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## A NEW SPECIES OF APATANIIDAE FROM THE RUSSIAN FAR EAST

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**ABSTRACT.** *Apatania maritima* sp.n. is described from the South Primorje, Far Eastern Russia. It is a member of *ulmeri* species subgroup. Adults emerge in spring; larvae probably inhabit metarhithral localities.

## INTRODUCTION

The family Apataniidae was treated as a subfamily within the Limnephilidae for a long time, but recently it was shown to be a separate family (Gall & Wiggins 1992). In the last review of this group, Schmid (1953, 1954) subdivided the genus *Apatania* into several hierarchic units of uncertain taxonomical rank. One of these subdivisions, the *fimbriata*-supergroup (former genus *Apatelia* Wallengren), included a grouplet called *ulmeri* within the *malaisei*-subgroup. Species of the *malaisei*-subgroup are oriental in distribution and inhabit the rhithral parts of streams.

The species described here should be classified as a member of the *ulmeri*-grouplet or species complex. A set of characters represented in this new species and in other members of the *ulmeri*-complex show its separate position within the subgenus *Apatelia* and enables us to elevate its rank to the level equal to that of the *malaisei*-subgroup.

Ocular net of the MBS-1 microscope was used to make drawings. All measurements were made on the type specimens. Types are deposited in alcohol in the Zoological Institute of the Russian Academy of Science, St.Petersburg, Russia.

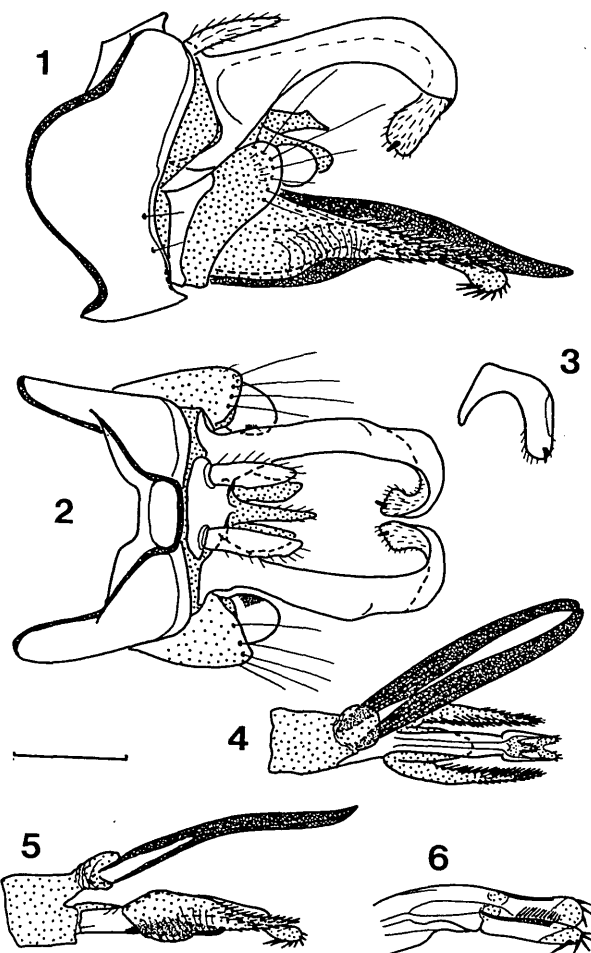
## DESCRIPTION

*Apatania maritima* Ivanov & Levanidova, sp.n.

**Holotype, male.** Body length 8,2 mm, forewing length 8,4 mm. Head dark brown, thorax brown, abdomen light brown with pale pleurites, pronotum lighter than meso- and metanota. Antennae brownish with light annulation at the subapical portions of segments, basal quarter of the antenna is darker than the rest. Legs fuscous, fore femora with elongated light spots on the hind surfaces. Wings pale, pterostigma large. Apical parts of the costal and subcostal fields as well as pterostigma are darkened. Lower surface of forewing provided with a row of short bristles along the radial vein extending from the origin of RS to the pterostigma. M4 and Cu of hindwings are united at a single point. Spur formula 1-2-4.

**Genitalia (Figs. 1-5).** Dorsal and ventral parts of segment 9 shorter than the lateral parts, separated lateral plates are absent. Preanal appendages oval and straight. The external branches of the dorsal appendages of segment 9 are long and wide, strongly curved ventromedially; apical parts of these branches provided with one short black spine each. Fused internal branches of segment 10 narrow and straight in dorsal view, wide and obliquely truncated in lateral view. Segment 10 is reduced to two finger-shaped truncated protuberances. Basal segments of inferior appendages narrowed in their distal halves and directed dorsad; apical segments short, rounded, each bearing a sclerotized spot on its inner surface. Aedeagus long, its apex is incised terminally and has a deep dorsal groove. The tip of the aedeagus is provided with a number of spines directed backward and downward. A small setose bulb is hidden in the dorsal groove of the aedeagus. Parameres black, very long and slender, fused subbasally at a single point and rounded apically. Lateral parts of aedeagus bear a pair of long soft acute projections provided with numerous

spines, mainly but not exceptionally on their inner surfaces. A sclerotized lobe protrudes backwards from the midventral part of aedeagus.



**Female (Figs. 7-9).** Body length 8,2 mm, forewing 9,2 mm. Coloration as in the male except hind legs have the light middle spots on the external surfaces of femora and the pale distal halves of tibiae. The last abdominal segment in dorsal view is incised apically and bears a small ridge on the dorsal surface; in lateral view its apical margin has several incisions, as shown on Fig.7. Anal tube with wide opening, narrow and curved apex, and swollen lateral walls.

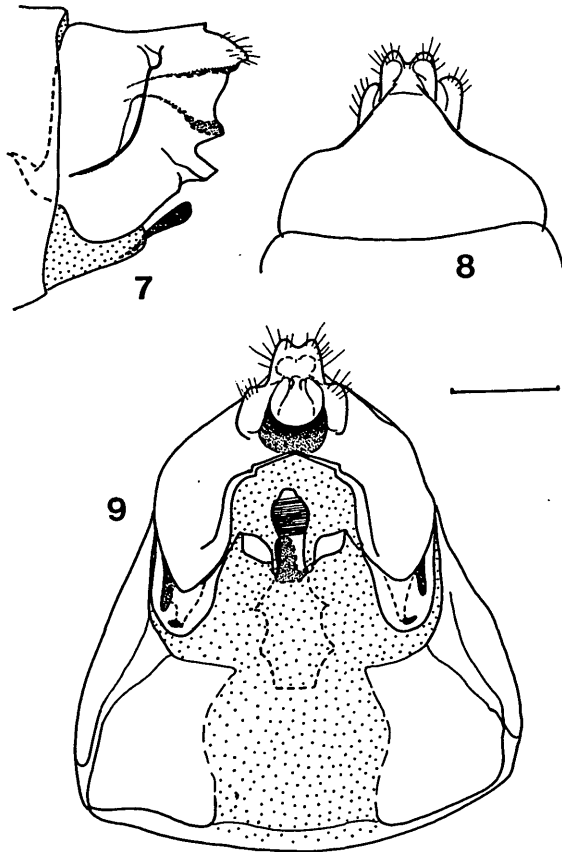
**Material.** Holotype, male: Russia, South Primorje, vicinity of Slavyanka, eastern slopes of Pan Ling Mts., Kedrovaya Pad' Nature Reserve, 5.5.1974, L.Zhiltsova. - Allotype, female: data as in the holotype. - Paratypes: 1 male, 3 females: the same area and date as holotype, Brook Mongugai, L.Nadezhkina.

## COMMENTS

This new species was collected near fast-running stream localities (metarhithral) with stony and pebble bottoms. Water temperatures in summer in these streams are usually less than 18°C and reaches are in proximity to shallows.

*Apatania maritima* sp.n. is related to *A.sarkandensis* Ivanov (1991) and is especially close to *A.ulmeri* Schmid. It differs from the smaller *A.ulmeri* in the wider and shorter external lobes of the 9th segment without additional inner protuberances; these lobes in *A.maritima* are more curved apically. Ventral parts of segment 9 in

*A.maritima* are wide, inferior appendages are shorter than in *A.ulmeri* with ovoid (not elongated as in the last species) gonostyle, and the aedeagal structures resembles that of *A.majuscula* in the shape of the apex. Eversible lateral lobes of aedeagus in *A.ulmeri* are longer and have no basal spines. Parameres in *A.maritima* are obtuse apically and much longer than in *A.ulmeri*.



## ACKNOWLEDGEMENTS

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## REFERENCES

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## Legend to the figures.

- Figs. 1-6. Male genitalia of *Apatania maritima* sp.n., holotype:  
 Fig.1. Lateral view with protruded phallic structures.  
 Fig.2. Dorsal view, phallic structures omitted.  
 Fig.3. Apical part of the left external branch of segment 9, posterior view.  
 Fig.4. Aedeagus and parameres, dorsal view, parameres are shifted to show the aedeagus.  
 Fig.5. Aedeagus and parameres, lateral view.  
 Fig.6. Tip of aedeagus, dorsolateral view.  
 Scale: Figs.1-3 and 6: 0,3mm; 4 and 5: 0,5mm  
 Figs. 7-9. Female genitalia of *Apatania maritima* sp.n., allotype:  
 Fig.7. Lateral view.  
 Fig.8. Dorsal view.  
 Fig.9. Ventral view.  
 Scale: 0,3 mm.



*Apatania sarkandensis* has long gonostylii, long acute preanal appendages, narrowed basal and apical parts of the large dorsal appendages (external branches of segment 9), and differs in the shape of segment 9 bearing the setose lateroposterior lobes. Eversible processes and spines on aedeagus are absent.

The species described here should be placed in the fimbriata-complex of the genus and represents a transition between mongolica- and malaisei-subgroups proposed by Schmid (1953). The subgroup malaisei is distinctly paraphyletic, as was supposed by Schmid (l.c.). *A.ulmeri* and related *A.maritima* and *A.sarkandensis* should be separated from the rest of malaisei-subgroup. Thus, we treat here the newly described species as a member of the ulmeri-subgroup in the subgenus *Apatelia* Wall. distinguished from others in long straight slender parameres, very long and strongly curved downward dorsal 'arms' - external branches of segment 9 in the male, and short anal tube and ventral part of the last abdominal segment in the female. The ulmeri-subgroup in related to *A.mongolica* Mart. and, probably, *A.sinensis* Mart.

## LIST OF RESEARCH WORKERS ON TRICHOPTERA

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 Present interests: development of larvae of *Hydropsyche* under the influence of several nitrite and nitrate concentrations. egg development, swarming behaviour of *Hydropsyche*; identification of Trichoptera. - Other interests: larval behaviour, net-building of caddis larvae, distribution of *Hydropsyche* in Europe. - Wanted: papers on problems mentioned above, e-mail-addresses of scientists who are working with net-spinning caddis; alcohol material of larvae of *Hydropsyche* from western Europe.

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