



Ips typographus L. - European Spruce Bark Beetle

BACKGROUND

This bark beetle is considered to be one of the most destructive pests of spruce on the continent of Europe. Extensive injury to forests resulting from wars, fires and storms, has at numerous times made possible the buildup of high populations of the pest which caused excessive secondary damage. In addition to damaged trees, this species also attacks healthy trees. The ability to breed in very fresh bark, coupled with the habit of continuing to feed in the bark on completion of development, makes the insect a serious pest of spruce forests.

HOSTS

Ips typographus prefers thick, succulent bark, but will adapt itself readily to bark of different thicknesses and generally prefers parts of the tree more than 1 meter from the ground. The preferred host of the beetle is Norway spruce (*Picea abies*) but it will also attack other spruces and conifers (*Pinus*, *Abies* and *Larix*). A very similar *Ips* beetle, recorded as *I. typographus japonicus* Nijj., is known to occur in Japan, Korea and the Soviet Far East, but is generally regarded as a subspecies of *I. typographus*.

DISTRIBUTION

- **Europe:** Most of continental Europe.
- **Asia:** China, Japan, Korea (North and South) and Russia's Far East.

BIOLOGY

In Europe, breeding begins in early spring, the date varying according to the weather. Eggs are laid at regular intervals in egg-pockets along the sides of the egg-galleries. Egg-laying often requires 3 weeks or more, larvae from the first-laid eggs being half grown before the last eggs are laid. Frequently the larvae, pupae and young adults are present in the same brood system. Under normal conditions, parents may produce two successive broods during the same year, the first brood developing in 2 or 3 months, the second maturing before winter. If, however, the second brood cannot mature before winter, development is completed the next spring. The sex ratio of *Ips* will vary according to the species, the normal being 2 or 3 females per male in *I. typographus*. The egg-galleries of *Ips* are fairly constant in pattern and to some degree may indicate the species present (Fig. 1). *I. typographus* normally constructs a 3-armed gallery system with egg-galleries starting from a central pairing chamber. The galleries extend about 12.5 cm, invariably directed to the long axis of the trunk. Larval tunnels seldom exceed 2.75 cm in length. Egg galleries may vary from the general pattern, however, depending on population, and on whether the attack is on felled or standing trees.

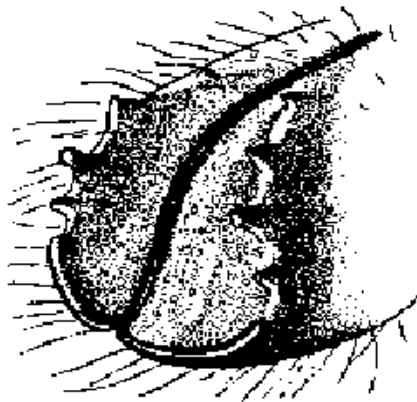
DETECTION & IDENTIFICATION

Symptoms

When a large population is established on standing trees, the damage can be detected from a distance by the presence of red tops on the affected trees (Fig. 2). In Europe, the beetle also transmits a fungus (*Ophiostoma polonicum*) which is lethal to healthy trees. On recently fallen, weakened, or diseased spruce; especially Norway spruce, signs of the beetle include: red-brown dust in bark crevices, numerous round (exit) holes about 2-3 millimetres in diameter, or small tubes of resin (pitch tubes), extruded from the bark.

Identification

The **adult** beetle (Fig. 3) is 4 to 5.5 mm long; cylindrical; dark brown, almost black in colour. The front of the head and the sides of the body are covered with long yellowish hairs. The posterior portion of the abdomen is concave being bounded on each side by a raised margin bearing four distinct teeth, third tooth from top being the largest. The mature **larva** is, white, legless with light brown head and mandibles. About 5 mm. in length.



Posterior end of an adult beetle; note the raised teeth.

*It should be noted that, accurate identification requires specialized expertise. To the naked eye, the European spruce bark beetle is virtually identical to many of our native bark beetles found in North American forests.



Fig. 1



Fig. 2



Fig. 3

Text : Plant Pest Surveillance Unit

Photo: George Gate, Forestry Commission of Great Britain.

Date Modified: 2005-10-28

