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Caddisflies (Trichoptera) from Sumatra (Indonesia), with descriptions of eleven new species

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Abstract. Trichoptera collected in Western Sumatra are listed, 11 new species of the genera *Rhyacophila*, *Gunungiella*, *Ecnomus*, *Drepanocentron*, *Polypsectropus*, *Anisocentropus*, *Ceraclea*, *Oecetis* and *Setodes* are described and figured.

Key words: Sumatra, Trichoptera, new species, list of species.

The present study is based mostly on Trichoptera collected by Zoltán Ecsedi. The bulk of the material including all holotypes is preserved in 70-80% alcohol in the collection of the first author, except otherwise stated. A summary of the material is given in Table 1; the new species are described below.

The collecting sites were:

- 1.) Way Kambas National Park, 4°5' S, 105°49' E, 22.6.2009
- 2.) Panyungkain, Bukit Barisan Selatan National Park, 950m, 5°06' S, 104°08' E, 24.6.2009
- 3.) Way Titias, Bukit Barisan Selatan National Park, 850m, 5°07' S, 104°08' E, 25.-26.6.2009
- 4.) Danau Ranau, Bukit Barisan Selatan National Park, 950m, 4°57' S, 103°52' E, 30.6.-2.7.2009
- 5.) Mauro Sako village, Tapan Road, Kerinci National Park, 750-950m, 2°40' S, 101°16' E, 15.7.2009

***Rhyacophila triregionorum* new species (Rhyacophilidae)**

The new species belongs to the *Rhyacophila lieftincki* species group of SCHMID and is close to *Rhyacophila krauskasseggae* MALICKY described from Indonesia (Sumatra: Dolok Merangir) but differs in having (1) a different light pattern on forewing; (2) apicodorsal lobe of IXth segment rounded posteriad in dorsal view and not tapering, but tapering in lateral view and not rounded; (3) Xth segment not constricted in caudal view; (4) apex of Xth segment capitate, less concave subapicad in lateral view; (5) tergal trap horizontal and only slightly arching dorsad, not right angled; (6) harpago bilobed, not trilobed; (7) aedeagus high in lateral view with short low apical portion.

Male: medium-sized brown species with light mottled forewing. Antennae, maxillary and labial palps, legs lighter. Forewing length 8.2 mm, light mottle on the brown membrane, irregularly scattered; pterostigma granulosly meshed.

Male genitalia. IXth segment very short ventrally but longer dorsally; dorsoapical lobe rounded in dorsal view. Xth segment oblique with capitate apex bearing ventrally two heavily sclerotized teeth in lateral view; the pair of subapical teeth possibly represents the highly reduced anal sclerites; Xth segment with a pair of long setae midway and two rows of short and stout setae on the apex visible in dorsal view; paraprocts (U-shaped apical band) narrow in lateral view, almost similar to the width of the tergal strap; tergal strap connecting paraprocts to the phallobase horizontally, slightly arching dorsad. Cerci absent. Harpago with a short dorsal and a longer ventral lobe in lateral view. Phallic organ with aedeagus and parameres of almost similar length; aedeagus

high with an abrupt low short apical portion; parameres spatulate with strong apical and subapical spines.

Holotype male: Danau Ranau, Bukit Barisan Selatan NP, 950 m, 1.vii.2009, light trap.

Etymology: Named after the wife of the collector who was pregnant with twin daughters while her husband was collecting the holotype during an exhausting expedition.

***Gunungiella rana* new species (Philopotamidae)**

Closest to *Gunungiella britomartis* MALICKY described from Java, but differs in having (1) a pair of long apicomeresal processes on the tergum of the fused VIII segment; (2) Xth segment encased inside by a pair of dark comb-shaped spines; (3) coxopodite short rounded, not elongated; (4) harpagones shorter and tapering apicad; (5) endotheca with only three spines, not with four.

Male: small-sized brown coloured species. Forewing membrane uniformly brown; discoidal and thyridial cells have a similar length and shape; median cell almost three times longer; hyaline wing pattern composed of anastomose, median and Cu2 windows; the window around anastomosis S-shaped; median window along the m-cu cross vein and along the primary bifurcation of median vein extending three times longer along M3+4 than along m-cu crossvein.

Male genitalia. VIIIth segment short and fused; tergal region elongated apicad, forming a pair of long and narrow mesal processes visible in dorsal view. IXth segment fused without a discernible suture, arching with a shorter dorsal and longer ventral part in lateral view. Xth segment elongated forms a hood over the phallic organ; a pair of heavily sclerotized, dark pigmented comb-shaped spines make a case over the internal wall inside of the Xth segment creating a double hood over the phallic organ; this could represent the vestigial paraproct similarly to some other heavily sclerotized structures present in several species. Cerci absent. Gonopods composed of the rounded coxopodite and the vertically elongated harpago; apical surface of harpagones covered with short, densely packed black spines. The phallotheca of the phallic organ constricted in the middle; endotheca with three black spines.

Holotype male: Danau Ranau, Bukit Barisan Selatan NP, 950 m, 1.vii.2009, light trap. Paratypes: 20 males, 1 female from the same site, 30.6.-1.7.2009, light trap.

Etymology: the name refers to the type locality.

***Gunungiella wamana* new species**

Close to *Gunungiella guni* MALICKY described from Vietnam, but differs in having (1) a short anterior apodeme on the tergite of the fused IXth segment, not long; (2) sternite of the fused IXth segment rounded semicircular posteriad, not straight; (3) harpagones short with straight-cut apical margin, not rounded; (4) phallotheca arching, not straight; (5) endotheca with three spines, not with five; (6) well sclerotized phallotremal sclerite visible protruded apicad.

Male: small-sized species with light brown head and thoracic dorsum and yellow setal warts and appendages. Forewing membrane uniformly brown; discoidal and thyridial cells have a similar length and shape; median cell almost four times longer; hyaline wing pattern composed of anastomose, median and Cu2 windows; the window around anastomosis V-shaped; median window located on m-cu cross vein and on the primary bifurcation of median vein extending three times longer along M3+4 than along m-cu crossvein.

Male genitalia. VIIIth segment short and fused; tergal region moderately elongated apicad, forming a pair of short

triangular mesal processes visible in dorsal view. IXth segment fused with a discernible suture separating tergite and sternite, arching to form rounded convex posterior and parallel-sided concave anterior margin. Xth segment forming a simple elongated hood over the phallic organ without any sensillae, spines or processes of possible paraproctal origin. Cerci absent. Gonopods composed of the drop-shaped coxopodite and the very short harpago; apical margin of the harpagones straight and covered with short, densely packed black spines of even size. The phallosome arching with bulbous basal part; endothea with three black spines and well sclerotized phallosomal sclerites.

Holotype male and 4 males, 1 female Paratypes: Danau Ranau, Bukit Barisan Selatan NP, 950 m, 30.vi.2009, light trap.

Etymology: the name refers to the very short harpagones, short "wamana" in Sanscrit.

Gunungiella zoliana new species

Closest to *Gunungiella aanafiagza* MALICKY described from Sumatra, but differs in having (1) unique VIIIth tergite with comb-shaped denticulate ventral margin in dorsal view; (2) on VIIIth tergite two big apical teeth visible curving upwards in lateral view; (3) Xth segment unarmed, without backward curving pair of spines; (4) coxopodite with undulating dorsum in lateral view, not convex.

Male: small-sized dark brown coloured species. Forewing membrane uniformly brown; discoidal cell having a similar shape, but shorter than thyridial cell; median cell twice as long as thyridial cell; hyaline wing pattern composed of anastomose, median and Cu2 windows; the window around anastomosis straight and vertical, arching only slightly basad; a small window separated from anastomosis around crossvein r, T-shaped median window along the m-cu cross vein and along the primary bifurcation of median vein; cu2 window opens basad to the base of Sc and SR.

Male genitalia. VIIIth segment with clearly separate tergum and sternum; VIIIth tergite highly modified into a dark pigmented hood dominating the entire genitalia in lateral view; however in dorsal view deeply excised and composed of two large lateral lobes; the ventral margins of the lateral lobes produced and with a comb-like pattern of stout and long mesad directed dark spines. IXth segment fused without discernible suture, arching with longer dorsal and shorter ventral part in lateral view. Xth segment housed by the lateral lobes of the VIIIth tergite and elongated and encasing the phallic organ. Cerci absent. Gonopods composed of the quadrangular coxopodite with undulating dorsum in lateral view and the vertically elongated harpago; ventroapical surface of harpagones covered with densely packed black spines of medium length. Endothea of the phallic organ with two black spines.

Holotype male: Way Titias, Bukit Barisan Selatan NP, 950 m, 26.vi.2009, light trap.

Etymology: named after the collector Zoltán (Zoli) Ecsedi.

Ecnomus kambas new species (Ecnomidae)

Most similar to *Ecnomus promat* MALICKY & CHANTARAMONGKOL described from Thailand but differs in having (1) cerci and paraproct slender, not robust; (2) cerci with subapical excision ventrally, not without one; (3) cercal apex rounded, not tapering; (4) gonopod short and not curving upward in lateral view; (5) gonopod with rounded apices, not tapering.

Male: medium-sized brown species. Foretibial spurs incomplete, only two; spur formula 2:4:4. Second segment of maxillary palp longer than first and only slightly shorter than third; third segment positioned apically on second; maxillary palp formula I-II-III-IV-V. Wing membrane pale brown; forewing length 3 mm; forewing forks complete, F1 present; corneous nygmæ indiscernible both in F2 and in thyridial cell; forewing vein R1 strongly hypertrophied, thickened along its entire length; false fork of R1 indiscernible on the granulated pterostigmal area; median cell almost twice as long as discoidal cell, thyridial cell low and longer than discoidal cell; hyaline window pattern pronounced and composed of a window patch along crossvein m-cu and linear windows along the posterior part of stem M and entire stem M1+2 as well as along Cu2.

Male genitalia. Tergum IX short and tall, convex anteriorly and concave posteriorly; its sclerotized strips, the skeletal holder connecting phallosome to tergum IX well-visible as originating near the fulcrum, the meeting point of cerci, paraproct and IXth tergite; sternum IX subtriangular in lateral view, lowering to join the narrow articulation with tergum IX; quadrangular in ventral view with longitudinal median suture present. Vestigial Xth segment is discernible as a small membranous mesal lobe with slightly fringing irregular apical margin in dorsal view. Cerci parallel-sided digitiform, slightly excised ventrally subapical in lateral view; both the lateral and mesal surfaces covered with less modified decumbent or erect setae with well developed alveoli; cercal modified stout black setae of mesal surfaces lacking. External paraproctal processes very long, slender digitiform and curving upwards in lateral view; their apices armed with 2 apical and 1 ventral subapical erect and stout setae. Gonopods stout digitiform upward arching in lateral view and diverging laterad in ventral view; a small lobe present dorsobasad and directed slightly anteriorly. Phallic apparatus composed of the following structures: (1) tapering phallic apodeme, (2) sclerotized strips connecting phallosome to the fulcrum of the IXth tergite, (3) mid-dorsal triangular lobes, (4) basoventral pair of triangular lobes, (5) aedeagus with downcurving and tapering apex; (6) tenons connecting phallosome to the basal plate of the gonopods; parameres absent.

Holotype male and 3 males paratypes: Way Kambas National Park, 22. VI. 2009, light trap.

Etymology: the name refers to the type locality.

Drepanocentron amhathan new species (Xiphocentronidae)

This new species is most similar to *Drepanocentron limorum* OLÁH described from Peninsular Malaysia, but differs in having (1) anterior margin of IXth tergite concave, without elongated anterior mesal lobe; (2) the ventroapical mesal plate of IXth sternite narrow parallel-sided linguiform in ventral view, not broad and not narrowing apically; (3) Xth segment without needle-pointed, stout and black spines; (4) gonopods with two ventromesal spiny area; (5) coxopodite low, not high; (6) modified apical spur on hindleg shorter than the first tarsomere.

Male: small pale brown species. Head dorsum pale brown, pronotal and mesonotal sclerites darker, especially the mesoprescutum. Maxillary palp formula is I- II-III-IV-V, segment IV as long as segments I-II-III together. A pair of enlarged frontal lateral compact setose warts dominate the face, occupying almost the entire surface of frontal area and touching medially on their posterior or dorsal section and untouched and diverging laterad on their anterior or ventral

area. Four pairs of compact setose warts are present on the dorsum of the head: (1) postgenal compact setose warts, (2) occipital compact setose warts, (3) vertexal ocellar compact setose warts and (4) vertexal lateroantennal compact setose warts are present; a single frontal interantennal compact setose wart shifted dorsad between the scapi up to the coronal groove and delineated by frontal grooves. There is no compact setal wart present on the cervix or on the cervical sclerite. Mesoprescutum present, longer than broad, subquadrangular and well-set off by distinct sutures and divided with a median suture. Proepisternal setal warts present. Spur formula is 243; modified apical spur on hindleg slightly shorter than the first tarsomere, narrowing apicad and ending in a terminal pointed spine-shaped process. Forewing length 3.1 mm; only two anal veins are present; thyridial shortened, about half the length of the discoidal cell.

Male genitalia. IXth abdominal segment represented by robust, tripartite sternite and by a smaller, but sclerotized tergite; IXth sternite composed of rhomboid middle body, filiform anterior apodeme and the well-developed ventroapical mesal plate in lateral view; ventroapical mesal plate narrow linguiform in ventral view; IXth tergite fused to the VIIIth tergite, however more pigmented and its contour is well-defined and visible; its apical margin deeply and widely concave without anterior mesal lobe in dorsal view. Segment X without any needle-pointed, stout and black spines, although not clearly discernible. Less sclerotized, almost membranous paraproctal plates inside the hood of the Xth segment and along the phallic organ only discernible as an indistinct continuation of the Xth segment. The elongated anterior arms of IXth tergite, Xth segment, the less sclerotized paraprocts as well as the cerci meet at the fulcrums on the dorsum of the IXth sternite. Cerci regular parallel-sided, basal one third low (narrow), apical two thirds twice as high (wider). Coxopodite and harpago fused without any visible suture, incision or constriction; long digitate apical process of the harpago slightly arching upwards; there are two areas composed of short, stout and black spines on the ventromesal surface of the harpagones; one longer midway and one rounded basad; basal plate broad and S-shaped in lateral view producing a pair of short sclerotized straps connecting basal plate to the fulcrum. Phallosome bulbous basad; following thin and straight, and ending in broadened membranous endotheca without any discernible spines or aedeagus.

Holotype male: Danau Ranau, Bukit Barisan Selatan NP, 950 m, 30.vi.2009 light trap.

Etymology: the name refers to the sole specimen (holotype) which represents the first discovery of the genus in Indonesia, lone "amhathan" in Sanscrit.

***Polyplectropus danauranauana* new species (Polycentropodidae)**

This small-sized brown coloured species has very unique gonopods with an apicoventral spatulate rostrum. No similarly shaped gonopods are known in *Polyplectropus*. Its subphallic sclerite, combined with well-developed paraproct, has some resemblance to *Polyplectropus exallus* NEBOISS described from Sulawesi, but differs by differently shaped gonopods, cerci and paraprocts. Another unique structure developed on the reduced Xth segment is a single mesal long sclerotized spine, not previously known in *Polyplectropus*.

Male: head, cervical and dorsal thoracic sclerites dark brown; palpi, lateral thoracic sclerites, legs and especially antennae lighter. Spur formula 344. Maxillary palp formula is (I,II)-IV-III-V, third segment inserted mesosubapicad. Forewing length is 5.2 mm. Discoidal cells in forewing closed and in

hindwing open; median cells on forewing closed. Forewing with apical forks 1, 2, 3, 4, 5, hindwing with apical forks 2, 5 present; forewing densely covered with decumbent setae; forewing membrane light brown with hyaline windows along crossveins r-m, m, large hyaline window present around primary fork of M merged with hyaline window along crossvein m-cu.

Male genitalia. The sclerotized IXth sternite subtriangular with well produced anterior and posterior antecostal sutures on its dorsal angle; subtriangular sclerotized IXth tergite located obliquely horizontally and attached to the dorsal angle of the sternite; IXth tergite meeting at or forming fulcrum with cerci, paraproctal complex and Xth segment. Segment X semi-membranous forming lateral plates covered with microtrichiae of dark colour; these lateral plates are fused to tergite IX and paraproctal complex, as well as connected by narrow heavily sclerotized narrow brace; on the middle of this brace, a long sclerotized single spine developed and directed posterad and slightly upwards. Cerci rounded and downcurving. Paraproctal complex is fused to the cerci; the dorsal spine-like paraproctal processes have a broad base arching mesad; the subphallic sclerite heavily developed and trilobed; both the median and lateral lobes with some apical setae. Gonopods with apicoventral spatulate rostrum directed downwards. The phallic apparatus less sclerotized without any discernible structure located dorsad, fixed and guided very high by the paraproctal subphallic sclerite.

Holotype male: Danau Ranau, Bukit Barisan Selatan NP, 950 m, 30.vi.2009 light trap. – Paratype male: Sumatera Barat, Padangpanjang, Gunung Singgalang, 8.-11.2.1996, leg. A. Kallies, Zoologisches Museum Berlin.

Etymology: the name refers to the type locality.

***Anisocentropus kundalin* new species (Calamoceratidae)**

This medium-sized castaneous species belongs to the *Anisocentropus brevipennis* species cluster of the *Anisocentropus* (*Anisocentropus*) *latifascia* species group created by OLÁH & JOHANSON (2010). The short, apical slender digitate apices of the gonopods differentiate this new species from *A. brevipennis* ULMER (Borneo), *A. hoisat* OLÁH & JOHANSON (Laos), and *A. maralus* OLÁH & JOHANSON (Penninsular Malaysia). *A. thinlin* OLÁH & JOHANSON described from Laos has extremely short gonopods with a very broad base in lateral view. The circular anterior end of the cleft-like median excision on the apical portion of the Xth segment in *A. kundalis* n. sp. is unique and differentiates it from all other members of the species cluster.

Male: a medium-sized *Anisocentropus* species with castaneous wing membrane covered with dense brown decumbent setae. Forewing length 7.6 mm. Castaneous forewing membrane unicolor with only a few scattered small light dots, besides the median and cubital linear hyaline windows. On forewing, R1 confluent with R2 before C; base of discoidal cell a little anterior of wing middle; Fork I,II,III,IV,V present, crossveins sc-r, s, r-m, m, m-cu and cu present, crossvein r and cu-a indiscernible; postanal vein lacking; nygma and thiridium dark pigmented and enlarged. On hindwing R1 runs to R2, Fork I,II,III,V present, Fork I longer than Fork II.

Male genitalia. The IXth abdominal segment fused annular, without longitudinal grooves separating its dorsal mesal and ventral parts; tergum shorter than ventrum in lateral view; anterior margin of IXth segment convex; the entire posterior margin forming a large regular straight-cut plate without a visible lateral flank between the preanal and inferior

appendages; antecosta, the ridge on the inner surface supporting longitudinal muscles well developed and visible as an external groove of the antecostal suture; tergum of the IXth segment with a slightly protruding mesal keel. Intersegmental profile between segment IX and segment X exhibits a step-like slope in lateral view. In dorsal view, suture remnant visible separating tergum IX from segment X. Xth segment longer than the gonopods and slightly longer than cerci and forming a broad hood, cleft apically and producing downwardly directed apical lobes; anterior end of cleft or excision broadened into a circular base; the apices of apical lobes blunt, not tapering; the dorsum of Xth segment sparsely covered with erect and short setae. Cerci are digitiform in lateral and a little clavate in dorsal view. Gonopods one segmented without harpago, long triangular slightly S-shaped in lateral view, their digitate apices short; stout setae located on the middle of their mesal surfaces. Phallic apparatus forming a curving tube with elongated more sclerotised ventral apical lobe; above this ventral lobe part of the aedeagus visible in its unextruded state; a very dark pigmented phallotremal sclerite visible as a large compact structure in the membranous aedeagus; in ventral view the phallotremal sclerite complex composed of a posterior V-shaped configuration with anterior elongation in ventral view; this unpaired anterior elongation appears free hanging under the posterior V-shaped unit; ejaculatory duct indiscernible.

Holotype male and two female paratypes: Way Kambas National Park, 22. VI. 2009, light trap.

Etymology: the name refers to the circular anterior end of the apical excision on segment X, circular means "kundalin" in Sanscrit.

Ceraclea kudila new species (Leptoceridae)

Close to *Ceraclea modesta* BANKS described from Borneo but differs in having (1) IXth segment with posterosternal plate half the height of a segment and not one third height; (2) lateral lobes of the Xth segment without any strong spines; (3) cerci fused basally in dorsal view, not separated; (4) cerci long and high, not short and low in lateral view; (5) harpagones long and surpassing apices of coxopodites; (6) apical half of the ventral lobes of coxopodites sinuous and slightly S-shaped, not straight and not spine-like.

Male: Medium-sized brown species. Antennae, maxillary palps, labial palps and legs lighter. Head and thorax dorsum castaneous with contrasting light setal warts. Setal warts on head dorsum enlarged occupying almost the entire area, except posteromedian region of the vertex; pairs of small postgenal, large occipital, vertexal ocellar compact setose warts present; the pair of frontal interantennal compact setose warts fused to form a large single pentagonal wart between the frontal grooves; a single pair of frontogenal compact setose warts present on the facial region. Forewing length 6.3 mm, membrane grey with dense darker setal cover and without any discernible pattern in alcohol.

Male genitalia. IXth segment with short acrotergite dorsad; its posterosternal plate housing the gonopod articulation and the basal plate is half the height of the segment. Xth segment low in lateral and narrow in dorsal views with digitiform lateral lobes slightly capitate; lateral lobes only slightly shorter than the median body of segment X. Cerci enlarged, higher than segment X and slightly shorter; foliiform in lateral and rounded in dorsal views, basodorsally fused. Gonopods as long as segment X; ventral lobes of coxopodites thin and slender in lateral view, the apical half mesally curving and slightly S-shaped, not spine-like; harpagones surpassing

significantly the apices of the dorsal lobe of the coxopodite. Phallic organ with two strong and black spines.

Holotype male: Way Titias, Bukit Barisan Selatan NP, 850 m, 26.vi.2009, light trap.

Etymology: the name refers to the sinuous terminal portion of the ventral lobe of coxopodites in ventral view, sinuous "kudila" in Sanscrit.

Oecetis samsipta new species (Leptoceridae)

This new species, having short and rounded cerci almost fused to segment X as well as enlarged and rounded asymmetric phallic organ with single paramere, is placed in the *Oecetis lacustris* species group. Having a double concavity on the posterior margin of segment IX separated by a pronounced triangular projection in lateral view, it belongs to the *Oecetis jacobsoni* species complex established by MALICKY (2005). Most similar to *Oecetis meghadouta* SCHMID described from Sri Lanka, however the triangular projection between the dorsal and pleural concavities has been developed in *O. samsipta* n. sp. into a long downward curving, lobe-like setose process, absent in *O. meghadouta*. Moreover the unusually abbreviated apical apices of the gonopods separate this new species easily from all the known members of the species complex.

Male: light brown, yellowish species with black eyes, and darker brown spotted pattern on forewing. The dark spots with lighter hollows are located near fork bases, cross veins and apical ends of longitudinal veins. Scapes are robust, almost as long as the head without any elongated setal tuft. Maxillary palp formula is I-IV-II-III-V. Spur formula is 022. Forewing length is 5.6 mm.

Male genitalia. Terga VI, VII and VIII without honeycomb reticulations. Segment IX short with long rounded anterior dorsal lobe on its tergum; anterior margin with double concavity in lateral view; pleural concavity less pronounced; the projection between the dorsal and pleural concavities produced into a long downward curving setose lobe. A single fused pair of papillae visible both in lateral and dorsal views between IXth and Xth segments, above cerci. Cerci (preanal or superior appendages, setose area) setose, short, rounded, basally fused to segment X. Gonopods broad based with abbreviated and tapering apices and closely proximate bases as visible in ventral view; small central patch of setae present on their mesal surfaces. Phallic apparatus consist of the short and rounded phallosome with barely discernible endotheca; single sinuous paramere as long as the phallic organ with slight broadening midway in lateral view.

Holotype male: Way Kambas National Park, 22. VI. 2009, light trap.

Etymology: the name refers to the abbreviated apical apex of the gonopods, abbreviated "samsipta" in Sanscrit.

Setodes dvizakhana new species (Leptoceridae)

This new species has the typical *Setodes* wing venation except that crossvein *s* on forewing is long oblique, not short-cut straight connecting R2+3 and R4+5 at the shortest point. However its genital structure is rather interesting having long bifurcated cerci and lacking parameres. One of the most striking generic features of the *Setodes* phallic organ is the well-developed arching parameres. FLINT & SYKORA (2004) have described *Setodes anomalus* from the Dominican Republic, the only representative of the *Setodes* genus from the Neotropical region. Its specific epithet was selected with reference to the apparent lack of parameres and the presence of a sclerite between the tenth tergum and the cerci. However

the lack of parameres is not so unique, their lost or reduction occurs in *Setodes viridis*, *S. parisamchuddha* and *S. chandrakita* species groups and in several isolated or unplaced species from the Oriental and Afrotropical regions. The presence of a separate sclerite between cerci and segment X, a possible remnant of the paraproct (intermediate appendages) seems more uncommon in *Setodes*. Although in Nearctic species of *Setodes* the variously formed processes on the fused IXth and Xth segment are considered as preanal appendages (cerci) and intermediate appendages (paraproct) (HOLZENTHAL, 1982; RASMUSSEN & al. 2008), other authors describe the mesal process fused to the IXth segment, or processes if it is cleft, as the Xth segment itself or its processes and only additional sclerotized structures are called intermediate appendages or paraproct. This additional structure was found by FLINT & SYKORA in the Neotropical *S. anomalus* and similar structures seem to be present also on the drawings of some Oriental species: *S. laios* MALICKY & O'CONNOR 2006 and *S. kyklope* MALICKY 2008 described from Indonesia (MALICKY & CHANTARAMONGKOL (2006); MALICKY (2008). However these sclerotized additional structures of intermediate appendages may not be homologous across Trichoptera (HOLZENTHAL & al. 2007), but some more or less sclerotized remnant structure is frequently present on the ventrum of the Xth segment guiding dorsally the phallic organ (OLÁH & JOHANSON, 2010). In *Setodes dvizakhana* n. sp., the parameres of the phallic organ are completely reduced and some sclerotized remnant of the paraproct present on the ventrum of the Xth segment. The third feature of this new species, emphasized by its specific epithet, the bilobed or bifurcated cerci easily differentiate it from all known *Setodes*.

Male: dark greyish brown species with pronounced hyaline window present before fork M on forewing. Cranial sclerites, grooves and warts all are medium brown, difficult to discern on the uncleared head. Scape shorter than head and bare without the elongated setal tuft of *Trichosetodes*. Maxillary palp formula is II-IV-(I, III, V). Proepisternal swollen setal wart absent. Mesokatepisternum of each mesopleuron acute anterodorsally, not truncated by a short sulcus. Spur formula 022. Forewing length is 6.2 mm; hyaline window pattern consists of large pronounced transparent longitudinal triangular patch before M fork and a long narrow line along the entire Cu₂; crossveins on forewing long and oblique.

Male genitalia. IXth abdominal segment medium long, shortening dorsad, setose laterad and lateroventrad at least with alveoli present; its tergum delineated by curving suture in lateral view; tergum with two rounded dark patches of microtrichial sculpture on its anterior margin visible both in lateral and dorsal views; intersegmental profile between IXth and Xth tergum rounded and acutely angled. Xth segment fused basally to the IXth tergum, long quadrangular concave hood, deeply excised apicomesally, resulting in two rounded lobes in dorsal view; less sclerotized and without any discernible setae; bordered laterad and ventrad by the more sclerotized paraproctal plates. This paraproctal vestigium is more sclerotized than the above lying Xth segment producing actually a second partial hood and giving a dorsolateral guiding function to the phallic apparatus which is connected somehow to the IXth tergum and to the ventrum of Xth segment laterally while forming a broad plate. Cerci bilobed or bifurcated; basal lobe shorter covered with erect setae; ventral arm long whip-like with two parts; its distal half composed of and completely covered with vestiture of tomentose setae. Gonopods short, clearly bilobed both in lateral and ventral views; dorsomesal lobe packed with numerous protuberances of large alveoli. Phallic apparatus

consist of the short phallobase and the phallicata arching posteroventrad, ending in a duck-head shaped apex; dorsal lateral flanges discernible on the phallicata, parameres lacking.

Holotype male: Way Kambas National Park, 22. VI. 2009, light trap.

Etymology: the name refers to the unique bifurcation of the cerci, bifurcation "dvizaakhana" in Sanscrit.

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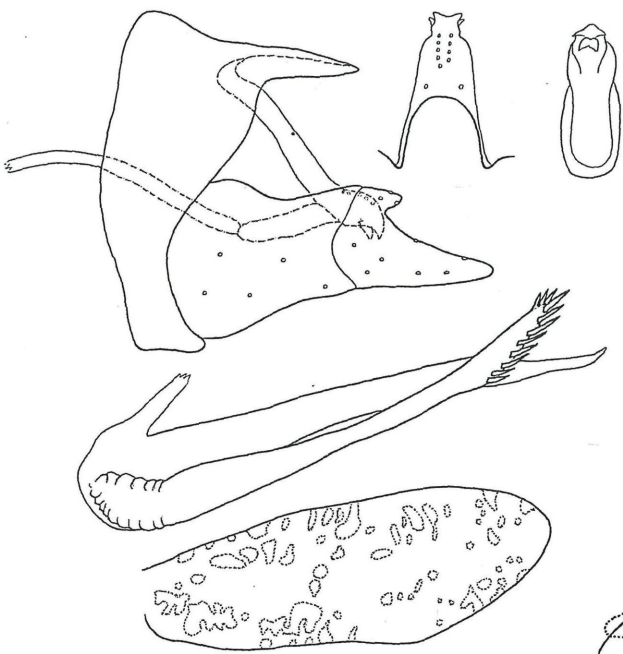
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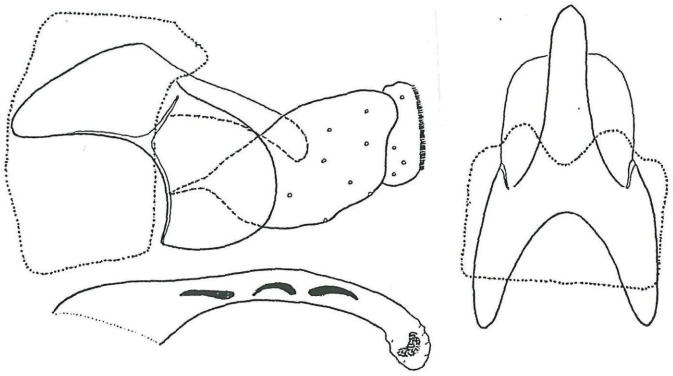
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Charleston SC 29407
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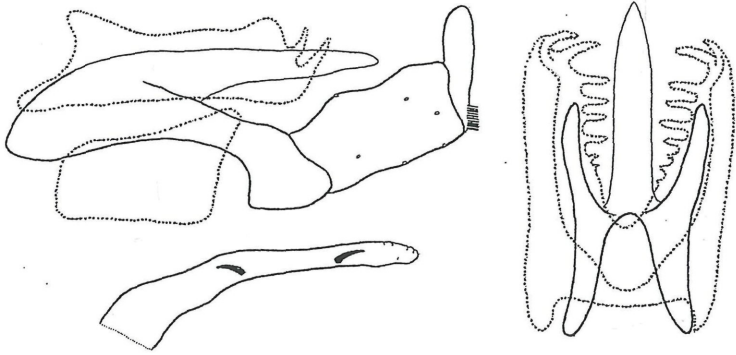
Rhyacophila trireginorum



Gunungiella wamana



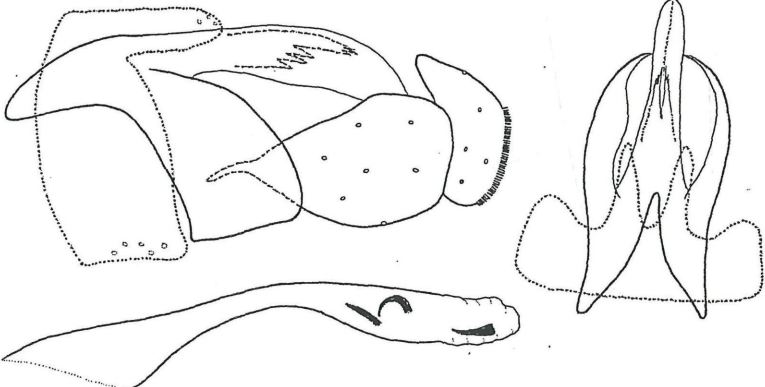
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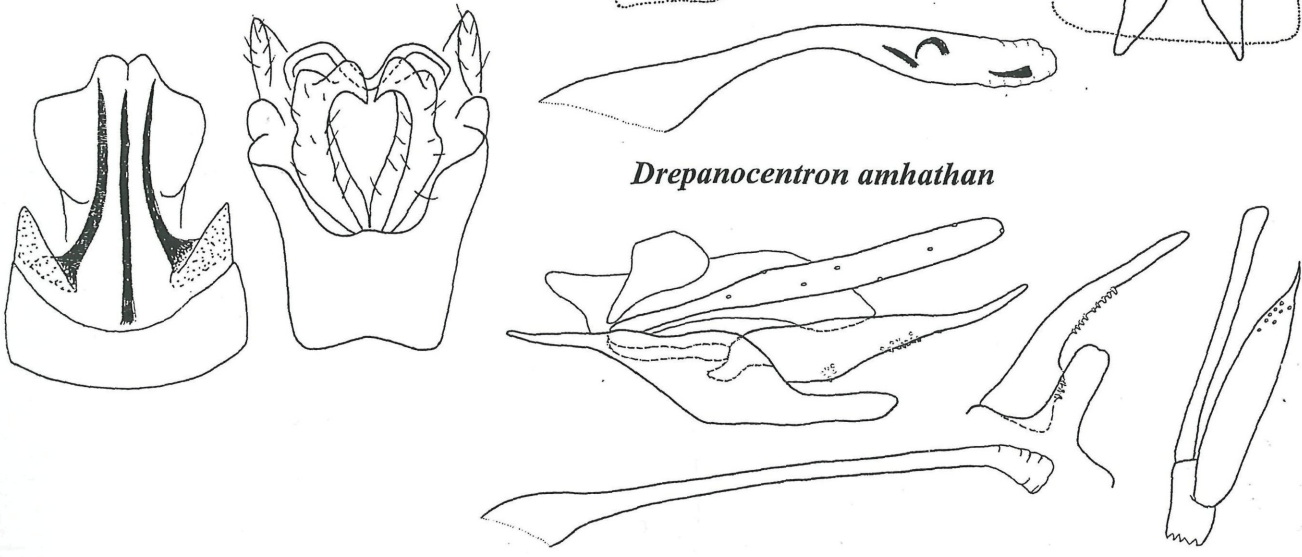
Polyplectropus danauranauana



Gunungiella rana



Drepanocentron amhathan



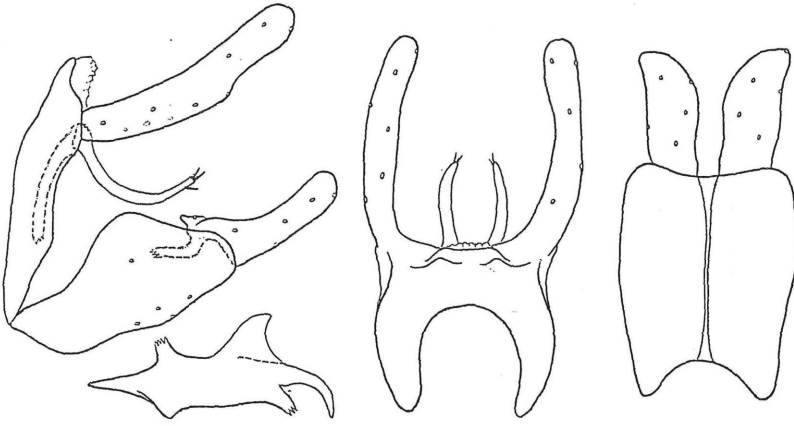
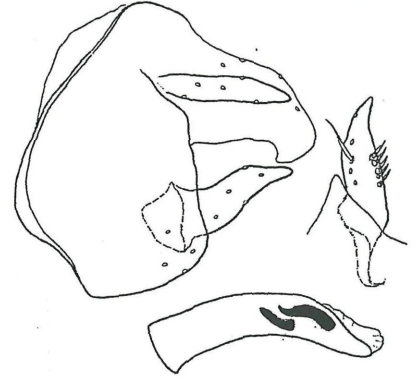
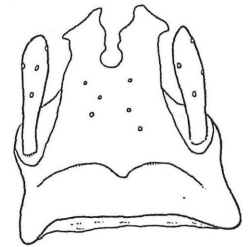
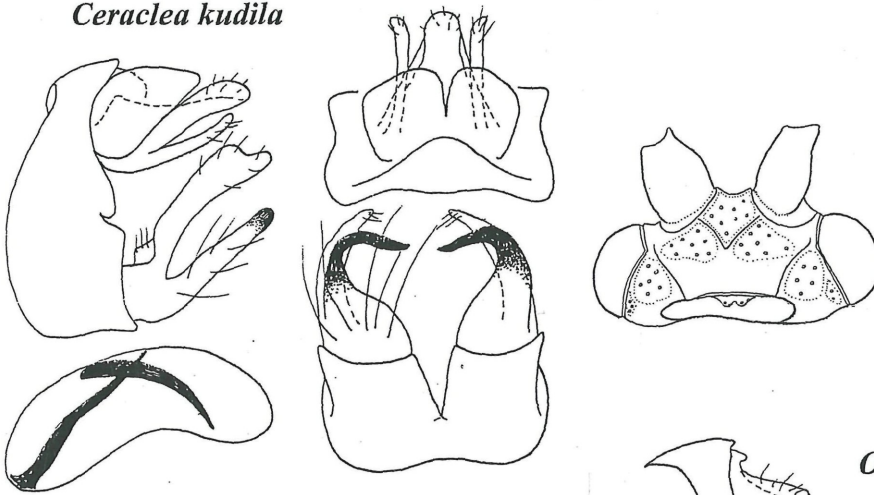
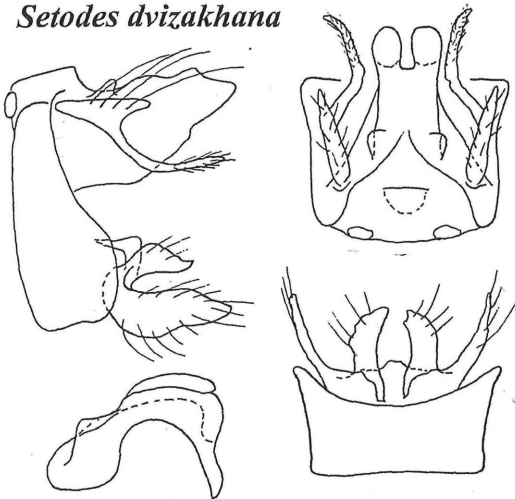
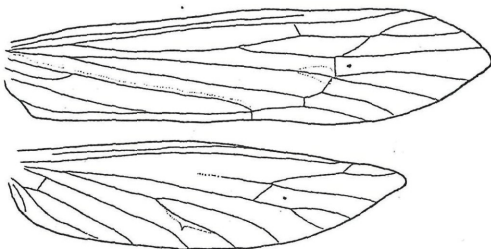
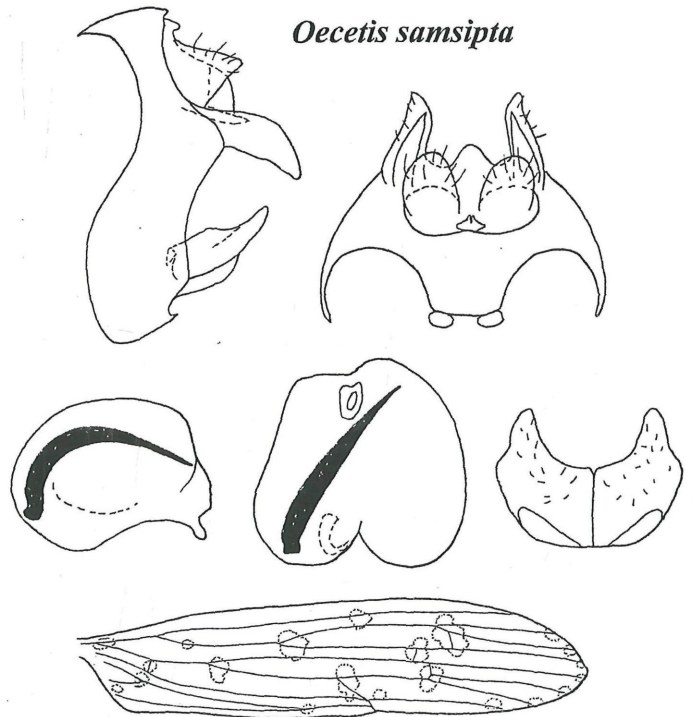
Ecnomus kambas*Anisocentropus kundalin**Ceraclea kudila**Setodes dvizakhana**Oecetis samsipta*

Table 1.

	Sites no.				
	1	2	3	4	5
Rhyacophilidae					
<i>Rhyacophila ainola</i> MAL. 1989			1♂, 1♀	5♂, 1♀	
Glossosomatidae					
<i>Glossosoma bukitana</i> MAL. 1978					1♂
Philopotamidae					
<i>Chimarra briseis</i> MAL. 1998			5♂		
<i>Chimarra fulmeki</i> ULMER 1951				1♂	
<i>Chimarra gemmal</i> MAL. 1989			1♂	1♂	
<i>Chimarra gigama</i> MAL. 1989				2♂	
<i>Chimarra thienemanni</i> ULMER 1951			2♂		
<i>Gunungiella aanafiazga</i> MAL. 1993			1♂		
Stenopsychidae					
<i>Stenopsyche ochripennis</i> ALBARDA 1991			3♂		
Polycentropodidae					
<i>Nyctiophylax anryutah</i> OLÁH & JOH. 2010			2♂		
<i>Nyctiophylax kupirah</i> OLÁH & JOH. 2010			1♂		
<i>Nyctiophylax tapan</i> OLÁH & JOH. 2010					3♂
<i>Pseudoneureclipsis complexa</i> OLÁH & JOH. 2010			1♂		
<i>Pseudoneureclipsis josech</i> MAL. 1993					2♂
Ecnomidae					
<i>Ecnomus crepidulus</i> MOSELY 1932	5♂				
Psychomyiidae					
<i>Lype atria</i> MAL. & CHANT. 1993				1♂	
<i>Paduniella kalamos</i> MAL. 2004			4♂		
<i>Paduniella semarangensis</i> ULMER 1913			1♂		
<i>Psychomyia capillata</i> ULMER 1910			4♂		
<i>Psychomyia fulmeki</i> ULMER 1930			1♂		
<i>Psychomyia selatana</i> OLÁH & JOH. 2010			41♂		
Hydropsychidae					
<i>Macrostemum fastosum</i> WALKER 1852			2♀		
<i>Diplectrona dulitensis</i> KIMMINS 1955			1♂		
<i>Diplectrona hermione</i> MAL. & CHANT. 2002				1♂	
<i>Cheumatopsyche globosa</i> ULMER 1910			1♂		
<i>Hydromanicus flavoguttatus</i> ALBARDA 1881			5♂, 3♀	1♂, 2♀	
<i>Hydromanicus sempit</i> CHANT. & MAL. 1995		1♂		1♂, 2♀	
<i>Hydropsyche germanorum</i> MEY 1998					1♂
<i>Hydropsyche saranganica</i> ULMER 1951		1♂			
Lepidostomatidae					
<i>Lepidostoma abruptus</i> BANKS 1931			3♂		
<i>Lepidostoma diehli</i> WEAVER 1989			1♂		
<i>Lepidostoma longipenis</i> WEAVER 1989				2♂	1♂
<i>Lepidostoma malickyi</i> WEAVER 1989			1♂		
Helicopsychidae					
<i>Helicopsyche angusta</i> ULMER 1951		1♂	1♂		
Leptoceridae					
<i>Oecetis idomeneos</i> MAL. 2005			1♂		
<i>Oecetis kodros</i> MAL. 2005	19♂, 2♀				
<i>Oecetis momos</i> MAL. 2005	1♂				
<i>Oecetis pretakalpa</i> SCHMID 1995					1♂
<i>Oecetis tripunctata</i> FABR. 1793	9♂				
<i>Setodes trikuthia</i> OLÁH & JOH. 2010					2♂
<i>Setodes wirhal</i> OLÁH & JOH. 2010			15♂		
<i>Trichosetodes thienemanni</i> ULMER 1951			3♂		

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