# Second addition to volume 15 (Trichoptera: Annulipalpia) and volume 19 (Trichoptera: Integripalpia) of Fauna bulgarica

## Krassimir KUMANSKI

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**Abstract.** The genus *Trichostegia* and four species (*Hydroptila angulata*, *Trichostegia minor*, *Oecetis intima* and *Mystacides longicornis*) are found for the first time in Bulgaria. The recently described *Rhyacophila margaritae*, *Hydroptila atalante*, *Hydropsyche incognita*, *Hydropsyche krassimiri* and *Potamophylax juliani* are also included in the Bulgarian list of Trichoptera. *Hydropsyche* cf. *doehleri*, *Hydropsyche fulvipes* and *Mesophylax aspersus* are deleted, the last two correspondingly replaced by *Hydropsyche peristerica* and *Mesophylax impunctatus aduncus*. The synonymy of *Hydropsyche dentata* Kumanski, 1974 with *H. saxonica* McLachlan, 1884 is declared. New localities of eight rare species are reported. Updated maps of distribution in Bulgaria for 17 species are provided. The number of Trichoptera known so far from Bulgaria is increased to 258 species.

Key words: Fauna, Trichoptera, Bulgaria, new data

#### Introduction

Thirteen years after the first Addition to the Bulgarian caddisfly fauna (KUMANSKI, 1993), a significant amount of new trichopterological data has been accumulated. Several new species have been described, some of them newly discovered, and some wrongly determined, and respectively published. A lot of new localities have been established for many species, some of them being among the rarest representatives of Trichoptera in this country. Thus, an update of the knowledge on the caddisfly fauna of Bulgaria is now proposed.

#### Material

The material of Trichoptera included here has been collected by the author, if not otherwise stated. It consists of adult insects, kept in 70° ethanol, and is deposited in the collections of the National Museum of Natural History, Sofia.

# List of species

# Rhyacophila kownackiana Szczesny, 1970

This species was previously considered a rare local endemic from the Central Stara Planina Mts. (KUMANSKI, 1985; Kumanski in HUBENOV et al., 1999). The knowledge on its distribution has been considerably enriched with its finding in Osogovo Mts. (KUMANSKI, 2001a) and now in Ruy Mt. This species is very probably an endemic of the northeastern part of the Balkan Peninsula. Its flight period is from May to September, within the limits of 800 and 2000 m.

Distribution: Stara Planina, Osogovo and Ruy Mts. (Fig. 1).

# Rhyacophila margaritae Kumanski, 1998

New localities: Stara Planina Mts.: torrents, left tributaries of Zavodna River, below Vezhen Chalet, 1300-1500 m, 24.08.2003, abundant 33 and 99.

The new localities are not far away from the ones this species was described from

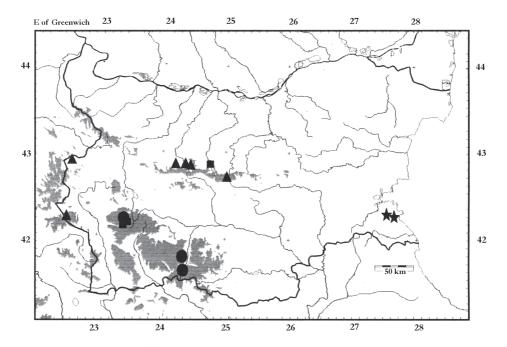


Fig. 1. Distribution in Bulgaria of Rhyacophila kownackiana ( $\blacktriangle$ ), Stactobia maclachlani ( $\blacksquare$ ), Microptila minutissima ( $\bullet$ ) and Hydroptila atalante ( $\star$ )

(KUMANSKI, 1998). A noteworthy fact is the density of the populations there. The only accompanying other species appeared to be the abovementioned Rh. kownackiana.

Distribution: Local endemic from Central Stara Planina Mts.

#### Stactobia maclachlani Kimmins, 1949

A recent revision of the material, announced by KUMANSKI (1979) as Microptila minutissima Ris, has shown that the specimens from the two new localities in Rila Mts. (KUMANSKI, 1979) belong in fact to Stactobia maclachlani Kimmins. The same mistake was repeated by KUMANSKI (1985). Reliable data on M. minutissima are those published by NOVAK (1971) from Rila Mts., and the ones of KUMANSKI (1975) from the Rhodopes. Thus, except for the single known locality in the Stara Planina Mts., Stactobia maclachlani is now reported for the first time in Rila Mts. from torrents with hygropetric niches above-and-below Kartalska Polyana, 1600 m, 15.08.1972, abundant  $\partial \partial$  and QQ.

Distribution in Bulgaria of Stactobia maclachlani and Microptila minutissima is shown on Fig. 1.

## Hydroptila atalante Malicky, 1997

New locality: Strandzha Mts., Zelenkovska River, 10 km above Yasna Polyana Village, ca. 100 m, 05.08.1981, abundant  $\partial \partial$  and QQ.

The species was recently described by MALICKY (1997) and was known only in its type locality in Strandzha Mts., the upper stream of Ropotamo (Tzerovska) River, 18.06.1908, 6 🗸 🗸 so far. Its male genital structures resemble very much those of *H. cornuta* Mosely, the type series of which (from England) were revised by the same author (MALICKY, 1997). The following re-examination of the material from Bulgaria, announced as H. cornuta (KUMANSKI, 1985), has revealed that it belongs to H. atalante, and not to H. cornuta. Thus, the latter species should be deleted from the list of the Bulgarian caddisflies.

Distribution: A probable endemic from the eastern part of the Balkan Peninsula (Strandzha Mts., Fig. 1). It is likely to be found also in the Turkish part of the mountain.

#### Hydroptila angulata Mosely, 1922

Localities: Strandzha Mts., Zelenkovska River, 10 km above Yasna Polyana Village, 05.08.1981, 3 9 (together with abundant 33 and 99 of *H. atalante*; see the previous species); Sakar Mts., torrent above Mramor Village, 20.06.1980, 3 ♀♀, leg. K. Kumanski and H. Malicky, on light).

New species to the Bulgarian fauna. Its discovery there was expected (KUMANSKI, 1985). Notwithstanding the lack of males so far, the detailed description of the female (MARSHALL, 1978) does not leave any doubt as to the accuracy of our identification.

Distribution: The range of this species is large, but not yet sufficiently investigated; the species is known from the Iberian Peninsula to Pakistan; in Bulgaria it has been found only in Strandzha and Sakar Mts. so far (Fig. 2).

## Hydropsyche krassimiri Malicky, 2001

Hydropsyche cf. doehleri: KUMANSKI, 1985.

Having mentioned the specimens from Bulgaria (Strandzha Mts.) as H. cf. doehleri Tobias, KUMANSKI (1985: p. 215-216, Fig. 89) has found several morphological differences between

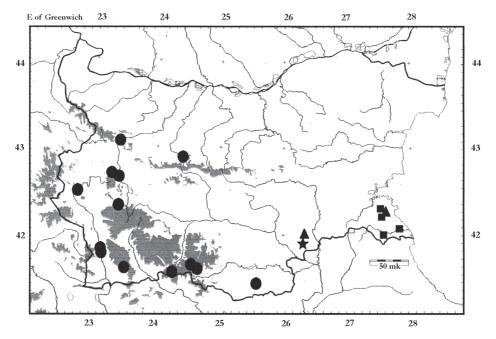


Fig. 2. Distribution in Bulgaria of Hydroptila angulata (▲), Hydropsyche krassimiri (■), Hydropsyche peristerica (●) and Hydropsyche ornatula (★)

them and the type material of H. doebleri from Italy. In a recent study on the species group of H. instabilis from the East Mediterranean region MALICKY (2001) describes a series of new species, including H. krassimiri. The localities of the latter are in Strandzha, as well as in several East Aegean islands (Samos, Chios) and in Western Anatolia (Afion, Kızılcahamam).

This species is largely spread in the East Mediterranean and, at least in Strandzha Mts., it appears to be quite common (Fig. 2); later on, I have found it in some other places there: torrent, left tributary to Rezovska River, 6 km SE of Malko Tarnovo, 14.07.1975, 1 &; Veleka River, Kachul, 06.08.1981, 2 33; Aidere, right tributary to Veleka River, 07.08.1981, 2 33, 1 \$\text{\$\text{\$\geq}\$}\$; Mladezhka River, left tributary to Veleka River, above Mladezhko Village, 08.08.1981, 10 33,499.

# Hydropsyche peristerica Botosaneanu et Marinkovic, 1966

Hydropsyche fulvipes: KLAPALEK, 1895; KUMANSKI, 1974; 1975; 1985.

Hydropsyche mahrkusha NOVAK, 1971 (nec Schmid).

A re-examination of the material published as H. fulvipes (Curtis, 1834) from Bulgaria was carried out after Malicky's paper (MALICKY, 2001). This revision has shown that in any case it is H. peristerica and not H. fulvipes. The male genitalia of these two species are morphologically very similar. Regardless of this, I am inclined to accept the suggestion of MALICKY (2001) that in terms of some other features (i.e. eye proportions), as well as of its ecology, the species spread in the central and southern parts of the Balkan Peninsula is H. peristerica. The habitats of this species in Bulgaria resemble the ones in Greece, rhitral and epipotamal torrents, rather variable in character, disposition and dimensions. H. fulvipes, on its turn, appears to be quite a stenobiotic species inhabiting the hypocrenal of Central Europe. Thus, the latter species should be deleted from the list of the Bulgarian caddisflies, and, correspondingly, replaced by H. peristerica.

Beside H. instabilis, H. peristerica is the second representative of the instabilis-group broadly spread in Bulgaria (Fig. 2). It is reported from most of Bulgarian mountains (Rila, Pirin, the Rhodopes, Stara Planina, Sredna Gora, Vitosha and Plana). Here are several new and interesting localities. Struma River: Skakavitza Railway Station, 07.07.1979, 1 3 and 15.10.1979, 1 3; Stara Kresna Railway Station, 09.06.1980, 3 & ; Yavorov Railway Station, 05.05.1980, 3 & d, all leg. J. Ganev, on light; Rhodopes: Shirokolashka River above Shiroka Laka Village, 22.06.1980, 2 ∂∂, 3 ♀♀, leg. K. Kumanski and H. Malicky, Krumovitza River, 2 km above Krumovgrad, 18.04.1977, 1 *d*.

## Hydropsyche ornatula McLachlan, 1878

New locality: Sakar Mts., 15-25.05.1977, 1  $\stackrel{?}{\circ}$ , 10  $\stackrel{?}{\circ}$ , leg. S. Zagorchinov. Second find of this rare species in Bulgaria (Fig. 2). The only reliable data so far were based on material deposited in the Vienna Natural History Museum, labeled "Eastern Rumelia", other data lacking.

# Hydropsyche incognita Pitsch, 1993

Hydropsyche pellucidula KLAPALEK, 1895 (nec Curtis); NOVAK, 1971 (nec Curtis); KUMANSKI: 1971 (nec Curtis); 1975 (nec Curtis); 1985 (nec Curtis, partim).

Hydropsyche incognita: KUMANSKI, 2001a; 2001b.

The revision of the Bulgarian material published as H. pellucidula, carried out after the description of H. incognita, has revealed the existence of both species in this country. The second one has proved to be more abundant and largely spread than the first one. It is also the most common and ecological plastic representative of the genus in Bulgaria as a whole. In fact, the genitalia drawn by KUMANSKI (1985: Figs 93 and 95) are taken after a specimen of H. incognita and not of H. pellucidula as announced. The map of distribution presented by KUMANSKI (1985: Fig. 99) is, correspondingly, incorrect. The distribution of H. incognita is shown on Fig. 3 in the present paper.

#### Hydropsyche pellucidula (Curtis, 1834)

This species is closely related to H. incognita, and not easily distinguished from it. Its main distinctive features are in some peculiarities of the male genitalia and in the shape of the aedeagus in particular. They are shown on Fig. 7.

H. pellucidula is also much rarer than H. incognita, inhabitant of the hypocrenal and epipotamal. So far established only in the Eastern Rhodopes, Strandzha Mts. and in Devnya River (Fig. 3); the last locality published by BOTOSANEANU (1956) is now totally destroyed.

# Hydropsyche saxonica McLachlan, 1884

Hydropsyche dentata KUMANSKI, 1974; syn. nov.

Hydropsyche saxonica: KUMANSKI, 1985 (dentata not declared as syn. of saxonica).

New locality: Eastern Rhodopes, torrent, tributary of Alamovska River, 3 km E of Zlatograd, 16.04.1977, 2 33.

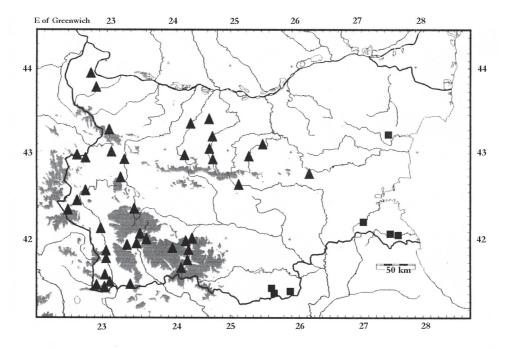


Fig. 3. Distribution in Bulgaria of Hydropsyche incognita ( ) and Hydropsyche pellucidula ( )

This is the second find of that very rare species in Bulgaria. The first one was not sufficiently defined ("near Burgas"), most probably situated in the foothills of Strandzha Mts. and this material has been wrongly described as a new species (KUMANSKI, 1974). Later on, this mistake was corrected but the new synonymy was not indicated (KUMANSKI, 1985). Now I use this opportunity to correct this nomenclature gap.

#### Hydropsyche bulgaromanorum Malicky, 1977

New localities: Kostinbrod, June 1977, 2 & d, leg. P. Popov; Balchik, Tuzlata: 23-25.08.2000, 1  $\circlearrowleft$ ; 10.08.2000, 2  $\circlearrowleft$   $\circlearrowleft$ ; 03.07.2003, 1  $\circlearrowleft$ , all leg. S. Beshkov, on light.

This species appears to be one of the most widely distributed taxa of Hydropsychidae in a large part of Europe and Anatolia. Further on, it appears to be among the most eurytopic species there. Common in hypopotamal, e.g. in the lower stretch of the Danube River, it occurs also in eupotamal and epipotamal of various rivers and even small torrents in the plain and in the mountain foothills from 0 to ca. 900 m. It is especially common and abundant in the rivers of Northern Bulgaria (the Danube and its tributaries, Kamchiya), and in somewhat lesser degree in some of the southern Bulgarian rivers (e.g. Maritza, Tundzha etc.), not established and evidently lacking in Struma and Mesta rivers. Notwithstanding the facts mentioned above, the new locality near Balchik deserves special attention. It is situated near the Black Sea shore where all kinds of streams with elements of potamal are situated in the vicinity. Batovska River offers the only more or less suitable habitats. It runs and flows into the sea some 15 km southwards of the collecting site. H. bulgaromanorum, like all hydropsychids, is an obligate rheophilous

species, so the probability of inhabiting the swampy lenitic basins between the shores and the steep slopes of Dobrudzha Plateau is very unlikely. Besides, the typical inhabitants of stagnant waters [Limnephilus decipiens (Kolenati), 1 ♂; L. griseus (Linnaeus), 1 ♂ and 2 ♀♀; L. bipunctatus Curtis, 1  $\circlearrowleft$ ; L. affinis Curtis, 1  $\circlearrowleft$ ], some other rheophilous species [Tinodes sp., 1  $\hookrightarrow$ ; Stenophylax permistus McLachlan, 1 3 have been collected simultaneously with H. bulgaromanorum. The only chance of several rheophilous species to exist there should be in the very small and isolated from each other, strongly calcareous brooks flowing down the slopes of the plateau. These semidrying in summertime torrents are typical habitats for some psychomyids [Tinodes polifurculatus Botosaneanu, Lype reducta (Hagen) and L. phaeopa (Stephens)]. The occurrence of a species of Hydropsychidae in such a net region, isolated from the river, indicates both the relict character of that locality, and the high adaptive potentiality of H. bulgaromanorum as well.

The distribution in Bulgaria is shown on Fig. 4.

## Trichostegia minor (Curtis, 1834)

Locality: Arkutino Swamp, 20.08.1997, 1 ♀, leg. S. Beshkov, on light.

New genus and species for the fauna of Bulgaria. Its discovery there was expected (KUMANSKI, 1988).

A phytophilous limno- and potamophilous species, inhabitant of lakes and swamps rich in water vegetation as well as of calm stretches of the rivers in the plain. Widely spread but very rare species. Evidently among the rarest caddisflies in Bulgaria (Fig. 4). The flight period lasts from April to August. The genitalia are shown by KUMANSKI (1988: Fig. 5).

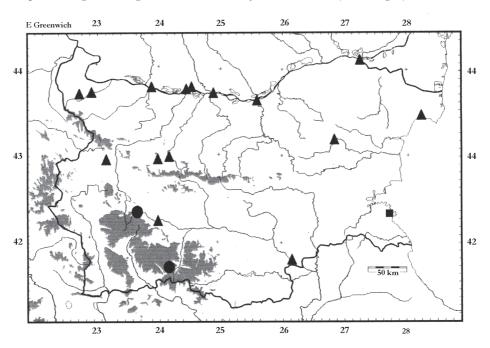


Fig. 4. Distribution in Bulgaria of Hydropsyche bulgaromanorum ( $\blacktriangle$ ), Trichostegia minor ( $\blacksquare$ ) and *Limnephilus ignavus* (●)

<u>Distribution</u>: Europe from the Pyrenees to Ural Mts. On the Balkan Peninsula it has been known only in its northwestern parts, thus the new locality is enriching the knowledge on the range in southeastern direction.

# Limnephilus ignavus McLachlan, 1865

New locality: Rila Mts., Dolna Banya, 27.09.1987,  $7 \, \stackrel{\wedge}{\circ} \, \stackrel{\wedge}{\circ}$  and  $2 \, \stackrel{\wedge}{\circ} \, \stackrel{\wedge}{\circ}$ , leg. D. Kiryakov, on light. This is the second find of the species in Bulgaria. So far, it was found only in the Rhodopes (Fig. 4).

# Colpotaulius incisus (Curtis, 1834)

A very rare species, so far known in Bulgaria only from Kostinbrod (and not from Kostenetz, as wrongly indicated in KUMANSKI, 1988).

New locality: Durankulak Lake, Vaklino Village, 28.09.1998, 1 &, leg. S. Beshkov, on light. Distribution in Bulgaria: Fig. 5.

## Glyphotaelius pellucidus (Retzius, 1783)

The species was known in Bulgaria only from the Southern Black Sea region and from the Sakar Mts.

Distribution in Bulgaria: Fig. 5.

#### Mesophylax impunctatus aduncus Navas, 1923

Mesophylax aspersus BOTOSANEANU, 1965 (nec Rambur); KUMANSKI, 1968 (nec Rambur); 1972 (nec Rambur); 1988 (nec Rambur).

The revision of the genus *Mesophylax* (MALICKY, 1998) has shown that all data concerning *M. aspersus* (Rambur), so far published from Bulgaria, should be transferred to its close relative *M. impunctatus* McLachlan. On its turn, the latter species is represented in the Balkan Peninsula and Western Anatolia by a distinct subspecies. The nominate form occurs in Central Europe and the British islands.

## Potamophylax juliani Kumanski, 1999

The only known so far locality of this endemic species remains its *locus typicus* – Osogovo Mts.

#### Oecetis intima McLachlan, 1877

<u>Locality:</u> Shabla salty swamp, 25.09.1998, 5  $\lozenge \lozenge$  and 11  $\lozenge \lozenge$ ; Shabla Lake, 27.09.1998, 2  $\lozenge \lozenge$ , all leg. S. Beshkov, on light.

New species to the fauna of the Balkan Peninsula.

Habitually resembling *Oecetis furva* (Rambur) but larger and somewhat paler than it. Coloration grayish yellow to light-brownish. Fore wing length  $(\Diamond, \mathcal{Q})$  10-12 mm. Spurs 1,2,2; the fore tibia

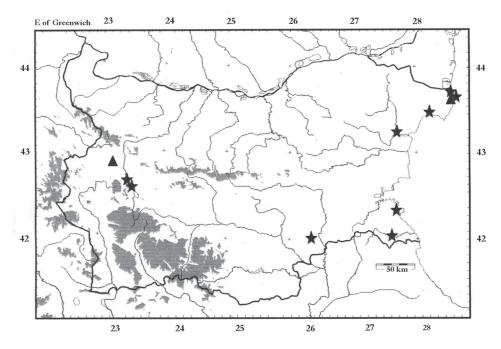


Fig. 5. Distribution in Bulgaria of *Colpotaulius incisus* ( $\blacktriangle$ ) and *Glyphotaelius pellucidus* ( $\star$ )

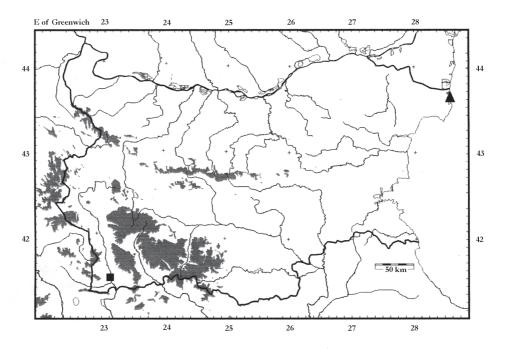


Fig. 6. Distribution in Bulgaria of Oecetis intima (▲) and Mystacides longicornis (■)

spur shorter than the ones on the mid and hind legs but nevertheless well distinguishable after a careful observation.

Male genitalia (Fig. 8: A-D) very similar to those of *Oe. furva* (Fig. 8: E-H). Inferior appendages with deep excision on the caudal margin, resulting in long and laterally acuminate ventral branch, and a shorter but broad and rounded dorsal one. Viewed ventrally, medial margins of inferior appendages smooth, forming a broadly opened cup with handle; the sharp medial processi, typical for *Oe. ochracea* (Curtis), lacking here. Aedeagus also resembling the one of *Oe. furva*, its basal portion here more voluminous.

<u>Female genitalia</u> (Fig. 9: A): Most characteristic part there is the ventral plate, formed by the fused 8th and 9th sternites. The plate is composed of a pair of intensively brown before maceration, lateral portions. A pale longitudinal strip separating the lateral portions, their caudal margins nearly straight.

The identification of this species could be made after the corresponding key for the genus *Oecetis* (KUMANSKI, 1988), with following additions:

1 (12) Males. 2(7)Spurs 1, 2, 2. Big insects; length of fore wing not less than 10 mm. 3 (4) 4 (3) Smaller insects; length of fore wing 8 mm or less. 12 (1) Females. 13 (18) Spurs 1, 2, 2. 14 (15) Bigger insects; length of fore wing not less than 9 mm. 14a (14b) Eight sternum with a pale heart-shaped elongated plate, bearing a dark median line 14b (14a) Eight sternum with a dark brown elongate-elliptic plate, bearing a pale median strip. . Smaller insects; length of fore wing not exceeding 8 mm. 15 (14) 16 (17) . . . . .

The discovery of this species on the Balkans was expected (BOTOSANEANU & MALICKY, 1978). The localities announced here (Fig.6) are the westernmost ones known so far.

<u>Distribution:</u> Eastern Palaearctic: China, Mongolia, Iran, Central Asia, the Crimea Peninsula.

#### Mystacides longicornis (Linnaeus, 1758)

<u>Locality:</u> Struma River, the bridge east of Ribnik near Petrich, 08-09.08.1996, 1  $\stackrel{\bigcirc}{\circ}$ , on light (Fig. 6).

New species to Bulgaria but its occurrence has been expected (KUMANSKI, 1988). Its main distinguishing feature is the lighter, golden-brown general coloration. The other two species of the genus are considerably darker, black-brown to metallic iridescence black. The genitalia are figured by KUMANSKI (1988: Fig. 163).

<u>Distribution:</u> Europe.

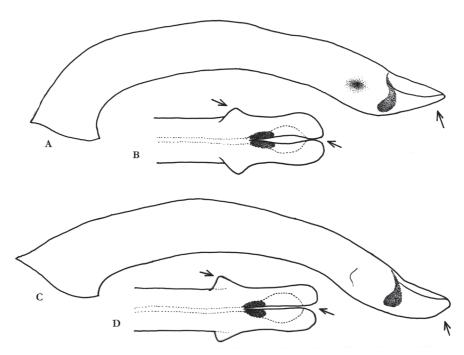


Fig. 7. Aedeagus of Hydropsyche pellucidula (A – lateral; B – ventral) and Hydropsyche incognita (C – lateral; D – ventral)

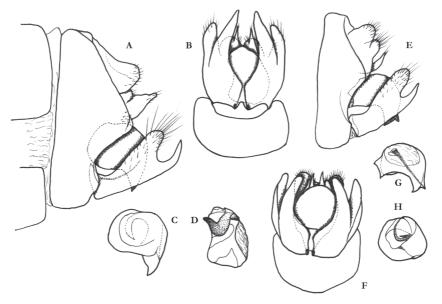


Fig. 8. Male genitalia of Oecetis intima (A – lateral; B – ventral; C – aedeagus, lateral; D – aedeagus, ventral) and Oecetis furva (E – lateral; F – ventral; G – aedeagus, lateral; H – aedeagus, ventral)

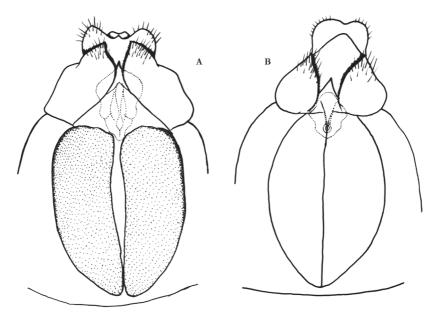


Fig. 9. Female genitalia, ventral, of Oecetis intima (A) and Oecetis furva (B)

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Author's address: Dr. Krassimir Kumanski National Museum of Natural History Bulgarian Academy of Sciences Tsar Osvoboditel Blvd. 1 1000 Sofia, Bulgaria

# Второ допълнение към том 15 (Trichoptera: Annulipalpia) и том 19 (Trichoptera: Integripalpia) от Фауна на България

Красимир КУМАНСКИ

(Резюме)

След първото допълнение към томовете 15 и 19 от Фауна на България се появиха нови трихоптерологични данни. Описани бяха пет нови вида: Rhyacophila margaritae, Hydroptila atalante, Hydropsyche krassimiri, Hydropsyche incognita и Potamophylax juliani. В резултат на неотдавна публикувани таксономични ревизии от списъка на българските ручейници се изваждат Hydropsyche cf. doehleri и Mesophylax aspersus, а се включват Hydropsyche krassimiri и Mesophylax impunctatus aduncus. Hydropsyche dentata Kumanski е нов синоним на H. saxonica McLachlan. Род Trichostegia и три вида (Hydroptila angulata, Trichostegia minor и Mystacides longicornis) се съобщават за първи път за България, а Oecetis intima — за Бълканския полуостров. Съобщават се нови находища за някои редки видове. Особен интерес представлява намирането на Hydropsyche bulgaromanorum в напълно изолираното от речната мрежа на страната находище при България достига 258.