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Trichoptera of Mindoro, the Philippines I. New species and records from the Baroc River Catchment, Roxas, Oriental Mindoro
(Insecta, Trichoptera)

Wolfram Mey and Hendrik Freitag

Abstract The study of a collection of caddisflies from Mindoro yielded a total of 34 species. Eight species proved to be unknown taxa and are described in the present article as: *Rhyacophila crenophysetis* spec. nov., *Agapetus parallelaria* spec. nov., *Stactobia roxasi* spec. nov., *Paduniella vicentis* spec. nov., *Paduniella prodita* spec. nov., *Psychomyia taugadensis* spec. nov., *Tinodes hypoplectis* spec. nov., and *Ecnomus biundularia* spec. nov. A list of all collected species is provided.

Key words Trichoptera, taxonomy, faunistics, new species descriptions, Philippines, Mindoro, Taugad River

Introduction

To date, 371 species of caddisflies have been recognized in the Philippines (Mey, unpublished data). Species records are available from all major islands whereas most of the smaller, about 500 islands with an area of over one km^2, are poorly or not sampled at all. Mindoro belongs to the larger islands of the archipelago. The interior of the island is largely mountainous with several peaks reaching elevations above 2000 m. One of these is Mt. Halcon, with 2585 m the fourth highest mountain in the Philippines. The high mountain ranges receive moderate rainfall throughout the year and heavy rain during the rainy season in the summer months. The wet tropical climate supports not only the growths of extensive lowland- and montane rainforests but forms the basis of an extensive watershed system. The mountain-rivers are usually permanent water courses with a variety of different habitats supporting a rich aquatic entomofauna including caddisflies.

The area in focus, the Baroc River Catchment in San Vicente, Municipality of Roxas, is situated at the southern portion of Mindoro's central mountain range. The catchment is part of the Key Biodiversity Area "69 Hinunduang Mt." (sensu Ong et al. 2002), which is recognized as a terrestrial and inland water area of very high biological importance and extremely high critical conservation priority ("EHc"), that is, however, subjected to a high socioeconomic pressure (Ong et al. 2002) Recent studies of the aquatic entomofauna in scope of the ongoing Baroc River Catchment Survey of the Ateneo de Manila University have led to the descriptions of new species of riffle beetles (Freitag 2013). Further studies are under preparation.

According to the experiences of the senior author, the abundance and diversity of Trichoptera on Mindoro seems to be higher than on other islands. Every collecting trip on Mindoro has resulted in the discovery of new taxa (Mey 1995, 1998, 2002). Mindoro is the terra typica of about 35 species of caddisflies up to now. We expect the number of Mindoro caddisflies to exceed 150 species, which is more than a doubling of the present number. For comparison, Malicky (2009) published a list of caddisflies from the Island of Sibuyan. It is the first summary of the Trichoptera of a small to medium-sized island in the archipelago. His list contains 44 species identified from material obtained by three collecting trips. However, the collecting efforts taken so far are certainly not sufficient enough to reveal the whole fauna. All three samples were taken from one lowland locality only. Higher elevation sites or places on the southern and eastern sides of the island remained unconsidered. Without any doubts, further research on this island will increase the current number considerably. The authors have plans to continue the exploration of the caddisfly fauna of Mindoro. Field work must concentrate on springs, bogs and rivers at high elevations, which are admittedly not easy to reach. Samples

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should be taken on both sides of the mountain range in the centre of the island. Another interesting aquatic ecosystem is Lake Naujan in northeast Mindoro. It is a large lake which should harbour a unique caddisfly community from which we do not have any data. Unless these habitats remain unexplored it appears premature to compile a list of the hitherto known species. It will be an objective of a future article. The present paper concentrates on the description of new species and the communication of further species from material, which has been collected by the junior author and his students since 2012.

Material and methods

The collections used for this study were retrieved in course of the Baroc River Catchment Survey of the Ateneo de Manila University's Biology Department. All major tributaries in the middle and upper catchment of the Baroc River were sampled in course of this survey. However, collection methods that gain material of terrestrial adult specimens were only applied at selected sites. A map of the area with the collection sites is provided in Figure 1 (plate 19).

The trichopteran material for this study was collected either by the use of light traps or by emergence traps designed after Freitag (2004) using a 1:1 mixture of 95% ethanol and glycerine as preservative. A few additional specimens were manually collected by the help of a hand net.

Traped specimens were transferred into 95% ethanol after obtaining them from the traps.

Genitalia of male specimens were dissected and permanently fixed on microscopic slides.

The specimen labels include letter codes referring to a particular sampling station (tributary) of the Baroc River Catchment. Letters "E", "L", and "M" following the site code indicate emergence trap, light trap, and manual collections, respectively.

The material is deposited in coll. CFP at the Ateneo de Manila University, the Museum of Natural History, University of the Philippines Los Baños and in the Museum für Naturkunde, Berlin.

Description of new species

Rhyacophilidae

Rhyacophila crenophysetis spec. nov.

Holotype ♂: Philippines, Mindoro, Roxas, Brgy. San Vicente, Taugad River, Watersource tributary, 150 m a.s.l., (TWF) **E**, N 12°37'01" E121°23'18", 22.12.-14.1.2013, leg. Pangantihon

Paratypes: 2 ♂♂, 2 ♀♀,same data as holotype

Derivatio nominis: Derived from Greek "krene", spring, fountain, and "physis", creature, referring to the habitat of the new species.

Forewing length 8-9 mm; head brown, setal warts paler; eyes with fine hairs; antennae brown, pubescent, with light annulations on tip of flagellomeres; 5-segmented maxillary palpi, dark brown, terminal segments of equal length; labial palps more slender, dark brown; thorax brown, mesoscutum without setal warts in the middle; legs light brown, spurs darker, 3.4.4.

Forewing brown, without maculation, veins darker, apex rounded, crossveins r-m and m-cu membranous, anal loop as long as free end of A1+2+3, separate from Cu2 at wing margin.

Male genitalia (figs. 2-4): Segment IX as complete ring with tergal part large and sternal part much narrower, constricted on the latero-ventral sides; segment X narrow and compact, caudal side with ventrally directed teeth, dorsal side with a short appendage; anal sclerites small without root, not prodruding, apical band of segment X short, tergal strap absent, coxopodite of inferior appendages longer than harpago and with reduced basal apodemes, median side with long hairs filling the space between coxopodites, dorsal and ventral lobe of harpago elongate, rounded apically and with black margin made up from tiny spines, ventral lobe of harpago with filiform appendage, bifid apically, phallic apparatus very short, aedeagal complex short, aedeagus tube-like, slender, parameres short, bearing a bundle of bristles.

Female genitalia (fig. 5): Segment VII with ventral, triangular process, segment VIII compact, tube-like, with straight apical margins, processus spermatheca of ovoid shape, dorsal terminal apophyses extremely long, reaching caudally to base of segment VI and conneced apically with a triangular, dorsal sclerite, ventral apophyses short.

Remarks: The new species is closely related to *R. spinosellata* Mey, 1995, which was described from the eastern side of Mindoro. The species share in the male sex the short phallic complex with tiny paramers, the dorsal appendage of segment X, the shape of the harpago and the hairy median sides of the coxopodites. They differ in the length of the coxopodites and in the form of segment X.

The species is a new addition to the *spinosellata* group, which contains further five species which are all endemic to the Philippines (Mey 20011).

Ecological notes: The species was collected in an emergence trap spanned over a small waterfall in secondary forest. This creek is used as the source of water supply for the village of San Vicente. It's water is calcerous as noticeable by lime deposits around the little fall.

Glossosomatidae

Agapetus paralellaria spec. nov.

Holotype ♂: Philippines, Mindoro, Roxas, Brgy. San Vicente, Baroc River trib.,Taugad River, 530 m a.s.l., TDR3, **E** N 12°38'05" E 121°19'33", 23.1.-16.2.2013, genitalia slide Mey 20/13, leg. Pangantihon

Paratypes: 1 ♂, 1 ♀,same data as holotype

Derivatio nominis: Derived from Greek "paralellos", referring to the parallel dorsal and ventral margin of the inferior appendages.

Forewing length 2.5-3 mm; head brown, setal warts paler; antennae light brown, pubescent, 5-segmented maxillary palpi, dark brown, terminal segment longer than preceding segment; labial palps small, dark brown; thorax brown, mesoscutum without setal warts; legs light brown, spurs darker, 3.4.4

Male genitalia (figs 6-7): Segment XI compact, with a dorsal and ventral lateral suture, the latter articulating with the inferior appendages, tergal (= dorsal) side reduced, preanal appendages elongate, bearing long setae, segment X triangular in lateral view, ventral margins thickened and nearly fused proximally, inferior appendages elongate and stripe-like, with parallel dorsal and ventral margins, median sides with two blades irregularly equipped with short teeth, phallic apparatus tube-like.

Remarks: The genitalia of the new species resemble very much *A. baptos* Mey, 1998 from Palawan and Panay. Both species can be distinguished by the shape of the inferior appendages.

Hydroptilidae

Stactobia pangantihoni spec. nov.

Holotype ♂: Philippines, Mindoro, Roxas, Brgy. San Vicente, Taugad River, Watersource tributary, 150 m, (TWF) E, N 12°37'01" E 121°23'18", 22.xii.-14.i.2013, genitalia slide Mey 22/13, leg. Pangantihon

Paratypes: 1 ♂, 9 ♀♀,same data as holotype

Derivatio nominis: The species is named for Clister V. Pangantihon, the collector of this interesting species and project assistant of the Baroc River Catchment Survey of the Ateneo de Manila University.

Forewing length 1.8 - 1.9 mm; head brown, ocelli white, with dark bases, antennae yellow, maxillary palpi long, brown, legs yellow-brown, thorax brown.

Male genitalia (figs 8-9): Sternite VII with long, ventral appendage, apodemal rods of sternum IX extends anteriorly to base of segment VII, inferior appendages oval lamellae, weakly sclerotised, intermediate appendages black hooks, screwed laterally and ventrally, phallic apparatus with a long, hooked cornutus and a similar sclerite attached to the lateral margin, tip truncate and flat, with acute lateral ends.

Remarks: The male genitalia of *S. roxasi* spec. nov. shares the hook-like intermediate appendages with *S. mangyanica* Mey, 1995, but differs by the long sternum IX and its long apodemes, and by the complicated structure of the phallic apparatus, which is membranous and indistinct in the latter species. *S. mangyanica* was described from Mindoro too, but from a locality in the north-east. Another related species is probably *S. culasi* Wells & Mey, 2002 described from Panay. It differs from the new species by the structure of the intermediate and inferior appendages.

Paduniella prodita spec. nov.

Holotype ♂: Philippines, Mindoro, Roxas, Brgy. San Vicente, Baroc River tributary Taugad Daka River, 530 m a.s.l., TDR 3, **E** N 12°38'05" E 121°19'33", 23.1.-16.2.2013, genitalia slide Mey 19/13, leg. Pangantihon

Paratypes: 5 ♂♂, 4 ♀♀,same data as holotype; 1 ♂, 13 ♀♀, Philippines, Mindoro, Roxas, Brgy. San Vicente, Hinundugan River, Hinagdanan Falls, 200m, HR2, N 12°35'22" E 121°21'54", 31.iii.2013, leg. H. Freitag & Pangantihon

Derivatio nominis: The species name is derived from Latin "proditus", discovered.

Forewing length 2.5 – 2.9 mm; head pale brown, antennae yellow, with brown annulations on base of flagellomeres, maxillary palpi long, brown, labial palpi light brown, legs yellow-brown, thorax brown.

Male genitalia (figs 10-11): Inferior appendages straight, with bifid apex, inner side enlarged, with a setose apical margin, intermediate appendage singular, very long and with tiny spines on apex, phallic apparatus without dorsal appendage or rod.

Remarks: The new species is probably related to *P. panayica* Mey 1998 from Panay based on the apically bifid inferior appendages and the absent dorsal appendage of the phallic apparatus. Diagnostic features of *P. prodita* spec. nov. are the long intermediate appendage and the shorter preanal appendages.

Paduniella sanvicentis spec. nov.

Holotype ♂: Philippines, Mindoro, Roxas, Brgy. San Vicente,Taugad River, 180 m a.s.l., TR1 **L**, N 12°37'32" E 121°21'17",15.01.2013, GP Mey 24/13, leg. C. V. Pangantihon

Derivatio nominis: The species is named after its type locality, Barangay San Vicente, Roxas, Oriental Mindoro to honour the kind support and care of the barangay administration under lead of Captain Ronel S.Sescar during field trips of faculty members and students of the Ateneo de Manila University's Biology Department.

Forewing length 2.6 mm; head pale brown, antennae yellow, with brown annulations, maxillary palpi slightly longer than tibia and tarsus of foreleg, dark brown, first and terminal segments shortest, labial palpi 4-segmented, light brown, legs yellow-brown, thorax brown; hindwing with C and Sc forming a costal lobe, fork 1, 2 and 5 present, R4 and R5 united before wing margin.

Male genitalia (figs 12-13): Sternum IX slender, bases of inferior appendages somewhat convex on ventral and dorsal sides, intermediate appendages paired, very long and bent ventrad, preanal appendages beyond sternum IX triangularly elongate, phallic apparatus with a single dorsal rod, truncate at apex, and a broad ventral part.

Remarks: According to the inferior appendages the new species is similar to *P. angusta* Banks, 1939, decribed from Mindoro. The male holotype kept in the Museum of Comparative Zoology Cambridge and examined by the senior author has an unpaired intermediate appendage and an undulating dorsal appendage of the phallic apparatus.

Psychomyia taugadensis spec. nov.

Holotype ♂: Philippines, Mindoro, Roxas, Brgy. San Vicente,Taugad River, 180 m a.s.l., TDR 2, **L**, N 12°37'32" E 121°21'17", 04.04.2013, GP Mey 23/13, leg. H. Freitag

Paratypes: 6 ♀♀, (probably belonging to the male), same data as holotype

Derivatio nominis: The species name is derived from the name of the river.

Forewing length 3 mm; head and thorax pale brown, antennae yellow, without brown annulations, maxillary palpi light brown, spurs 2.4.4., inner spur of foreleg very small.

Male genitalia (figs 17-18): Segment IX rounded, preanal appendages parallel-sided laterally, somewhat bent upwards, dorsal and ventral margin on median side with a triangular process each, base with a recurved process from median side, outer part of inferior appendages triangular in ventral and lateral view, inner part slender and sinus-like bent, tip of phallic apparatus bent upwards.

Remarks: The species stands close to *P. nigrella* Mey, 1998 from Negros because of possessing similar preanal appendages together with the presence of a recurved process on the median base. However, the inferior appendages and the phallic apparatus are of different architecture.

Tinodes hypoplectis spec. nov.

Holotype ♂: Philippines, Mindoro, Roxas, Brgy. San Vicente, Baroc River tributary,Taugad River, 530 m a.s.l., TDR 3, **E** N 12°38'05" E 121°19'33", 23.1.-16.2.2013, leg. Pangantihon

Derivatio nominis: The species name is derived from the Greek "hypo" and "plectos", referring to the ventral cornuti or appendages of the phallic apparatus.

Forewing length 4.5 mm; head dark brown, setal warts paler, thorax brown, mesoscutellum light brown, antennae brown, without annulations, maxillary palpi brown, labial palpi pale brown; fore- and hindwings brown, veins darker.

Male genitalia (figs 19-21): Inferior appendages broad, harpago slender and curved dorsad, intermediate appendages shorter than inferior appendages, with short and long lateral and dorsal spines, phallic apparatus with two, subsequent preapical spines, directed ventrad.

Remarks: The new species is very similar to *T. reminigia* Mey 1998 from Panay and *T. adjuncta* Banks, 1937. The main differences are the more stout inferior appendages, the arrangements of spines on the intermediate appendages and the two, ventral cornuti of the phallic apparatus. The three species represent a superspecies (complex of very similar species), which probably have further species on the Visayan Islands and on Luzon.

Ecnomidae

Ecnomus biundularia spec. nov.

Holotype ♂: Philippines, Mindoro, Roxas, Brgy. San Vicente, Baroc River trib.,Taugad River, 530 m a.s.l., TDR 3, **E** N 12°38'05" E 121°19'33", 23.1.-16.2.2013, leg. Pangantihon

Derivatio nominis: The species name is derived from the Latin "undula", small wave, referring to the shape of the apical part of the inferior appendage of the male.

Forewing length 3.8 mm; head yellow, setal warts pale brown, thorax brown, setal warts paler, mesoscutellum light brown, antennae yellow, without annulations, maxillary palpi yellow-brown, labial palpi paler.

Male genitalia (figs 14-16): Anterior ventral margin of segment IX excised triangularly, preanal appendages long and straight, with a small median process, dorsal appendages paired and small, inferior appendages with angled bases bearing a short, inner process, apical parts bent mediad and dorsad, tips enlarged and flattened, phallic apparatus upright, apex beak-like in lateral view, broadly rounded in dorsal view.

Remarks: The species is unique in the form of the inferior appendages. Similar species are *E. typhlodes* Mey, 1998 and *E. paratyphlodes* Mey, 1998 described from Panay.

List of collected species

There are many females of *Psychomyia*, *Hydropsyche* and *Cheumatopsyche* collected on several localities but without the corresponding males. Since females of the three genera cannot be determined with certainty those specimens are omitted from the list.

***Rhyacophila crenophysetis* spec. nov.**

See description above,

***Agapetus paralellaria* spec. nov.**

See description above,

Agapetus curvidens Ulmer, 1930

20 ♂♂, 3 ♀♀, - Baroc River tributary Taugad Daka River, 220 m a.s.l., TDR1 **L**, N 12°37'33" E 121°21'18", 16.01.2013, leg. C. V. Pangantihon;
4 ♂♂, 3 ♀♀, - Baroc River tributary,Hinundugan River, 118 m a.s.l., HR1 **M**, N 12°36'23" E 121°23'29", 18.11.-1.12.2012, leg. H. Freitag;
4 ♂♂, 23 ♀♀, - Hinundugan River, below Hinagdanan Falls, 200m a.s.l., HR2 **L**, N 12°35'22" E 121°21'54", 31.03.2013, H. Freitag & C. V.Pangantihon;
1 ♂, 12 ♀♀, - Taugad River, 100 m a.s.l., TR1 **L**, N 12°37'06" E121°23'49'', 22.12.2012, leg. H. Freitag;

8 ♀♀, - Taugad River, 180 m a.s.l., TR2 **L**, N 12°37'32" E 121°21'17'',15.01.2013, leg. Pangantihon;
5 ♀♀, - Taugad River, 180 m a.s.l., TR2, **L**, N 12°37'32" E 121°21'17", 04.04.20133, leg. H. Freitag;

Ugandatrichia mindoroensis Mey, 1995

1 ♀, - Taugad River, Watersource tributary, 150 m, (TWF) E, N 12°37'01" E 121°23'18'', 22.xii.-14.i.2013, leg. Pangantihon

***Stactobia pangantihoni* spec. nov.**

See description above,

Hydroptila nigrovalvata Mey, 2003

1 ♂, 1 ♀, - Baroc River tributary,Hinundugan River, 118 m, HR1 **L**, N 12°36'23" E 121°23'29", 17.11.2012, leg. H. Freitag & Pangantihon

Hydroptila pedemontana Mey, 1995

2 ♂♂, 11 ♀♀, - Hinundugan River, Hinagdanan Falls, 200m, HR2, N 12°35'22" E 121°21'54", 31.iii.2013, H. Freitag & Pangantihon;
1 ♂, 7 ♀♀, - Taugad River, 100 m, TR1, N 12°37'06" E 121°23'49'', 22.xii.2012, leg. H. Freitag;
3 ♀♀, - Taugad River, 180 m, TR1, N 12°37'32" E 121°21'17'', 13.i.2013, leg. Pangantihon

Chimarra lotta Malicky, 1993

1 ♂, - Baroc River tributary, Taugad River, 530 m, TOR, N 12°38'05" E 121°19'33", 23.i.-16.ii.2013, leg. Pangantihon

Chimarra nemet Malicky, 1993

2 ♂♂, 4 ♀♀, - Taugad River, Watersource tributary, 150 m, (TWF) E, N 12°37'01" E 121°23'18'', 22.xii.-14.i.2013, leg. Pangantihon

Chimarra nigrella Mey, 1995

1 ♂, - Baroc River tributary, Hinundugan River, 118 m, HRI, N 12°36'23" E 121°23'29", 17.xi.2012, leg. H. Freitag
2 ♂♂, 1♀, Hinundugan River, Hinagdanan Falls, 200m, HR2, N 12°35'22" E 121°21'54", 31.iii.2013, H. Freitag & Pangantihon;

Chimarra potamophila Mey, 1995

1 ♀, - Baroc River tributary, Hinundugan River, 118 m, HRI, , N 12°36'23" E 121°23'29", 18.xi.-1.xii.2012, leg. H. Freitag
2 ♂♂, 2 ♀♀, - Hinundugan River, Hinagdanan Falls, 200m, HR2, N 12°35'22" E 121°21'54", 31.iii.2013, H. Freitag & Pangantihon;
3 ♂♂, 3 ♀♀, Taugad River, 180 m, TRI L, N 12°37'32" E 121°21'17'',15.i.2013, leg. Pangantihon;
3 ♂♂, 3 ♀♀, - Taugad River, 180 m, TR1, N 12°37'32" E 121°21'17'', 13.i.2013, leg. Pangantihon
2 ♀♀, Taugad River, 180 m, TR1, L, N 12°37'32" E 121°21'17'', 13.i.2013, leg. Pangantihon
3 ♂♂, 1 ♀, -

***Paduniella prodita* spec. nov.**

See description above,

***Paduniella sanvicentis* spec. nov.**

See description above,

***Psychomyia taugadensis* spec. nov.**

See description above,

***Tinodes hypoplectis* spec. nov.**

See description above,

Abaria mindorogena Mey, 1995

4 ♂♂, 1 ♀, - Taugad River, Watersource tributary, 150 m, (TWF) E, N 12°37'01" E 121°23'18", 22.xii.-14.i.2013, leg. Pangantihon

Pseudoneureclipsis unguiculata Ulmer, 1930

1 ♂, - Baroc River tributary, Hinundugan River, 118 m, HRI, N 12°36'23" E 121°23'29", 18.xi.-1.xii.2012, leg. H. Freitag
1 ♀, - Hinundugan River, Hinagdanan Falls, 200m, HR2, N 12°35'22" E 121°21'54", 31.ii.2013, H. Freitag & Pangantihon;

1 ♀, - Taugad River, 100 m, TR1, N 12°37'06" E 121°23'49'', 22.xii.2012, leg. H. Freitag;
1 ♀, - Taugad River, 180 m, TRI L, N 12°37'32" E 121°21'17'', 15.i.2013, leg. Pangantihon;

Polyplectropus spec.

1 ♀, Taugad River, 180 m, TR1, L, N 12°37'32" E 121°21'17'', 13.i.2013, leg. Pangantihon,

***Ecnomus biundularia* spec. nov.**

See description above,

Ecnomus pusio Malicky, 1993

1 ♂, - Hinundugan River, Hinagdanan Falls, 200m, HR2, N 12°35'22" E 121°21'54", 31.iii.2013, H. Freitag & Pangantihon;

Macrostemum quinquepunctatum (Banks, 1920)

4 ♀♀, - Baroc River tributary, Hinundugan River, 118 m, HRI, N 12°36'23" E 121°23'29", 17.xi.2012, leg. H. Freitag
1 ♀, - Taugad River, 140 m, IR2, L, N 12°37'18'' E 121°22'58", 16.xi.2012, leg. H. Freitag & Pangantihon
3 ♀♀, - Taugad River, 180 m, TRI L, N 12°37'32" E 121°21'17'', 15.i.2013, leg. Pangantihon;
1 ♀, - Taugad River, 180 m, TR1, N 12°37'32" E 121°21'17'', 13.i.2013, leg. Pangantihon
3 ♀♀, - Taugad River, 180 m, TDR 2, Licht, N 12°37'32" E 121°21'17'', 04.iv.2013, leg. H. Freitag;

Oestropsyche vitrina (Hagen, 1859)

1 ♀, - Hinundugan River, Hinagdanan Falls, 200m, HR2, N 12°35'22" E 121°21'54", 31.iii.2013, H. Freitag & Pangantihon;
1 ♂, 2 ♀♀, - Taugad River, 100 m, TR1, N 12°37'06" E 121°23'49'', 22.xii.2012, leg. H. Freitag;
1 ♂, - Taugad River, 140 m, IR2, L, N 12°37'18'' E 121°22'58", 16.xi.2012, leg. H. Freitag & Pangantihon
1 ♂, 2 ♀♀, - Taugad River, 180 m, TR1, N 12°37'32" E 121°21'17'', 13.i.2013, leg. Pangantihon
6 ♂♂, 9 ♀♀, - Taugad River, 180 m, TR1, L, N 12°37'32" E 121°21'17'', 13.i.2013, leg. Pangantihon
3 ♂♂, 2 ♀♀, - Taugad River, 180 m, TRI L, N 12°37'32" E 121°21'17'', 15.i.2013, leg. Pangantihon;

Polymorphanisus semperi (Brauer, 1869)

1 ♀, - Hinundugan River, Hinagdanan Falls, 200m, HR2, N 12°35'22" E 121°21'54", 31.iii.2013, H. Freitag & Pangantihon;

Hydropsyche calawiti Mey, 1995

2 ♂♂, 4 ♀♀, - Taugad River, 100 m, TR1, N 12°37'06" E 121°23'49'', 22.xii.2012, leg. H. Freitag;

Hydropsyche mindorensis Mey, 1995

2 ♂♂, 4 ♀♀, - Baroc River tributary, Hinundugan River, 118 m, HRI, N 12°36'23" E 121°23'29", 17.xi.2012, leg. H. Freitag
1 ♂, 1 ♀, - Baroc River tributary, Hinundugan River, 118 m, HRI, L, N 12°36'23" E 121°23'29", 01.xii.2012, leg. H. Freitag
1 ♂, - Taugad River, 100 m, TR1, N 12°37'06" E 121°23'49'', 22.xii.2012, leg. H. Freitag;

Cheumatopsyche cf***. costalis*** (Banks, 1913)

1 ♀, - Hinundugan River, Hinagdanan Falls, 200m, HR2, N 12°35'22" E 121°21'54", 31.iii.2013, H. Freitag & Pangantihon;

Cheumatopsyche reticulata (Banks, 1913)

1 ♂, 1 ♀, - Baroc River tributary, Hinundugan River, 118 m, HRI, L, N 12°36'23" E 121°23'29", 01.xii.2012, leg. H. Freitag

Cheumatopsyche mixta Mey, 2003

2 ♂♂, 1 ♀, - Baroc River tributary, Hinundugan River, 118 m, HRI, , N 12°36'23" E 121°23'29", 18.xi.-1.xii.2012, leg. H. Freitag

Cheumatopsyche spec.

2 ♀♀, - Baroc River tributary, 220 m, IDR, N 12°37'33" E 121°21'18", 16.i.2013, leg. H. Freitag & Pangantihon;
3 ♀ ♀, - Baroc River tributary, Hinundugan River, 118 m, HRI, N 12°36'23" E 121°23'29", 17.1xi.2012, leg. H. Freitag & Pangantihon
2 ♀♀, - Baroc River tributary, Hinundugan River, 118 m, HRIm, N 12°36'23" E 121°23'29", 18.xi.-1.xii.2012, leg. H. Freitag;
6 ♀♀, - Taugad River, 100 m, TR1, N 12°37'06" E 121°23'49'', 22.xii.2012, leg. H. Freitag;
3 ♀♀, - Taugad River, 180 m, TRI L, N 12°37'32" E 121°21'17'', 15.i.2013, leg. Pangantihon;
1 ♀, - Taugad River, Watersource tributary, 150 m, (TWF) E, N 12°37'01" E 121°23'18'', 22.xii.-14.i.2013, leg. Pangantihon

Lepidostoma senectutis (Mey, 1990)

3 ♂♂, 1 ♀, - Baroc River tributary, Taugad River, 530 m, TOR, N 12°38'05" E 121°19'33", 23.i.-16.ii.2013, leg. Pangantihon
1 ♂, 2 ♀♀, - Taugad River, Watersource tributary, 150 m, (TWF) E, N 12°37'01" E 121°23'18", 22.xii.-14.i.2013, leg. Pangantihon

Anisocentropus spec.

2 ♀♀, Baroc River tributary, Taugad River, 530 m, TOR, N 12°38'05" E 121°19'33", 23.i.-16.ii.2013, leg. Pangantihon

Leptocerus spec.

1 ♀, - Taugad River, 100 m, TR1, N 12°37'06" E 121°23'49", 22.xii.2012, leg. H. Freitag;

Oecetis alticolaria Mey, 1998

1 ♂, 1 ♀,- Baroc River tributary, Taugad River, 530 m, TOR, N 12°38'05" E 121°19'33", 23.i.-16.ii.2013, leg. Pangantihon

Oecetis flavicoma Mey, 1998

1 ♂, - Hinundugan River, Hinagdanan Falls, 200m, HR2, N 12°35'22" E 121°21'54", 31.iii.2013, H. Freitag & Pangantihon;

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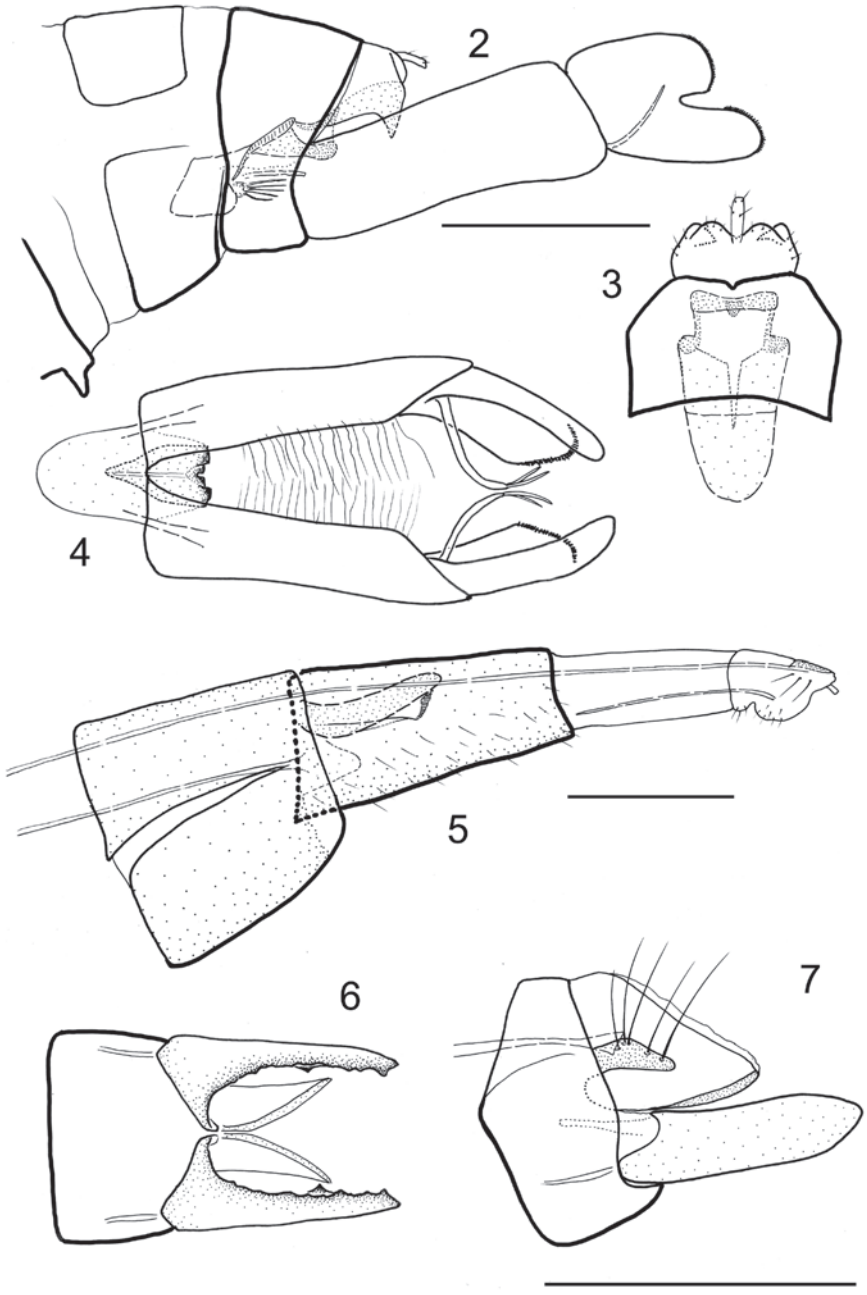
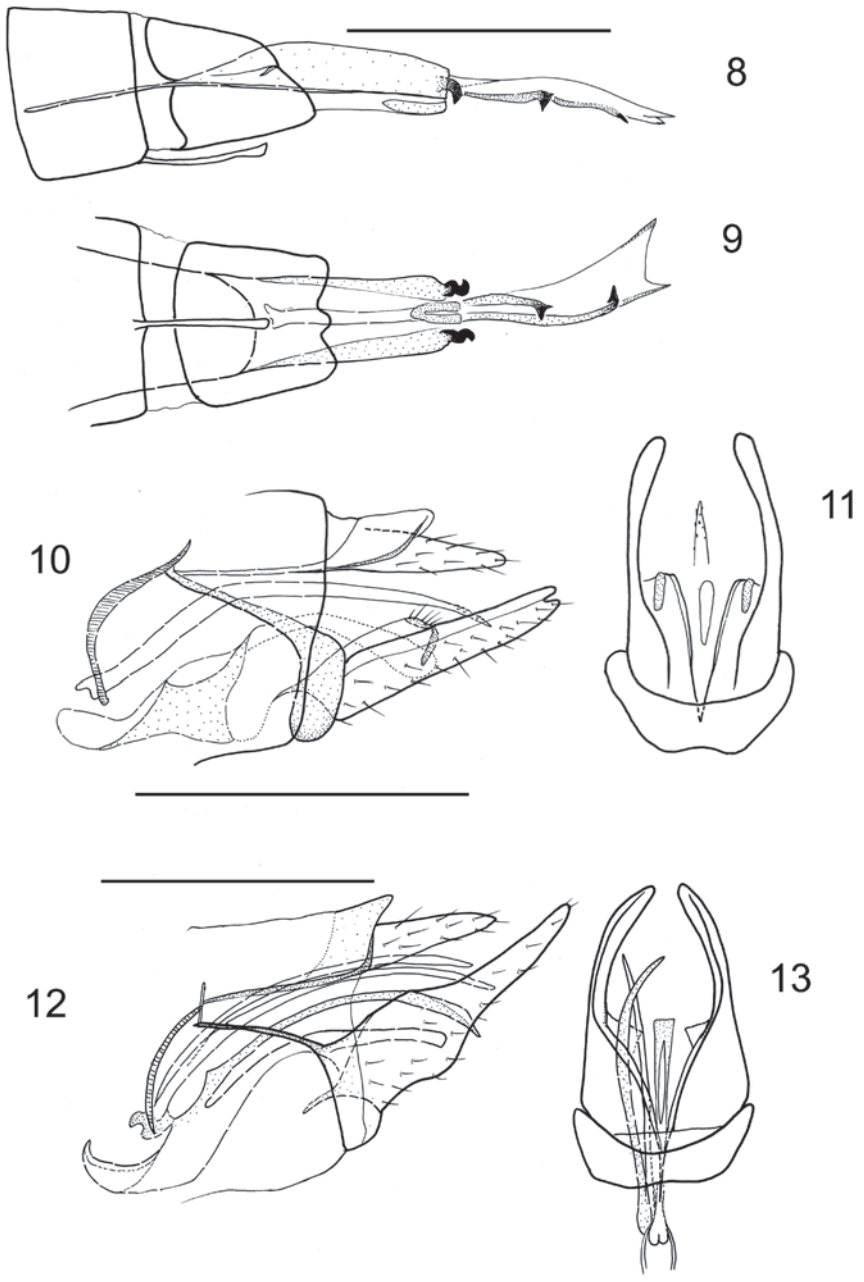
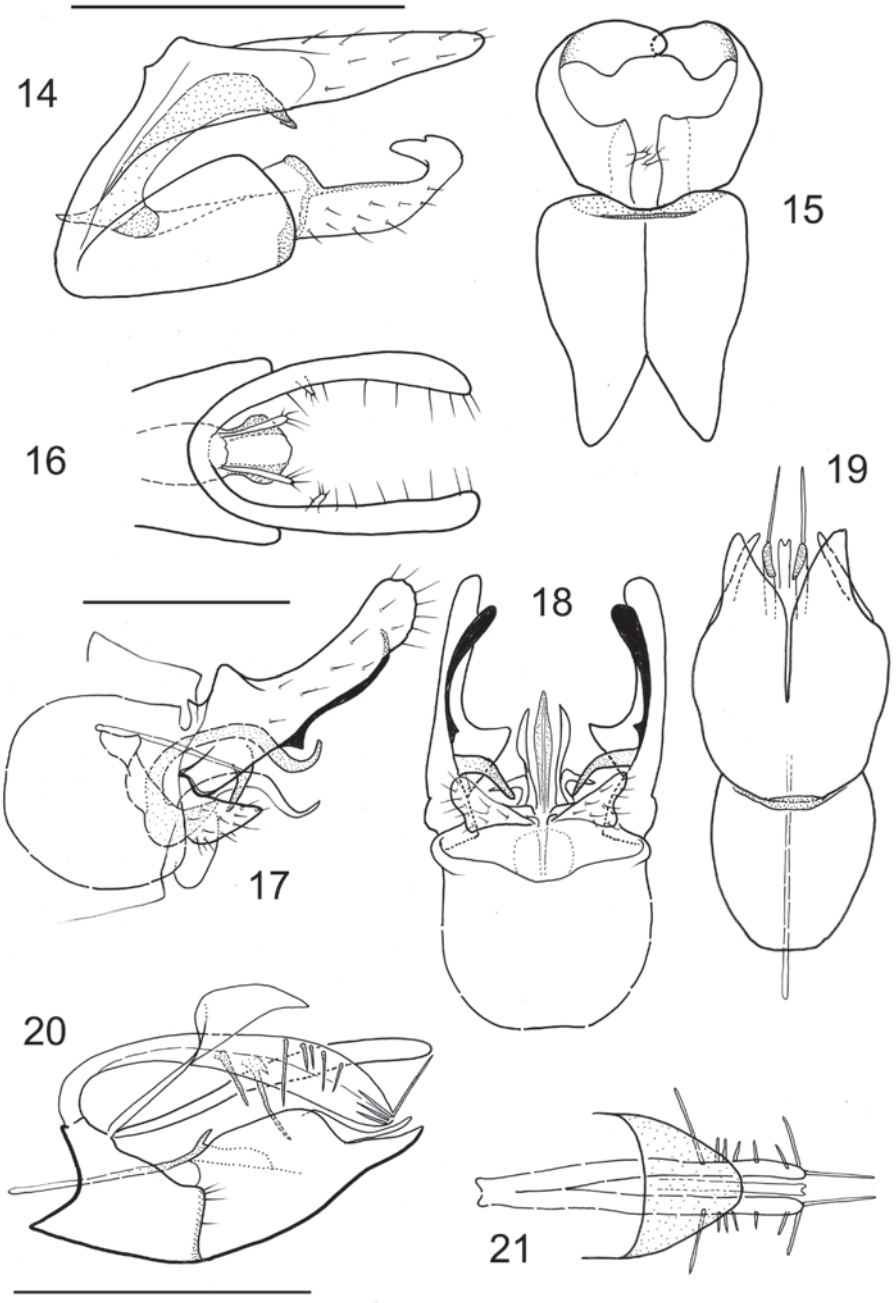


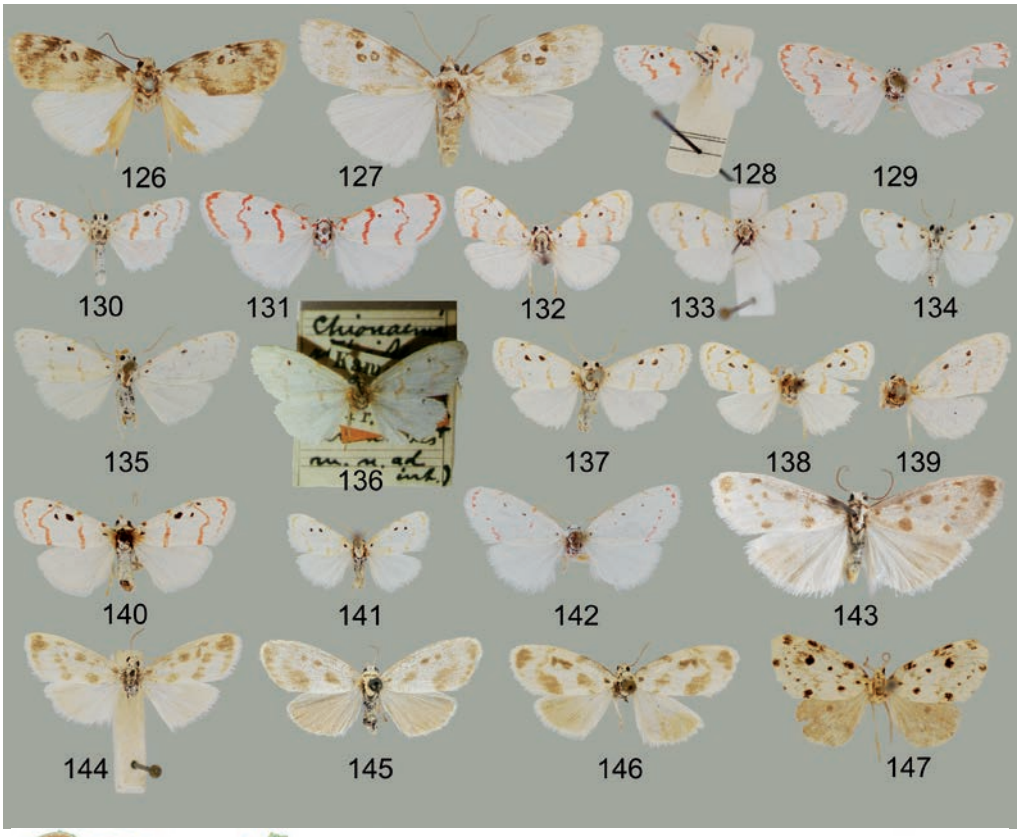
Figs 2-4: Male genitalia of *Rhyacophila crenophysetis* spec. nov., 2 – lateral, 3 – dorsal, 4 – ventral (scale 0.5 mm)
Fig. 5: Female genitalia of *Rhyacophila crenophysetis* spec. nov., lateral view (scale 0.5 mm)
Figs 6-7: Male genitalia of *Agapetus parallelus* spec. nov. (scale 0.25 mm)



Figs 8-9: Male genitalia of *Stactobia roxas*i spec. nov., 8 – lateral, 9 - ventral (scale 0.25 mm)
Figs 10-11: Male genitalia of *Paduniella prodita* spec. nov., 10 –lateral, 11 – ventral (scale 0.25 mm)
Figs 12-13: Male genitalia of *Paduniella vicentis* spec. nov., 12 – lateral, 13 – ventral (scale 0.25 mm)



Figs 14-16: Male genitalia of *Ecnomus biundularia* spec. nov., 14 – lateral, 15 – ventral, 16 – dorsal (scale 0.5 mm)
Figs 17-18; Male genitalia of *Psychomyia taugadensis* spec. nov., 17 – lateral, 18 – ventral (scale 0.5 mm)
Figs 19-21: male genitalia of *Tinodes hypoplectis* spec. nov., 19 – ventral, 20 – lateral, 21- dorsal (scale 0.5 mm)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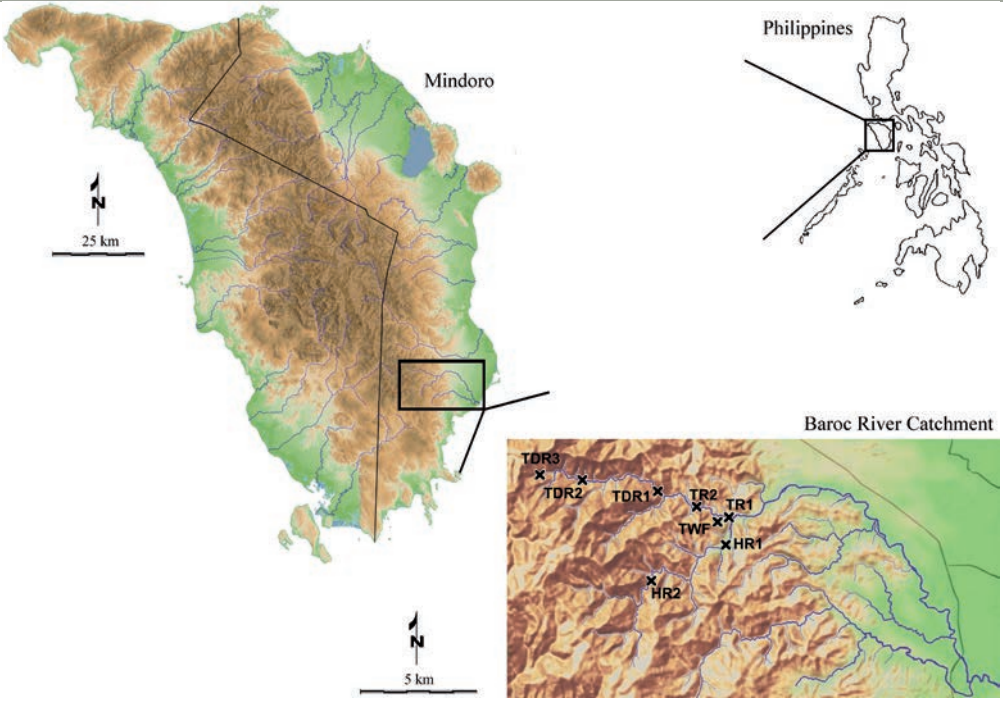
Mindoro
N
25 km
Philippines
Baroc River Catchment
TDR3
TDR2
TDR1
TR2
TR1
TWF
HR1
HR2
N
5 km