

## On a collection of Trichoptera from the river Bija and from the vicinities of the lake Teletzkoje.

A. B. Martynov, Leningrad.

With 16 figures.

### Fam. Rhyacophilidae.

#### Gen. *Rhyacophila* Pict.

##### 1. *Rhyacophila* sp.

2 ♀. River Bija, down from the cataracts Sarakokshi. 22. VII. 1928.

Head and thorax dark fuscous; antennae dark fuscous with distinct yellow annulations. Coxae fuscous, with yellowish-fuscous stripes beneath; leys yellow; anterior and median tibiae with distal third brownish, externally; tarsi in the median and anterior legs yellow, in the posterior tarsi basal joint brown, second joint brown in its distal portion, 3<sup>rd</sup> and 4<sup>th</sup> joints, each, with a brownish spot at the end; spurs brown.

Abdomen brownish. Anterior wings elongated, narrowly triangular in their distal portion; colouring brownish irrorated with numerous minute hyalin spots; at the apical margin there are several larger pale spots. Nervures distinct and almost black;  $AF_1$  commences a little earlier, than  $AF_2$ . Posterior wings pale but the pterostigmal region is brown;  $AF_1$  begins also somewhat earlier, than  $AF_2$ . Length of body 12 mm.

It is very difficult to determine the species by the females only. By the character of the furcation of RS it reminds two species, yet known from Altaj, *Rhyacophila impar* Mart. and *Rhyacophila* sp. (Mart. 1904<sup>1)</sup>) and I think, that it belongs to one of these two species. *Rh. impar* is a very distinct species with a peculiar structure of the genital segments.

The collection of Trichoptera, described below, is gained by Miß S. G. Lepneva, during her journey (from the Russian Hydrological Institute) at the lake Teletzkoje in 1925 and 1928. The greatest part was collected at the shores of the rapid river Bija, originating from the Teletzkoje lake, and only few insects are collected at the shores of the lake itself and in some other localities.

<sup>1)</sup> A. Martynov. Notes on the Trichoptera collected by the Prof. Sushkin's Exped. to the Altaj. Rev. Russe D'Entom. XIV, 1914, 1.

The larvae of this species, collected by S. Lepneva, are also very peculiar and such a case confirms the supposition, that it belongs, perhaps, to *Rh. impar*.

### 2. *Rhyacophila sibirica* Mc Lach.

Larvae and pupae. — Small stream, falling into the river Inja, near Nowosibirsk. 14. VII. 1925.

In some pupae male genital appendages are yet formed, and thus the determination of this species was possible. This species is known from Altaj and Sajan-mountains.

### Gen. *Glossosoma* Curt.

#### 3. *Glossosoma nylanderi* Mc Lach.

♂. River Bija, upwards from the town Bijsk. 18—21. VIII. 1925.

♀. River Bija, between Salasan and Kebeten. 22. VIII. 1925.

♀. River Bija, near cataracts Sarakokshi. 22. VII. 1928.

♀. The shores of the river Korbu, at the lake Teletzkoje. 8. VII. 1928.

*Glossosoma nylanderi* occurs in rapid mountainous rivers and torrents and is widely distributed in East Siberia; it is known also from the Minoussinsk district.

### Gen. *Agapetus* Curt.

#### 4. *Agapetus sibiricus* Mart.

*Agapetus sibiiricus* Martynov, Ann. Mus. Zoolog. Acad. Sci. Russie, t. XXII, 1917, p. 49, fgs. 5—7.

13 ♂, 8 ♀. River Bija, near the farm of Smolnikov. 23. VII. 1928.

Examination of the genital structures in this species convinced me, that it is rather closely allied to *Agapetus kirgisorum* Mart. from Turkestan. Pedes genitales, app. praeanales, as well as the 10<sup>th</sup> segment are structured, as in that species, but the roof of the 10<sup>th</sup> segment in *A. sibiricus* does not possess such stick-shaped slender appendages, which exist in the turkestanian species. Ventral appendage of the 6<sup>th</sup> segment is here shorter and more slender.

*Agapetus sibiricus* is widely distributed in East Siberia; I have seen numerous specimens of this species from Jakutsk province and still further to East, in the basin of the rivers Amur and Ussuri.

This is a psychrophile potamobionte species.

**Fam. Hydroptilidae.****Gen. *Padunia* Mart.****5. *Padunia adelungi* Mart.**

*Padunia adelungi* Martynov, Ann. Mus. Zool. Ac. Sci., t. XV, p. 425, fgs. 66—67; t. XXII, 1917, p. 50, fgs. 8—10.

7 ♂. River Bija, near Lebjashje 18. VIII. 1925; 1 ♂, the same river, near Pavlushki. 31. VIII. 1925.

6 ♂, 2 ♀. River Bija near the farm of Smolnikov. 23. VII. 1928.

This species is widely distributed in Siberia and is very common also in the basin of the rivers Ussuri and Amur. Potamabionte species.

**6. *Padunia lepnevae*, n. sp. (Fig. 1—3).**

5 ♂, 7 ♀. River Bija, near the farm of Smolnikov. 23. VII. 1928.

Head dark brown, with pale warts; antennae yellowish; in the palpi maxillares 2<sup>nd</sup> joint very short, 5<sup>th</sup> joint equal to the 3<sup>rd</sup>, 4<sup>th</sup> one a little shorter. Legs yellowish, with brown spurs (1. 4. 3); first spur minute. Thorax brown above, paler at the sides; abdomen brownish. Anterior wings hairy, rufous-brownish,

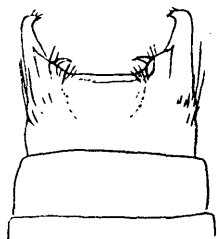


Fig. 1.

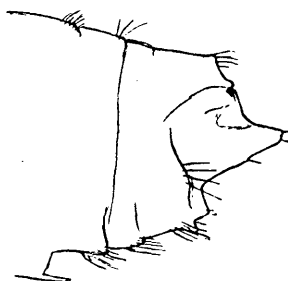


Fig. 2.

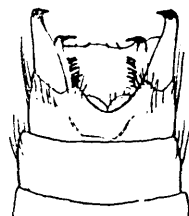


Fig. 3.

with two variable whitish transverse stripes, as in *P. adelungi*; nervuration similar to that in *P. adelungi*; posterior wings paler. Median tibia and first tarsal joint somewhat dilated in the females.

♂. 6<sup>th</sup> sternit with a small median tooth. 10<sup>th</sup> segment coalesced, partly, with the 9<sup>th</sup> segment, therefore the boundary between them not very distinct; hind border of the 9<sup>th</sup> ventral segment bearing tufts of hairs. 10<sup>th</sup> segment united with the 9<sup>th</sup> segment, as well as, also, with the pedes genitales, as in *P. adelungi*, but its shape is different. Upper portion forms a broad plate-like roof with truncated hind-margin; at the sides this dorsal plate is coalesced with the pedes genitales, but is shorter, than

these appendages. One may perceive, from beneath, two more lateral hook-like appendages, placed near the hind margin of the dorsal plate and by their acute apices turned to each other; nearer to the base there are still two lateral longitudinal brownish stripes, each formed by a row of minute blackish spinules. Pedes genitales, if seen from beneath, are straight and gradually attenuated to their apices, the latter are blackish, turned inwards and acute at their ends; basal portions widely placed and articulated with the somewhat produced lateral portions of the 9<sup>th</sup> sternit. This sternit appears as being broad and by the broad median oval excision subdivided into two lateral portions, but further examination reveals that it is of a more composite nature and that its just mentioned lateral portions represent, morphologically, but the basal portions (basal joints?) of the pedes genitales, coalesced with the true 9<sup>th</sup> sternit. Seen from the side, 10<sup>th</sup> segment and pedes genitales (which are coalesced with it) form a

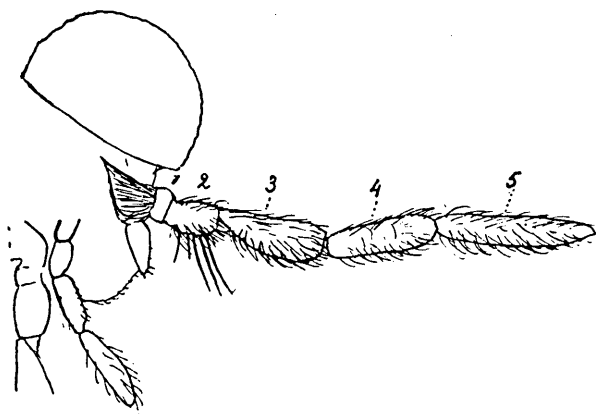


Fig. 4.

very broad subtriangular structure, with produced apical (hind) portions; these portions represent free apical portions of the pedes genitales. Penis not exerted in our specimens.

Length of ♂ bodies 2,3–2,5 mm; that of the females 2,7–2,8 mm.

In the nervuration and coloration of its wings this species is similar to *P. adelungi*, but very different in the structure of ♂ genital segments. In *P. lepnevae* 9<sup>th</sup> sternit is deeply excised in the middle, in *P. adelungi* it is strongly produced, forming a long median tongue-shaped lobe. Pedes genitales and dorsal

plate are also very different in both species. Thus, *P. lepnevae* is a very distinct species.

### Gen. *Stactobiella* Mart.

*Stactobiella* Martinov, "Trichoptera" in Practical Entomology", part. V, Leningrad, 1924, p. 57.

#### 7. *Stactobiella biramosa* n. sp. (Fig. 4—6).

1 ♂. River Bija, near the farm of Smolnikov. 23. VII. 1928.

Head and thorax brownish. Antennae slightly longer than the body, composed of 18 joints; basal joint somewhat thickened, 4—6 joints — the longest. Palpi maxillares, practically, 4-jointed, as the basal joint is extremely shortened and nearly coalesced with the second joint (fig. 4). Second joint rather short, bearing several bristles; third joint twice longer, than the second and somewhat thickened; fourth joint equal, in the length to the third, fifth one considerably (on  $\frac{1}{3}$ ) longer. In the palpi labiales third joint the longest, basal joint shorter, than the second, but not very shortened. Ocelli present. Anterior wings long, narrow, similar to those in *S. ulmeri*, densely clothed with rufous hairs; nervation similar to that in *S. ulmeri*; posterior wings paler. Legs clothed with brownish hairs; spurs 1, 3, 4 (♂), brown.

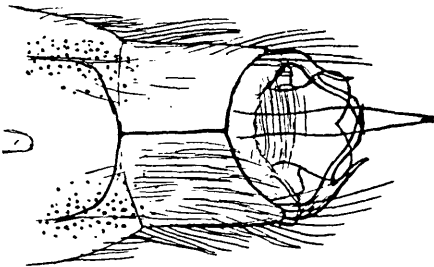


Fig. 5.

(♂). Abdomen pale brownish, densely clothed with pale brownish hairs. 8<sup>th</sup> dorsal segment bearing two lateral groups of round dots, as in *S. ulmeri*. 9<sup>th</sup> segment broad; median portion of the 9<sup>th</sup> sternit represents as a separated transverse plate with slightly convex hind margin. 9<sup>th</sup> dorsal segment broad, with concave hind margin. Pedes genitales short, but very thick; seen from beneath (fig. 6), they are plate-like, straight,

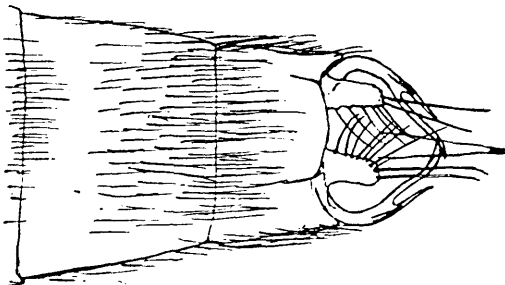


Fig. 6.

each bearing a row of bristles on its inner and apical margins, apical bristles being very long. Seen from the side, these appendages prove to be curved upwards. With the bases of these appendages are connected still two other appendages, which are very long, slender, upcurved and bow-shaped in their basal halves, if seen from above. Behind the ends of the lower plate-like portions, each of these upper appendages divides into two spinelike processes, inner (proximal) one long and crossing the same process of the opposite appendage, and outer one shorter, acute at its end. Near the points of the furcation arise still two short and very slender processes, beneath. These long bowshaped appendages represent the upper branches of the pedes genitales.

10<sup>th</sup> segment forms a broad and elongated plate-like dorsal plate, by a small median excision behind subdivided into two lateral rounded lobes. Under this plate is placed a very long and slender median appendage, similar to that in *S. ulmeri* Silt.; it is attenuated to its apex which is incised and thus forms as two apical spinules.

Length of the body 2,2 mm.

Judging by the structure of the genital segments, and especially, by the shape of the pedes genitales (lower thick portions) and of the dorsale plate, this species is allied to *S. ulmeri*, but distinct.

### **Fam. Stenopsychidae.**

#### **Gen. *Stenopsyche* Mc Lach.**

##### **8. *Stenopsyche griseipennis* Mc Lach.**

♀. River Bija, near Tourachak. 8. VIII. 25.

3 ♂, 2 ♀. River Bija, near the farm of Smolnikov. 23. VII. 1928.

This is a Chinese species, widely distributed also in the Amur-land, as well as in the South Central Siberia and in Altaj. Psychrophile potamobionte species.

### **Fam. Psychomyidae.**

#### **Gen. *Psychomyiella* Ulm.**

##### **9. *Psychomyiella composita* Mart.**

4 ♂, 3 ♀. River Bija, near the farm of Smolnikov. 23. VIII. 1928.

Lower lobe of the praeanal appendages, if seen from side, is somewhat narrower, than in the type-form, but in all other features our form is similar to the type-form from Siberia, and

I consider, that it belongs to the same species, which is known also from the Minoussinsk district.

10. *Psychomyiella minima* Mart.

3 ♂, 2 ♀. River Bija, near the farm of Smolnikov. 23. VII. 1928.

♂. River Bija, down of Ustkyshy. VIII. 1925.

The finding of this species in the river Bija is interesting, as it was known only from the Upper Tunguska (tributary of Enisej). Besides, I have seen it, as well as *P. composita*, from Amurland. One species of this genus is known from Japan, and one species is indicated (by Ulmer) from Java.

**Fam. Polycentropidae.**

**Gen. Nyctiophylax Brau.**

11. *Nyctiophylax angarensis* Mart.

2 ♂. River Bija, near the farm of Smolnikov. 23. VII. 1928.

1 ♂. River Bija between Bijsk and Salasan. 18.—21. VIII. 1925.

This form from the river Bija is completely similar to the Siberian form. It is usual also in Amurland. Potamobionte, but, apparently, not as psychrophile, as both species of *Psychomyiella*. Allied to *N. sinensis* Brau. from China.

**Gen. Cyrrus Steph.**

12. *Cyrrus flavidus* Mc Lach.

♀. Lake Chernoe (black), at the river Inja, tributary of the river Obj. 22. VII. 1925.

Judging by the wing nervation this specimen belongs to the European species *C. flavidus*.

**Gen. Neureclipsis Mc Lach.**

13. *Neureclipsis bimaculata* L.

Several specimens from: the river Inja, 7. VI. 1925; the lower course of the river Toulou, near Obj, 28. VI. 1925; near the lake Tolmachevskoje, 5. VII. 1925, at the river Obj.

This species is widely distributed in the large rivers of Siberia.

**Fam. Hydropsychidae.**

**Gen. Hydropsyche Pict.**

14. *Hydropsyche ornatula* Mc Lach.

Several specimens from the shores of the river Obj, near Nowosibirsk. 20. VI., 1. VII., 5. VII. 1925.

Several specimens from the shores of the river Bija, near the town Bijsk. 21. VII. and 13. VIII. 1925.

Very common in the large siberian rivers, Obj, Enissej and Lena.

15. *Hydropsyche guttata* Pict.

Several specimens, ♂ and ♀. The shores of the river Obj, near Nowosibirsk, 20. VI. 1925; river Toula, tributary of the Obj. 28. VI. 25.

Also usual in Siberia, occuring in large rivers.

16. *Hydropsyche czekanovskii* Mart.

1 ♂. River Obj near Nowosibirsk. 5. VII. 1925.

This siberian species is yet indicated from the upper course of the river Obj.

17. *Hydropsyche kozhantchikovi* Mart.

1 ♂. River Bija, near the farm of Smolnikov. 23. VII. 1928.

The distribution of this species is very interesting: it is know from Minoussinsk district and from North Turkestan.

**Gen. *Macronema* Pict.**

18. *Macronema radiatum* Mc Lach.

Several specimens. The shores of the river Obj near Nowosibirsk, 21—23. VI. 1925; the shores of the river Toula (tributary of the river Obj, near Nowosibirsk. 28. VI. 1925.

Widely distributed in Siberia and in Amurland.

**Gen. *Aethaloptera* Brauer.**

19. *Aethaloptera rossica* Mart.

2 ♂. River Toula, near Nowosibirsk, 28. VI. 25.

2 ♂. River Obj, at the village Atamanovo, 16. VII. 25.

Very common also in Amurland; by G. Ulmer is indicated from China. Occurs in large rivers together with *M. radiatum*.

**Fam. *Leptoceridae*.**

**Gen. *Leptocerus* Leach.**

20. *Leptocerus annulicornis* Steph.

♂. River Bija, near the farm of Smolnikov. 23. VII. 1928.

♂ ♀. River Bija, from Bijsk till to Salesan. 18.—21. VIII. 1925.

Occurs in Europe, Western and Central Siberia. Feebly reophile.



21. *Leptocerus nigronervosus* Retz.

- ♂ ♀. The falling of the river Inja in the river Ob. 11. VI. 1925.  
Was not known from Minoussink district or from Altaj.

22. *Leptocerus aterrimus* Steph.

- ♂. River Obj, in the city Nowosibirsk. 6. VI. 1925.  
This european species was not known from Siberia.

**Gen. *Triaenodes* Mc Lach.**23. *Triaenodes interna* Mc Lach.

- 1 ♀. River Bija, near the farm of Smolnikov. 23. VII. 1928.

Length of the specimen 7,2 mm. By the whole coloration, as well as by the structure of antennae (elongated basal joints) reminds closely of *Tr. interna*. As this species (♂) is known to me from the upper Obj and from the river Tomj, not very far from Tomsk, I am sure, that this ♀ specimen belongs, indeed, to *Tr. interna*, which till now was known only from Turkestan. Feebly reophile species.

**Gen. *Setodes* Ramb.**24. *Setodes* sp.?

- ♀. Bougrinski isle at the shores of Obj, near Nowosibirsk. 10. VI. 1928.

Unfortunately, it is impossible to determine this (somewhat damaged) specimen precisely. Perhaps, it belongs to *S. pulcher* Mart.

**Gen. *Mystacides* Latr.**25. *Mystacides longicornis* L.

- 1 ♂. A small lake at the town Nowosibirsk. 5. VII. 1925.  
Was yet known from Minoussinsk district.

**Fam. Phryganeidae.****Gen. *Prophryganea* Mart.**26. *Prophryganea obsoleta* Hag.

- ♀. Near the town Barnaul. 13. VIII. 1925.

**Gen. *Phryganea* L.**27. *Phryganea striata* L.

- ♂. A bay, formed by the river Inja. VI. 1925.

**Fam. Limnophilidae.****Gen. *Praecosmoecus* Mart.**

28. *Praecosmoecus digitatus* n. sp. (Fig. 7—12).

♂. Lake Teletskoje, at the village Jajlu. 24. VI. 1928.

♂. River Korbu, near the waterfall. 8. VII. 1928.

(Also many larvae and pupae from the river Korbu).

Head and thorax yellowish, with yellowish rufous hairs. Antennae yellow, somewhat serrate in the distal portions, as long, as the body, In the palpi maxillares basal joint very short, second and third ones long, slender. Legs yellow, with black spines and yellow spurs. The formule of spurs is 1, 3, 4, ♂ and ♀.

Anterior wings (fig. 7) pale yellowish, clothed with pale yellow hairs; large, broad, with elliptical, rounded apical margin. Nervures pale brownish; pterostigmal region opaque. Subcosta and radius straight; discoidal cell very long and narrow, with short pedicel; RS arising a little behind the middle of DC; 3<sup>rd</sup> and 5<sup>th</sup> apical cells angulate; along the anastomose a broad, but indistinct pale brownish streak.

Posterior wings pale greyish, broad; discoidal cell much shorter than in anterior wings, but, nevertheless, long, longer, than its footstalk; 1<sup>st</sup> apical cell impigning further inwards, than the 3<sup>rd</sup>-one. The whole anal region clothed with short erect and curved hairs.

♂. The genital segments structured, in general, on the same plane as in *Pr. kamtschalicus* Mart.<sup>1)</sup>, but in the details the difference is very strong.

9<sup>th</sup> segment is very narrow in the ventral, as well as in the dorsal portions, but its side-  
portions are very broad,

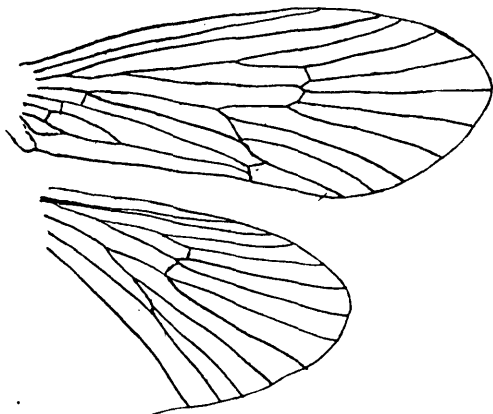


Fig. 7.

<sup>1)</sup> *Pr. kamtschalicus* was described by me by the female only (Rev. Russe d'Entom., XIII., 1913, p. 478; Ann. Mus. Zool. Ac. Sci. U. R. S. S., 1925, p. 15—17, fig. 4—7). Dr. G. Ulmer described then an another similar species

forming two broad convexities backwards. Two long lateral hairy appendages I consider as being the outer or lateral horns of the 10<sup>th</sup> segment, similar to the homologous horns in *Dicosmoecus palatus* McLach.<sup>2)</sup> and in the subfam. *Apataniinae*. True praeanal appendages are wanting in the gen. *Praecosmoecus*. Outer horns in *Pr. digitatus* are fingershaped, slightly thickened in their distal portions and bearing erect hairs, as in *D. palatus*. At their bases the are united with the median process of the 10<sup>th</sup> Segment, which is stickshaped, slender, as long, as the outer horns, thickened at its base and truncated at its apex (from side). This process belongs, doubtless, to the 10 segment and

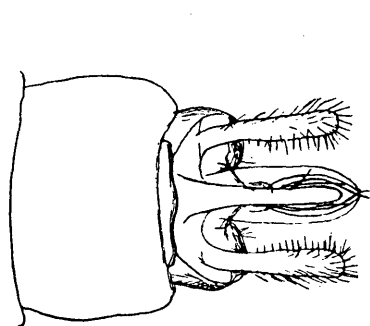


Fig. 8.

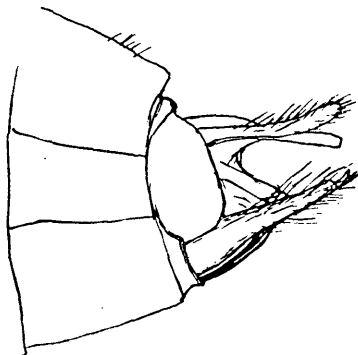


Fig. 9.

morphologically represents, probably, the median element and two inner horns of the 10<sup>th</sup> Segment in the subf. *Apataniinae*, together. Lower portion of the 10<sup>th</sup> segment forms a broad platelike process, directed obliquely downwards and backwards, but soon dividing in two slender branches. The last names branches are plate-like, slender, curving gradually upwards and inwards. Pedes genitales stickshaped, straight, thickened at their bases, hairy. From the inner parts of their thickened basal portions arise two bund-

from Kamtschka, *Fr. Malaisei* Ulm., by the male only (Ark. f. Zool. 19 A, N. 8, 1927). In the Collections of the Academy of Sciences there are two specimens, one male and one female, from the Amurland, which I consider as representing *Pr. kamtschaticus*, as the structure of ♀ genitalia is here identical with that described by me for this species. The formule of spurs proved to be in both specimens 1. 3. 4. The examination of the genital structures in the male specimen showed to me, that they are shaped here quite as in *Pr. Malaisei*, therefrom I conclude, that the species *Pr. Malaisei* is the same species, as *Pr. kamtschaticus*.

<sup>2)</sup> Compare my description of ♂ genital appendages in this species in Ann. Mus. Zool. Ac. Sci., XIX, 1924.

les of long black spines, 3 spines in each bundle, placed between the branches of the lower process of the 10<sup>th</sup> segment. (fig. 10.) One spine in each bundle is long, a little projecting behind the ends of the lateral branches of the 10<sup>th</sup> segment, two other spines are shorter. Penis not exerted.

♀. (Female genital structures are studied on the imago in the pupal skin).

9<sup>th</sup> segment (fig. 11) broad, with concave hind margin, as in *Pr. kamtshaticus*, but its ventral portion is somewhat reduced, giving

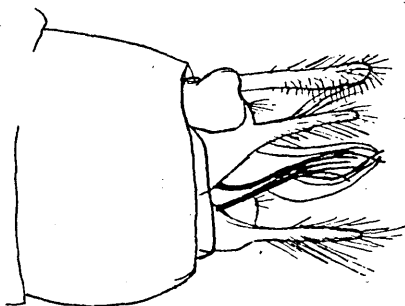


Fig. 10.

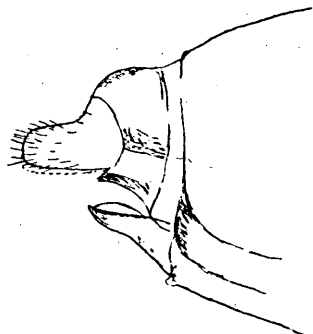


Fig. 11.

place to the large subgenital plate. Dorsal plate by the median excision behind subdivided into two lobes; seen from side it is broad, hairy, with rounded apical margin. Subgenital plate large, tongue shaped; it can be well seen also from the side.

Length of body 9 mm.

The just described species by the structure of ♂ and ♀ genitalia differs rather strongly from the another species of the gen. *Praecosmoecus*, *Pr. kamtshaticus*, although the general plane of these structures remains similar in both species. Wings resemble very much to those in the last named species. The systematical position of this interesting genus was cleared by me earlier. It is allied to the gen. *Dicosmoecus* McLach. and by the structure of its genitalia, in *P. digitatus*, especially, reminds also of *Apalaniinae*. This is quite comprehensible, as the archaic group of

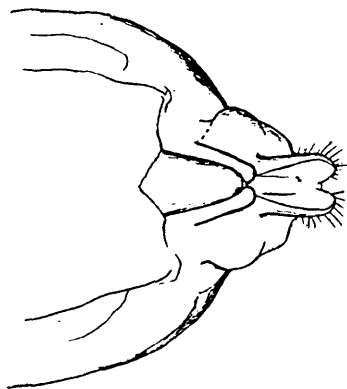


Fig. 12.

*Dicosmoecus* is more or less allied to this subfamily. As I noticed earlier, the wings in the gen. *Praecosmoecus* resemble much those in the gen. *Silo* Curt., from the fam. *Sericostomatidae*. Such a resemblance does not represent anything astonishing or improbable, as the subfamily *Apataniinae*, to which the gen. *Praecosmoecus* is allied, reveals yet many features of the gen. *Silo* (subfam. *Goerinae*). On the other side, the whole family *Limnophilidae* is allied also to the subfam. *Lepidostomatinae* (*Sericostomatidae*).

Ecology. All larvae and pupae are found by S. Lepneva in the mountainous river or torrent Korbu (or Korboo), falling in the lake Teletzkoje. Thus, this is a psychrophile, torrenticole species.

### Gen. *Dicosmoecus* Mc Lach.

#### 29. *Dicosmoecus palatus* Mc Lach.

♀. Lake Teletzkoje, at the origin (source) of the river Bija. 29. VIII. 1925.

Widely distributed in Siberia and penetrating also in the gov. of Archangelsk (Petchora-district).

### Gen. *Limnophilus* Burm.

30. *Limnophilus subfuscus* (Ulm.), sbsp. *sibiricus* n. sbsp. (Fig. 13—16).

*Limnophilus subfuscus* (Ulm.) var. — Martynov, Trichopt. de la Siberie, P. IV. Ann. Mus. Zool. Ac. Sci, XIX, 1914, pp. 185—187, fig. 9—12.

3 ♀. Shores of the lake Teletzkoje. 17. VII. 1928 (specimens in alcohol).

Siberian form of *L. subfuscus* was described by me in 1914, in russian only. As I mentioned here, it somewhat differs from the japanese type form, as it was described by Ulmer,<sup>1)</sup> I have never seen this japanese form, by the wing-nervation, as well as by the structure of ♀ genitalia. In the collections of the Zoolog. Museum of the Russian Academy there are about 10 specimens of this form from Hingan, river Nishnjaja Tunguska, vicinities of the lake Baical (mouth of the river Selenga), Bunbuj, Eniss. gov., and from Ala-shan. Comparison of all these ♀ specimens reveals, that this form is variable enough, therefore I consider to be useful to give here a more detailed description of three spe-

<sup>1)</sup> Trichopteren in Coll. Zool. de Selys Longchamps, 1907, p. 20, fig. 32—35.

cimens from the lake Teletskoje. These specimens are young, but one specimen is more or less well coloured.

Head brown, yellowish beneath. Antennae dark yellow, with black annulations, but narrow end-portions of the joints are pale. Thorax reddish brown above, mesonotum brownish yellow, with two blackish longitudinal stripes. Hairs golden yellowish,

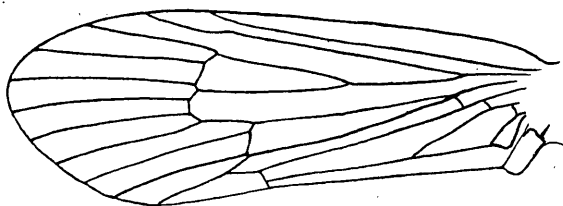


Fig. 13.

with some admixture of brownish.

Legs yellow, coxae a little darker; spines black. Abdomen brownish, ochraceous beneath.

Anterior wing (fig.

13) feebly dilated in their distal portion, yellowish grey, clothed with short and slender brownish yellowish hairs, irrorated with minute pale rounded and indistinct spots. Subcubital and postcostal areas brown, with distinct pale irrorations. Pterostigmal region brownish, with several pale spots. Nervures distinct, fuscous, but with numerous pale interruptions. Membrane finely granulate. Discoidal cell elongately triangular, with acute base; it is slightly longer, than its footstalk. The bases of the first and second apical cells oblique, 3<sup>rd</sup> apical cell biangulate; 4<sup>th</sup> cell narrower, than the 2<sup>nd</sup>, margined by the straight cross-vein at its base; 5<sup>th</sup> apical cell biangulate.

Posterior wings pale; DC a little shorter, than its stalk, second apical cell margined by a straight (not oblique) cross-vein at its base; M divides a little behind the origin of the discoidal cell. Nervures yellowish brownish; pterostigmal region somewhat yellowish.

♀. 8<sup>th</sup> segment large, reddish brownish, with pale rounded spots near its hinder margin. Median lobe of the subgenital plate (fig. 14) broad, truncated at its end, somewhat dilated at the base;<sup>1)</sup> side lobes broader, subquadrate, with convex inner margins; supragenital plate with arcuate margin. 9<sup>th</sup> tergite more or less coalesced with the 10<sup>th</sup> segment, its posterior boundary is concave. Side pieces very large (fig. 15); ventral portion also large, subdivided into two halves by a subtriangular median stripe; hind

<sup>1)</sup> In the siberian specimens it is slightly longer, elongately triangular, but, in general, its shape somewhat varies.

margin straight, with a small median triangular excision. Superior appendages coalesced, above, with the 10<sup>th</sup> segment. If seen from above (fig. 16), they are very broad in their basal portions, separated from each other by an indistinct median fissure. Distal portions are finger-shaped and slender, above; seen from side, they are gradually dilating to their bases; two triangular hairy projections at their bases represent outer portions of the superior appendages. Ventral portion of the 10<sup>th</sup> segment truncated posteriorly.

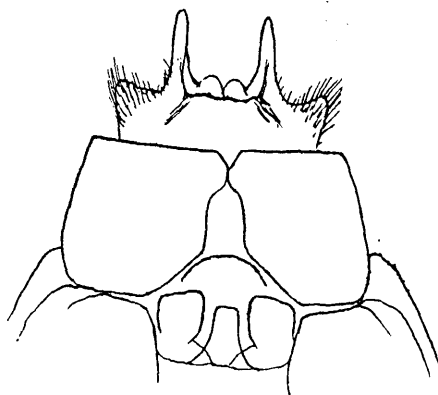


Fig. 14.

Length of body 15,5  
—16,5 mm.

The just described form somewhat varies in the colouring (some siberian specimens are much more darker), as well as in some details of ♀ genital structures, but these variations are not very strong, and I think, that all siberian and Central-Asiatic specimens belong to one and the same subspecies, — sbsp. *sibiricus* m. This subspecies differs from the japanese form, chiefly, in that in the latter form the discoidal cell is a little shorter, than its footstalk, in the anterior wings, and equal to its footstalk in the posterior wings. Ulmer's figure 34 (apex of ♀ abdomen from above) is very different from our figure 16, but our figures are made on the specimens in alcohol. I consider, at present, that the siberian form is a subspecies, not a separate species, as I presumed earlier, when describing a new allied species, *L. subfuscus* Mart., from Turkestan.<sup>1)</sup>

Comparing *L. subfuscus* with some other asiatic *Limnophila*, I revealed the interesting fact, that in the structure of ♂ and ♀ genitalia, as well as, even, in the wingnervation, this species is similar to *Stenophylax algosus* McLach, known from arctic Fennoskandia and from the basin of the lower Enissej, but is almost twice larger, than this form. I have no any specimen of *St. algosus* in my disposal, nevertheless, basing on

<sup>1)</sup> Ann. Mus. Zoolog. Acad. Sci. URSS, 1927, p. 492.

McLachlan's<sup>1)</sup> and Siltala's<sup>2)</sup> figures, I conclude, that the ♂ genitalia in *St. algosus* and *St. crudus* McLach (it seems to me, that *St. crudus* is not more, than a form of individual variation of *St. algosus*), indeed, are similar enough to those in *L. subfuscus*. Female genitalia are described by Siltala,<sup>2)</sup> and the comparison of our figures 14—16 with Siltala's figure 3 shows clearly, that these structures are very similar in both species. The wingnervation in *St. algosus* is also somewhat reminding that in *L. subfuscus*. Taking into considerations all these facts, I conclude, that the

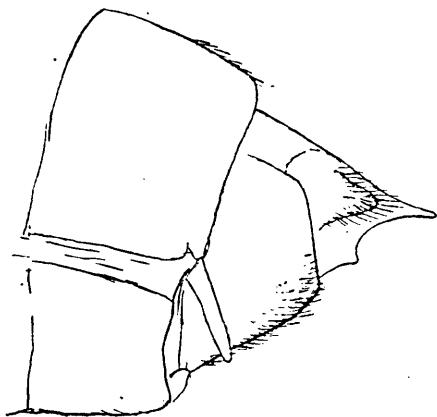


Fig. 15.

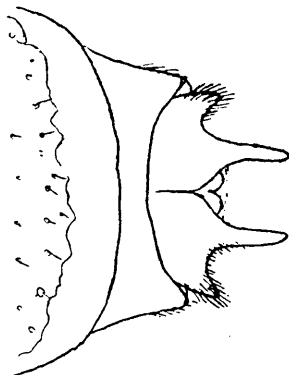


Fig. 16.

species *algosus* McLach. belongs probably, not to the gen. *Stenophylax* or *Asynarchus* (as Wallengren thought), but rather to the gen. *Limnophilus* and is allied to *L. subfuscus* Ulm.<sup>3)</sup> As it is usual for many arctic forms, the known form of *L. algosus* McLach. appears to be in the condition of a cold-morpha, or morpha frigoris. From hence its variability, as cold-forms, in general, are subject to a strong individual variation.

### 31. *Limnophilus rhombicus* L.

♀. River Obj, isle Bougrinski. 10. VI. 1925.

This european species is known from the Minoussink district and from the Central Siberia (gov. Irkutsk and near the town Tomsk).

<sup>1)</sup> Mc Lachlan R., A monogr. Rev. Trichopt. Europ. Fauna, p. 120, Pl. XIII.

<sup>2)</sup> Siltala A. J., Zur Trichopterenfauna der Nördlichen Fennoskandia. Acta Soc. pro Fauna et Flora Fennica, 31, N. 2, 1908, p. 9, Pl. I. fig. 3.

<sup>3)</sup> In its turn this species appears to be allied to *L. politus* Mc L.



**Gen. *Apatelia* Wall.****32. *Apatelia* nov. spec.**

♀. River Bija, near Sanatory. 21. VIII. 1925.

♀. River Bija, upwards from Bijsk. 18. VIII. 1925.

♂. River Bija, down from the form of Smolnikov. 23. VII. 1928.

This form is a new species, allied to *A. muscula* McL.; I will describe it in another place.

**Fam. Sericostomatidae.****Gen. *Brachycentrus* Curt.****33. *Brachycentrus subnubilus* Curt.**

♂♂, ♀♀. River Ob, near the isle Bougrinski, right shores. 6.—11. VI. 1925.

This species is widely distributed in Siberia.

**Gen. *Lepidostoma* Ramb.****34. *Lepidostoma hirtum* Fabr.**

3 ♀. River Bija, near the form of Smolnikov. 23. VII. 1928.

♀. River Bija, from Bijsk up to Salasan. 18.—21. VIII. 1925.

This species was yet known from the Minoussinsk district and from Siberia.

To this list one may add five more species, yet indicated earlier<sup>1)</sup> from the vicinities of the lake Teletskoje.

1. *Platyphylax nigrovittatus* McLach. — Northern shores of the lake Teletskoje. This species is widely distributed in South and Central Siberia, in Amur-land and in Mantchuria; it penetrates also in the arctic districts of the Archangelsk gov. (Kanin peninsula).

2. *Phacopteryx brevipennis* Curt. Western shores of the lake Teletskoje. Occurs also in Europe and in Central Siberia.

3. *Limnophilus stigma* Curt. — The mouth of the river Bashkaus. Widely distributed European-Siberian species.

4. *Oligoplectrodes potanini* Mart. — River Tchulyshman, near the mouth of the river Bashkaus. — Mongolo-Siberian species.

5. *Molanna* sp. Somewhat west from the lake Teletskoje.

<sup>1)</sup> Martynov, Revue Russe d'Entomol. XIV, 1914, N. 1, p. 1—13.

The greatest part of the species, found at the river Bija and in the vicinities of the Teletskoje lake, is yet known from Altaj and from Minoussinsk district, and this fact determines the zoogeographical position of this fauna. The ecological and zoogeographical analysis of the fauna of Minoussinsk and of Altaj districts was yet made by me in other papers.<sup>1)</sup> As I noticed here, the fauna of both these lands bears the east-siberian character, having, in the same time, its own, peculiar traits.

The same character reveals also the just described fauna of the river Bija and of the Teletskoje-lake. The finding here of four new and distinct species (*Padunia lepnevae*, *Stactobiella biramosa* and *Praecosmoecus digitatus* and *Apatelia* n. sp.) strengthens still more certain independence of the altaic subprovince of the east-siberian fauna. The presence here of several reophile species, till now considered as being european only (*Stenophylax rotundipennis*, *St. alpestris*, *St. coenosus*, *Anabolia laevis*, *Caetopteryx obscurata*) also adds some peculiarity to the altaic fauna, as well as the finding here of two species (*Triaenodes interna*, *Hydropsyche kozhantchikovi*), occurring also in Turkestan. (It is of interest, that the northern species *Stenophylax algosus* proved to be allied to the japanese siberian species *L. subfuscus*, discovered now at the lake Teletskoje. On the account of such a relation the species *algosus* must be attributed rather to the gen. *Limnophylus*.)

The presence in the Altaj district of a whole row of distinct endemic species, as well as of several reophile forms, occurring also, in the mountainous (chiefly) regions of Europe, proves, that the enormous altaic mountainous region (Altaj + Minoussinsk district, partly) was, to a certain degree, a separated centre, where originated a whole row of its own, endemic species. Many of the siberian forms penetrated here later, partly, during and after the Ice-period.

The finding in Altaj of several „european“ reophile species renders further investigations of the altaic hydrofauna interesting and important not only for the russian, but also for the west-european biologists.

<sup>1)</sup> a) Notes on Trichoptera, collected by Pr. Sushkin's Expedition to the Altaj. — Rev. Russe d'Entom. XIV, 1914, N. 1.

b) Sur une nouvelle espèce des Apataniini et quelques autres formes du pays de Minoussinsk. — Ann. Mus. Zool. Ac. Sci. Russ. XXII, 1918.

c) Notice sur les Trichopt. de la district de Minoussinsk. — Jahrb. des Martjanov'schen Museum in Minoussinsk. Bd. II, Lief. III, pp. 62—107, 2 Plates.

## Explanation of the figures.

- 1—3 *Padunia lepnevae* n. sp. The apex of the ♂ abdomen from above, from side and from beneath (3).  
 4—6 *Stactobiella biramosa* n. sp. ♂. 4. Palpus maxillaris and labialis. 5 and 6. Last segment of the ♂ abdomen, from above and from beneath.  
 7—12 *Praecosmoecus digitatus* n. sp. 7. Nervuration of wings. 8.—10. Male genital appendager from above, from side and from beneath. 11.—12. Female genital segments from side and from beneath.  
 13—16 *Limnophilus subfuscus* (Ulm.) var. *sibiricus* n. ♀. 13. Nervuration of the anterior wing of a ♀. 14.—16. Apex of ♀ abdomen, from above, from side and from beneath.



## Über die nordamerikanische *Ceratophyllus*, welche auf Zieseln und Murmeltieren leben.

Von J. Wagner, Beograd.

In meiner Arbeit über die Einteilung der Gattung *Ceratophyllus*<sup>1)</sup> stellte ich genauere Grenzen dieser Gattung fest, dem Typus der Gattung *C. hirundinis* Curt. entsprechend, und sonderte aus ihr *Myoxopsylla*, *Ctenophyllus* und *Tarsopsylla* (= *Ctenonotus* Kol.) als selbständige Gattungen aus. In dieser Arbeit habe ich mich ausschließlich auf die palaearktischen Arten beschränkt, doch kann kein Zweifel darüber bestehen, daß einer solchen Revision auch die außerpalaearktischen *Ceratophyllus*-Arten bedürfen, ganz besonders die amerikanischen, deren z. Z. bereits mehr als 70 beschrieben sind. Jedoch verfüge ich über ein für eine solche Revision unzulängliches Material und daher will ich hier im Zusammenhang mit meinen Arbeiten über die *Ceratophyllus*-Arten, welche auf den palaearktischen Zieseln leben<sup>2)</sup>, nur diejenigen nordamerikanischen Arten erwähnen, welche auf Zieseln und Murmeltieren angetroffen wurden.

<sup>1)</sup> Wagner, Über die Einteilung der Gattung *Ceratophyllus* Curt. „Koonowia“, V, 1927, p. 101.

<sup>2)</sup> Wagner, Berichte des Russ. wissenschaftl. Institutes in Belgrad. 1928. Wagner und Ioff, Rev. de Microbiol., Saratoff, V, 1926, p. 57.

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