

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

## ***Lepidosaphes ussuriensis***

### **Identity**

**Name:** *Lepidosaphes ussuriensis* Borkhsenius  
**Synonym:** *Paralepidosaphes ussuriensis* (Borkhsenius)  
**Taxonomic position:** *Insecta: Hemiptera: Homoptera: Diaspididae*  
**Common name:** Ussuri oystershell scale (English), Уссурийская запятовидная щитовка (Russian)  
**EPPO code:** LEPSUS  
**Phytosanitary categorization:** EPPO A2 action list no. 319

### **Hosts**

*L. ussuriensis* is a polyphagous pest, damaging a variety of deciduous trees in natural woodland, or planted as ornamentals, such as *Alnus hirsuta*, *Betula* spp. (including the European *Betula pendula*), *Euonymus maackii*, *Malus baccata*, *Malus manschurica*, *Physocarpus amurensis*, *Populus maximowiczii*, *Populus suaveolens*, *Populus tremula* (also in Europe) and poplars planted in cities, *Syringa amurensis*, *Ulmus japonica*, *Ulmus laciniata*, *Ulmus pumila*.

### **Geographical distribution**

**EPPO region:** Russia (only in the Asian part, see below)  
**Asia:** northern China; Russia (south of the Far-East region, Sakhalin) (Chumakova, 1953; Pilipyuk, 1970; Dantsig, 1980; Orlinskii *et al.*, 1991), Japan (Hokkaido, Honshu) (Chumakova, 1953; Orlinskii *et al.*, 1991)  
**EU:** absent

### **Biology**

*L. ussuriensis* is an ecologically plastic polyphagous pest. It overwinters as eggs. Hatching of neonate larvae occurs in the beginning of June, and oviposition at the end of August. Average fecundity reaches 75–77 eggs per female. In the northern part of its range, the south of Primor'e Territory (Far-East region of Russia), the scale is usually not very numerous due to parasitoid activity, comparatively low female fecundity and the development of only one generation per year. Nevertheless, outbreaks of the pest occur from time to time and the damage may be high in these

cases. The scale lives on tree branches in mixed mesophyte forests and ornamental plantations. In more favourable warmer conditions (e.g. in China), the scale can be multivoltine (Chumakova, 1953; Borkhsenius, 1962, 1966; Kupyanskaya, 1968, 1973; Dantsig, 1977, 1980; Orlinskii *et al.*, 1991).

### **Detection and identification**

#### **Symptoms**

Females and larvae of *L. ussuriensis* are easily detected on leaves and branches.

#### **Morphology**

##### *Eggs*

Eggs of *L. ussuriensis* are violet and of round shape.

##### *Nymph*

No detailed information available.

##### *Adult*

Females of *L. ussuriensis* (Fig. 1) are of elongated pyriform shape, the head and prothorax being the narrowest parts of the body. The body is narrowed forwards and backwards. The front part of the female body has small conical outgrowths. There are protuberances with 1 spine on the 2nd to 4th segments of the abdomen, and, respectively, with 1 or 2 spines on the metathorax. Small conical combs form a stripe on the 1st segment of the abdomen, and small groups of such combs are located on the 2nd and 3rd segments. The female scutellum is almost black, much darker than those of other *Lepidosaphes* species (Borkhsenius, 1962, 1966; Kupyanskaya, 1968, 1973; Dantsig, 1980; Orlinskii *et al.*, 1991). See also the EPPO diagnostic protocol for this species (OEPP/EPPO, 2006).

### **Pathways for movement**

*L. ussuriensis* spreads mainly with plants for planting. Natural active spread is only over very short distances on branches and leaves, with neonate larvae.

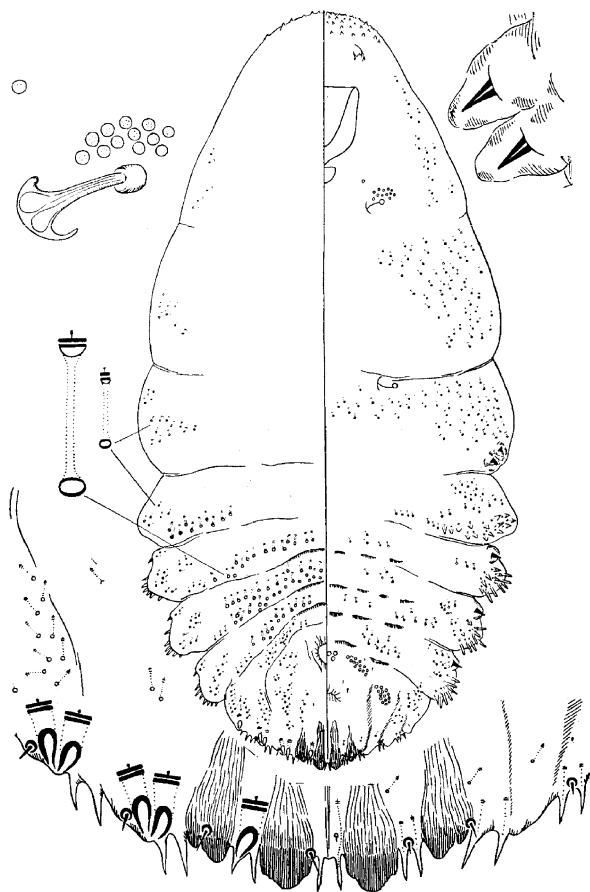


Fig. 1 Structure of a female of *Lepidosaphes ussuriensis* (Borkhsenius, 1962).

## Pest significance

### Economic impact

*L. ussuriensis* can have a serious economic impact on forest and ornamental trees. Periodic outbreaks of the pest occur in its natural area of distribution. Trees are also affected in urban environments. The pest severely damages its host plants by making multiple feeding probes and by sucking sap. Heavy infestation leads to the death of branches and leaf fall of the host trees (Kupyanskaya, 1968, 1973; Dantsig, 1977; Orlinskii *et al.*, 1991).

### Control

Chemical control of *L. ussuriensis* is not very effective. Biological control of the scale may be possible, since a large

range of natural enemies renders the pest less important in its natural area of distribution (Pilipyuk, 1970; Orlinskii *et al.*, 1991).

### Phytosanitary risk

*L. ussuriensis* causes serious damage to forest and ornamental trees in countries and areas where it occurs. It would be able to establish in many EPPO countries, especially in the warmer parts of the region. It could probably damage trees in the same genera as its native host plants.

### Phytosanitary measures

*L. ussuriensis* was added in 2004 to the EPPO A2 action list, and endangered EPPO member countries are thus recommended to regulate it as a quarantine pest. Plants for planting from countries where the pest is present should be dormant and without leaves. An appropriate phytosanitary measure is that they should come from a pest-free area, or a pest-free place of production.

## References

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