New species and new records of Palaearctic Trichoptera in the material of the Hungarian Natural History Museum

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Abstract – 223 Trichoptera species were determined from the Palaearctic material of the Hungarian Natural History Museum collected in Iran, Pakistan, Kazakhstan, and from several countries along the Mediterranean Sea. Fifteen new species are described: Wormaldia albanica sp. n. (Albania), Pseudoneureclipsis adiabenorum sp. n. (Iran), Pseudoneureclipsis parthus sp. n. (Iran), Tinodes andrasi sp. n. (Croatia), Tinodes urdhva sp. n. (Albania), Rhyacophila akutila sp. n. (Bulgaria), Rhyacophila liutika sp. n. (Macedonia), Rhyacophila masula sp. n. (Iran), Lepidostoma yuechiorum sp. n. (Kazakhstan), Drusus arbanios sp. n. (Albania), Drusus dacothracus sp. n. (Albania), Drusus illyricus sp. n. (Albania), Drusus muranyorum sp. n. (Greece), Drusus pelagus sp. n. (Albania) and Notidobia nogradorum sp. n. (Albania) Three species are redrawn: Wormaldia subnigra MCLACHLAN, 1865 (from Albania), Rhyacophila brevifurcata KUMANSKI, 1986 (from Montenegro) and Allogamus auricollis (PICTET, 1834) (from Montenegro). With 76 figures.

Key words – Trichoptera, caddisflies, Albania, Bosnia-Herzegovina, Bulgaria, Croatia, France, Greece, Hungary, Iran, Italy, Kazakhstan, Kosovo, Macedonia, Mongolia, Montenegro, Pakistan, Poland, Romania, Russia, Serbia, Slovenia, Spain, Turkey.

INTRODUCTION

The recently accessed Palaearctic caddisfly material in the Hungarian Natural History Museum was collected from Iran, Pakistan, Kazakhstan, and from several countries along the Mediterranean Sea. Altogether 223 species were determined and many of them were either not collected at all, or only very rarely after their original descriptions. In materials from poorly studied areas, like Iran, Kazakhstan and Albania thirteen new species were found and described. The relatively well-collected countries of Croatia and Greece also produced one new species each.
MATERIAL AND METHODS

This study is based on specimens preserved in 70–80% alcohol. In order to observe morphological details in the genitalia, the entire abdomen was removed and placed in a small glass beaker of 25 cm³ with 10% KOH solution and boiled for 5 to 15 minutes for digestion. When sufficient material was available, the rest of the body, the head and the thorax without wings were also placed in the same glass beaker together with the abdomen and boiled in order to remove the soft tissues for reliable detection of the sclerotised groove and wart pattern on head and thorax. The setal wart pattern of the entire head and thorax with all the anatomical parts are rarely described and figured in species descriptions or performed only on intact animals, without tissue treatment. In many untreated specimens the wart and groove patterns are poorly visible and frequently indiscernible, especially if the warts have the same colour as the cranial sclerites, or if the setae on the warts are not detached and the warts are densely covered by intact setae. Clearing the entire wingless body give us very useful information on the setal wart pattern for species descriptions. Here we use our trinominal terminology to describe the groove and setal wart patterns on the head (Oláh & Johanson 2007). We used our functional appendicular terminology and not the conventional anatomical directional terminology to describe the genital structures in species descriptions (Oláh & Johanson 2008).

The duration of the treatment is adjusted individually to the effectiveness of clearing process, which depends on the species or even on the nutritive state of tissues or on the physiological condition of the specimens. The process of digestion can be easily followed by transparency. The dissolution rate of the soft tissues, the clearing transparency is clearly visible to naked eye. The digested abdomen, head and thorax were subsequently transferred to distilled water and the macerated tissue was removed mechanically by fine-tipped forceps and needles. The cleared wingless animal was transferred to 80% ethyl alcohol, then to glycerine for examination under microscope. Different sized pins modified to support ring bottom were introduced into the abdomen and used to hold and stabilise the genitalia in lateral, dorsal and ventral position for drawing. However, the plane of view is never perfect and we made no special procedures of grid, matrix or reflection to produce absolute mirror symmetry of the drawings. Instead, the genital structures are drawn exactly as seen in the microscope. However, setae are represented only by their alveoli and moreover their density is only symbolic. If essential the setal length or setal shape are presented by drawing a single or a few setae only. The genital structures were traced using a drawing tube mounted on a WILD M3Z microscope.

Careful studies of wing venation were carried out on the right wings mounted on dry permanent slides or on freshly cut right wings if permanent wing preparation was not produced. The cut right wings were carefully managed under glass cover in deep glycerine solution in order to stretch perfectly. A simplified presentation of the wing shape and wing pattern was prepared by bold wing shape contour and dotted pattern lines. The wing pattern delineated by dotted lines is not specified whether dark, light or coloured and not distinguished whether membrane or setal origin. If pattern was not contrasting the dotted line was set on the middle on the density transition. Studies on the maxillary palps, groove and wart pattern or other head and thoracic characters, leg claws and spurs, were carried...
out in deep glycerine column applying different sized pins with supporting ring to establish and stabilise the appropriate views. The head drawings are also drawn exactly as seen in the microscope. However, we have to emphasize the extreme importance of the plane and angle of view which may change considerably the form and ratio of structural elements in the final drawings as was clearly demonstrated by MALICKY (1988). In addition to the spur formula, we have introduced the maxillary palp formula in order to simplify the presentation of the length ratio of the 5 palp segments. The segment sequence represents the increasing segment length, with equally long segments given in (bracket). In maxillary palps when segment I is the shortest, segments II and IV equally long but longer than segment I, segment III shorter than II and IV, segment V the longest, the maxillary palp formula is I-III-(II,IV)-V. Species descriptions were standardized to ensure consistently formatted and comparable template descriptions almost according to EVENHUIS (2007).

Species descriptions were standardized to ensure consistently formatted and comparable description in general accord with EVENHUIS’ (2007) template principle. We have standardized also the terminology to describe space extensions of variously formed structural elements. The following terms were used to qualify the dimensions and extensions of genital structural elements: (1) short or long for length dimension on the longitudinal direction of coronal plane along the anteroposterior axis; (2) low or high (traditionally shallow or deep especially for excisions) for height dimension on the vertical direction of the sagittal plane along the dorsoventral axis and (3) narrow or wide (broad) on the lateral direction of the transversal plane along the mediolateral or left-right axis. The three-dimensional Cartesian coordinate system provides theoretical possibility to quantify by measurements the three physical dimensions of length, width, and height of each structural element. However this quantification is used very seldom in species description. Here we quantify only the length of forewing.

All specimens are deposited in the Hungarian Natural History Museum (HNHM), Budapest.

NEW SPECIES AND NEW RECORDS

PHILOPOTAMIDÆ


**Wormaldia albanica** sp. n. (Figs 1–3)

*Description* – Male (in alcohol). Small-sized, medium brown animal with light brown wing membrane. Maxillary palp formula is I-II-IV-(III,V). Forewing length 4.8 mm, hyaline forewing pattern composed of anastomose, median and Cu2 windows; window around anastomosis linear; median window along m-cu cross vein and along primary bifurcation of median vein extending two times longer along M3+4 than along m-cu crossvein; Cu2 window at arculus elongated linear extending to wing margin.

Male genitalia (Fig. 1). VIIIth tergite slightly modified with a short apicodorsal excision at its centre. IXth segment pentagonal with well developed antecostal suture on ventroanterior corner and subtriangular lobe on anterior margin. In dorsal view Xth segment is a narrow long triangular hood (Fig. 2); in lateral view digitiform without any excision or saddle-shaped depression and without any dorsal subapical hook, dent, projection or elevation; however, a pair of unusual and conspicuous flange of sclerites visible basolaterally. Cerci broad in lateral view, narrow, tapering and slightly S-shaped in dorsal view. Harpagnes longer than coxopodites, slender, tapering and slightly downcurving apicad in lateral view. Phallic apparatus (Fig. 3) consisting of phallotheca and evertile membranous endotheca armed with a long cluster of microspines, a single large spine and four small spines detached from basal end of microspine cluster and slightly enlarged.

*Type material* – Holotype, male, HNHM. **Albania**: Tepelenë district, Tepelenë, Uji i Ftohtë (Cold Water Spring), 165 m, N40°15.011’, E20°03.548’, 13.III.2008, leg. SZ. CZIGÁNY & D. MURÁNYI.
Etymology – It is named for the country in which the type was collected.

Diagnosis – This new species belongs to the species described from the Balkan Mountains with enlarged endothecal microspine cluster and tapering harpagones: *W. kimminsi* BOTOSANEANU, 1960; *W. khourmai* SCHMID, 1959; *W. balcanica* KUMANSKI, 1979; *W. bulgarica* NOVÁK, 1971. It is closest to *W. bulgarica* described from Bulgaria, but differs by having (1) conspicuous basolateral flange of sclerites present on Xth segment and well visible both in lateral and dorsal view; (2) in lateral view Xth segment has no dorsal excision and no any dorsal subapical hook, tooth or elevation, both present and very conspicuous on *W. bulgarica*; (3) cerci slightly S-forming tapering in dorsal view, not straight and clavate; (4) harpagones longer than coxopodites, not shorter; (5) harpagones slender, tapering and down-curving apically; (6) endotheca with a large spine and a group of four smaller spines besides the long microspine cluster, not only with a single large spine.

*Wormaldia albanica* sp. n., holotype, male: 1 = genitalia in left lateral view; 2 = Xth segment, cerci, IXth tergite and VIIIth tergite in dorsal view; 3 = phallic organ in lateral view

*Fig 1–3. Wormaldia albanica* sp. n., holotype, male: 1 = genitalia in left lateral view; 2 = Xth segment, cerci, IXth tergite and VIIIth tergite in dorsal view; 3 = phallic organ in lateral view

Annls hist.-nat. Mus. natn. hung. 102, 2010


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**Figs 4–6.** *Wormaldia subnigra* McLachlan, 1865, male: 4 = genitalia in left lateral view; 5 = Xth segment, cerci, IXth tergite and VIIIth tergite in dorsal view; 6 = phallic organ in lateral view.

*Annls hist.-nat. Mus. natn. hung.* 102, 2010
Dipseudopsidae

Pseudoneureclipsis adiabenorum sp. n.
(Figs 7–10)

Description – Male (in alcohol). Head almost quadrangular. Ocelli absent. Eyes about half of vertex width. Maxillary palp formula II-I-III-IV-V. Antennae stout, 1.4 times longer than forewing; scape short, 1/4 as long as head; inteantennal distance wider than scape. Cephalic and thoracic groove and setal wart structure following general pattern of genus. Spur formula 244, posteroapical spur on foreleg only half length of anteroapical, posteroapical and posterosubapical spurs 1/3 longer than anteroapical and anterosubapical both on midleg and hindleg. Claws on legs are small and symmetrical. Forewing length 5 mm. Forewing membrane and veins are light brown covered with scarce cinereus setae. Forewing with Forks I,II,III,V and with closed discoidal, median and thyridial cells, crossvein m-cu closing thyridial cell not reaching first fork of longitudinal vein M; on forewing Fork I is smaller than Fork III; hindwing with Fork II,III,V and only thyridial cell closed, but very narrow.

Male genitalia (Fig. 7). IXth abdominal segment consisting of a narrow tergit and short sternite; the narrow tergite reduced to antecostal ridge articulating to narrow dorsal rod of IXth sternite in hinge-joints. Segment X reduced to a short setose monolobe as visible in dorsal view (Fig. 8). The pair of paraproctal processes (intermediate appendages) is fused mesally to base of cerci and produced a pair of short processes directed slightly mesad in dorsal view. Cerci short and rounded in lateral view. Coxopodite of the gonopod elongated, subtriangular on its apical half; second segment of gonopods, harpagones moved dorsobasal and forming bipartite mesad curving process with tapering apex; its basal part produced into an additional short process midway; intersegmental membrane, articulation line of harpagones well-visible (Fig. 9). Phallic apparatus with downcurving broader phallobase and broad and slightly arching horizontal phallotheca with transparent, almost hyaline membranous apical part, the endotheca with three setal bunches (Fig. 10).

Type material – Holotype, male, HNHM. Iran: Province Bushehr, S-Zagros, Thang e Ram near Dalekhi, 400 m, 7–8.VI.2005, leg. P. Gyulai & A. Garai.
Etymology – The name was chosen to remember the Parthian Prince Adiabene, bearing in mind his relation to Jesus Chrestos and their possible relations to the type locality.

Diagnosis – This small-sized brown caddisfly is similar to \textit{P. amana} MALICKY, 1989 described from Oman. However differs by having (1) the IX\textsuperscript{th} sternum shorter, (2) the semisclerous basal setose lobe of the X\textsuperscript{th} segment monolobed, not bifid; (3) cerci short and rounded in lateral view; not elongated and triangular (4) paraproct without elongated spine-like ventral process, (5) coxopodite with subtriangular apical half in lateral view, not parallel-sided; (6) harpagones with a short process on midway; (7) phallic organ with three setal bunches without any spines.

\textbf{Pseudoneureclipsis parthus} sp. \textit{n.}  
(Figs 11–14)

\textit{Description} – Male (in alcohol). Head almost quadrangular. Ocelli absent. Eyes about half of vertex width. Maxillary palp formula II-I-III-IV-V. Antennae stout, 1.4 times

\textit{Annls hist.-nat. Mus. natn. hung. 102}, 2010
longer than forewing; scape short, 1/4 as long as head; inteantennal distance wider than scape. Cephalic and thoracic groove and setal wart structure following general pattern of the genus. Spur formula 244, posteroapical spur on foreleg only half length of anteroapical, posteroapical and posterosubapical spurs 1/3 longer than anteroapical and anterosubapical both on midleg and hindleg. Claws on legs small and symmetrical. Forewing length 5 mm. Forewing membrane and veins light brown covered with scarce cinereous setae. Forewing with Forks I,II,III,V and with closed discoidal, median and thyridial cells, crossovein m-cu closing the thyridial cell not reaching first fork of longitudinal vein M; on forewing Fork I is smaller than Fork III; hindwing with Fork II,III,V and only thyridial cell closed, but very narrow.

Male genitalia (Fig. 11). IXth abdominal segment consisting of a narrow tergit and well-developed compact sternite, higher than long; narrow tergite reduced to antecostal ridge articulating to narrow dorsal rod of IXth sternite in hinge-joints. Segment X produced into a multidigitate setose and papillated sclerotized short mesal lobe visible only in dorsal view (Fig. 12). The pair of paraproct processes (intermediate appendages) is fused mesally to base of cerci and produced a pair of short rod directed slightly mesad in dorsal view and armed with setae. Cerci short and high in lateral view bearing a long seta ventroapicad on elevated alveolus. Coxopodite of gonopods rounded; second segment of gonopods, harpagones (stylus) moved dorsobasad and forming long and mesad curving rod with tapering apex; intersegmental membrane, articulation line of harpagones well-visible (Fig. 13). Phallic apparatus with downcurving broader phallobase and broad and slightly arching horizontal phallotheca with transparent, almost hyaline membranous apical part; this protruding apicalendotheca densely covered microtrichia froming a terminal corona (Fig. 14).

Type material – Holotype, male, HNHM. Iran: Province Busher, S-Zagros, Thang e Ram near Dalekhi, 400 m, 7–8.VI.2005, det. P. GYULAI & A. GARAI.

Etymology – The name was chosen to remind the Scythian Alliance of the Parthian Empire ruling the territory of type locality during half thousand years between 238BC and 226AD.

Diagnosis – This small-sized brown animal is similar to P. iranicus MALICKY, 1982 described from Iran. However differs by having (1) IXth sternum higher than long, not longer than high, (2) the multidigitate semisclerous basal setose lobe of the Xth segment short, not monolobed and not long; (3) cerci short armed with single long seta on a ventroapical raised alveolus, not long and not unarmed; (4) paraproct short with broadening basal part continuing into a less sclerotized subphallic strap, (5) coxopodite rounded, not subdivided into a dorsabasal lobe; (6) phallic organ with numerous setae froming a setal coronal apex without any spines.


**Description** – Male (in alcohol). Small medium brown animal. Sclerites medium brown, setal warts both on head and thorax somewhat lighter, grooves are dark. Appendages pale yellow. Maxillary palp formula is I-IV-II-III-V. Forewing length 4 mm, its membrane pale brown densely covered with hairs.

*Annls hist.-nat. Mus. natn. hung.* 102, 2010

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Figs 11–14. *Pseudoneureclipsis parthus* sp. n., holotype, male: 11 = genitalia without phallic organ in left lateral view; 12 = IXth tergite, Xth segment, cerci, paraproct in dorsal view; 13 = coxopodite and harpago of the left gonopod in ventral view; 14 = phallic organ in lateral view
Male genitalia (Fig. 15). IXth abdominal segment represented by separate sternite and tergite; setaless tergite apron-shaped in dorsal view roofing directly middle phallic apparatus and dorsal paraproctal processes; subquadrangular sternite short and tall; its dorsal elongated apodemes connected to meet paired paraproctal processes and phallic organ rather tall; fulcrum complex where IXth tergite and sternite as well as cerci meeting located almost at middle of sternal apodeme. Vestigial membranous Xth segment frequently fused to IXth tergum not discernible at all. Cerci setose, elongated with narrower basal broad middle and very thin apical thirds. Paraproct is represented by a pair of broad dorsal paraproctal process embracing, almost tubing phallic organ; paraprocts armed with mega-setae housed in well-developed alveoli: 4–5 middle laterad on both sides, 5–6 subapical dorsal and 2–3 subapical ventral. Coxopodite of gonopods short and tall having apical margin with 3 spinelike processes: 1 dorsoapical, 1 subapical oriented anteromesad and 1 mesal oriented posterad; harpagones digitiform rooting mesally subapial (Figs 16–17); basal plate of gonopods with long enlarged and clavate anterior apodeme; pair of dorsal posterd directed processes only slightly arching and with a ventral hump on midway (Fig. 18). Phallic apparatus weakly discernible as located inside paraproctal processes; its free S-forming apex with very thin ejaculatory duct (Fig. 15).

*Type material* – Holotype, male, HNHM. Croatia: Dubrovnik-Neretva county, Konavli Mts, Ljuta (near Gruda), Ljuta Stream at the Konaviski dvori watermill, 60 m, N42° 32.076', E18°22.610', 7.X.2008, leg. L. DÁNYI, Z. FEHÉR, J. KONTSCHÁN & D. MURÁNYI.

Figs 15–18. *Tinodes andrasi* sp. n., holotype, male: 15 = genitalia without basal plate of the gonopod in left lateral view; 16 = coxopodite and harpago of the left gonopod in ventral view; 17 = coxopodite and harpago of the left gonopod in dorsal view; 18 = basal plate of the gonopods.
Etymology – The name of this tiny *Tinodes* species was dedicated to ANDRÁS, the newly-born son of the collector, DÁVID MURÁNYI.

Diagnosis – This new species is close to the widely distributed *Tinodes rostocki* MCLACHLAN, 1878, but differs by having (1) IXth sternite short and tall, not long and low; (2) phallicata with S-forming thin apical end, not C-forming; (3) paraproctal processes armed with 4–5 megasetae on the middle, besides the apical set; (4) apical margin of coxopodite has altogether only 3 spinelike processes, not 5 processes; apicomesal short and blunt processes lacking; (5) dorsal pair of processes on basal plate low-arching, not hooked; (6) anterior apodeme of basal plate very enlarged and clavate.

*Tinodes assimilis* MCLACHLAN, 1865 – France: Mt. Mezenc, Borée, Massif Central, 44.908, 4.228, 1026 m, 15.VII.2007, leg. M. BÁLINT (1 male).


*Tinodes foedella* MCLACHLAN, 1884 – France: Citou, Aude, 43.408, 2.591, 906 m, 14.VII.2007, leg. M. BÁLINT (3 males, 2 females).


*Tinodes rostocki* MCLACHLAN, 1878 – Albania: Dibër district, Korab Mts, Radomirë, torrent E of the village, 1460 m, N41°49.131’, E20°30.160’, 26.VI.2007, leg. D. MURÁNYI (1 male, 2 females). Dibër district, Korab Mts, open stream above Fushë Korabit, 1945 m,
New species and records of Palearctic Trichoptera in the material of the HNHM

Tinodes urdhva sp. n.
(Figs 19–22)

Description – Male (in alcohol). Small medium brown animal. Sclerites medium brown, setal warts both on head and thorax lighter. Grooves dark, cranial areas medium, warts light brown. Appendages pale yellow. Maxillary palp formula is I-IV-II-III-V. Forewing length 4.8 mm, its membrane pale brown densely covered with hairs.

Male genitalia (Fig. 19). IXth abdominal segment represented by separate sternite and tergite; setalless tergite apron-shaped in dorsal view roofing directly middle phallic apparatus and dorsal paraproctal processes; subquadrangular sternite with rounded ventroproximal angle angle; its dorsoapical angles forming elongated apodemes connected to meet paired paraproctal processes and phallic organ; fulcrum complex where IXth tergite and sternite as well as the cerci meeting located at start of sternal apodeme. Vestigial membranous Xth segment frequently fused to IXth tergum not discernible at all. Cerci setose, elongated as usual with narrower basal and broader middle thirds. Paraproct represented by a pair of broad dorsal paraproctal process shorter than cerci embracing, almost tubing the phallic organ; paraprocts armed with megasetae housed in well-developed alveoli: 1 middle ventral, 2–3 subapical ventral, 3–4 apical and 5–6 subapical dorsal. The coxopodite of the gonopods long oviform; harpagones simple monolobed, curving upward and mesad (Figs 20); basal plate of gonopods with long anterior apodeme, horizontal middle flanks and capitapate apices (Figs 21–22). Phallic apparatus weakly discernible located inside paraproctal processes and being in double cover of cercus and paraproct on both sides; its filiform sclerotized apex discernible besides membranous thin ejaculatory duct (Fig. 19).

Type material – Holotype, male, HNHM.


Etymology – Name was given with reference to the upward directed harpagones, upward “urdhva” in Sanscrit.

Annls hist.-nat. Mus. natn. hung. 102, 2010
Diagnosis – This new species belongs to the Tinodes kimminsi SYKORA, 1962; T. maculicornis (PICTET, 1934); T. sarisa MALICKY, 1975, T. unicolor (PICTET, 1934) species complex having simple monolobed harpagones and tall paraproct. Most close to T. sarissa MALICKY described from Greece, but differs by having (1) number and pattern of megasetae on paraproctal processes different; (2) phallicata is simple rod without any structures; (3) harpagones upward directed, not downward; (4) basal plate of gonopods with different structural units both in lateral and ventral view.

![Image of Tinodes urdhva sp. n., holotype, male](image)

Figs 19–22. *Tinodes urdhva* sp. n., holotype, male: 19 = genitalia without basal plate of the gonopod in left lateral view; 20 = fused coxopodites and the harpagones of the gonopod in ventral view; 21 = basal plate of the gonopods in lateral view; 22 = basal plate of the gonopods in ventral view

POLYCENTROPODIDAE


*Neureclipsis bimaculata* (LINNAEUS, 1758) – **Kazakhstan**: Province Almaty, Chu-Illisky Mt., 10 km NW Krasnogorka, 1250 m, 75°10’ E, 43°20’ N, 2.IX.1997, leg. A. OROSZ (1 male).
New species and records of Palaearctic Trichoptera in the material of the HNHM

**Plectrocnemia conspersa** (CURTIS, 1834) – Croatia: Virovitica-Podravina county, Papuk Mts, Jankovac Spring, 455 m, N45°31.126', E17°41.198', 1.X.2007, leg. L. DÁNYI, J. KONTSCHÁN & D. MURÁNYI (1 male).

**Plectrocnemia geniculata** McLACHLAN, 1871 – France: Provence Alps, Jausiers, 44.390, 6.776, 1500 m, 11.VII.2007, leg. M. BÁLINT (1 male).


**Polycentropus mazdacus** SCHMID, 1959 – Turkey: Vil. Artvin, Col Cancurtalan, 800 m, 1–2.VII.1996, leg. A. PODLUSSÁNY (1 male).

**Hydropsychidae**


**Cheumatopsyche lepida** (PICTET, 1934) – Turkey: Province Hakkari, 30 km NE of Hakkari, 1500 m, 43°55’E, 37°41’N, 4.VII.2002, leg. B. BENEDER & T. CSÖVÁRI (2 males).


Hydropsyche instabilis (Curtis, 1834) – Turkey: Vil. Artvin, Col Cuncurtalan, 800 m, 1-2.VII.1996, leg. A. Podlussány (1 male).

Hydropsyche kebab Malicky, 1974 – Turkey: Province Hakkâri, 30 km NE of Hakkâri, 1500 m, 43°55'E, 37°41'N, 4.VII.2002, leg. B. Benedek & T. Csóvári (2 males).


New species and records of Palaearctic Trichoptera in the material of the HNHM

Bulgaria, Pirin, Banska, 41.806 23.472, 1200 m, 1.VIII.2007, leg. L. UJVÁROSI & N.-K. NAGY (1 male).


**Hydropsyche pellucidula** (Curtis, 1834) – Greece: Lamia, Sperchias, 38.878, 22.163, 185 m, 29.VII.2007, leg. M. BÁLINT (9 males).


**Hydropsyche tabacarui** Botosaneanu, 1960 – Albania: Korcë district, Vithkuq, gorge of the Osum River SW of the village, 1250 m, N40°32.263', E20°34.153', 27.V.2007, leg. Z. BARINA, CS. NÉMETH & D. PIKFÓ (1 male, 1 female).


**Potamyia stramina** McLachlan, 1875 – Kazakhstan: Province Almaty, valley of River Ili, 20 km NNW of Kapchugay, 550 m, 77°00' E, 44°00' N, 31.VIII.1997, leg. A. OROSZ (1 male).

Annls hist.-nat. Mus. natn. hung. 102, 2010
RHYACOPHILIDAE


**Rhyacophila akutila** sp. n.
(Figs 23–26)

*Description* – Male (in alcohol). Small-sized, medium brown animal with lighter appendages and light brown wing membrane. Maxillary palp formula I-II-V-IV-III. Abdominal tergites and sternites light spotted with rather large and less pigmented alveolar haloes. Forewing length 9 mm.

Male genitalia (Fig. 23). In lateral view IXth segment quadrangular, short and tall, ventral half shorter than dorsal; dorsoapical area with erect setae. Segment X composed of dorsal branch with subapical flaps and straight ventral branch (Figs 23, 25); in dorsal view apical excision pentagonal and subapical flaps laterad directed (Fig. 24); apices of ventral branch without anal sclerites, deeply bifid, its mesal lobe pointed; weakly discernible U-shaped paraproct shifted anterad at the apices of the ventral branch, its tergal band connecting paraproct to phallobase short. Cerci reduced. Ventrum of harpagones shorter than dorsum of coxopodites. Phallic apparatus consisting of very short phallotheca with phallobase (Fig. 26); dorsal processes of phallotheca composed of longer unpaired upper and less sclerotized slightly shorter lower lobes divided medially to its half; phallobase connected to U-shaped paraproct by median tergal band and by tenons (clasper hanger of ROSS) and tendons (clasper tendon of ROSS) to dorsobasal area of coxopodite; aedeagus (phallicata) with a more sclerotized digitiform dorsal process and less sclerotized, more robust ventral arm with hammer-shaped apex; a pair of membranous, weakly discernible blunt lateral arm or parameres shorter than dorsal processes.


*Etymology* – This species is named with reference to the peculiar straight ventral branch of the Xth segment; “akutila” is “straight” in Sanscrit.

*Diagnosis* – This new species belongs to the *R. tristis* species group. It is closest to *R. pseudotristis* KUMANSKI, 1987, but differs by having (1) abdominal tergites and sternites with very pronounced light coloured alveolar haloes, *R. pseudotristis* has no light ring around alveoli at all; (2) in dorsal
view the apical excision on Xth segment almost pentagonal, not triangular; (3) in dorsoapical view the pair of apicoventral flaps on the dorsal branch of the Xth segment laterad directed, not parallel or mesad oriented; (4) the vertically oriented ventral branch of the Xth segment short and straight, not long and arching; (5) apices of the vertical branche of the Xth segment deeply bifid, not shallow; (6) mesal lobe of the apices pointed, not blunt; (7) membranous, almost indiscernible blunt parameres much shorter than the paired less sclerotized dorsal processes of the phallobase.

**Figs 23–26.** Rhyacophila akutila sp. n., holotype, male: 23 = genitalia without phallic organ in left lateral view; 24 = Xth segment in dorsal view; 25 = Xth segment in caudal view; 26 = phallic organ in left lateral view

*Rhyacophila aquitanica* McLachlan, 1879 – **France:** Lespinassière, Aude, 43.415, 2.533, 650 m, 14.VII.2007, M. Bálint (11 males, 2 females).


*Annls hist.-nat. Mus. natn. hung.* 102, 2010


**Figs 27–31. Rhyacophila brevifurcata** KUMANSKI, 1986, male: 27 = genitalia without phallic organ in left lateral view; 28 = Xth segment in dorsal view; 29 = Xth segment in caudal view; 30 = phallic organ in left lateral view; 31 = part of the phallic organ in dorsal view.


*Anns hist.-nat. Mus. natn. hung. 102, 2010*
**Rhyacophila dorsalis** (Curtis, 1834) – **France**: Massif Central, Lachapelle-Grailouse, 44.817, 4.021, 1074 m, 15.VII.2007 leg. M. Bálint (1 male).


**Rhyacophila intermedia** McLachlan, 1868 – **France**: Citou, Aude, 43.408, 2.591, 906 m, 14.VII.2007, leg. M. Bálint (4 males).


**Rhyacophila liutika** sp. n. (Figs 32–36)


Male genitalia (Fig. 32). In lateral view IXth segment quadrangular, short and tall, dorsomedian process, this apomorphic structure of this species complex lost; antecostal suture, external groove of antecosta having shorter dorsolateral and longer ventrolateral sutures. Segment X composed of horizontal basal and oblique distal parts; basal part enforced by two strongly sclerotized rods; distal part having balloon-shaped apex (Fig. 32); in caudal view two vertical spine lines visible located in regular circular area of deep apical concavity, possibly the vestigial anal sclerite or epiproct (Fig. 34); a small sclerite with long root at very ventral end of apical structure of segment X may represent vestigial U-shaped structure, paraproct (Fig. 32). Vestigial cerci as dorsal setose subapical humps present on basodorsum of oblique distal structure of Xth segment (Fig. 33). Ventrum of harpagones is...
slightly longer than dorsum of coxopodites. Phallic apparatus consisting of very short phallotheca, fused evertile membranous paramere and short and membranous aedeagus (phalicata); phallotheca reduced to a short band of phallobase (Fig. 35); sclerotized U-shaped phallobase very short ventrad, little longer dorsad where two upper ends of U-shape fused to basodorsal part of coxopodites; basodorsal articulation where tenon of phallotheca (clasper hanger at ROSS) and tendon of gonopod (clasper tendon of ROSS) meeting poorly discernible, however, continued both side into strongly sclerotized multipointed or serrated process (Fig. 36); a pair of dorsal processes with poorly discernible sclerotized connection to phallobase visible in caudal view with smooth mesad curving apical lobes and denticulated mesal angles.

Type material – Holotype, male, HNHM. Macedonia: Southeastern region, Belasica Mts, Kolesino, waterfall of the Kolesino Stream in platan-beech forest above the village, 500 m, N41°23', E22°48', 18.X.2006, leg. L. DÁNYI & D. MURÁNYI.

Etymology – This species is named to remember Liütika (today Levente). He was the first son of the Hungarian Prince Árpád and led the Turkish Kabar tribes to balance the Turkish Bulgars on the Balkan during the Hungarian conquest to the Carpathians.

Figs 32–36. Rhyacophila liutika sp. n., holotype, male: 32 = genitalia without phallic organ in left lateral view; 33 = Xth segment in dorsal view; 34 = Xth segment in caudal view; 35 = phallic organ in left lateral view; 36 = part of the phallic organ in dorsal view

Annls hist.-nat. Mus. natn. hung. 102, 2010
Diagnosis – This new species belongs to the species group of *R. stigma-tica* and close to species described from the Carpathians (*R. furcifera*) and from various parts of the Balkan (*R. kownackiana* SZCZESNY, *R. morettina* BOTOSANEANU, *R. brevisurcata* KUMANSKI, *R. denticulifera* KUMANSKI). Most close to *R. denticulifera* described from Bulgaria but differs by having (1) dorsomedial process of IXth tergite lost; (2) apical part of segment X rounded balloon-shaped in lateral view, not rectangular; (3) two vertical setal lines both located inside a single circular area in the caudal concavity of the Xth segment, not in two separate vertically oval area; (4) the dorsal processes of the phallobase differently shaped and their apical lobes smooth, not serrated.


*Rhyacophila masula* sp. n.  
(Figs 37–40)


Male genitalia (Fig. 37). Ventrum of IXth segment strongly abbreviated; dorsal apical lobe short with pointing indistinct apex. Segment X L-shaped, its horizontal dorsal half narrow filiform in dorsal view (Fig. 38), higher in lateral view with obliquely truncate setose apex; epiproct (anal sclerite) elongated, heavily sclerotized with well-developed internal root; paraproct (U-shaped apical band) well-developed continuing into semi-sclerotized tergal strap connecting to phallobase. Cerci foliform in dorsal view and fused to segment X and to dorsal apical lobe of segment IX (Fig. 38). Harpagones bilobed, slightly excised. Phallic apparatus large; phallobase fixed to the paraproct by tergal strap without visible suture and to dorsobasal corner of coxopodites by tenons of phallotheca (clasper hanger at ROSS) and tendons of gonopods (clasper tendon of ROSS) (Fig. 39); juncture or suture between tenon and tendon discernible; phallotheca without dorsal process; endotheca visible as slightly sclerotized membranous apical area of the phallotheca; a pair of upward and mesad curving parameres having apical black spine-like joint; aedeagus (phallicata) long and flat due to pair of well-developed lateral flanks, supplied with a pair of lateral subapical spines (Fig. 40); apex of aedeagus filiform.
Type material – Holotype, male, HNHM. Iran: Gilan Province, River Masula, 27.X.1990, leg. J. OLÁH.

Etymology – It is named for River Masula, where this species was collected.

Diagnosis – This new species belongs to the species group of *R. vulgaris*. It is closest to *R. forcipulata* MARTYNOV, 1929 described from Caucasus but differs by having (1) abbreviated dorsal apical lobe of IXth segment with indistinct apical ending both in dorsal and lateral view, not with distinct apical end; (2) apex of Xth segment filiform in dorsal view, not broad trifid; (3) fused cerci foliform in dorsal view, not pottery form; (4) harpagnones with short excision, not with long, (5) aedeagus with pairs of large lateral flanks and of lateral spines, not simple.

**Figs 37–40. Rhyacophila masula** sp. n., holotype, male: 37 = genitalia without phallic organ in left lateral view; 38 = Xth segment in dorsal view; 39 = phallic organ in left lateral view; 40 = aedeagus (phallicata) and parameres of the phallic organ in ventral view


Annds hist.-nat. Mus. natn. hung. 102, 2010
Annls hist.-nat. Mus. natn. hung. 102, 2010

New species and records of Palaearctic Trichoptera in the material of the HNHM


Rhyacophila stagnatica (Kolenati, 1859) – Slovenia: Podravska region, Pohorje Mts, Oplotnica, stream in a beech forest above the village, 9.VIII.2005, leg. D. MURÁNYI (1 male).
**Rhyacophila torrentium** PICTET, 1834 – **France**: Western Alps, Lalley, 44.732, 5.679, 1221 m, 16.VII.2007, leg. M. Bálint (2 males).


**Bosnia-Herzegovina**: Foća region, Zelengora, Suha, forest spring above the settlement, 1110 m, 43°15.892', 18°35.595', 10.V.2006, leg. L. Dányi, J. Köntschán & D. Murányi (1 male).


**Glossosomatidae**

**Agapetus arvernensis** Malicky, 1980 – **France**: Citou, Aude, 43.408, 2.591, 906 m, 14.VII.2007, leg. M. Bálint (5 males).


*Annls hist.-nat. Mus. natn. hung. 102, 2010*
New species and records of Palaearctic Trichoptera in the material of the HNHM


Glossosoma capitatum MARTYNOV, 1913 – Turkey: Vil. Artvin, Col Cancurtalan, 800 m, 1–2.VII.1996, leg. A. PODLUSSÁNY (1 male).


PTILOCOLEPIDAE


HYDROPTILIDAE


Annls hist.-nat. Mus. natn. hung. 102, 2010


APATANIIDAE

Apatania fimbriata (PICTET, 1934) – France: Massif Central, Mt. Mezene, 44.92, 4.18, 1538 m, 15.VII.2007, leg. M. BÁLINT (15 males).


BRACHYCENTRIDAE


Micrasema longulum MCLACHLAN, 1876 – France: Massif Central, Lachapelle-Graillouse, 44.817, 4.021, 1074 m, 15.VII.2007, leg. M. BÁLINT (1 male).


**Goeridae**

**Goera japonica** Banks, 1906 – **Kazakhstan**: Province Almaty, valley of River Ili, 20 km NNW of Kapchugay, 550 m, 77°00' E, 44°00' N, 31.VIII.1997, leg. A. Oroz (5 males). – Resolution of taxonomic status of problematic goerid caddisflies from the Eastern Palearctic Region needs more material. In Kazakhstan we found five male specimens of *Goera japonica* Banks that was considered to occur only in Japan and restricted locations along the mainland coast (Gall et al. 2007). The two males from Kazakhstan have typically divided appendages of the Xth segment and “japonica” structure of gonopods. The only difference discernible compared to the holotype drawing is the ventromesal lobe of IXth sternum that is more slender on specimens from Kazakhstan; however, its width seems not stable, it varies even between the two specimens examined.

**Goera pila** (Fabricius, 1775) – **Greece**: Sidirokastro, 41.274 23.427, 177 m, 31.VII.2007, leg. L. Ujvarosi & M. Bálint (4 males).

**Lithax incanus** (Hagen, 1859) – **Turkey**: Vil. Artvin, Col Cancurtalan, 800 m, 1–2.VII.1996, leg. A. Podlussány (5 males, 3 females).

**Silv nigricornis** (Pictet, 1834) – **Croatia**: Dubrovnik-Neretva county, Konavli Mts, Ljuta (near Gruda), Ljuta Stream at the Konavski dvori watermill, 60 m, N42°32.076', E18°22.610', 7.X.2008, leg. L. Dányi, Z. Fehér, J. Kontschán & D. Murányi (1 male).


**Lepidostomatidae**

**Crunoeia irrorata** (Curtis, 1834) – **France**: Citou, Aude, 43.408, 2.591, 906 m, 14.VII.2007, leg. M. Bálint (7 males).


**Lepidostoma doebleri** Malicky, 1976 – **Greece**: Arkadia prefecture, Aroania Mts, Planitiero, Planitiero (Ladon) Springs in the village, 640 m, N37°55.985', E22°09.503',


*Lepidostoma itoae* (KUMANSKI et WEAVER, 1992) – Kazakhstan: Province Almaty, valley of River Ili, 20 km NNW of Kapchugay, 550 m, 77°00’ E, 44°00’ N, UV light trap 30–31.VIII.1997, leg. A. OROSZ (2 males). – This species was described from Korea as closely related to and sympatric species of *Lepidostoma elongatum* (MARTYNOV, 1935) found together in the same habitat and at the same date in Korea.


*Lepidostoma yueciourum* sp. n.

(Figs 41–46)

Description – Male (in alcohol). Small-sized dark brown animal. Forewing length only 6 mm; M unbranched; thyridial cell small, moved basad and enclosed by obliquely running crossvein m-cu; Fork V well developed; costal margin with extreme edge folded over and supplied with a tuft of elongated setae basad; median groove, furrow or rather a fold developed on M appears free of scales and its bottom covered with shorter setae compared to slope or margin of groove; anal groove much shorter and produced by coalescence of basal section of Cu2 and A; anal groove is not a fold, it is fused and thickened veins (Fig. 42). Two basomedian processes of scapes occupy only about one fourth of scape (Fig. 41).

Male genitalia (Fig. 43). IXth abdominal segment fused annular and short. Xth segment, cerci and paraproct fused into a complex embracing phallic organ dorsad; difficult to demarcate their boundaries; setose dorsolateral lobe, possible cerci trilobed both in dorsal and lateral view; mesal pair of vertical plates may represent part of Xth segment rather long and high in lateral view bearing some setae or setal alveoli; ventrolateral tip of fused complex, pair of rudimentary paraprocts more sclerotized turning mesad as narrow straps (Fig. 44). Gonopods long almost parallel-sided stout rod-like in lateral view with pronounced dorsosubapical hump, especially well visible in ventral view (Fig. 45); below this dorsal bump towards basad the setiferous area on ventral surface bearing 7–8 very particularly developed, stout megasetae; gonopods apex covered with microsetae (Fig. 43). Phallic organ accompanied by a pair of slender parameres (Fig. 46).

**Etymology** – The name was given to remember the ancient Scythian inhabitants of the Heavenly Tian Shan Mountains, the *yuechi* Hun tribes, the ancestor of Kushans who established the great Kushan Empire in North and Middle India including Baktria, Gandhara and Malva during the 1st to 3rd centuries AD.

**Diagnosis** – This new species belongs to *Lepidostoma ferox* branch, but without pseudocells on forewing; most similar to *Lepidostoma nigrescens* (MEY et JUNG, 1989) described from Kirgizistan. The new species differs by having smaller size, discoidal cell much longer than its stalk on forewing, not shorter or equal; much shorter fork V on forewing, not reaching almost to wing base; the two basomedian processes on scape occupy only one fourth of the scape, not one third; cerci trilobed, its shortly bilobed mesal lobes produced posterad, as a result the pair of cerci together not straight or excised in dorsal view; gonopods with dorsosubapical hump and armed with very characteristic stout megasetae on ventral setiferous area.

*Figs 41–46. Lepidostoma yuechiorum* sp. n., holotype, male: 41 = head with appendages in left lateral; 42 = forewing venation; 43 = genitalia without phallic organ in left lateral view; 44 = Xth segment, cerci in dorsal view; 45 = left gonopod in ventral view; 46 = phallic organ in left lateral view
LIMNEPHILIDAE


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**Figs 47–51. Allogamus auricollis** (PICTET, 1834), male: 47 = genitalia without phallic organ in left lateral view; 48 = IXth tergit, cerci, paraproct in dorsal view; 49 = IXth tergite, cerci, paraproct in caudal view; 50 = gonopods and paraprocts in ventrocaudal view; 51 = aedeagus (phallicata) and paramer of the phallic organ in left lateral view

*Annls hist.-nat. Mus. natn. hung.* 102, 2010
New species and records of Palaearctic Trichoptera in the material of the HNHM


Astratodina mihirakula SCHMID, 1961 – Pakistan: Garam Chashma, 2600 m, 24.VI. 1992, leg. G. ČSORBA & M. HREBLAY (1 male). Gilgit, 1700 m, 29.V.1992, leg. G. ČSORBA & M. HREBLAY (1 male). Karakoram Mts, 40 km N of Gilgit, Juglat, 2400 m, 12.VIII.2001, leg. B. BENEDEK & L. RONKAY (3 males). Naltar, 2900 m, 19.VI.1992, leg. G. ČSORBA & M. HREBLAY (1 male). – This species was described by SCHMID (1961) and later its status confirmed (SCHMID 1991). IVANOV (1991) has synonymised as junior synonym of Astratodina inermis MOSELY. Based on material from various habitats in Pakistan, we found the male paraprocts (intermediate appendages) with dorsomesal process well visible in caudal view significantly differ from paraprocts of A. inermis without this dorsomesal process. The width and length may vary (IVANOV 1991), but we accept SCHMID’s reconfirmation that this is a valid species due to its rounded shape of cerci and especially to the presence of well produced dorsomesal process on the paraprocts.


Astratodina mihirakula SCHMID, 1961 – Pakistan: Garam Chashma, 2600 m, 24.VI. 1992, leg. G. ČSORBA & M. HREBLAY (1 male). Gilgit, 1700 m, 29.V.1992, leg. G. ČSORBA & M. HREBLAY (1 male). Karakoram Mts, 40 km N of Gilgit, Juglat, 2400 m, 12.VIII.2001, leg. B. BENEDEK & L. RONKAY (3 males). Naltar, 2900 m, 19.VI.1992, leg. G. ČSORBA & M. HREBLAY (1 male). – This species was described by SCHMID (1961) and later its status confirmed (SCHMID 1991). IVANOV (1991) has synonymised as junior synonym of Astratodina inermis MOSELY. Based on material from various habitats in Pakistan, we found the male paraprocts (intermediate appendages) with dorsomesal process well visible in caudal view significantly differ from paraprocts of A. inermis without this dorsomesal process. The width and length may vary (IVANOV 1991), but we accept SCHMID’s reconfirmation that this is a valid species due to its rounded shape of cerci and especially to the presence of well produced dorsomesal process on the paraprocts.


**Eccilosteryx guttulata** (PICTET, 1834) – **Italy**: Vinadio, Alps, 44.305, 7.171, 1200 m, 11.VII.2007, leg. N.-K. NAGY & M. BÁLINT (1 male, 1 female).


**Drusus arbanios** sp. n.

(Figs 52–55)

**Description** – Male (in alcohol). Dark castaneous; cephalic and thoracic sclerites dark, almost shining ebony black brown especially on the dorsum; cephalic and thoracic setose warts pale brown; appendages including legs except coxa lighter brown, haustellum and intersegmental membranous teguments whitish. Maxillary palp formula I-II-III. Spurs of male 1.3.3. Forewing length 8 mm.

Male genitalia (Fig. 52). Posteroventral black spinate area on tergite VIII not extended posteriorly, four-lobed, stepped and armed with specialized peg-like setae discernible both in lateral and dorsal view; both lower and upper lobes subdivided mesally; less pigmented irregularly shaped area of fused setal alveoli located anteriad of black spinate area visible both in lateral and dorsal view. Segment IX short ventrally, very short strap or bridle-like dorsally; its lateral length elongated by rounded lobe anteriad; midlateral sclerotized strips of sternite IX triangular and directed mesad between gonopods and cerci; vestige of sternal abdominal lateral suture of fused IX segment well developed. Xth
segment fused to IXth tergite forming together short dorsal bridle. Cerci bilobed in lateral view; dorsal lobe quadrate, ventral lobe subtriangular and slender. Paraproct forming a closed structure around anal opening by inner and outer branches (Figs 53–54); inner branches forming an upward directed narrow vertical plate quadrate in lateral view with a small dorsoapical wart only; in caudal view with dorsal apices slightly diverting laterad; their upper surface covered with pointed peg-like modified setae similarly to surface of posterodorsal spinate area of VIII tergite, exhibiting anchor function during copula; outer branches of paraproct spread laterad triangularly. Gonopods upward arching, broad triangular large lobe like in many other species populating various valleys in the Balkan Mountains. Aedeagus and parameres slender, parameres having two small spines far from each other on midway (Fig. 55).

**Type material** – Holotype, male, HNHM. **Albania**: Skrapar district, Ostrovicë Mts, Backë, stream beneath the pass between Mt. Frengu and Mt. Faqekuq, 1915 m, N40°31.614', E20°25.021', 4.VII.2005, leg. Z. BARINA, D. PIFKÓ & D. SCHMIDT.

**Etymology** – The name was given to remind the old ancient city of Arbon and his people the Arbanios, nearby the type locality.

**Figs 52–55. Drusus arbanios** sp. n., holotype, male: 52 = genitalia without phallic organ and with dotted contour of VIIIth tergite with spinate lobes in left lateral view; 53 = dotted contour of VIIIth tergite with spinate lobes, IXth tergit, cerci, paraproct in dorsal view; 54 = paraproct in caudal view; 55 = aedeagus (phallicata) and paramer of the phallic organ in left lateral view.
Diagnosis – This dark species with almost ebony black sclerites belongs to the species complex with large upward arching triangular gonopods and triangular or bilobed cerci inhabiting the Balkan Mountains. Most close to Drusus illyricus sp. n., but differs by having (1) small animal with forewing length of 8 mm, not large animal of 14 mm; (2) posterodorsal spinate area on VIIIth tergite four-lobed in dorsal view, not trilobed; (3) the longitudinal groove of IXth segment linear, not with ventral arm; (4) cerci with dorsal lobe quadratic, not tapering in lateral view; (5) inner branch of paraproct forming an almost regular quadratic plate in lateral view, not supplied with a dorsal pronounced subapical wart-shaped process.


Drusus dacothracus sp. n.

(Figs 56–59)

Description – Male (in alcohol). Black species; cephalic and thoracic sclerites dark, black especially on dorsum; appendages including legs brown, haustellum and intersegmental membranous teguments whitish. Spurs of male 1.3.3. Forewing length 11 mm.

Male genitalia (Fig. 56). Posterodorsal black spinate area on tergite VIII three-lobed in dorsal view (Fig. 57) and stepped in lateral view; armed with specialized peg-like setae discernible both in lateral and dorsal view; upper spinate lobe narrow in dorsal view; two patches of less pigmented irregularly shaped area of fused setal alveoli located anteriad of black spine area. Segment IX very long ventrally, very short bridle-like dorsally; its lateral length elongated by rounded triangular lobe anteriad; midlateral sclerotized strips of sternite IX triangular and directed mesad; vestige of sternal lateral suture of fused IXth segment well-developed without middle fork. Xth segment fused to IXth tergite forming together short dorsal bridle. Cerci are triangular and bilobed in lateral view; dorsal lobe short triangular; ventral lobe long triangular. Paraproct complex forming a closed structure around anal opening by inner and outer branches; upward directed slender dorsal apices of inner branches narrow and diverting laterad both in dorsal and caudal view (Figs 58–59); their upper surface covered with pointed peg-like modified setae similar to surface of posterodorsal spinate area of VIII tergite, exhibiting anchor function during copula; outer
branches of paraproct spread laterad triangularly. Gonopods upward arching, broad triangular large lobe like in many other species populating various areas in the Balkan Mountains. Aedeagus and parameres slender; parameres with small spine located dorsad on apical third.


**Etymology** – The name was given to remind Dacian-Thracian origin of the Albanian people inhabiting the type locality. Three theories exist: the Illyrian, Dacian-Thracian and Pelasgian origin of the Albanians.

**Figs 56–59. Drusus dacothracus** sp. n., holotype, male: 56 = genitalia without phallic organ and with dotted contour of VIIIth tergite with spinate lobes in left lateral view; 57 = dotted contour of VIIIth tergite with spinate lobes, IXth tergit, paraproct in dorsal view; 58 = paraproct in caudal view; 59 = paraproct in ventrocaudal view

*Annls hist.-nat. Mus. natn. hung.* 102, 2010
Diagnosis – This dark species belongs to the species complex with large upward arching triangular gonopods and triangular or bilobed cerci inhabiting the Balkan Mountains. It is closest to *Drusus illyricus* sp. n., but differs by having (1) smaller size; (2) upper lobe of the trilobed spinate area on tergite VIII narrow and clearly monolobed, not broad bilobed with some mesal depressen; (3) sternal lateral suture of the fused IXth segment without middle fork, not with well-developed middle ventral branch; (4) segment IX not very long ventrally; (4) cerci with dorsal lobe short triangular, not long and downward curving; (5) the ventral lobe of the cerci long triangular, not long digitiform; (6) inner branch of paraproct differently shaped both in lateral, dorsal and caudal view.


*Drusus illyricus* sp. n. (Figs 60–62)

Description – Male (in alcohol). Dark castaneous; cephalic and thoracic sclerites dark, almost black especially on dorsum; cephalic and thoracic setose warts brown; appendages including legs except coxa and proximal portion of femur lighter brown, haustellum and intersegmental membranous teguments whitish. Spurs of male 1.3.3. Forewing length 14 mm.

Male genitalia (Fig. 60). Posterodorsal black spinate area on tergite VIII slightly extended posteriorly, three-lobed, stepped and armed with specialized peg-like setae discernible both in lateral (Fig. 60) and dorsal view (Fig. 61); less pigmented irregularly shaped area of fused setal alveoli located anteriad of black spinate area. Segment IX very long ventrally, very short bridle-like dorsally; its lateral length elongated by rounded triangular lobe anteriad; midlateral sclerotized strips of sternite IX triangular and directed mesad;
vestige of sternal lateral suture of fused IXth segment well developed with middle fork. Xth segment fused to IXth tergite forming together short dorsal bridle. Cerci triangular and bilobed in lateral view; dorsal lobe broad based with tapering and downcurving apex, ventral lobe slender and longer. Paraproctal complex forming a closed structure around anal opening by inner and outer branches; upward directed obtuse dorsal apices of inner braches short and diverting laterad both in dorsal and caudal view (Fig. 62); their upper surface covered with pointed peg-like modified setae similarly to surface of posterodorsal spinate area of VIII tergite, exhibiting anchor function during copula; outer branches of the paraproct spreaded laterad triangularly. Gonopods upward arching, broad triangular lobe like in many other species populating various areas in the Balkan Mountains. Aedeagus and parameres slender.


Etymology – The name was given to remind one possible origin of the Albanian people inhabiting the type locality. Three theories exist: the Illyrian, Dacian-Thracian and Pelasgian origin of the Albanians.

_Figs 60–62._ _Drusus illyricus_ sp. n., holotype, male: 60 = genitalia without phallic organ and with dotted contour of VIIIth tergite with spinate lobes in left lateral view; 61 = dotted contour of VIIIth tergite with spinate lobes, paraproct in dorsal view; 62 = paraproct in caudal view

*Annls hist.-nat. Mus. natn. hung.* 102, 2010
**Diagnosis** – This dark species belongs to the species complex with large upward arching triangular gonopods and triangular or bilobed cerci inhabiting the Balkan Mountains. Most close to *Drusus pelagus* sp. n., but differs by having (1) larger size; (2) sternal lateral suture of the fused IXth segment with middle fork, not without; (3) segment IX very long ventrally, not medium long; (4) cerci with dorsal lobe slender, downward curving, not blunt rounded; (5) inner branch of paraproct with short and narrow dorsal apex as visible both in lateral, dorsal and caudal view, not long and broad.


**Drusus miranyorum** sp. n.  
(Figs 63–69)

*Description* – Male (in alcohol). Cephalic and thoracic sclerites castanean dark, almost black especially on dorsum; cephalic and thoracic setose warts brown; legs except coxa and proximal portion of femur lighter brown, haustellum and intersegmental membranous teguments, including abdominal pleurites light. Spurs of male 1.3.3. Forewing length 9 mm.

Male genitalia (Fig. 63). Posterodorsal black spinate area on tergite VIII bilobed armed with specialized peg-like setae discernible both in dorsal view (Fig. 64); two lateral lobe separated by wide less armed and depigmented mesal area with apicomesal small excision; behind lateral spinate lobes 4–5 setal alveoli present with light rounded hollow. Segment IX long ventrally, very short bridle-like dorsally (Fig. 63); its lateral length elongated by rounded triangular lobe anteriad; midlateral sclerotized strips on posterior margin of sternite IX small and directed mesal articulating somehow to lateroventral angle of paraproct complex; vestige of sternal lateral suture of fused IXth segment well developed continuous to antecostal suture. Xth segment fused to IXth tergite forming together the short dorsal bridle. Cerci are subquadangular in lateral view. Paraproctal complex forming a closed structure around anal opening by inner and outer branches; the upward directed broad and fused dorsal apices of inner branches diverting laterad both in dorsal and caudal view (Fig. 65); their tip armed with 3–4 black setae laterad; outer branches of

*Annls hist.-nat. Mus. natn. hung. 102, 2010*
paraproct spread ventrolaterad triangularly. Gonopods slightly S-shaped with basoventral heel. Aedeagus and parameres slender, parameres simple filiform (Fig. 66).

Female genitalia. Segment IX short, its lateral setose lobes downcurved foliform in lateral (Fig. 67) and triangular in dorsal view (Fig. 68). Segment X characterized by deep triangular excision apicomesally, forming two lateral lobes of triangular shape both in lateral (Fig. 67) and dorsal view (Fig. 68). Suprangenital plate well-developed and quadrangular both in lateral (Fig. 67) and dorsal view (Fig. 68). Median lobe of the vulvar scale vestigial, reduced to a small triangular process in ventral view (Fig. 69).

Figs 63–65. Drusus muranyorum sp. n., holotype, male: 63 = genitalia without phallic organ and with dotted contour of VIIIth tergite with spinate lobes in left lateral view; 64 = dotted contour of VIIIth tergite with spinate lobes, IXth tergite, cerci, paraproct in dorsal view; 65 = paraproct in caudal view; 66 = aedeagus (phallicata) and paramer of the phallic organ in left lateral view. – Figs 67–69. Drusus muranyorum sp. n., female: 67 = genitalia in left lateral view; 68 = genitalia in dorsal view, 69 = vulvar scale in ventral view

**Etymology** – The name was given for the collectors DÁVID MURÁNYI and his wife SZILVIA CZIGÁNYI, who made together extensive collectings around alpine springs and streams on the Balkan.

**Diagnosis** – This autumn collected dark fuscous species belongs to the species complex of *D. discophorus* described from the Balkan. Most close to *Drusus bureschi* KUMANSKI, 1973, but differs by having (1) almost black body color, not light brownish yellow; (2) IXth segment long, not short in lateral view; (3) lateral lobe on paraproctal complex in dorsal and caudal view narrow, not broad; (4) cerci subrectangular, not rounded; (5) gonopods S-shaped, not upward arching triangular; (6) parameres single filament, not bifid.

**Drusus pelasgus** sp. n.
(Figs 70–73)

**Description** – Male (in alcohol). Dark castaneous; cephalic and thoracic sclerites dark, almost shining ebony black especially on dorsum; cephalic and thoracic setose warts pale brown; appendages including legs except coxa and proximal portion of femur lighter brown, haustellum and intersegmental membranous teguments whitish. Spurs of male 1.3.3. Forewing length 10 mm.

Male genitalia (Fig. 70). Posterodorsal black spinate area on tergite VIII slightly extended posteriorly, three-lobed, stepped and armed with specialized peg-like setae discernible both in lateral and dorsal view (Fig. 71); less pigmented irregularly shaped area of fused setal alveoli located anteriad of black spinate area visible both in lateral and dorsal view. Segment IX long ventrally, very short strap or bridle-like dorsally; its lateral length elongated by rounded triangular lobe anteriad; midlateral sclerotized strips of sternite IX triangular and directed mesad; vestige of sternal abdominal lateral suture of the fused IX segment well developed (Fig. 70). Xth segment fused to IXth tergite forming together short dorsal bridle. Cerci triangular and bilobed in lateral view; dorsal lobe broad short, ventral lobe slender and longer. Paraproctal complex forming a closed structure around anal opening by inner and outer branches; upward directed obtuse dorsal apices of inner branches stepped in lateral view and diverting laterad both in dorsal and caudal view (Fig. 72); their upper surface covered with pointed peg-like modified setae similar to surface of postero-
dorsal spinate area of VIII tergite, exhibiting anchor function during copula; outer branches of paraproct spread laterad triangularly. Gonopods are upward arching broad triangular large lobe like in many other species populating various valleys in the Balkan Mountains. Aedeagus and parameres slender (Fig. 73).


_Etymology_ – The name was given to remind the origin of the Albanian people inhabiting the type locality. Pelasgus was the ancestor of the Pelasgians, the son of Zeus, the Ancient Greeks even used to believe that he was the first man. In a wider sense Albanians are Illyrians and Illyrians are Pelasgians, as a result the Albanian language explains the names of the ancient Greek gods, the Greek mythology originates from the Illyrian- Pelasgian.

_Rearks_ – Possible associated female stored together in the vial of male paratype.

_Figs 70–73. Drusus pelasgus sp. n., holotype, male: 70 = genitalia without phallic organ and with dotted contour of VIIIth tergite with spinate lobes in left lateral view; 71 = dotted contour of VIIIth tergite with spinate lobes, paraproct in dorsal view; 72 = paraproct in caudal view; 73 = aedeagus (phallicata) and paramer of the phallic organ in left lateral view._
**Diagnosis** – This dark species with almost ebony black sclerites belongs to the species complex with large upward arching triangular gonopods and triangular or bilobed cerci inhabiting the Balkan Mountains. It is closest to *Drusus plicatus* RADOVANOVIC, 1942, but differs by having (1) postero-dorsal spinate area on VIIIth tergite quadrangular in dorsal view, not triangular; (2) rounded mesal lobe of the spinate area in lateral view, not rectangular; (3) cerci not deeply bilobed; (4) cerci with dorsal lobe broad and short, not slender and long; (5) inner branch of paraproct stepped in lateral view, not rounded triangular; (6) inner branch with quadrangular lateral lobe in dorsal view, not with triangular; (7) outer branch robust and straight vertical, not thin and arching; (8) outer branch met mesad forming a closed structure around anus, not open.

*Drusus radovanovici* MARINKOVIĆ-GOSPODNETIC, 1970 – **Bosnia-Herzegovina**: Foča region, Zelengora, Suha, forest spring above the settlement, 1110 m, 43°15.892', 18°35.859', 10.V.2006, leg. L. DÁNYI, J. KONTSCHÁN & D. MURÁNYI (3 males).


*Glyphtoteleia pellucidus* (RETZIUS, 1783) – **Greece**: Sidirokastro, 41.274, 23.427, 177 m, 31.VII.2007, leg. L. UJVÁROSI & M. Bálint (1 female).


*Limnephilus alaicus* (MARTYNOV, 1915) – **Kazakhstan**: Province Almaty, Temerlik Mt., 10 km SW of Tuyuk, 2100 m, 79°20'E, 43°05'N, 28.VIII.1997, leg. A. Orosz (1 male).

*Annls hist.-nat. Mus. natn. hung.* 102, 2010

**J. Oláh**


Mesophylax asperus (RAMBUR, 1842) – Spain: Catalonia, Cabanelles, 800 m, Mare de Deu del Mont, 30.V.2001, leg. A. OROSZ (1 male).


**Psilopteryx montanus** KUMANSKI, 1968 – **Macedonia**: Pelagonia region, Pelister Mts, Nišepole, brooks in alpine grasslands and in beech forest around the sky course, 1375 m, N40°58.812', E21°15.165', 17.X.2006, leg. L. DÁNYI, J. KONTSCHÁN & D. MURÁNYI (1 male, 1 female).


**Stenophylax caesareicus** (SCHMID, 1959) – **Turkey**: Vil. Artvin, Col Cancurtalan, 800 m, 1–2.VII.1996, leg. A. PODLUSZÁNY (1 male).


**Stenophylax mueleni** (MCLACHLAN, 1884) – **Iran**: Province Fars, 3 km W of Sangar, 2000 m, 18.IV.1999, at light leg. GY. FÁBIÁN, L. NÁDAI & K. SZÉKELY (1 male, 1 female). – **Turkey**: Province Sivas, Girün, 1500 m, 37°12’ E, 38°45’ N, 18-19.VI.1991, leg. CS. SZABÓKI (2 males, 2 females).


**Stenophylax sequax** (MCLACHLAN, 1875) – **Albania**: Skrapar district, Ostrovicë Mts, Backë, beneath the Frengu Peak, light trap, 1750 m, N40°31.314’, E20°24.833’,

*Annls hist.-nat. Mus. natn. hung. 102, 2010*
New species and records of Palaearctic Trichoptera in the material of the HNHM


**Stenophylax tauricus** (MARTYNOV, 1917) – **Iran**: Province Büyer Ahmad, 3 km N of Sisah, 2700 m, 10–12.V.1998, leg. GY. FÁBIÁN & K. SZÉKELY (2 males). – **Turkey**: Vil. Artvin, Col Cancurtalan, 800 m, 1–2.VII.1996, leg. A. PODLUSSÁNY (1 male).


**Uenoidae**


**Thremma gallicum** McLACHLAN, 1880 – **France**: Mt. Mezenc, Borée, Massif Central, 44.908, 4.228, 1026 m, 15.VII.2007, leg. M. BÁLINT (4 males, 2 females).

**Leptoceridae**


**Adicella reducta** (McLACHLAN, 1865) – **France**: Mt. Mezenc, Borée, Massif Central, 44.908, 4.228, 1026 m, 15.VII.2007, leg. M. BÁLINT (4 males, 1 female).


**Molannidae**

**Molanna moesta** BANKS, 1906 – **Kazakhstan**: Province Almaty, valley of River Ili, 20 km NNW of Kapchugay, 550 m, 77°00’ E, 44°00’ N, 31.VIII.1997, leg. A. OROSZ (2 males).

**Odontoceridae**


**Odontocerum lusitanicum** MALICKY, 1975 – **France**: Mt. Mezenc, Borée, Massif Central, 44.908, 4.228, 1026 m, 15.VII.2007, leg. M. BÁLINT (2 males).

**Beraeidae**


**Beraea maura** (CURTIS, 1834) – **France**: Lespinassière, 43.402, 2.532, 450 m, 14.VII. 2007, leg. M. BÁLINT (5 males).

*Annls hist.-nat. Mus. natn. hung. 102, 2010*


Sericostomatidae


**Notidobia nogradiatorum** sp. n.
(Figs 74–76)

*Description* – Male (in alcohol). Dark castaneous; cephalic and thoracic sclerites dark brown, almost black especially on dorsum; appendages including legs lighter brown; haustellum and intersclerital membranous teguments whitish. Forewing length 11 mm; wing membrane brown, densely covered with decumbent setae; hyaline window pattern of forewing not very conspicuous due to rich setal cover, but well discernible: 6 depigmented area visible around (1) fork bases of SR and S2-S3; (2) crossvein s; (3) forkbase of M; (4) forkbase of M1-M2; (5) stem M, (6) stem Cu2.

Male genitalia (Fig. 74). In lateral view IXth segment subtriangular with produced dorsoapical and ventroapical margins; in ventral view ventroapical margin excised mesad; in dorsal view dorsoapical margin forming more pigmented rounded apical rim, separating IXth tergite from sclerotized basal part of Xth segment; groove network on segment IX well developed; dorsal groove pattern delineating IXth tergum helping to discern boundary of fused Xth segment (Fig. 75). Xth segment represented by heavily sclerotized basal pair of lateral flaps just at and slightly below apical rim of IXth tergite; after this sclerotized basal part Xth segment less sclerotized, its laterobasal part fused to the strongly sclerotized pair of paraproctal processes. Cerci short, vertically flattened, as a result rounded in lateral and elongated in dorsal view. Paraproctal processes end in huge hook-formation (its dotted shape visible in cover of gonopods). Gonopods each have basomesal pair of spines with separated bases in lateral view (their dotted shapes visible in the cover of gonopods). Phallotheca with arching basal and straight apical halves; apical half starting with a ventral heel; membranous endotheca located dorsad and without any visible endothecal sclerites (Fig. 76).

*Type material* – Holotype, male, HNHM. **Albania**: Korcë district, Zvirine, Trifti Spring N of the village, 835 m, N40°47.644’, E20°44.128’, 24.V.2007, leg. Z. BÁRINA, C S. NÉMETH & D. PIFKÓ (1 male).

*Etymology* – This species was dedicated to SÁRA NÓGRÁDI and her husband ÁKOS UHERKOVICH, who have made the Hungarian caddisflies one of the best studied national fauna of the planet.

*Remarks* – Possible associated female stored together in the vial of paratype.

*Diagnosis* – This new species belongs to the homogeneous group of species: *Notidobia melanoptera* STEIN, 1863, (Greece), *N. nekibe* Klapálek, 1903, (Greece), *N. sagarrai* Navas, 1917 (Sardinia), *N. bizensis* Malicky et

*Annls hist.-nat. Mus. natn. hung. 102, 2010*
SIPAHILER, 1993 (Albania) and N. salihli MALICKY et SIPAHILER, 1993 (Turkey). It is closest to N. bizensis, but differs by having (1) more robust and curve-shaped groove pattern on the IXth dorsum, not slender and straight; (2) the heavily sclerotized pair of paraproctal processes with extremely enlarged dorsal and downcurving hook-formation, not with small hook; (3) the two spine-shaped processes on the basomesal surface of the gonopod with separated individual bases, not with long joint basal plate.

_Figs 74–76. Notidobia nogradorum sp. n. holotype male: 74 = genitalia without phallic organ in left lateral view; 75 = IXth tergite, Xth segment, cerci in dorsal view; 76 = phallic organ in left lateral view_


**Schizopelex furcifer** MCCLACHLAN, 1880 – **France**: Citou, Aude, 43.408, 2.591, 906 m, 14.VII.2007, leg. M. BÁLINT (2 males).

**Sericostoma personatum** (KIRBY et SPENCE, 1826) – **France**: Lespinassière, 43.402, 2.532, 450 m, 14.VII.2007, leg. M. BÁLINT (1 male). Mt. Mezenc, Borée, Massif Central, 44.908, 4.228, 1026 m, 15.VII.2007, leg. M. BÁLINT (1 male). Provence Alps, Jausiers, 44.390, 6.776, 1500 m, 11.VII.2007, leg. M. BÁLINT (7 males, 5 females).


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