SHORT COMMUNICATION

V. A. Dubinina[1)], M. G. Ponomarenko[2)]. THE WHITE SATIN MOTH, *LEUCOMA SALICIS* (LINNAEUS, 1758) (LEPIDOPTERA: LYMANTRIIDAE), IS A PEST OF THE POPLAR IN THE SAKHALIN. – Far Eastern Entomologist. 2010. N 214: 8-12.

Summary. The investigation of the lepidopterian pests in the Sakhalin Island allows to specify biology and injuriousness of the *Leucoma salicis* (L.), which is serious pest of the woodland.

Key wirds. White satin moth, Lepidoptera, pest, Sakhalin, Russia.

В. А. Дубинина[1)], М. Г. Пономаренко[2)]. Ивовая волнянка – *Leucoma salicis* (Linnaeus, 1758) (Lepidoptera: Lymantriidae) – вредитель тополя на Сахалине // Дальневосточный энтомолог. 2010. N 214. С. 8-12.

Резюме. Исследование чешуекрылых вредителей на острове Сахалин позволило уточнить биологию и вредоносность волнянки *Leucoma salicis* (L.), которая является серьезным вредителем лесопарковых насаждений.

INTRODUCTION

The lepidopterian fauna on the Sakhalin Island is still poorly studied. Hitherto the representatives of micro- and macromoths are recorded for the first time from this area (Dubinina, Ponomarenko, 2009; 2010). Among lepidopterian founds are not only rare species but serious pests of agriculture and forestry, such as *Leucoma salicis* (Linnaeus). This species is known as white satin (or satin) moth mainly in foreign literature (Wagner, Leonard, 1979; Grijpma, 1989; Sun, 1989; Humphreys, 1996; Kamata, 2002) and as willow tussock moth in Russian publications (Tshistjakov, 1988; Kuznetzov, 1999). In mentioned publications the distributional range of this species in the Russian Far East was limited by continental part only. Firstly presence of this species in the Sakhalin fauna was indicated in the Key to the insects of Russian Far East (Tshistjakov, 2003). Besides, in mentioned book *L. salicis* was widely recorded in south part of Russian Far East including Kuril Islands. Unfortunately, material on this species was not listed, that was likely reason to consider the presence of *L. salicis* in the fauna of the Far East questionable in recently published Catalog of Lepidoptera of Russia (Matov, 2008). On the base of material kept in the collection of the Institute of Biology and Soil Science and recently collected in Primorsk Territory and Sakhalin the distribution of the white satin moths in the Russian Far East has been confirmed. The especial observations allowed to specify the peculiarities of the biology and injuriousness of this pest in the conditions of Sakhalin.

RESULTS AND DISCUSSION

Leucoma salicis (Linnaeus, 1758)

Phalaena salicis Linnaeus, 1758, *Syst. Nat.* (Edn 10), 1: 502.

Stilpnotia doii Matsumura, 1927, *J. Coll. Agric. Hokkaido Imp. Univ.* 19(1): 38.

Leucoma salicis (Linnaeus): Kozhanchikov, 1950: 342-345; Tshistjakov, 1988: 202-204; 2003: 626; Kuznetzov, 1999: 291-293; Matov, 2008: 239.

MATERIAL. Sakhalin: 6♂, 2♀, Konuma [=Novoalexandrovsk], Saghalien Central Experimental Station, 25.VII 1930; 1, 25, 29. VII 1934; 15, 29. VII 1936; 19. VII 1933 (Tamanuki); 2♂, Yuzhno-Sakhalinsk vicinity, 25.VII 2008 (Dubinina). Primorskii krai: 1♂, 70 km SSE Chuguevka, National Park "Zov tigra", 43°36'01" N, 134°14'20" E, 630 m above sea level, 14.VII 2010 (Beljaev).

GENITALIA. Male and female genitalia see in Kozhanchikov, 1950: fig. 165; Tshistjakov, 2003: figs 363, *1*, *2*; 364, *2*.

DISTRIBUTION. Europe (excluding north regions), Russia (European part excluding north regions, Ural, south part of West Siberia, Irkutskaya oblast, south part of Yakutia, Transbaikalia, Amurskaya oblast, Khabarovskii krai, Primorskii krai, Sakhalin, Kuril Islands), Asia Minor, Transcaucasia, Kazakhstan, Central Asia, Mongolia, N and NE China, Korea, Japan (Hokkaido, Honshu), N America (Canada, USA).

HOST PLANTS. *Populus* spp., *Salix* spp., *Corylus* spp., *Acer* spp.

Table 1

Phenology of the *Leucoma salicis* in the Sakhalin

Year	Months/Decades															
	October-April	May			June			July			August			September		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
2008	L	L	L	L	L	L	L	L P	L P A E	P A E L	A E L	A E L	L	L	L	L
2009	L	L	L	L	L	L	L	L	L P	P A E	P A E L	A E L	A E L	L	L	L

Designations: L – larva; P – pupa; A – adult; E – egg.

BIOLOGY. In the Russian Far East this species has one generation. In the Sakhalin the life cycle of this species is studied in 2008-2010 (Table 1). Imago appears from first or second decades of July depending from weather conditions. In 2008 first moths were observed at the middle and in 2009 at the end of July. Current year adults of white satin moth were recorded from 9th of July and their number reached peak at the middle of month. Males are more active and dominate in the light trap. Soon after emergence males and females copulate, it was noted that they can do it repeatedly (Wagner & Leonard, 1979). Females oviposit shortly after copulation on the bark and leaves of the host plant. In laboratory conditions female had oviposited 326 eggs in 8 layings (each 3, 18, 25, 29, 44, 54, 58 and 81 eggs) in one day. Eggs are greenish and covered by silvery grey spumous excretions. In 2009 larvae emerged at the end of first decade of August. Larvae are with dark brown and black head and body from yellowish-green to light brown, with black lines between segments, densely covered by setae. Two anterior and two posterior black transversal bands divide dorsum of the larva into three white mat parts; lateral lines are black. Usually larvae of

second instar prepare for overwintering. In 2009 it had been observed that further behavior of the larvae is different. Part of them, reaching 4-5 mm in length, stopped feeding at the end of first decade of September and prepared for overwintering. They removed to the soil litter, and made small white cocoons on the underside of dried leaves. Rest part of larvae continued to feed and reached 15-20 mm and more in length. The colour of their head changed into light orange and body became yellowish green, last segment and one before were lighter then main body. In the spring the larvae migrate on the young leaves and continue their development. Larvae of last instar are 36 mm in length; greyish brown with black head and white dorsal fascia dividing into spots by greyish transversal lines on the tergites. Two anterior and two posterior black transversal bands are visible on the dorsum of the larva. It's body bears tufts of yellowish-brown hair-like setae coming from reddish-brown warts which are arranged in several rows. In current year first pupae were found at the end of June and mass pupation is observed from mid of first decade of July.

INJURIOUSNESS. Usually the most harm is from overwintered larvae *L. salicis*, which feed by leaves and cause defoliation of host plants (Grijpma, 1989; Sun, 1989; Humphreys, 1996; Kamata, 2002). In Sakhalin larvae of *L. salicis* damage *Populus maximowiczii* Henry. Last mass multiplication of this pest was registered in 2008. The overwintering larvae had heavily damaged the crowns of the trees. The number of the larvae was from 55 to 140 specimens on one tree. It was registered 15 larvae at an everage on one running metre of the branch. Totally 45-60% of leaves were fed in nidus of this pest. In 2009 and current year such injuriousness was not noted. The climatic conditions of the Sakhalin influence on the number of this pest. Thus, continuous spring with low temperature, cool beginning of summer and heavy precipitation in 2009 sharply reduced the number of overwintering larvae. Probably strong dependence of satin moth number on climatic conditions is the reason why to present time the total defoliation of host plants is not registered in Sakhalin, a phenomenon is often observed in Europe, Asia and North America.

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