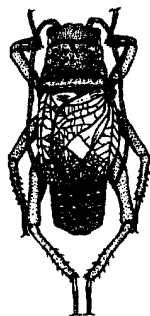


Far Eastern Entomologist



ДАЛЬНЕВОСТОЧНЫЙ ЭНТОМОЛОГ

Journal published by
Far East Branch of the
Russian Entomological Society
and Laboratory of Entomology
Institute of Biology and Pedology,
Vladivostok

Number 7: 1-12

February 1995

A REVIEW OF THE LIMACODIDAE (LEPIDOPTERA) OF THE RUSSIAN FAR EAST

Yu.A. Tshistjakov

Institute of Biology and Pedology, Vladivostok-22, 690022, Russia

15 species of Limacodidae belonging to 13 genera are reviewed; among them *Kitanola speciosa* Inoue and *Neothosea suigensis* Mats. are recorded for the first time from Russia. New synonymy is proposed: *Kitanola* Matsumura, 1925 = *Mediocampa* Inoue, 1982, syn. n. *Phlossa conjuncta* Wlk., is omitted from the local fauna. The data on faunistics, biology and distribution of all observed species are summarized.

KEY WORDS: Limacodidae, faunistics, Russian Far East.

Ю.А.Чистяков Обзор семейства Limacodidae (Lepidoptera) Дальнего Востока России // Дальневосточный энтомолог. 1995. N 7. С. 1-12.

Приводится аннотированный список 15 видов из 13 родов. *Kitanola speciosa* Inoue и *Neothosea suigensis* Mats. впервые указываются для фауны России. Установлена новая синонимия: *Kitanola* Matsumura, 1925 = *Mediocampa* Inoue, 1982, syn. n. Ошибочно указывавшийся ранее для Дальнего Востока *Phlossa conjuncta* Wlk. исключен из состава местной фауны. Обобщены сведения по биологии и географическому распространению рассматриваемых видов.

Биолого-почвенный институт, Дальневосточное отделение Российской Академии Наук, Владивосток-22, 690022, Россия.

INTRODUCTION

A family of the Limacodidae still remains as one of poorly studied group in the fauna of the Russian Far East. Apart from thorough works of the last century with original faunistic data and descriptions of some new species of Limacodidae from this region (Oberthur, 1879, 1880; Staudinger, 1887; Graeser, 1888) there are only few sources on this matter, mostly rather small faunistic papers with scanty information about the representatives of this family. Most completely the species composition of the Limacodidae of discussed fauna is referred in the general and the only list of Far Eastern Lepidoptera, compiled mainly on the basis of relevant volumes of "Macrolepidoptera of the World" by A. Seitz and published almost 70 years ago (Moltrecht, 1929), where 13 of these species were reported, including *Phrixolepia nobilis* Stg. (*Heterogenea nobilis* - according to original description). Now the latter taxon is transferred to genus *Iragaodes*, Noctuidae. Since that time only one additional species - *Microleon longipalpis* Btl. has been recorded from this territory (Hering, 1933).

In the course of this work on taxonomy of the Far Eastern Limacodidae 2 other species - *Kitanola* (= *Mediocampa*) *speciosa* Inoue and *Neothosea suigensis* Mats. were found to be new for discussed fauna. Thus, upon our data with regard for literature sources 15 species of Limacodidae are registered at the Russian Far East.

The aim of this paper is to summarize all known up to date literature data and available materials on this family in the scope of Russian Far East fauna.

The paper based mainly on the author's material and on the collection of the Institute of Biology and Pedology (both of those are presented in the survey without special indication). A place of deposition some other material, mentioned herein (including the types of taxa, described from the territory under discussion) are indicated in the text under following abbreviations:

BMNH - The Natural History Museum, London, Great Britain.

HUS - Entomological Institute, Hokkaido University, Sapporo, Japan.

ZISP - The Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia.

ZMMU - The Zoological Museum, Moscow State University, Moscow, Russia.

ZMHB - Zoologisches Museum der Humboldt-Universität, Berlin, Germany.

In the case when observed material does not cover all known localities within Russian Far East, such additional data are borrowed from the literature (the modern names of mentioned sites are given in square brackets). The literature has been cited for every species includes only sources with descriptions and those, based on the local material.

LIST OF LIMACODIDAE

Austrapoda dentata (Oberthur, 1879)

Limacodes dentatus Oberthur, 1879: 8 (Syntypes: Askold Is. [Russian Far East, Southern Primorye], in BMNH); Oberthur, 1880: 42, pl. 1, fig. 10.

Heterogenea dentatus: Graeser, 1888: 120; Staudinger, 1892: 298 (Sidemi [Yankovskii Penins., Besverchovo]).

Austrapoda dentata: Tshistjakov, 1992: 125.

MATERIAL EXAMINED. Amurskaya oblast': 2 males, Kundur, 19.VII 1988. Primorskii Krai: male, Barabash-Levada, 50 km N Pogranichny, 3.VII 1978; male, 17 km SSW Krounovka, 20 km SW Ussuriysk, 27.VII 1990; 6 males, Gornotayozhnoye, 18 km SE Ussuriysk, 15.VII 1982; 6 males, Ussuriysky res., 30 km SE Ussuriysk, 12-17.VII 1990; 10 males, 2 females, 6 km N Zanadvorovka, 2-3.VIII 1984; male, Kedrovaya Pad', 30 km SW Vladivostok, 5.VI 1983 (leg. V. Kononenko); 10 males, 2 females, Okeanskaya, near Vladivostok, 22,26.VII 1994; female, Tigrovoi, 20 km W Partisansk, 4.VII 1975; 2 males, Ryasanovka, 14 km SSW Slavyanka, 19.VII 1992; 10 males, 6 km SSE Andreevka, 34 km SSW Slavyanka, 31.VII-1.VIII 1990.

BIOLOGY. Moths usually appear from the middle of July to the middle of August. But, as it was supposed already (Graeser, 1888), sometimes it can produce 2 generations. Probably, we have a deal with such case, collecting some specimens in early June and during first decade of July.

DISTRIBUTION. Russian Far East (Amurskaya oblast', Primorskii krai); NE and N China, Korea, Japan.

Ceratonema christophi (Graeser, 1888)

Heterogenea christophi Graeser, 1888: 119 (Type: female, Vladivostok [Russian Far East], in ZISP); Staudinger, 1892: 296.

Cochlidion christophi: Filipjev, 1927: 261 (Tigrovoi).

Ceratonema christophi: Tshistjakov, 1992: 125.

MATERIAL EXAMINED. Amurskaya Oblast': 3 males, Kundur, 18.VII 1988. Primorskii krai: male, Shmakovka, 12.VII 1933 (leg. Sevastyanov, ZMMU); male, Barabash-Levada, 29.VI 1978; male, 5 km N Rettichovka, 23.VII 1990; male, 17 km SSW Krounovka, 27.VII 1990; 2 males, Gornotayozhnoye, 1,15.VII 1982; 20 males, 3 females, Ussuriysky res., 21.VII 1966 (leg. Z. Konovalova), 13-20.VII 1990, 13.VII 1993; 13 males, 4 females, 6 km N Zanadvorovka, 30.VII-5.VIII 1984, 6,20.VII 1985; 3 males, Kedrovaya Pad', 29.VII 1974 (leg. V. Kononenko), 5.VII 1983 (leg. V. Kononenko); 2 males, De-Friz Penins., 14 km NNE Vladivostok, 20.VI 1962 (leg. M. Omel'ko), 19.VII 1964 (leg. M. Omel'ko); 2 males, 1 female, Okeanskaya,

12.VII 1994; male, Suchan [Partisansk], Malaya Sitza river, 20.VII 1925 (leg. V. Lugovoi, ZMMU); 7 males, 1 female, Ryasanovka, 19-20.VII 1992.

BIOLOGY. The moths appear from July to August in various types of the mixed coniferous-broadleaved forest.

DISTRIBUTION. Russian Far East (Amurskaya oblast', South of Khabarovskii krai, Primorskii krai); Korea.

REMARKS. In external appearance this species resembles *Apoda avellana* L. (= *Cochlidion limacodes* auct.) from Europe and for a long time was considered to be congeneric with the latter. However, it quite differs from *A. avellana* by wing venation and structure of genitalia and due to that it was justly transferred to *Ceratonema* Hmps. (Okano, Pak, 1964).

The moths of this species, preserving typical pattern of their fore wings consisting with fuscous lines, vary greatly in color from pale-yellow or ochreous to reddish-yellow or light-brown. Hind wings usually pale-yellow, but sometimes could be greyish. In the collection of ZMMU there is one curious specimen (cited in the material under the label: "Suchan, Malaya Sitza..."), with wing coloration strikingly similar to that of *Apoda avellana*: fore wings brown, with reddish triangle maculation at apex, from outer side of oblique postmedian line, while hind wings are dark-brown, nearly of chestnut colour.

Genus *Kitanola* Matsumura, 1925

Kitanola Matsumura, 1925: 116 (Type-species: *Kitanola sachalinensis* Matsumura, 1925: 116, by original designation).

Mediocampa Inoue, 1982: 298, Moths of Japan, 1: 298 (Type-species: *Kitanola speciosa* Inoue, 1956: 159, by monotypy), **syn. n.**

The type species of *Kitanola* Mats. and the type species of *Mediocampa* Inoue are hardly distinguishable from each other and could be separated surely by genitalia structure only. In this connection it is necessary to emphasize that the generic characteristics of both discussed taxa are very close also in many respects, including wing venation (the only difference is that R_2 of fore wing is very shortly stalked with common branch of R_3 - R_5 in *Kitanola*, while it arises separately from the upper angle of cell, from the same point with common branch of R_3 - R_5 in *Mediocampa*) so structure of male genitalia which are, as far as I can judge from description of those of *K. uncula* from Korea (Okano, Pak, 1964: 3, Pl. 1, fig. 3), no different from each other, but only by the shape of aedeagus and number of claw-form cornuti in vesica. To my mind, all these differences, however, seems to be insufficient for dividing these taxa into separate genera, so *Mediocampa speciosa* Inoue is considered here to be congeneric with *Kitanola uncula* Stg. and consequently *Mediocampa* Inoue is treated as junior synonym of *Kitanola* Mats.

***Kitanola uncula* (Staudinger, 1887)**

Heterogenea uncula Staudinger, 1887: 197, pl. 11, fig. 9 (Type: female, Vladivostok, leg. H. Christoph, in ZMHB); Staudinger, 1892: 298.

Kitanola sachalinensis Matsumura, 1925: 116, pl. 10, fig. 7 (Type: female, Ichinosawa [Solovyovka, 25 km S Yuzhno-Sakhalinsk, South Sakhalin], 27.VII 1924 leg. S. Matsumura, in HUS).

Kitanola uncula: Dubatolov, Ustjuzhanin, 1991: 249.

DISTRIBUTION. Russian Far East (Southern Primorye, South Sakhalin and Southern Kurils (Kunashir Is.); NE China, Korea, Japan.

No specimens examined.

***Kitanola speciosa* Inoue, 1956, comb. res.**

Kitanola speciosa Inoue, 1956, Kontyu, 24: 159, fig. 1.

Mediocampa speciosa Inoue, 1982, Moths of Japan, 1: 298; *ibid.*, 2: 220, pl. 34, fig. 21-23.

MATERIAL EXAMINED. Primorskii krai: male, Kedrovaya Pad', 9.VIII 1966 (leg. A. Tsvetaev, MSU); 2 males, Ryasanovka, 6, 19.VII 1992 (leg. E. Belyaev); 2 males, 6 km SSE Andreevka, 31.VII 1990; 2 males, 1 female, Okeanskaya, 26,31.VII 1994.

DISTRIBUTION. Russian Far East (Southern Primorye, recorded for the first time); Japan.

***Microleon longipalpis* Butler, 1885**

Microleon longipalpis Butler, 1885, Cistula ent., 3: 121.

MATERIAL EXAMINED. Primorskii krai: 2 males, Ryasanovka, 6, VII 1987 (leg. E. Belyaev), 16.VII 1992 (leg. E. Belyaev).

DISTRIBUTION. Russian Far East (Southern Primorye); Korea, Japan.

REMARKS. Formerly had been reported from Ussuri region by M. Hering (1933) without any reference about observed material. Here the occurrence of this species in the Southern Primorye is confirmed upon the truly determined material.

***Heterogenea asella* (Denis et Schiffermuller, 1775)**

Bombyx asella Denis & Schiffermuller, 1775, Ankundung syst. Werkes Schmett. Wienergegend: 65.

Heterogenea asella: Graeser, 1888: 120 (Khabarovsk); Staudinger, 1892: 297 (Vladivostk); Dubatolov, Ustjuzhanin, 1991: 249 (Kunashir Is., South Kurils).

Heterogena asella: Kurentzov, 1939: 173 (print. error).

MATERIAL EXAMINED. Primorskii krai: male, Gornotayozhnoye, 22.VII 1994 (leg. E. Belyaev); female, Okeanskaya, 26,31.VII 1994.

BIOLOGY. In Europe is known as polyphagous species, the larvae of which feed on various broad leaved trees. According to L. Graeser (1888), he had been collecting the larvae of this species in the vicinity of Khabarovsk in early August on *Ulmus campestris* (= *U. japonica*).

DISTRIBUTION. Amphipalaeartic species, widespread throughout most of Europe to Caucasus and then in the eastern part of Eurasia (Russian Far East, E China, Korea and Japan).

***Phrixolepia sericea* Butler, 1877**

Phrixolepia sericea Butler, 1877, Ann.Mag. nat. Hist. (4) 20: 276.

Limacodes castaneus Oberthur, 1879: 7 (Type: Askold Is., [Russian Far East, Southern Primorye], in BMNH); Oberthur, 1880: 41, pl. 1, fig. 11.

Phrixolepia sericea: Graeser, 1888: 120 (Vladivostok).

Heterogenea sericea: Staudinger, 1892: 297.

MATERIAL EXAMINED. Primorskii krai: male, Tigrovoi, 4.VII 1975; 5 males, female, Kaimanovka, 20 km SE Ussuriysk, 19-21.VII 1961 (leg. A. Tsvetaev, ZMMU), 19.VII 1975 (leg. A. Tsvetaev, ZMMU); female, 6 km N Zanadvorovka, 30.VII-3.VIII 1984; male, Suchan [Partisansk], Malaya Sitza river, 20.VII.1925 (leg. V. Lugovoi, ZMMU).

BIOLOGY. The moths appear from July to early August, inhabiting the mixed coniferous-broadleaved forests.

DISTRIBUTION. Russian Far East (Southern Primorye); NE China, Korea, Japan, Taiwan.

***Monema flavescens* Walker, 1855**

Monema flavescens Walker, 1855, List Specimens lepid. Insects Colln Br. Mus., 5: 1112; Tshistjakov, 1988: 263.

Miresa flavescens: Graeser, 1888: 121 (Blagoveshchensk, Khabarovsk); Staudinger, 1892: 300 (Askold Is., Suifun [Razdolnaya river]); Kurentzov, 1939: 174 (Sputinka [upper part of Komarovka river, Ussuriysky res.], Suchan, Sitza river [Partisansk]).

MATERIAL EXAMINED. Primorskii krai: 3 males, Barabash-Levada, 26.VI-8.VII 1978; 2 males, Ilyinka, 1.VII 1950 (leg. D. Kononov); 2 males, 17 km SSW Krounovka, 27.VII 1990, 15.VII 1992; 4 males, Gornotayozhnoye, 18.VII 1982, 18.VII 1990; male, 6 km N Zanadvorovka, 8.VIII 1985; 5 males, Kedrovaya Pad', 10-20.VII 1976; 12 males, De-Friz penins., 17.VII 1953 (leg. D. Kononov), 8.VIII 1955 (leg. D. Kononov), 3-19.VII 1961 (leg. M. Omel'ko),

20.VI 1962 (leg. M. Omel'ko), 10,19.VI 1968 (leg. M. Omel'ko), 19.VII 1969 (leg. M. Omel'ko); 2 males, Ryasanovka, 19,28.VII 1992.

BIOLOGY. The moths appear in June-July, inhabiting broadleaved and mixed coniferous-broadleaved forests. The larvae hatch in the last half of July, feed on a wide range of orchard and forest trees until autumn (at first gregariously then become solitary), hibernate in a strong cocoon, in which pupate in the end of May - beginning of June of the following year.

The species is known as a serious pest of the fruit trees throughout southern part of Russian Far East (Kurentzov, 1939; Tshistjakov, 1988).

DISTRIBUTION. Russian Far East (South of Amurskaya oblast' and Khabarovskii krai, Primorskii krai); NE and N China, Korea, Japan, ? Taiwan.

***Phlossa conjuncta* (Walker, 1855)**

Limacodes ? *conjuncta* Walker, 1855, List Lep. ins. Brit. Mus., 5: 1150.

REMARKS. This species, being known from India, Burma, Siam, China, Taiwan, Korea and Japan, has been reported as occurring in Amur and Ussuri also under the names *Natada conjuncta* (Kawada, 1930) and *Iragoides conjunctus* (Okano, Pak, 1964). But both these reports seems to be misunderstanding based most likely on first record of *Ph. conjuncta* from Korea (Fixsen, 1887). There are no any other evidences of its finding within that region and therefore it should be omitted from the local fauna, for this time at least.

***Neothosea suigensis* (Matsumura, 1931)**

Thosea suigensis Matsumura, 1931: 107, pl. 2, fig. 14.

MATERIAL EXAMINED. Primorskii krai: male, female, Kaimanovka, 1, 19.VII 1961 (leg. A. Tsvetaev, ZMMU); 2 males, 6 km N Zanadvorovka, 4.VIII 1984, 21.VII 1985.

DISTRIBUTION. Russian Far East (Southern Primorye, recorded for the first time); Korea.

REMARKS. As it has been shown quite rightly, *suigensis* actually differs from all representatives of the genus *Thosea* Wlk. as well as in having hind tibiae without middle spurs, so by structure of genitalia and these differences are justifiable to establish for this unusual species a new genus - *Neothosea* (Okano, Pak, 1964).

***Chibiraga banghaasi* (Hering et Hopp, 1927)**

Miresia bang-haasi Hering & Hopp, 1927: 83, pl. 10, fig. 11 (Syntypes: 2 males from Sutschansk [Partisansk, Russian Far East, Southern Primorye], coll. O. Bang-Haas and 1 male from Sidemi [Yankovskii Penins., Russian Far East,

Southern Primorye], leg. A. Moltrecht, in ZMHB).

Miresina bang-haasi: Hering, 1933: 206.

MATERIAL EXAMINED. Primorskii krai: 2 males, 5 km N Rettichovka, 23,24.VII 1990; male, 17 km SSW Krounovka, 27.VII 1990; 12 males, 3 females, 6 km N Zanadvorovka, 4.VIII 1984; male, 6 km SSE Andreevka, 25.VII 1985 (leg. S. Sinev).

BIOLOGY. The moth appear from the latter half of July to early August, inhabiting mainly the thinned out oak-woods. In China (Wei Cheng-gui, 1985) the larvae feed on leaves of *Quercus mongolica* and *Q. liaotungensis*.

DISTRIBUTION. Russian Far East (Southern Primorye); Korea, NE and E China, Taiwan.

***Narosoideus flavidorsalis* (Staudinger, 1887)**

Heterogenea (Miresa) flavidorsalis Staudinger, 1887: 195, pl. 11, fig. 7 (Syntypes: 4 males, 1 female, Vladivostok, Sidemi [Yankovskii Penins.], Suifun [Rasdolnaya river], [Russian Far East, Southern Primorye], in ZMHB).

Miresa flavidorsalis: Graeser, 1888: 121; Staudinger, 1892: 301.

MATERIAL EXAMINED. Primorskii krai: 2 males, female, Ternei, 3.VII 1962 (leg. V. Volkova), 4,18.VII 1964 (leg. V. Volkova); 2 males, 6 km N Zanadvorovka, 2.VIII 1984, 21.VII 1985; 11 males, Kedrovaya Pad', 3-29.VII 1974 (leg. V. Kononenko), 10.VIII 1976, 15.VII 1984 (leg. A. L'vovsky); 5 males, De-Friz Penins., 20.VII 1955 (leg. A. Kurentzov), 15.VII 1960 (leg. M. Omel'ko), 2-13.VII 1961 (leg. M. Omel'ko), 30.VI 1964 (leg. M. Omel'ko); male, Uliss inlet, Vladivostok, 12.VII 1960; 2 males, 6 km SSE Andreevka, 16,18.VII 1985 (leg. S. Sinev).

BIOLOGY. The moths appear from July to the middle of August, inhabiting various types of mixed and broadleaved forests.

DISTRIBUTION. Russian Far East (Primorskii krai); NE and N China, Korea, Japan, Taiwan.

***Narosoideus fuscicostalis* (Fixsen, 1887)**

Heterogenea (Miresa) flavidorsalis var. *fuscicostalis* Fixsen, 1887: 337, pl. 15, fig. 10.

Miresa fuscicostalis: Graeser, 1888: 121; Staudinger, 1892: 301.

MATERIAL EXAMINED. Amurskaya oblast': male, Blagoveschensk, 28.VI 1990 (leg. A. Strel'tzov).

DISTRIBUTION. Russian Far East (Amurskaya oblast'); Korea.

REMARKS. This species seems to be very rare in Russian Far East where from it was hitherto known upon 2 males, reported by L. Graeser (1888) from the same site, as specimen mentioned above.

Surprising that all 3 of known specimens are found rather northward from the main area of this species, while it never been found yet in Primorye, the most close region to the type locality in Korea.

***Parasa sinica* Moore, 1877**

Parasa sinica Moore, 1877, Ann. Mag. Nat. Hist., (4) 20: 93; Filipjev, 1927: 261 (Phansa [near Partisansk]); Kurentzov, 1939: 174.

Heterogenea hilarula Staudinger, 1887: 197 (Syntypes: Vladivostok (coll. H. Christoph), Askold Is., Ussuri, Suifun [Rasdolnaya river] (coll. Dorries) [Russian Far East, Southern Primorye], in ZMHB).

Neaera hilarula: Graeser, 1888: 121 (Blagoveshchensk, Khabarovsk).

Neaerasa hilarula: Staudinger, 1892: 298 (Suchan [Partisansk], Sidemi [Yankovskii Penins.]).

Neaerasa sinica: Staudinger, 1892: 299.

Latoia sinica: Tshistjakov, 1988: 266; Dubatolov, Ustjuzhanin, 1991: 249.

MATERIAL EXAMINED. Primorskii krai: female, 7 km NE Glubinnoye, 18.VI 1990; 2 males, Ternei, 14,19.VII 1964 (leg. V. Volkova); male, sea coast near Ternei, 2.VII 1914 (leg. N. Krylov); 4 males, Barabash-Levada, 24.VI-8.VII 1978; 2 males, 30 km NW Dal'negorsk, 4.VII 1971; female, Yaroslavsky, 4.VII 1979; 2 males, 30 km NE Chuguyevka, 27.VI-12.VII 1973; 7 males, 17 km SSW Krounovka, 13,19.VII 1992, 4.VII 1993; male, Ussuriysk, 21.VII 1921 (leg. A. Kurentzov); 1 male, 2 females, Gornotayozhnoye, 2-13.VII 1982; 8 males, Ussuriysky res., 21.VI-14.VIII 1966 (leg. Z. Konovalova), 15.VII 1990, 13.VII 1993; 5 males, 3 females, 6 km N Zanadvorovka, 1-2.VIII 1984, 4.VII-8.VIII 1985; 13 males, 2 females, Kedrovaya Pad', 3-29.VII 1974 (leg. V. Kononenko), 10.VI-20.VII 1976; male, Vol'no-Nadezhdinskoye, 16.VI 1952; 10 males, De-Friz Penins., 17.VII 1953 (leg. D. Kononov), 15.VII 1960 (leg. D. Kononov), 2.VI-19.VII 1961 (leg. M. Omel'ko), 15.VI-3.VII 1967 (leg. M. Omel'ko); 2 males, Okeanskaya, 22.VI 1957, 18.VI 1994; 3 males, Tigrovoi, 20-23.VI 1975; 8 males, Anisimovka, 19-29.VI 1988; 2 males, Ryasanovka, 19,28.VII 1992. Kuril Is.: male, female, Kunashir Is., Alechino, 11-18.VII 1962 (leg. N. Asarova).

BIOLOGY. The moths appear in June-July, sometimes in August (in warm years, when it can produce the second brood), inhabiting various types of forest and penetrating into the mountains up to timber line. The larvae are polyphagous, defoliating various broad leaved trees. After hatching in the last half of July, they live and feed gregariously, skeletonizing leaves, then become solitary causing most damage to orchard and forest trees until autumn. In the end of September they construct a strong cocoon just on the foodplant, in the furcations of branches, in which hibernate and pupate in the end of May - early June of the following year.

One of the common species in the gardens throughout southern part of Russian Far East, where it is known as a serious pest of the fruit trees (Kurentzov, 1939; Tshistjakov, 1988).

DISTRIBUTION. Russian Far East (Amurskaya oblast', Khabarovskii krai, Primorskii krai, Sakhalin and South Kurils); Korea, China, Japan, Taiwan.

***Parasa hilarata* (Staudinger, 1887)**

Heterogenea hilarata Staudinger, 1887: 198 (Type: male, Sidemi [Yankovskii penins., Russian Far East, Southern Primorye], in ZMHB).

Neaera hilarata: Graeser, 1888: 121 (Blagoveshchensk, Khabarovsk, Vladivostok).

Neaerasa hilarata: Staudinger, 1892: 299 (Suifun [Rasdolnaya river], Suchan [Partisansk], Askold Is.).

Parasa hilarata: Kurentzov, 1939: 174 (Sitza river [Tigrovoi]).

MATERIAL EXAMINED. Primorskii krai: female, Dersu, 8 km S Dal'ny Kut, 13.VI 1990; male, Ussuriysk, 17.VII 1965; male, Gornotayozhnoye, 20.VII 1990; male, Kaimanovka, 26.VII 1964 (leg. A. Tsvetaev, MSU); female, Ussuriysky res., 17.VII 1990; male, 6 km N Zanadvorovka, 6.VII 1985; male, Kedrovaya Pad', 10.VII 1976; male, Vol'no-Nadezhdinskoye, 16.VI 1952; 3 males, De-Friz Penins., 14,17.VII 1960 (leg. M. Omel'ko), 3.VII 1961 (leg. M. Omel'ko); male, Ryasanovka, 11.VII 1987 (leg. E. Belyaev).

BIOLOGY. The moths appear from the middle of June to the middle of July occurring dispersally in various types of forest. The larvae are polyphagous, but feed mainly on Rosacea: *Malus* sp., *Pirus* sp., *Padus* sp.

It has been recorded as an occasional pest of the fruit trees (Kurentzov, 1939).

DISTRIBUTION. Russian Far East (Amurskaya oblast', Khabarovskii krai, Primorskii krai); NE China, Korea, Taiwan.

***Parasa consocia* Walker, 1863**

Parasa consocia Walker, 1863, List Specimens lepid. Insects Colln Br. Mus., 32: 484.

Heterogenea princeps Staudinger, 1887: 199, pl. 15, fig. 7 (Types: 2 males, Ussuri [Russian Far East, Southern Primorye], in ZMHB).

Neaerasa consocia: Staudinger, 1892: 300.

Latoia consocia: Tshistjakov, 1988: 264.

MATERIAL EXAMINED. Primorskii krai: 4 males, Barabash-Levada, 24.VI-8.VII 1978; male, Vozdvizhenka, 22.VII 1965 (leg. L. Kulikova); male, Ussuriysk, 15.VII 1920 (leg. A. Kurentzov).

BIOLOGY. The moths appear from late June to early August, occurring dispersally in broadleaved and mixed coniferous-broadleaved forests. The larvae are polyphagous, defoliating various trees, but feed mainly on Rosacea: *Malus sp.*, *Pirus sp.*, *Padus sp.*, *Crataegus sp.*, *Cerasus sp.* After hatching in the middle of July, they live congregatory, skeletonizing the leaves, in the middle ages become solitary and eat up the leaves to axis vein. In the end of September an adult larva builds up a strong cocoon, in which hibernates and then pupates within June of the following year.

It has been recorded as an occasional pest of the fruit trees (Tshistjakov, 1988).

DISTRIBUTION. Russian Far East (South of Amurskaya oblast' and Khabarovskii krai, Primorskii krai); NE, N and Central China, Korea, Japan, Taiwan.

ACKNOWLEDGMENTS

I am deeply appreciate to Dr. A.V. Sviridov (Zoological Museum, Moscow University) for his help in examination of material under his care. My special thanks are due to Drs. V.A. Mutin (Pedagogical Institute, Komsomol'sk-na-Amure) and E.A. Belyaev (Institute of Biology and Pedology, Vladivostok), who provided valuable specimens for this study.

REFERENCES

- Dubatolov, V.V., Ustjuzhanin, P.Ya. 1991. Moths from Southern Sakhalin and Kunashir, collected in 1989. Part 2. Microheterocera: Hepialidae, Zygaenidae, Limacodidae, Thyrididae, Pyraloidea, Pterophoridae, Alucitidae.- Japan Heterocerists' J., 164: 249-252.
- Filipjev, N.N. 1927. Zur Kenntniss der Heteroceren (Lepidoptera) von Sutchan (Ussuri Gebiet).- Ann. Mus. Zool.de l'Acad. Sci. URSS, 28: 219-264, pls 12-16.
- Fixsen, C. 1887. Lepidoptera aus Korea.- In: Romanoff, N.M. Memoires sur les Lepidopteres, 3: 337-342, pl. 15.
- Graeser, L. 1888. Beitrage zur Kenntniss der Lepidopteren-Fauna des Amurlandes.- Berl. ent. Zeicht.,32: 33-153.
- Hering, M., Hopp, W. 1927. Limacodidae. - In: Bang-Haas, O. Horae Macrolepidopterologicae Regionis Palaearctica. Dresden-Blasewitz, Vol. 1: 82-83, pl. 10.
- Hering, M. 1933. Limacodidae. In: Seitz, A. Macrolepidoptera of the World. Suppl. to vol. 2: 201-209, pl. 15.
- Kawada, A. 1930. A List of Cochlidionid moths in Japan, with descriptions of two new genera and six new species.- Journ. Imp. Agr. Exp. Stat., 1: 231-262, pl. 26.

- Kurentzov, A.I. 1939. [Injurious Moths (Macrolepidoptera) of Trees and Shrubs of the Ussuri Territory].- Trudy Gornotayozhnoi Stanzii, Vladivostok, 3: 107-208 (In Russian).
- Matsumura, S. 1925. An enumeration of the butterflies and moths from Saghalien, with descriptions of new species and subspecies. - J. Coll. Agric. Hokkaido imp. Univ., vol. 15: 83-196.
- Matsumura, S. 1931. Descriptions of some new genera and species from Japan, with a list of species of the family Cochlidionidae. - Ins. Mats., Vol.5: 101-116, pl. 2.
- Moltrecht, A.K. 1929. Ueber die geographische Verbreitung der Macrolepidopteren des Ussuri- und Amur-Gebietes.- Zapiski Vladivostokskogo Otdeleniya Russkogo Geograficheskogo obshchestva, Vladivostok. 70 P.
- Oberthur, C. 1879. Diagnoses d'Espèces nouvelles de Lépidoptères de l'île Askold. Rennes. 16 P.
- Oberthur, C. 1880. Faune de Lépidoptères de l'île Askold. Première Partie. Etudes d'Entomologie. Rennes, 5: I-X, 1-88, pls 1-9.
- Okano, M., Pak, S.-W. 1964. A revision of the Korean species of the family Heterogeneidae (Lepidoptera).- Ann. Report Coll. of Liberal Arts, Univ. Iwate, 22: 1-10, pl. 1.
- Staudinger, O. 1887. Neue Arten und Varietäten von Lepidopteren aus dem Amur-Gebiet.- In: Romanoff, N.M. Mémoires sur les Lépidoptères, 3: 126-232.
- Staudinger, O. 1892. Die Macrolepidopteren des Amurgebiets. I Theil. Rhopalocera, Sphinges, Bombyces, Noctuae. In: Romanoff, N.M. Mémoires sur les Lépidoptères, 6: 83-658, pls 4-14.
- Tshistjakov, Yu.A. 1988. Limacodidae.- In: Babochki-vrediteli sel'skogo i lesnogo khozyaistva Dal'nego Vostoka, Vladivostok: 262-266 (In Russian).
- Tshistjakov, Yu.A. 1992. Limacodidae.- In: Nasekomye Khinganskogo Zapovednika, Vladivostok: 125 (In Russian).
- Wei Cheng-gui, 1985. Preliminary data on bionomy of *Miresina banghaasi*.- Kunchun Chzhishi, 22, N. 2: 76-78 (In Chinese).

© Far Eastern Entomologist

Editor-in-Chief: S.Yu.Storozhenko

Editorial Board: A.S.Lelej Yu.A.Tshistjakov
N.V.Kurzenko V.N.Makarkin

Address: Institute of Biology and Pedology, Far East Branch of Russian Academy of Sciences, 690022, Vladivostok-22, Russia.

FAX: (4232) 310 193

E-mail: entomol@stv.iasnet.com

