

アムール河下流域のゼフィルス (2006, 2007 年の調査結果)

**On Zephyrus-fauna of the Lower Amur (Russian Far East) :
Results of 2006-2007 Expeditions**

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Abstract :

Five species from the tribe Theclini were added to formerly recorded 8 species in the lower reaches of the Amur River in Khabarovskii Krai, Russia ; all findings are mapped and all species are depicted.

アムール河の下流域では、ケルクス類の森林があり、ゼフィルス類を産する。筆者は 2006, 2007 年の 2 年間にわたってこの地域のゼフィルスを調べ、従来から知られていた 8 種類に加え、5 種類のこの地方としての初記録を出し、全部で 13 種類のゼフィルス類の棲息を確認した。本報告はその詳細な産地等の報告である。

Keywords :

Lycaenidae, Theclini, *Zephyrus*, Low Amur, Russian Far East, distribution.

The butterfly fauna of the lower reaches of the Amur River, within Ulchsky and Nikolaevsk Districts of Khabarovskii Krai of Russia, is still poorly known. Twelve species have been recorded since L. Graeser [1888] collected the first species at the Amur River mouth, *Neozephyrus japonicus* Mrr. All modern information about the *Zephyrus*-fauna of the Lower Amur was cited by Dubatolov, Novomodnyi and Deneko [2007]. This report presents new information that was collected in 2006-2007 years during two expeditions, kindly supported by Prof. T. Fujioka.

In July 2006, during a visit to Komsomolsk-na-Amure, V.V. Dubatolov had a possibility to study Dr. V. Mutin's collection, and found only five Theclini species of six species that were mentioned by V.M. Mutin [1992] in the list of the butterflies of the Komsomolsk-na-Amure suburbs, the so-called Green *Zephyrus* being missing. All they are cited in this article.

Five additional Theclini species were shown to occur at Komsomolsk-na-Amure and the Gorin River on the maps in the book by P. Gorbunov (2001), they are : *Antigius attilia* Brem., *Araragi enthea* Jans., *Wagimo signata* Btl., *Chrysozephyrus smaragdinus* Brem., *Favonius taxila* Brem., *F. cognatus* Stgr. and *F. orientalis* Mrr. ; later *Artopoetes pryeri* Mrr. and *F. taxila* were cited from Tsimmermanovka (Gorbunov, Kosterin, 2003). In 2006, V.V. Dubatolov requested exact information about these observations from Mr. P. Gorbunov, and he answered that only *Araragi enthea* Jans. and *Favonius cognatus* Stgr. were collected in

the Komsomolsky Nature Reserve in 1988 by Mr. V.B. Krasutsky, while the indications of *Chrysozephyrus smaragdinus* Brem., *Favonius orientalis* Mrr. and *Favonius taxila* Brem. for this locality were only extrapolations. Unfortunately, he evaded providing exact information on records of *Artopoetes pryeri* Mrr. and *F. taxila* from Tsimmermanovka.

After expedition 2005, by V.V. Dubatolov and I.F. Deneko, with a financial support by Prof. T. Fujioka, to Nikolaevsk-na-Amure, three *Favonius* species were discovered, which are strictly monophagous on oak : *F. korshunovi* Dubat. et Serg., *F. taxila* Brem. and *F. cognatus* Stgr. (Dubatolov, Novomodnyi, Deneko, 2007). In 2006, V.V. Dubatolov, together with A. Syachina, with the same financial support, visited the localities along the Amur River low reaches : Pivan near Komsomolsk-na-Amure, Tyr, Nikolaevsk-na-Amure, Arkhangelskoe and Chlya. They have also visited Subbotino (53°02'N 141°02'E), examined the easternmost oak forest on a steep slope along the Amur mouth bank, but did not found any Theclini species. In 2007, the same persons collected Theclini species in Komsomolsk-na-Amure, Kiselevka, Tsimmermanovka, Arkhangelskoe and Chlya. In 2007, they tried to found the one of the northernmost oak forest in the Lower Amur, between Lakes Orel and Chlya, but could not search that small hill which it was said to occupy in a wild high tree forest. The materials of these trips form the basis of this article. An annotated list of Theclini species of the Amur River low reaches is given below.

チョウセンメスアカシジミ

Thecla betulae (Linnaeus, 1758)

(Figs 16–17)

Material. 1♂, 1♀, Komsomolsk-na-Amure, “Silinsky” park, 50°34′N 137°03′E, 3, 8. VIII 1992, Mutin leg., 3♂, the same locality, 20. VII 2007, Dubatolov leg.; 1♂, Tyr, 52°56′N 139°46′E, 23. VII 2006, Dubatolov leg.

Distributed throughout the Amur basin, but there are only two records in the river low reaches (Fig. 1). A rare species.

In Tyr it was found on an oak tree in 100 m from the nearest *Padus avium* bush; probably occurs at the Amur river mouth also.

ウラゴマダラシジミ

Artopoetes pryeri (Murray, 1873)

(Figs 18–19)

Material. 1♀, Komsomolsk-na-Amure, “Silinsky” park, 50°34′N 137°03′E, 18. VII 1983, Mutin leg., 1♂, the same locality, 14. VII 1993, Mutin leg., 1♂, 1♀, the same locality, 20. VII 2007, Dubatolov leg.

In the Lower Amur, the species have been authentically recorded only from the Komsomolsk-na-Amure vicinities (Fig. 2), the northernmost locality being the Gorin (=Gorjun) River (Korshunov, Gorbunov, 1995). The citation from Tsimmermanovka (Gorbunov, 2001) needs confirmation, but it looks plausible, because the species larval food plant, *Syringa amurensis*, is distributed along the Amur River downstream to Sofiisk, and also along the Amgun’ River (Sokolov et al., 1986).

ミズイロオナガシジミ

Antigius attilia (Bremer, 1861)

Material. 9♂, 19♀, Kiselevka, 51°24′N 139°00′E, 25–28. VII 2007, Dubatolov and Syachina leg.; 35 spm. +1♂, 3♀, Tyr, 52°56′N 139°46′E, 22–25. VII 2006, Dubatolov and Syachina leg.; 2♂, 3♀, 15 km W of Nikolaevsk-na-Amure, Arkhangelskoe, 53°11′N 140°25′E, 26. VII 2006, Dubatolov and Syachina leg., 1♀, the same locality, 3. VIII 2007, Dubatolov leg.; 1♂, Km 16 on the road Nikolaevsk-Mago, 53°11′N 140°28′E, 26. VII 2006, Dubatolov and Syachina leg.

Distributed throughout the Lower Amur territory (Fig. 3). In 2006 was locally common, but not so frequent as *Favonius taxila* Brem. and *F. cognatus* Stgr.

オナガシジミ

Araragi enthea (Janson, 1877)

According to information by P. Gorbunov, the single collection of this species in the Lower Amur was done by Mr. V.B. Krasutsky in the “Komsomolsky” Nature Reserve (Fig. 4) in

1988. This locality is shown on the species distributional map (Gorbunov, 2001). Such information looks unreliable, because P. Gorbunov did not see any specimen himself (pers. comm.). Moreover, Dr. Mutin informed me that *Juglans* trees are solitary there; so this record needs confirmation; most probably, the reliable NE extremity of this species are the *Juglans* forests near Malmyzh (Dr. Mutin’s pers. comm.). Such distribution of *Juglans manschurica* corresponds to the published information: S.S. Charkevich (1987) figured few most north-eastern records of this tree at Malmyzh, while Sokolov et al. (1977) added one more locality at Sofiisk, 50 km NE from Tsimmermanovka.

ダイセンシジミ

Wagimo signata (Butler, 1882)

Since observation of this species in Kiselevka (Fig. 5) in 1998 (Dubatolov, Novomodnyi, Deneko, 2007), it was not recorded in the Lower Amur once more.

アカシジミ

Japonica lutea (Hewitson, 1865)

(Figs 20–21)

Material. 1♀, Nanai district, Malmyzh, 26. VI 1974, Mutin leg.; 1♂, 15 km W of Nikolaevsk-na-Amure, Arkhangelskoe, 53°11′N 140°25′E, 26. VII 2006, Dubatolov leg.; 3♂, 2♀, Km 16 on the road Nikolaevsk-Mago, 53°11′N 140°28′E, 26. VII 2006, Dubatolov and Syachina leg.

Distributed locally throughout the Lower Amur (Fig. 6), up to the river mouth, where it was collected by V. Dubatolov and A. Syachina in 2006; this locality was also shown on the species distributional map by J. Asahi et al. (1999).

ムモンアカシジミ

Shirozua jonasi (Janson, 1877)

Material. 1♂, the Gorin river, cape 2nd Byk, 28. VII 1980, Mutin leg.

The species is now recorded from the Lower Amur based on a single observation at the river Gorin (Fig. 7).

ミドリシジミ

Neozephyrus japonicus (Murray, 1875)

(Figs 22–25)

Material. 2♂, 1♀ (B-form), Komsomolsk-na-Amure, “Silinsky” park, 50°34′N 137°03′E, 25. VII, 7. VIII 1986, Mutin leg., 1♂, the same locality, 20. VII 2007, Dubatolov leg.; 1♂, 15 km W from Nikolaevsk-na-Amure, Arkhangelskoe, 53°11′N 140°25′E, 3. VII 2007, Dubatolov leg.; 1♂, Km 16 on the road Nikolaevsk-Mago, 53°11′N 140°28′E, 26. VII 2006, Dubatolov leg.; 20♂, 11

♀ ♀, Chlya, 53°33'N 140°12'E, 7. VIII 2007, Dubatolov leg.

Distributed throughout the Lower Amur basin (Fig. 8), as connected with the alder, a very common tree in the region. It was the only Theclini species that was recorded by L. Graeser [1888] in Nikolaevsk-na-Amure. After Dubatolov's expedition 2005, it was collected on the northern bank of Lake Chlya north from the Amur mouth, by a single female. In 2007 it was common there. So, it looks probable that it may extend further north, because its food plant, a tree *Alnus hirsuta*, occurs throughout the Sea of Okhotsk coast. Nevertheless, nobody collected it so far in the north, e.g. in Ayan, Okhotsk and Magadan, but it is quite probable that it may occur, for example, in the Tugur vicinity, and an attempt to find it there is the aim of further study.

メスアカミドリシジミ

Chrysozephyrus smaragdinus (Bremer, 1861)

(Figs 26-27)

Material. 1 ♂, 7 km E from Tsimmermanovka, 51°22'N 139°21'E, 31. VII 2007, Dubatolov and Syachina leg.

This is the first observation of the species in Lower Amur (Fig. 9). Formerly it was never recorded NE from the Ussuri River mouth, from where it was described, based on the lectotype designation by V. Dubatolov and M. Sergeev (1987). Nevertheless, its distribution has been extrapolated up to Komsomolsk-na-Amure by P. Gorbunov (2001), but in fact this species turned out to penetrate further in the NE direction.

オオミドリシジミ

Favonius orientalis (Murray, 1875)

(Figs 28-31)

Material. 1 ♂, 1 ♀, 15 km W from Nikolaevsk-na-Amure, Arkhangelskoe, 53°11'N 140°25'E, 3-4. VIII 2007, Dubatolov leg.

The species formerly have been recorded only in the region of Kiselevka-Tsimmermanovka (Fig. 10). In 2007, it was not collected both in Kiselevka and Tsimmermanovka. In the latter locality, the neighbouring oak forests have been entirely destroyed by fire in 90-th. In 2007, the species was surprisingly found near Nikolaevsk-na-Amure. A rare species in the Lower Amur area. Determination of both specimens was confirmed by the genitalia structure.

ホソオビオオミドリシジミ

Favonius korshunovi (Dubatolov et Sergeev, 1982)

Material. 5 ♂, Kiselevka, 51°24'N 139°00'E, 25. VII 2007, Dubatolov and Syachina leg.; 2 ♂, 15 km W from Nikolaevsk-na-Amure, Arkhangelskoe, 53°11'N 140°25'E, 26. VII 2006, Du-

batolov and Syachina leg., 10 ♂, the same locality, 3. VIII 2007, Dubatolov leg., 2 ♀ ♀, 4. VIII 2007, Dubatolov leg.; 14 ♂, Km 16 on the road Nikolaevsk-Mago, 53°11'N 140°28'E, 26. VII 2006, Dubatolov leg.

According to observations of 2006-2007, it is one of the most common Theclini species in the oak forests near Nikolaevsk-na-Amure (Fig. 1). Most probably it is distributed throughout the Lower Amur territory. Males have rather an evening flying activity, but can be collected in the morning as well.

ジョウザンミドリシジミ

Favonius taxila (Bremer, 1861)

Material. 2 ♂, 1 ♀, Komsomolsk-na-Amure vic., Pivan, 50°31'N 137°03'-04'E, 21. VII 2006, Dubatolov leg.; 6 ♂, 5 km NE from Kiselevka, 51°26'N 139°03'E, 26. VII 2007, Dubatolov and Syachina leg.; 2 ♀ ♀, the Amur River left bank between Kiselevka and Tsimmermanovka, 51°22'-23'N 139°08'-09'E, 1. VIII 2007, Dubatolov and Syachina leg.; 114 ♂, 47 ♀ ♀, Tyr, 52°56'N 139°46'E, 22-25. VII 2006, Dubatolov and Syachina leg.; 26 ♂, 3 ♀ ♀, 15 km W from Nikolaevsk-na-Amure, Arkhangelskoe, 53°11'N 140°25'E, 26. VII 2006, Dubatolov and Syachina leg., 49 ♂, 3 ♀ ♀, the same locality, 3-4. VIII 2007, Dubatolov leg.; 5 ♂, Km 16 on the road Nikolaevsk-Mago, 53°11'N 140°28'E, 26. VII 2006, 1 ♂, 1 ♀, the same locality, 29. VII 2006, Dubatolov leg.

One of the most widely distributed Theclini species common in the Amur River basin (Fig. 12).

ヒロオビミドリシジミ

Favonius cognatus (Staudinger, 1892)

Material. 1 ♀, Komsomolsk-na-Amure, "Silinsky" park, 50°34'N 137°03'E, 22. VII 2007, Dubatolov leg.; 1 ♂, 2 ♀ ♀, Kiselevka, 51°24'N 139°00'E, 25-29. VII 2007, Dubatolov and Syachina leg.; 6 ♂, 3 ♀ ♀, 5 km NE from Kiselevka, 51°26'N 139°03'E, 26. VII 2007, Dubatolov and Syachina leg.; 9 ♂, 10 ♀ ♀, Tyr, 52°56'N 139°46'E, 22-24. VII 2006, Dubatolov and Syachina leg.; 3 ♂, 4 ♀, 15 km W from Nikolaevsk-na-Amure, Arkhangelskoe, 53°11'N 140°25'E, 26. VII 2006, Dubatolov and Syachina leg., 3 ♂, 7 ♀ ♀, the same locality, 3-4. VIII 2007, Dubatolov leg.; 23 ♂, 2 ♀ ♀, Km 16 on the road Nikolaevsk-Mago, 53°11'N 140°28'E, 26. VII 2006, Dubatolov leg.;

Also one of the most widely distributed Theclini species in the Amur basin. According to P. Gorbunov (pers. comm.), Mr. V.B. Krasutsky collected it in 1988 in the "Komsomolsky" Nature Reserve as well. In the Lower Amur it is not abundant but common throughout the Lower Amur area (Fig. 13).

ウラジロミドリシジミ

Favonius saphirinus (Staudinger, 1887)

(Figs 32–35)

Material. 2♂, 1♀, Komsomolsk-na-Amure vic., Pivan, 50°31'N 137°03–04'E, 21. VII 2006, Dubatolov leg.; 3♀♀, 5 km NE from Kiselevka, 51°26'N 139°03'E, 26. VII 2007, Dubatolov and Syachina leg.; 11♀♀, the Amur River left bank between Kiselevka and Tsimmermanovka, 51°22–23'N 139°08–09'E, 1. VIII 2007, Dubatolov and Syachina leg.;

This is the first record from the Lower Amur (Fig. 14). Generally it is not very common species. In Pivan, butterflies were collected in an oak forest on the top of a hill. In the Kiselevka-Tsimmermanovka region it is restricted to lime-oak forests in the Amur River floodland. Such forests do not penetrate considerably downstream of Tsimmermanovka, so these new localities look to be the north-easternmost.

So, in the territory of the River Amur low reaches, we have recorded 14 species of the Theclini tribe. Now it looks probable that this number is more or less conclusive. Only two Theclini species, which are distributed in the middle part of the Amur basin are still not recorded north-east from Khabarovsk, they are: *Thecla betulina* Stgr. and *Japonica saepestriata* Hew. One more species, *Antigius butleri* Fent. was reported from Lidoga (Fig. 15), about 130 km S from Komsomolsk-na-Amure (Gorbunov, 2001). It looks not very probable for any of them to be distributed in the Lower Amur.

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(Novosibirsk, Russia) for correcting the language of the article.

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Fig. 1 *Thecla betulae* L.



Fig. 2 *Arthoptotes pryeri* Murr.



Fig. 3 *Antigius attila* Brem.



Fig. 4 *Araragi enthea* Jans.



Fig. 5 *Wagimo signata* Butl.



Fig. 6 *Japonica lutea* Hew.



Fig. 7 *Shirozua jonasi* Jans.



Fig. 8 *Neozephyraus japonicus* Murr.



Fig. 9 *C. smaragdinus* Brem.



Fig. 10 *Favonius orientalis* Murr.



Fig. 11 *F. korshunovi* Dubat. et Serg.



Fig. 12 *F. taxila* Brem.



Fig. 13 *F. cognatus* Staud.



Fig. 14 *F. saphirinus* Staud.



Fig. 15 *Antigius butleri* Fent.

Figs. 1-13. Distribution of Theclini species in the Lower Amur Area.

- 1- チョウセンメスアカシジミ *Thecla betulae* L.,
- 2- ウラゴマダラシジミ *Arthropoetes pryri* Murr.,
- 3- ミズイロオナガシジミ *Antigius attilia* Brem.,
- 4- オナガシジミ *Araragi enthea* Jans.,
- 5- ダイセンシジミ *Wagimo signata* Butl.,
- 6- アカシジミ *Japonica lutea* Hew.,
- 7- ムモンアカシジミ *Shirozua jonasi* Jans.,
- 8- ミドリシジミ *Neozephyraus japonicus* Murr.,
- 9- メスアカミドリシジミ *Chrysozephyrus smaragdinus* Brem.,
- 10- オオミドリシジミ *Favonius orientalis* Murr.,
- 11- ホソオビオオミドリシジミ *F. korshunovi* Dubat. et Serg.,
- 12- ジョウザンミドリシジミ *F. taxila* Brem.,
- 13- ヒロオビミドリシジミ *F. cognatus* Staud.,
- 14- ウラジロミドリシジミ *F. saphirinus* Staud.,
- 15- ウスイロオナガシジミ *Antigius butleri* Fent.



Figs. 16-23 *Theclini* species from the Lower Amur Area.

16-17-*Thecla betulae* L., male from Komsomolsk-na-Amure,

18-19-*Arthopoetes pryeri* Mrr., female from Komsomolsk-na-Amure,

20-21-*Japonica lutea* Hw., male from Arkhangelskoe near Nikolaevsk-na-Amure,

22-25-*Neozephyrus japonicus* Mrr., male and female, from Chlya,

26-27-*Chrysozephyrus smaragdinus* Brem., male from Tsimmermanovka vicinity,

28-31-*F. orientalis* Mrr., male and female, from Arkhangelskoe near Nikolaevsk-na-Amure,

32-33-*F. saphirinus* Dubat. et Serg., female from Pivan,

34-35-*F. saphirinus* Stgr., female from Kiselevka vicinity.

16, 18, 20, 22, 24, 26, 28, 30, 32, 34-upperside,

17, 19, 21, 23, 25, 27, 29, 31, 33, 35-underside.