia (North) (Pavlovskii *et al*., 1955; Issaev, 1966; Yanovskii, 1979; Vorontsov, 1995)
EU: absent

Biology

Mass flight of *S. morawitzi* usually occurs from mid July to the end of August in the southern part of the area of its distribution and from the end of July to mid August in its northern part. The first copulation occurs simultaneously with the attack of trees. Females attack larch trees and branches (of 7 mm in diameter in minimum) at the places where the bark depth does not exceed 3–4 cm. The entry gallery usually begins under bark scales and is not easily seen. It usually goes at an angle (up) from the bark surface. The construction of the gallery system begins from the creation of a small chamber, where the female lays 2–3 eggs. Then, the chamber is widened and borings are used to cover eggs. The female continues to lay eggs and to widen the gallery for 8–12 days. During this time, mating occurs 2–3 times. Males usually stay on the surface of the bark. Females usually lay 8–20 eggs per gallery. Larvae make 15–17 cm long intercrossing galleries filled with thin borings in sapwood and partly in phloem. Branches are usually spirally encircled by larval galleries. Larvae overwinter and continue to feed in the spring till June The end of the larval galleries is usually slightly enlarged to form a pupal chamber. Young adults stay in these chambers 5–8 days after emerging from pupae. The developmental cycle of *S. morawitzi* takes one year (Kurentsov, 1941; Issaev, 1966; Maslov, 1988; Shamaev, 1994).

Adults need additional feeding, which usually occurs at the zone of thin bark at the top of the trunk and on the branches. They make 0.7–1.3 cm long galleries during additional feeding. These galleries are characterized by the absence of borings.

S. morawitzi usually attacks stressed, dying or cut trees but can also attack almost healthy trees in the years of outbreaks. It may attack the same trees over several years, which often leads to their death. Larvae of the pest can develop even in dry phloem. *S. morawitzi* normally prefers sparse forests with large amount of light. In some regions, it is one of the major larch pests. Outbreaks often occur in forests damaged by fire, *Dendrolimus sibiricus* and other defoliators.

Detection and identification

Symptoms

Symptoms characteristic of *S. morawitzi* are: flow of resin coming from places of attempted attack, species-diagnostic gallery system (Fig. 1) with central chamber and radial larval galleries, sparse crowns of larch trees with partly dead tops and branches. The leaves of attacked trees often show yellowing and wilting.

Morphology

Larva
No information.

Adult
The adults (Fig. 2) have an elongated body, 2.6–4.2 mm long for males and 3.1–4.8 mm long for females. The pronotum,

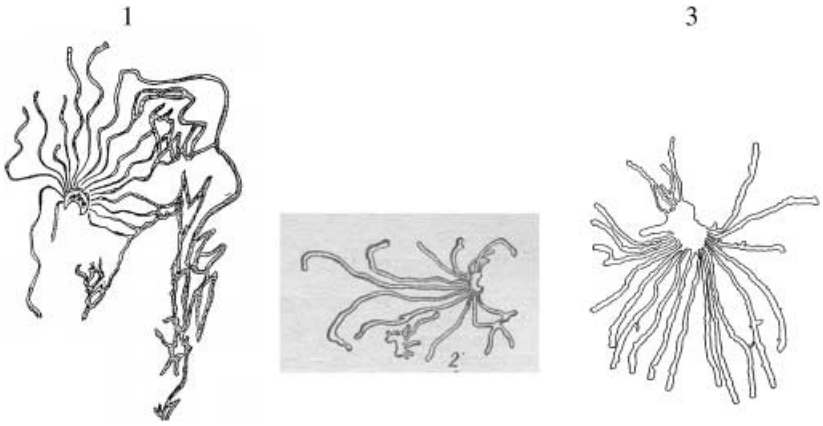

Fig. 1 Gallery system of *Scolytus morawitzi* (1 – Shamaev, 1994; 2 – Maslov, 1988; 3 – Issaev, 1966).

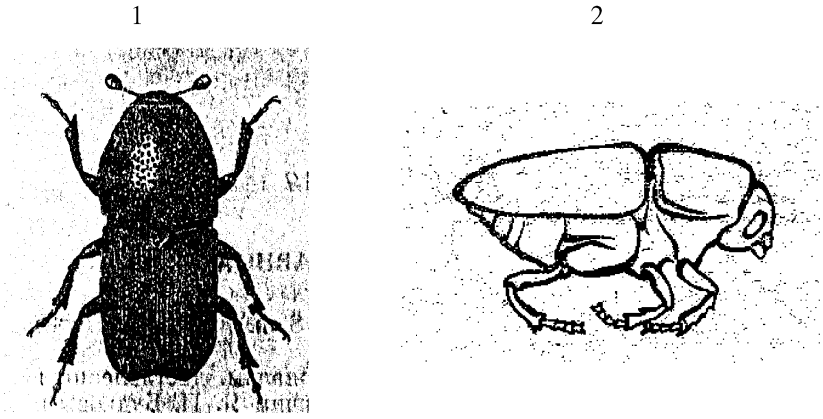

Fig. 2 Adult of *Scolytus morawitzi* (1 – Florov, 1949; 2 – Maslov, 1988).

antennae and legs are reddish-brown. The male has a strongly retreating forehead, and the female a projecting forehead with rough wrinkles along it, covered with hairs, which are denser in the lower part. Pronotum is narrowed in its front part, dotted with deep dots, which fuse in wrinkles on the sides. The length of pronotum is bigger than its width. Elytrae with furrows. The intervals between these furrows are equal except the first range close to the suture. Elytrae are toothed close to the apex. Abdomen is slightly projecting, with regular lines of dots, covered with dense hairs forming (especially on males) a dense brush at the sides of the 5th sternite.

Pathways for movement

Natural spread of the pest by flying adults is not very rapid. Because *S. morawitzi* may be hidden in the wood and therefore difficult to detect, it may be easily transported with untreated larch wood moving in trade. The pest may also be carried as a contaminant on various commodities. It is unlikely to be transported with planting for planting since it does not attack thin branches, small trunks or root stocks.

Pest significance

Economic impact

S. morawitzi is one of the important pests of larch in the region of its present distribution. It attacks stressed, dying or cut trees but can also attack almost healthy trees of different ages in the years of outbreaks. It continues to damage the same trees during several consecutive years causing their death. Sometimes, larvae encircle branches and trunks feeding in the phloem, which may lead to the death of the infested tree.

This species prefers to attack mature trees and, even in cases when it does not kill them, the infestation results in significant decrease of wood and seed production as well as loss wood marketability. The most severe damage is usually observed in larch forests previously attacked by *Dendrolimus sibiricus*, *Xylotrechus altaicus* and other pests or damaged by forest fires (Spessivtsev, 1931; Kurentsov, 1941; Florov, 1949; Issaev, 1966; Maslov, 1988; Shamaev, 1994; Vorontsov, 1995). With other pests, *S. morawitzi* is able to alter the ecological balance of forests where larch is an important component.

Control

Official control efforts are undertaken in the area of the present distribution of *S. morawitzi*. Control measures include silvicultural and sanitary measures (improving the resistance of forests, cutting and elimination all infested trees), treatments with chemical and biological preparations.

Phytosanitary risk

S. morawitzi is considered as a serious forest pest in areas where it occurs. It is very likely to establish in all areas within the EPPO region where *Larix* spp. occur naturally or have been planted. Larch is an important forest tree in some parts of the EPPO region.

Phytosanitary measures

S. morawitzi was added in 2002 to the EPPO A2 action list, and endangered EPPO member countries are thus recommended to regulate it as a quarantine pest. It is suggested to apply the following measures to imported material of *Larix*: bark freedom or heat treatment or 'pest-free area' for wood, and treatment or 'pest-free area' for bark. For plants for planting and for cut Christmas trees, which present relatively little risk, 'pest-free area' is required for large plants (above 3 m). These are the same measures as for *Ips subelongatus* (OEPP/EPPO, 2005).

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