

Data Sheets on Forest Pests

Cydia illutana dahuricolana

IDENTITY

Name:	<i>Cydia illutana</i> ssp. <i>dahuricolana</i> Kuznetsov
Synonyms:	<i>Laspeyresia illutana</i> ssp. <i>dahuricolana</i> Kuznetsov <i>Grapholitha illutana</i> ssp. <i>dahuricolana</i> Kuznetsov
Taxonomic position:	Insecta: Lepidoptera: Tortricidae.
Common name:	Dahurian larch seed moth, Dahurian larch cone moth, Spruce cone scale moth, Scale moth (English); Лиственничная шишковая листовёртка даурская, листовёртка чешуй еловых шишек, листовёртка чешуй (Russian).
Bayer computer code	LASPIL

HOSTS

Cydia illutana ssp. *dahuricolana* attacks cones of larch, especially *Larix gmelinii* (= *L. dahurica*) and *L. sibirica*, spruce, especially *Picea obovata*, fir and other coniferous (Pavlovskii *et al.*, 1955; Danilevskii & Kuznetsov, 1968; Maslov, 1988).

GEOGRAPHICAL DISTRIBUTION

EPPO region: Russia (Southern Siberia, south of North – Eastern Siberia, Transbaikalia, Far East).

Asia: Northern China, Japan, Mongolia, Russia (Southern Siberia, south of North – Eastern Siberia, Transbaikalia, Far East) (Danilevskii & Kuznetsov, 1968; Yanovskii, 1979; Yanovskii & Korotkov, 1984; Komai, 1986).

EU: Absent.

BIOLOGY

The flight of moths of *C. illutana* ssp. *dahuricolana* may occur in different parts of the area of the pest distribution from the end of May till the beginning of July (more often – in June) and lasts 2 – 3 weeks. Females lay eggs 1 to 3 together on young cones under scales. Caterpillars appear in 6 – 10 days. Neonate caterpillars enter into the cone and feed first inside seeds. Since the second instar, they feed on other parts of the cone. Damaged parts of the cone secrete resin, which glues scales together. Damaged cones usually can't open or fall down. Usually one, seldom 2 or 3 caterpillars develop in one cone. In August – September, caterpillars leave cones and overwinter inside forest floor or moss in white cocoons. The pupation occurs at the place of overwintering in spring (Pavlovskii *et al.*, 1955; Danilevskii & Kuznetsov, 1968; Galkin, 1971; Stadnitskii, 1971; Stadnitskii *et al.*, 1978; Maslov, 1988).

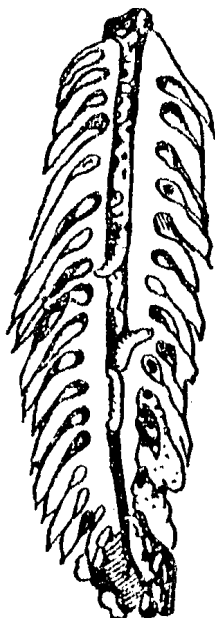


Fig. 1. Cone of spruce damaged by *Cydia illutana* (Maslov, 1988)

DETECTION AND IDENTIFICATION

Symptoms

Damaged cones may be easily detected due to the wilt of scales and the presence of pest excrements. The pest doesn't destroy the centre of the cone, which may be used for the diagnostic of the species, because this particularity is different from other cone pests (Danilevskii & Kuznetsov, 1968; Maslov, 1988).

Morphology

Eggs

No data.

Larva

The larva of *C. illutana* ssp. *dahuricolana* is light-grey or sometimes pink, 11 – 13 mm long, covered by small dark spots, with dark-brown head, with well developed legs (Stadnitskii, 1971; Stadnitskii *et al.*, 1978).

Pupa

The pupa of *C. illutana* ssp. *dahuricolana* is brown, 5 – 7 mm long, with developed teeth on the last segment of the abdomen (Stadnitskii, 1971; Stadnitskii *et al.*, 1978).

Adult

The adult of *C. illutana* ssp. *dahuricolana* is dark-brown with light-metallic and black stripes on front wings (Fig. 2, 3). Its wingspan is 11.5 – 13.0 mm. Front wings are comparatively narrow, their design is much more distinct and more developed than the corresponding design of European *Cydia illutana* Herrich-Schäffer. Most of wing scales are one-coloured. Bicoloured scales are found very seldom. Back wings are one-coloured dark-brown-grey, with light fringe. The top of the head and the thorax are covered by dark-brown-black scales. The abdomen is grey (Stadnitskii, 1971; Rozhkov *et al.*, 1966; Danilevskii & Kuznetsov, 1968).

Male genitalia of *Cydia illutana* Herrich-Schäffer (Fig. 4) and female genitalia of *Cydia illutana* ssp. *dahuricolana* Kuznetsov (Fig. 5) are shown on pictures (Danilevskii & Kuznetsov, 1968).

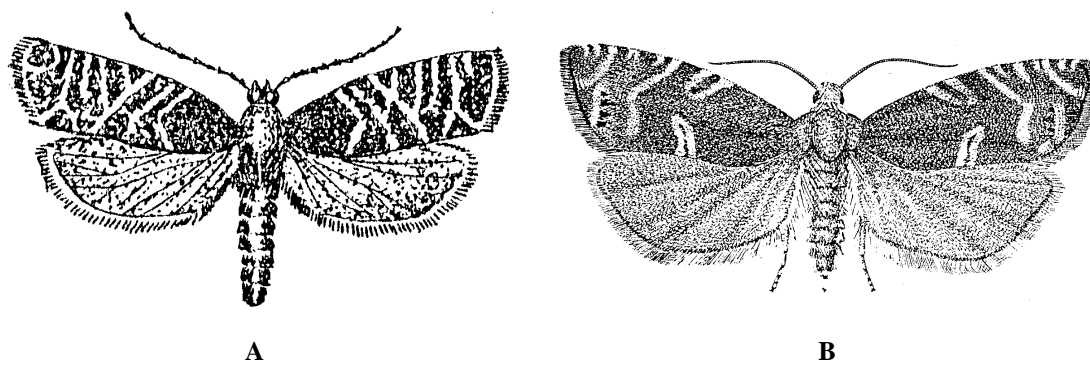


Fig. 2. An adult of *Cydia illutana* (A - Maslov, 1988; B – Danilevskii & Kuznetsov, 1968)

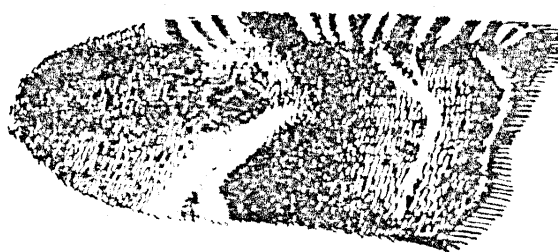


Fig. 3. A wing of *Cydia illutana* (Rozhkov *et al.*, 1966)

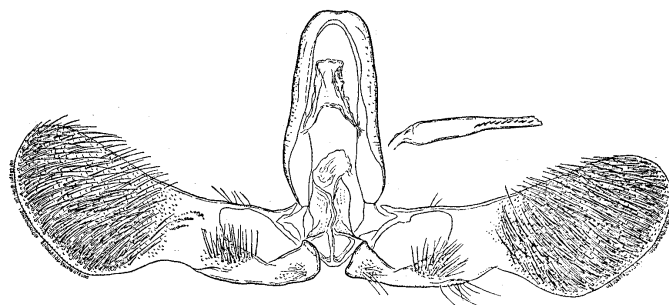


Fig. 4. Male genitalia of *Cydia illutana* Herrich-Schäffer (Danilevskii & Kuznetsov, 1968)



Fig. 5. Female genitalia of *Cydia illutana* ssp. *dahuricolana* Kuznetsov (Danilevskii & Kuznetsov, 1968)

MEANS OF MOVEMENT AND DISPERSAL

C. illutana ssp. *dahuricolana* can spread with flights of the adult moths. Eggs can be transported with coniferous plant for planting or cut branches with cones moving in trade. Larvae and pupae can be transported with soil, moss and forest litter.

PEST SIGNIFICANCE

Economic Impact

Cydia illutana Herrich-Schäffer doesn't cause significant damage in Europe at the reason of low level of its populations, which occur in Finland, Austria, European Russia and some other countries. Nevertheless, it continues to spread in Europe. It was recorded for the first time from the United Kingdom in southern England in 1984 and in Essex in 1997. Recently it was first recorded from France. The subspecies *Cydia illutana* ssp. *dahuricolana* Kuznetsov causes significant damage to seeds and cones of spruce, larch and fir in Siberia. Usual losses of seed production of Siberian larch reach 20 – 30 %. Losses of spruce seed production may reach 70 % and even more. Losses of fir seed production may reach till 60 %. The pest often damage larch cones after *Strobilomyia* (= *Lasiomma*) *laricicola* and/or together with *Eucosma impropria* (= *Petrova* (= *Semasia*) *perangustana* = *Laspeyresia zonovae*) and *Dioryctria abietella*. Together, these pests destroy till 80 – 95% of larch seeds, which may have significant impact on the harvest of seeds for forest nurseries (Rozhkov *et al.*, 1966; Danilevskii & Kuznetsov, 1968; Galkin, 1971; Stadnitskii, 1971; Golutvina, 1973; Stadnitskii *et al.*, 1976, 1978; Kondakov *et al.* 1979; Yanovskii, 1979, 1995; Yanovskii & Korotkov, 1984; Bradley, 1985; Maslov, 1988; Pleshanov *et al.*, 1988; Chambon *et al.*, 1992; Tuck, 2000).

Environmental Impact

C. illutana ssp. *dahuricolana* sometimes causes significant losses of coniferous seed production, either itself or more often together with other seed pests. This reduces possibilities of natural reforestation of these areas. This may result in serious changes of environment over large areas.

Control

Significant control efforts (mainly treatments with chemical and bacterial preparations) against *C. illutana* ssp. *dahuricolana* and other pests of coniferous seeds are undertaken during years of outbreaks in Russia and other countries where the pest is present (Galkin, 1971; Maslov, 1988).

Phytosanitary risk

C. illutana ssp. *dahuricolana* is not declared a quarantine pest by any regional plant protection organization. It is considered as a serious pest of coniferous seeds in the countries of its present distribution. It is very likely to be able to establish in many EPPO countries particularly those in the north and centre as well as in mountain areas. *Cydia illutana* Herrich-Schäffer continues its spread in Europe, which let to believe in capacities of *C. illutana* ssp. *dahuricolana* to spread. Coniferous are important forest and ornamental tree in the EPPO region.

PHYTOSANITARY MEASURES

To prevent introduction of *C. illutana* ssp. *dahuricolana* to other countries, the effective measure would be to prohibit import of coniferous plants for planting and cut branches with cones from the infested areas.

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