

## Contribution to the Knowledge of the Leaf-rollers (Lepidoptera, Tortricidae) of the Lower Amur Area

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**Abstract**—A list of 94 species of Tortricidae from the Lower Amur Area is presented, 14 species being recorded for Khabarovsk Terr. for the first time. Three species, *Endotheina quadrimaculana*, *Argyroploce arbutella*, and *Dichrorampha obscuratana*, are new to the Russian Far East. Two species monophagous on *Quercus*, *Tortrix sinapina* and *Hedya inornata*, have been found in the relict oak forests of the Lower Amur Area. Individual variation of the male genitalia within the *Dichrorampha simpliciana* species-group is revealed, and doubts are cast on the species rank of *D. cancellatana* and *D. okui*.

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The leaf-roller fauna (Lepidoptera, Tortricidae) of the Russian Far East is rather well known owing to a large series of publications of V.I. Kuznetsov (1973–2005). However, the investigations mostly concerned the southernmost areas of the region: the Middle Amur Area, Primorskii Territory, Southern Sakhalin, and the southern Kuriles. In the lower Amur River area, only a few leaf-rollers have been collected, and Kuznetsov published only single records of some, mainly boreal species in the environs of Nikolaevsk-on-Amur and Ozerpakh. However, this region is of great interest, since it includes the last isolated relict areas of the Far Eastern broadleaf forests (mostly oak forests) distributed downstream along the Amur River estuary as far as Subbotino Vill. and northwards as far as the crosspiece between lakes Orel and Chlya. The authors studied the lepidopteran fauna of the Lower Amur Area during the period of late July, 2006–early August, 2007. In order to determine the northeastern limits of the distribution ranges of nemoral species, special attention was focused on the oak forests.

### THE MAIN COLLECTING SITES AND DATES

Tyr (52°56'N, 139°46'E, about 100 m a.s.l.), 22.VII.2006, light trap, mixed forest with oaks above the village; 22–25.VII.2006, in daytime and at dusk, by hand, including sweeping oak canopy.

Arkhangelskoe (53°11'N, 140°25'E, about 200 m a.s.l.), 26.VII.2006, light trap in mixed forest with oaks, by hand in daytime and evening, sweeping oak canopy; 2–3.VIII.2007, with light trap and at light.

Lake Chlya (53°32'N, 140°13'E, about 30 m a.s.l.), 27–28.VII.2006, at light, outskirts of a village at the margin of a mixed forest, also by hand in evening; 4–6.VIII.2007, at light.

Belaya Gora (53°34'N, 140°22'E, about 250 m a.s.l.), 28.VII.2006, light trap, in the zone of *Pinus pumila* on coombe rocks.

Subbotino (53°02'N, 141°02'E, 0 m a.s.l.), 29.VII.2006, at light, outskirts of a holiday village at a sea-side meadow, also by hand in daytime and evening.

Chnyrrakh (53°05'N, 140°53'E, about 50 m a.s.l.), 30.VII.2006, light trap, mixed forest with a small portion of the oak.

Lake Chlya (53°28.5'N, 140°01'E, 1–2 m a.s.l.), 5.VII.2007, by hand, Mikhailovskaya Bay coast.

The Vaida River mouth (53°13'N, 140°21'E), 8.VII.2007, by hand.

The asterisk (\*) designates the species previously unknown in Khabarovsk Terr., two asterisks (\*\*), the species associated with oaks and previously unknown northwards of the Middle Amur Area. The data on the ranges and host plants are given according to Kuznetsov (2001, 2005).

### Tribe TORTRICINI

\*\* *Tortrix sinapina* (Butler, 1879). 7 ♂, 4 ♀, Tyr; 1 ♂, 1 ♀, Arkhangelskoe (2006); 1 ♂, 13 ♀, same locality (2007). An Amur–Chinese–Japanese species trophically associated with oaks. It occurs over the

entire valley of the Amur River within the limits of oak range.

*Acleris laterana* (Fabricius, 1793) (= *latifasciana* Haworth, 1811). The species was recorded by Kuznetsov (1973) from Ozerpakh Vill. in the Amur River estuary, 1915 (Chernavin). A trans-Palaeartic species, polyphagous on Rosaceae, was also recorded on currant and rhododendron.

#### Tribe COCHYLINI

*Cochylis dubitana* (Hübner, [1799]). 3 ♂, Arkhangelskoe (2007). A trans-Holarctic species developing on Compositae.

*Cochylidia heydeniana* (Herrich-Schäffer, 1851). 1 ♂, Tyr; 1 ♀, Arkhangelskoe (2007); 1 ♂, 1 ♀, Lake Chlya (2007). The species was recorded by Kuznetsov (1973) from the environs of Nikolaevsk, 17–18.VII.1964 (Masyutina). A trans-Palaeartic species developing on wormwood.

*Eupoecilia citrinana* Razowski, 1960. 1 ♂, Arkhangelskoe (2007); 1 ♀, Lake Chlya (2006). A south-Siberian–Far Eastern species.

*Gynnidomorpha minimana* (Caradja, 1916). 1 ♂, Arkhangelskoe (2007). A trans-Palaeartic species. In Europe, the larvae live in the inflorescences of *Pedicularis palustris*.

*Gynnidomorpha zygota* Razowski, 1964. 1 ♂, 1 ♀, Arkhangelskoe (2006); 4 ♂, 1 ♀, same locality (2007). A south-Siberian–Far Eastern species.

*Phtheochroa inopiana* (Haworth, [1811]). 5 ♂, Lake Chlya (2006). A trans-Holarctic species developing on wormwood roots.

#### Tribe EULIINI

*Eulia ministrana* (Linnaeus, 1758). The species was recorded by Kuznetsov (1973) from the environs of Nikolaevsk, 7.VII.1964 (Masyutina). A trans-Holarctic species, polyphagous.

#### Tribe SPARGANOTHINI

*Sparganothis pilleriana* ([Denis et Schiffermüller], 1775). 2 ♂, Arkhangelskoe (2007). A trans-Holarctic species, polyphagous.

*Sparganothis rubicundana* (Herrich-Schäffer, 1856). 2 ♂, Lake Chlya. A trans-Palaeartic species, a characteristic inhabitant of upper bogs; the larvae develop on bilberry.

#### Tribe CNEPHASIINI

*Eana incanana* (Stephens, 1852). 1 ♂, Tyr; 1 ♂, Arkhangelskoe (2007); 1 ♂, Chnyrrakh; 1 ♀, Lake Chlya (2007). A trans-Palaeartic species, polyphagous on herbaceous dicots.

#### Tribe ARCHIPINI

*Argyrotaenia pulchellana* (Haworth, 1811). The species was recorded by Kuznetsov (1973) from the Amur River estuary: 13(25).VI.1915 (Chernavin). A trans-Holarctic species, polyphagous.

*Archips ingentanus* (Christoph, 1881). 2 ♂, 1 ♀, Tyr; 1 ♂, Arkhangelskoe; 3 ♂, Chnyrrakh; 2 ♂, Belaya Gora. An Amur–Chinese–Japanese species. The species is polyphagous on deciduous trees, but larvae can also develop on herbs.

*Archips decretanus* (Treitschke, 1835) (= *betulana* Hb.). 1 ♂, Arkhangelskoe (2006); 2 ♂, 1 ♀, same locality (2007); 1 ♂, Chnyrrakh; 2 ♂, Lake Chlya (2006); 2 ♂, 1 ♀, same locality (2007); 1 ♂, Belaya Gora. A trans-Palaeartic species, polyphagous on deciduous trees and shrubs.

*Archips oporanus* (Linnaeus, 1758). 2 ♂, Arkhangelskoe (2007). A trans-Holarctic species, polyphagous on deciduous trees and shrubs.

\* *Archips pulcher* (Butler, 1879). 1 ♀, Lake Chlya (2007). The species was known from southern Primorskii Territory, Northeastern China, the Korean Peninsula, and Japan. The larvae live on the fir and the spruce.

*Archips rosanus* (Linnaeus, 1758). 6 ♂, 1 ♀, Tyr; 5 ♂, Arkhangelskoe (2007); 1 ♂, Subbotino; 10 ♂, 2 ♀, Lake Chlya (2006); 16 ♂, 2 ♀, same locality (2007). A trans-Holarctic species, polyphagous on deciduous trees and shrubs.

*Choristoneura diversana* (Hübner, [1817]). 1 ♂, Arkhangelskoe (2007). A trans-Palaeartic species, polyphagous on Rosaceae and other deciduous trees and shrubs.

**Note.** The specimen collected clearly differs from the species images in the keys by Kuznetsov (1978, 2001) in the structure of the genitalia. It is characterized by the presence of a large tooth on the right wall of the aedeagus. The presence of such a tooth was indicated as a specific character of *Ch. metasequoiacola* Liu, 1983 described from the Chinese province Hubei (Kuznetsov, 2001). However, in the original

description of the latter species, this character was not specified in the original description; moreover, a similar tooth was also depicted at the apex of the aedeagus of *Ch. diversana* Hb. We have examined over 20 males of *Ch. diversana* from the southern part of the Far East, and nearly all of them possess such a tooth.

***Choristoneura evanidana*** (Kennel, 1901). 1 ♀, Arkhangelskoe (2006); 1 ♀, Chnyrrakh. In Khabarovsk Terr., the species was first recorded from the Bolshekhkheksirskii Nature Reserve (Dubatolov and Syachina, 2007). This is an Amur–Chinese species, polyphagous on trees and shrubs.

***Choristoneura luticostana*** (Christoph, 1881). 1 ♀, Tyr; 1 ♀, Arkhangelskoe (2006). An Amur–Chinese species, polyphagous on trees and shrubs, frequently associated with oaks.

***Tosirips perpulchranus*** (Kennel, 1901). 1 ♂, Tyr; 1 ♂, Arkhangelskoe (2007); 1 ♀, Belaya Gora. An Amur–Chinese–Japanese species, apparently polyphagous, since the larvae were recorded on oak and vine.

***Ptycholomoides aeriferanus*** (Herrich-Schäffer, 1851). 2 ♂, 1 ♀, Tyr; 2 ♂, 2 ♀, Arkhangelskoe (2006); 20 ♂, 11 ♀, same locality (2007); 1 ♀, Lake Chlya (2006); 2 ♂, 6 ♀, same locality (2007); 1 ♀, Belaya Gora. A trans-Palaeartic species, recorded on larch and birch.

***Pandemis corylana*** (Fabricius, 1794). 3 ♂, Tyr; 1 ♂, Arkhangelskoe (2006); 4 ♂, same locality (2007); 3 ♂, 1 ♀, Chnyrrakh; 5 ♂, Lake Chlya (2006); 4 ♂, same locality (2007). A trans-Palaeartic species, polyphagous on deciduous trees and shrubs.

***Pandemis dumetana*** (Treitschke, 1835). 1 ♂, Tyr; 20 ♂, Arkhangelskoe (2007); 1 ♂, Subbotino; 3 ♂, Lake Chlya (2007). A trans-Palaeartic species, polyphagous on deciduous trees and shrubs, but the larvae can also develop on herbs.

***Pandemis cinnamomeana*** (Treitschke, 1830). 8 ♂, Arkhangelskoe (2006); 15 ♂, 2 ♀, same locality (2007); 1 ♂, Lake Chlya (2006); 3 ♂, Lake Chlya (2007); 1 ♂, Belaya Gora. A trans-Palaeartic species, polyphagous on deciduous trees and shrubs.

***Pandemis cerasana*** (Hübner, 1786). 1 ♀, Tyr; 1 ♀, Arkhangelskoe (2006); 1 ♀, same locality (2007); 1 ♂, 1 ♀, Lake Chlya (2007); 1 ♂, Belaya Gora. A trans-Holarctic species, polyphagous on deciduous trees.

***Pandemis heparana*** ([Denis et Schiffermüller], 1775). 1 ♂, 1 ♀, Tyr; 2 ♂, Arkhangelskoe (2007); 3 ♂, 1 ♀, Chnyrrakh; 3 ♂, Lake Chlya (2006); 5 ♂, same locality (2007); 1 ♂, Belaya Gora. A trans-Holarctic species, polyphagous on deciduous trees and shrubs.

***Lozotaenia forsterana*** (Fabricius, 1781). 1 ♂, Tyr; 1 ♀, Arkhangelskoe (2006); 3 ♂, Lake Chlya (2006). A trans-Palaeartic species, polyphagous on coniferous trees, deciduous shrubs, less frequently on herbs. The specimen from Tyr differs in the brownish, instead of gray, background of the fore wing.

\* ***Aphelia septentrionalis*** Obraztsov, 1959. 1 ♂, Lake Chlya (2006). An Eastern-Asian–Alaskan species.

***Aphelia paleana*** (Hübner, 1793). The species was recorded by Kuznetsov (1973) from Ozerpakh in the Amur River estuary, 10(22).VII.1915 (Chernavin). A trans-Palaeartic species, polyphagous on herbs.

***Neocalyptis angustilineana*** (Walsingham, 1900) (*Epagoge inconditana* Kenn.), 1 ♂, Arkhangelskoe (2007); 1 ♂, Chnyrrakh; 2 ♂, Subbotino; 1 ♂, 1 ♀, Lake Chlya (2007). An Amur–Chinese–Japanese species. The larvae were found in hips, but probably are polyphagous.

***Neocalyptis liratana*** (Christoph, 1881). 5 ♂, 3 ♀, Tyr; 1 ♂, Arkhangelskoe (2007); 1 ♂, Lake Chlya (2006); 2 ♂, same locality (2007); 1 ♂, Belaya Gora. The species was also recorded by Kuznetsov (1973) from the environs of Nikolaevsk, 1.VIII.1964 (Masjutina). An Amur–Chinese–Japanese species.

***Clepsis pallidana*** (Fabricius, 1776). 1 ♂, Arkhangelskoe (2007). A trans-Palaeartic species, polyphagous on Rosaceae shrubs and herbs.

***Clepsis rurinana*** (Linnaeus, 1758). 4 ♂, Tyr; 1 ♂, Arkhangelskoe (2006); 4 ♂, 5 ♀, same locality (2007); 1 ♀, Chnyrrakh; 1 ♂, Subbotino; 2 ♂, Lake Chlya (2006); 4 ♂, Belaya Gora. A trans-Palaeartic species, polyphagous on deciduous trees and shrubs, occasionally on herbs.

***Adoxophyes orana*** (Fischer von Röslerstamm, 1834). 4 ♂, Tyr; 1 ♂, Lake Chlya (2006). A trans-Palaeartic species, polyphagous on deciduous trees and shrubs.

#### Tribe ENDOTHENIINI

\* ***Endothenia quadrimaculana*** (Haworth, 1811). 1 ♂, Tyr. A trans-Holarctic species developing on roots of Labiatae.



## Tribe OLETHREUTINI

*Apotomis semifasciana* (Haworth, 1811). 1 ♂, Arkhangelskoe (2007); 1 ♂, Chnyrrakh. A trans-Palaeartic species trophically associated with willows.

*Apotomis inundana* ([Denis et Schiffermüller], 1775). 4 ♂, Arkhangelskoe (2007); 1 ♂, 1 ♀, Chnyrrakh. A trans-Palaeartic species developing on aspen.

*Apotomis turbidana* (Hübner, [1825]). 2 ♂, Arkhangelskoe (2006). A trans-Palaeartic species trophically associated with *Betula platyphylla*.

*Apotomis betuletana* (Haworth, 1811). 2 ♂, 1 ♀, Chnyrrakh; 1 ♂, Lake Chlya (2006); 2 ♂, 2 ♀; same locality (2007). A trans-Palaeartic species developing on various *Betula* species.

*Apotomis vigens* Falkovitsh, 1966. 3 ♀, Belaya Gora. The species is distributed in southern Siberia and Primorskii Territory.

*Apotomis capreana* (Hübner, [1817]). 1 ♂, Chnyrrakh. A trans-Palaeartic species developing on various *Salix* species, occasionally on aspen and poplars.

\* *Apotomis sauciana* (Frölich, 1828). 1 ♂, Lake Chlya (2006). Probably, this is a northern trans-Palaeartic species known only from northern Europe and Northeast Asia. The larvae develop on cowberry, were also recorded from raspberry.

*Orthotaenia secunda* Falkovitsh, 1962. ♂, Tyr. An Amur–Chinese–Japanese species, polyphagous on deciduous trees and shrubs.

*Hedya dimidiana* (Clerck, 1759). 1 ♂, 1 ♀, Chnyrrakh. A trans-Palaeartic species developing on Rosaceae.

*Hedya vicinana* (Ragonot, 1894). 2 ♂, Tyr; 6 ♂, 1 ♀, Arkhangelskoe (2007); 4 ♂, Chnyrrakh; 3 ♂, Lake Chlya (2006); 11 ♂, same locality (2007); 2 ♂, Belaya Gora. A south-Siberian–Far Eastern species developing on willows and poplars.

\*\* *Hedya inornata* (Walsingham, 1900). 2 ♂, 1 ♀, Tyr; 3 ♂, Arkhangelskoe (2007). An Amur–Chinese–Japanese species, monophagous on oak. It is widely distributed over the entire range of the oak in the territory of the Russian Far East: from the westernmost part in an oak forest on the Argunskii Range in Chita

Prov. (Dubatolov et al., 2003) to the easternmost part in the Lower Amur Area.

*Metendothenia atropunctana* (Zetterstedt, [1839]). 1 ♂, Chlya (2006). A trans-Holarctic species, polyphagous on trees.

\* *Argyroploce arbutella* (Linnaeus, 1758). 2 ♂, Lake Chlya (2006). The species was known from the north of West Europe and the north of the European part of Russia (Kuznetsov, 1978). In the Far East, it has been found for the first time. The species is trophically associated with various species of *Vaccinium* and *Arctostaphylos*.

\* *Rudisociaria irina* (Falkovitsh, 1966). 6 ♂, Tyr. The species is distributed in the Amur Area and Primorskii Territory.

*Olethreutes captiosana* (Falkovitsh, 1960). 1 ♂, Tyr; 1 ♂, Vaida River mouth; 1 ♂, Lake Chlya (2006). The species was recorded by Kuznetsov (1973) from the environs of Nikolaevsk, 18.VII.1964 (Masyutina). A south-Siberian–Amur–Chinese–Japanese species. The larvae presumably live in forest litter.

*Phiaris bipunctana* (Fabricius, 1794). 1 ♀, Tyr. A trans-Palaeartic species. In Europe, the larvae develop on cowberry, bilberry, and rhododendron.

\* *Phiaris dissolutana* (Stange, 1886). 1 ♂, Belaya Gora. A northern trans-Palaeartic species, the larvae develop between moss stems.

*Phiaris obsoletana* (Zetterstedt, [1839]). The species was recorded by Kuznetsov (1973) from the environs of Nikolaevsk, 26.VII.1964 (Masyutina). A boreal trans-Holarctic species.

*Phiaris metallicana* (Hübner, [1799]). 1 ♀, Lake Chlya (2006). Kuznetsov (1973) recorded this species from the environs of Nikolaevsk-on-Amur, 7–14.VII.1959 (Masyutina). A trans-Holarctic species developing on *Vaccinium* and *Rhododendron*.

*Phiaris turphosana* (Herrich-Schäffer, 1851). The species is known only from the record by Kuznetsov (1973) for Ozerpakh in the Amur River estuary, 22.VI(5.VII).1915 (Chernavin). A boreal trans-Holarctic species.

*Celypha flavipalpata* (Herrich-Schäffer, 1848). 5 ♂, Tyr; 3 ♂, Arkhangelskoe (2007); 1 ♂, Lake Chlya (2007). A trans-Palaeartic species.

*Celypha cespitana* (Hübner, [1817]). 2 ♂, Tyr; 1 ♂, Subbotino; 1 ♂. A trans-Holarctic species, polyphagous on herbs.

\* *Celypha rurestrana* Duponchel, 1843. 8 ♂, Arkhangelskoe (2007). This boreal trans-Palaeartic species was recorded earlier in the Far East only from Amurskaya Province. The larvae develop on *Hieracium* (Compositae).

*Loxoterma rivulana* (Scopoli, 1761). 8 ♂, Tyr; 7 ♂, 2 ♀, Arkhangelskoe (2007); 1 ♂, Subbotino; 1 ♂, Lake Chlya (2006); 3 ♂, 1 ♀, same locality (2007). A trans-Palaeartic species, polyphagous.

*Loxoterma siderana* (Treitschke, 1835). 3 ♂, 2 ♀, Subbotino. This trans-Holarctic species develops on Rosaceae shrubs and herbs.

*Loxoterma symmathetes* (Caradja, 1916). 1 ♂, Tyr; 3 ♂, Arkhangelskoe (2006); 1 ♂, Lake Chlya (2006). An Eastern-Asian vicariant of *L. lacunana* ([Denis et Schiffermüller], 1775) distributed to the east of Transbaikalia, polyphagous.

*Piniphila bifasciana* (Haworth, 1811). 1 ♂, Belaya Gora. A trans-Palaeartic species. The larvae develop in microstrobiles of *Pinus sylvestris*.

*Pseudosciaphila branderiana* (Linnaeus, 1758). 4 ♂, 1 ♀, Tyr; 1 ♂, Arkhangelskoe (2007); 2 ♂, 1 ♀, Chnyrrakh. A trans-Holarctic species trophically associated with the aspen and the poplar.

#### Tribe ENARMONIINI

*Ancylis uncella* ([Denis et Schiffermüller], 1775). 1 ♂, Belaya Gora. A trans-Palaeartic species. In Europe, the larvae develop on the heather.

*Ancylis badiana* ([Denis et Schiffermüller], 1775). 1 ♂, Arkhangelskoe (2006); 1 ♂, Lake Chlya (2006). A trans-Holarctic species developing on herbaceous legumes.

*Ancylis tineana* (Hübner, 1799)]. The species was recorded by Kuznetsov (1973) from the environs of Nikolaevsk-on-Amur, 7.VII.1964 (Masyutina). A trans-Holarctic species.

#### Tribe EUCOSMINI

*Epinotia ramella* (Linnaeus, 1758). 1 ♀, Lake Chlya (2006); 2 ♂, same locality (2007). The species was recorded by Kuznetsov (1976) from the environs of Nikolaevsk-on-Amur, 7.VII.1964 (Masyutina).

A trans-Palaeartic species. The larvae feed on seeds of birch, and also on willows and poplars.

*Epinotia signatana* (Douglas, 1845). 1 ♂, Lake Chlya (2007). A trans-Palaeartic species. The larvae develop on Rosaceae trees.

*Epinotia contrariana* (Christoph, 1881). 1 ♂, Subbotino; 1 ♂, Lake Chlya (2007). A south-Siberian-Far Eastern species developing on Rosaceae shrubs.

\* *Epinotia cinereana* (Haworth, 1811). 7 ♂, 2 ♀, Tyr; 1 ♂, Lake Chlya (2006). A trans-Palaeartic species. The larvae develop in aspen aments and on poplars.

\* *Zeiraphera ratzeburgiana* (Saxen, 1840). 1 ♂, Arkhangelskoe (2007); 1 ♀, Lake Chlya (2007); 1 ♂, Belaya Gora. A trans-Palaeartic species developing on conifers.

*Zeiraphera rufimitrana* (Herrich-Schäffer, 1847). 3 ♂, 4 ♀, Arkhangelskoe (2007); 8 ♂, 1 ♀, Lake Chlya (2007). A trans-Palaeartic species developing on conifers.

*Retinia perangustana* (Snellen, 1883). The species was recorded by Kuznetsov (1976) and Lyubarskaya (1964) from the Lower Amur Area. This is a boreal subtrans-Palaeartic species (not occurring westwards of Middle Europe) associated with larch.

*Spilonota laricana* (Heinemann, 1863). 6 ♂, 1 ♀, Belaya Gora. A trans-Holarctic species developing on larch.

*Spilonota ocellana* (Fabricius, 1787). 1 ♀, Tyr; 1 ♀, Belaya Gora. A trans-Holarctic species, polyphagous on trees.

*Rhopobota naevana* (Hübner, [1817]). 1 ♂, Tyr; 3 ♂, Arkhangelskoe (2007); 1 ♂, Lake Chlya (2006); 1 ♂, Belaya Gora. A trans-Holarctic species, polyphagous on deciduous trees and shrubs.

*Rhyacionia pinicolana* (Doubleday, 1849). 5 ♂, 3 ♀, Belaya Gora. A trans-Palaeartic species developing on various *Pinus* species.

*Notocelia tetragonana* (Stephens, 1834). 1 ♀, Lake Chlya (2006). Probably, a trans-Palaeartic species previously recorded from Europe and Northeast Asia (Magadan Prov.), trophically associated with the dogrose.

*Notocelia incarnatana* (Zincken, 1821). 17 ♂, Arkhangelskoe (2007); 2 ♂, Lake Chlya (2007). A trans-

Palaeartic species trophically associated with the dogrose.

*Notocelia rosaecolana* (Doubleday, 1850). 1 ♀, Arkhangelskoe (2006); 2 ♂, Lake Chlya (2006). The species was recorded by Kuznetsov (1976) from the environs of Nikolaevsk, 1.VIII.1964 (Masyutina). A trans-Holarctic species developing on Rosaceae shrubs.

*Epiblema foenella* (Linnaeus, 1758). 1 ♂, Tyr; 1 ♂, Arkhangelskoe (2007); 3 ♂, 1 ♀, Subbotino; 1 ♂, 2 ♀, Lake Chlya (2007); 3 ♂, 1 ♀, Subbotino. The species was recorded by Kuznetsov (1976) from the environs of Nikolaevsk, 7.VIII.1964 (Masyutina). A trans-Palaeartic species developing on wormwood.

*Epiblema scutulana* ([Denis et Schiffermüller], 1775). 1 ♂, Arkhangelskoe (2007). A trans-Palaeartic species developing on Compositae.

*Epiblema stricticana* (Fabricius, 1794). 1 ♂, Arkhangelskoe (2007). The male collected possesses the entirely darkened dorsal spot, but the structure of the genitalia removes all doubts about correctness of the identification. This is a trans-Palaeartic species developing on *Tussilago farfara* and some other herbs.

*Eucosma abacana* (Erschoff, 1877). 1 ♀, Subbotino. The species is distributed in the steppe and steppeified areas from Kazakhstan to Japan. The adults occur in wormwood thickets.

\* *Eucosma conterminana* (Guenée, 1845), 1 ♀, Lake Chlya (2006); 1 ♂, 1 ♀, same locality (2007). A trans-Palaeartic species. In Europe, the larvae develop on various species of *Lactuca*.

*Eucosma aspidiscana* (Hübner, [1817]). The species was recorded by Kuznetsov (1976) from the environs of Nikolaevsk, 17.VII.1964 (Masyutina). A trans-Palaeartic species.

*Pelochrista umbraculana* (Eversmann, 1844). 1 ♂, Belaya Gora. A trans-Palaeartic species.

#### TRIBE GRAPHOLITINI

*Cydia glandicolana* (Danilevsky, 1968). 2 ♂, Tyr; 2 ♂, Arkhangelskoe (2007). An Amur–Chinese–Japanese species developing in acorns of *Quercus mongolica*.

\* *Dichrorampha klimeschiana* Toll, 1955. 4 ♂, Arkhangelskoe (2006). A trans-Palaeartic species with a disjunctive range. The larvae presumably develop on *Achillea*.

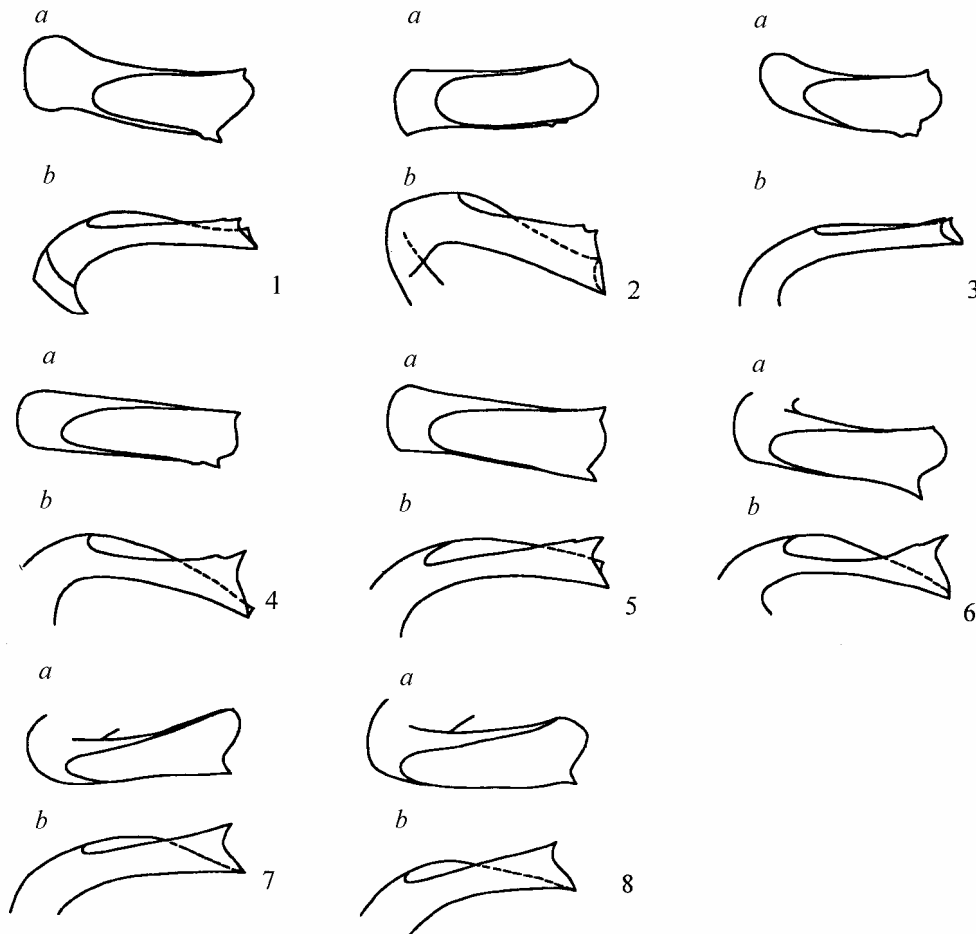
\* *Dichrorampha obscuratana* Wolff, 1955. 1 ♀, Subbotino. The species was known from the territory extending from Central Europe to the mountains of southern Siberia. This is the first record of the species in the southern part of the Far East. The larvae probably develop in roots of *Tanacetum*.

\* *Dichrorampha ambrosiana* (Kennel, 1919). 1 ♂, Arkhangelskoe (2007); 5 ♂, 6 ♀, Subbotino; 1 ♂, Lake Chlya (2007). This Siberian–Far Eastern species has been found in the Amur Area for the first time.

*Dichrorampha simpliciana* (Haworth, 1811). 5 ♂, Arkhangelskoe (2006); 4 ♂, 1 ♀, same locality (2007); 12 ♂, 1 ♀, Subbotino; 1 ♂, Lake Chlya (2007). The species was recorded by Danilevsky and Kuznetsov (1968) from the Langr Peninsula in the Amur River estuary, 18.VII.1907 (Soldatov). It is a trans-Palaeartic species. The adults fly above wormwood thickets.

**Note.** The taxonomy of the *D. simpliciana* species group is very obscure. Danilevsky and Kuznetsov (1968) distinguished two subspecies of this species: the western Palaeartic nominotypical subspecies and the eastern Palaeartic *D. cancellatana* (Kennel, 1901) described from the Amur Area without more exact indication of the collecting site. Later, Komai (1979) revised collections from Japan and distinguished three very closely related and partly sympatric species. *D. cancellatana* (Kennel, 1901) from Hokkaido Island is characterized by a higher right wall of the aedeagus and, respectively, the largest tooth is situated on this wall. In *D. okui* Komai, 1979 from Honshu and Kyushu islands, the left wall is better developed, and the tooth on this wall is distinctly larger than that on the right wall. In *D. albistriarta* Komai, 1979 from Hokkaido and Honshu islands, the left wall is also better developed, and tooth on this wall is long and attenuate; the species is also characterized by a whitish (instead of yellowish), pale pattern of the fore wing. In our opinion, the differences in the number of cornuti, reported by Komai, are not convincing, since these cornuti could fall out and be lost during preparation.

The authors have examined specimens of the *D. simpliciana* species-group, collected from various localities.



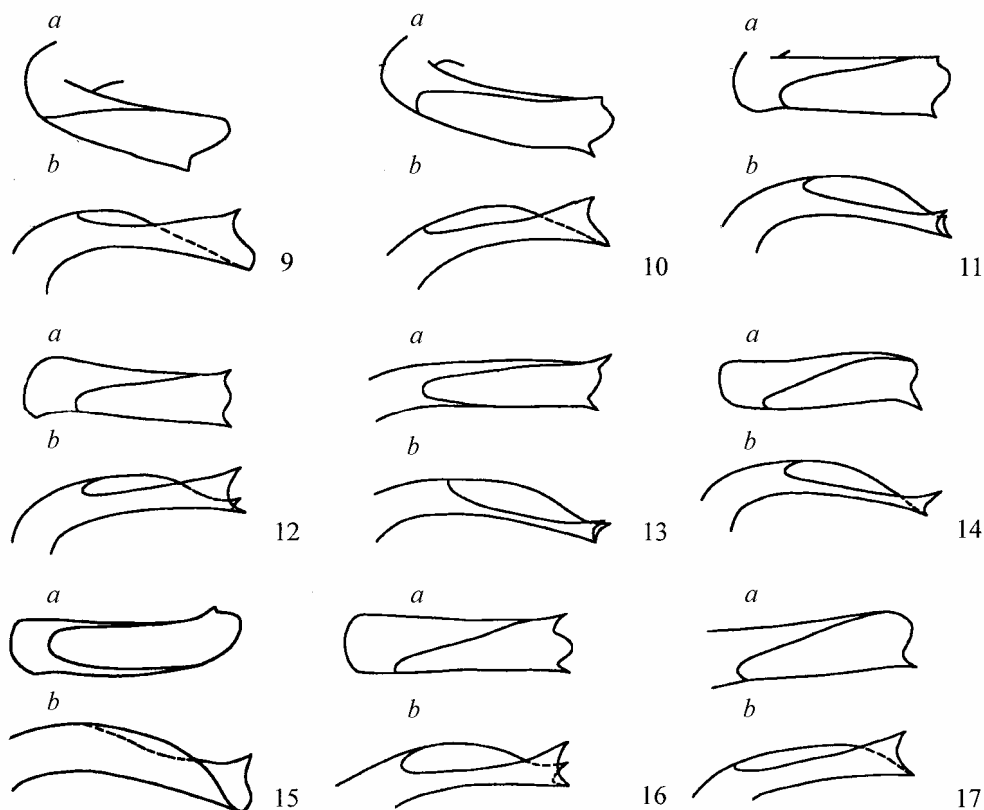
**Figs. 1–8.** *Dichrorampha simpliciana* (Haworth). Aedeagi of males of the *D. simpliciana* group: (a) dorsal view, (b) lateral view [(1) *D. simpliciana*, Novosibirsk, Akademgorodok, right bank of the Zyryanka River; (2, 3) *D. simpliciana*, Novosibirsk Prov., Iskitimskii Distr., Talmenka Vill.; (4) *D. cancellatana*, Chita Prov., Sokhondinskii Nature Reserve, Agutsa River; (5, 6) *D. cancellatana*, Chita Prov., Kyra Vill.; (7) *D. cancellatana*, Chita Prov., Nerchinskii Distr., 5 km W of Olochi; (8) *D. cancellatana*, Chita Prov., 5 km SW of Budyumkan River].

***D. simpliciana*:** 1 ♂, Novosibirsk, Akademgorodok, right bank of the Zyryanka River, 23.VII.1988 (Dubatolov). The left and right walls of the aedeagus form two small but distinct teeth; the left wall is better developed (Fig. 1). 2 ♂, Novosibirsk Prov., Iskitimskii Distr., Talmenka Vill., 2.VIII.1974 (Tibatina). In contrast to the preceding specimen, this one is characterized by the presence of small, apically obtused teeth formed by the left and right walls of the aedeagus, and the tooth on the left wall is double (Figs. 2, 3).

***D. cancellatana*:** 1 ♂, Chita Prov., Sokhnodinskii Nature Reserve, Agutsa River, 13.VIII.1991 (Dubatolov and Zinchenko). This specimen is similar to that collected in Talmenka Vill. (Novosibirsk Prov), but its teeth are stronger (Fig. 4). 4 ♂, Chita Prov., Kyra Vill., 11.VIII.1991 (Dubatolov). The left wall of the aedeagus is better developed, the apex of the aedeagus bears two teeth; in one specimen, the tooth on the right

wall is smaller, obtused, more similar to a small projection (Figs. 5, 6). 2 ♂, Chita Prov., Nerchinskii Distr., 5 km W of Olochi, 29.VII.2002 (Dubatolov). The specimens are characterized by the presence of one strong tooth formed by the left, better developed wall of the aedeagus (Fig. 7). 1 ♂, Chita Prov., 5 km SW of Burdyumkan River, 25.VII.2002 (Dubatolov). The aedeagus bears one tooth on the left wall (Fig. 8), similarly to that in the preceding specimens. 4 ♂, Khabarovsk Terr., Bolshekhkhtsirskii Nature Reserve, Bychikha, 10.VIII.2006 (Dubatolov). The specimen differs from the preceding specimens in the presence of one tooth formed by the left, instead of the right, wall of the aedeagus (Figs. 9, 10). 1 ♂, Primorskii Terr., 18 km SE of Ussuriisk, Gornotayozhnoe, arboretum, 8.VIII.1995 (Dubatolov). The specimen is characterized by a well-developed right wall of the aedeagus, terminating apically with a tooth (Fig. 15).





**Figs. 9–17.** *Dichrorampha simpliciana* (Haworth). Aedeagi of males of the *D. simpliciana* group: (a) dorsal view, (b) lateral view [(9, 10) *D. cancellatana*, Khabarovsk Terr., Bolshekhkhehtsirskii Nature Reserve, Bychikha; (11–14) *D. okui*, Khabarovsk Terr., Nikolaevsk Distr., Subbotino; (15) *D. cancellatana*, Primorskii Territory, Ussuriisk, Gornotaezhnaya Station; (16, 17) *D. okui*, Sakhalin, 12 km NW of Aniva, Lyutoga River].

*D. okui*: 2 ♂, Sakhalin, 12 km NW of Aniva, Lyutoga River, Urozhainoe, 16.VIII.1989 (Dubatolov, Zinchenko, Rusanov). In both specimens, the left wall of the aedeagus is better developed; one specimen possesses one tooth on the left wall of the aedeagus, and the other, two large teeth on the left and right walls (Figs. 16, 17). 12 ♂, Khabarovsk Terr., Nikolaevsk Distr., Subbotino, 30.VIII.2006 (Dubatolov and Syachina). The structure of the aedeagus exhibits two main forms. In three specimens, the aedeagus bears one strong, apically pointed tooth formed by the left wall of the aedeagus. In the other specimens, the aedeagus bears two teeth formed by the left and right walls; these teeth are more or less distinct, but the right one is larger in all the specimens (Figs. 11–14). In addition, one of the specimens possesses one row of additional teeth on the right wall of the aedeagus.

Thus, examination of the specimens collected from various areas of Siberia and the Far East has shown a wide individual morphological variability: “specific” characters overlap within the limits of one region and

even within the limits of one population. It seems to be unlikely that several species differing only slightly in details of sclerotization of the apical part of the aedeagus coexist on one glade. In this connection, the specific status of *D. cancellatana*, *D. okui*, and, probably, *D. albistriana* is questionable.

The results of the present study show that the leaf-roller fauna of the Lower Amur Area includes no less than 94 species. Among them, the majority (71 species, about 76%) are widely distributed trans-Palaearctic and trans-Holarctic species, 9 species (about 10%) are South-Siberian–south-Far Eastern subnemoral species, and 12 species (about 13%) are south-Far Eastern nemoral species associated with broadleaf forests. The latter group of species has proved to be twice more voluminous here than southwards, in the northern part of the Bureinskii Mountains. It can be accounted for by the fact that broadleaf trees are quite rare there, while in the Amur River mouth, oak forests form characteristic accumulations. The circumstance that such forests are inhabited by



a significant number of species trophically obligately associated with oak [Tortricidae: *Tortrix sinapina*, *Hedya inornata*; Thyatiridae: *Tethea ampliata* (Butler, 1878); Notodontidae: *Drymonia dodonides* (Staudinger, 1887), *Peridea lativitta* (Wileman, 1911); Nocuidae: *Catocala doerriesi* Staudinger, 1888, *C. dula* Bremer, 1861, *C. streckeri* Staudinger, 1888; Nymphalidae: *Neptis thisbe* Ménétriés, 1859; Lycaenidae: *Japonica lutea* (Hewitson, 1865), *Antigius attilia* (Bremer, 1861), *Favonius orientalis* (Murray, 1875), *F. korshunovi* (Dubatolov et Sergeev, 1982), *F. taxila* (Bremer, 1861), *F. cognatus* (Staudinger, 1892), etc.], points to their relict nature and indigeneity in this area, at least, beginning from the climatic optimum of the Holocene.

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