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Two new sawfly species for the Bulgarian fauna (Hymenoptera: Symphyta)

Maria Dobreva\(^1\), Nikolai Zlatanov\(^1\), Georgi Georgiev\(^2\)

(1) Forestry Protection Station – Plovdiv, 82 Slavyanska St, 4000 Plovdiv, Bulgaria, mr_dobreva@abv.bg
(2) Forest Research Institute, Bulgarian Academy of Sciences, 132 St. Kliment Ohridski Blvd, 1756 Sofia, ggeorgiev.fri@gmail.com; https://orcid.org/0000-0001-5703-2597

Abstract: Two sawfly species were established for the first time in Bulgaria: \textit{Gilpinia socia} (Klug) (Hymenoptera: Diprionidae) and \textit{Hemichroa crocea} (Geoffroy) (Hymenoptera: Tenthredinidae). \textit{G. socia} was found on \textit{Pinus sylvestris} in Plovdiv City, and \textit{H. crocea} – on \textit{Alnus glutinosa} in the land of Iskra Village. The late-instar larvae were collected and reared in Petri dishes in laboratory conditions in Forestry Protection Station in Plovdiv. Seven female and one male adult specimens of \textit{G. socia} appeared between 30 July and 23 August 2021.

Keywords: Bulgaria, \textit{Gilpinia socia}, \textit{Hemichroa crocea}, new records

Introduction

The suborder Symphyta is the largest phytophagous group of Hymenoptera, including 818 genera and 8855 species (Taeger et al., 2018). Some species are known as economically important pests in forests.

Vassilev (1978) summarised data on about 268 known species of the suborder Symphyta in Bulgaria. Later, several new species of the sawfly fauna of the country were also reported (Georgiev, 1990, 1996; Stoyanov & Ljubomirov, 2001; Georgiev et al., 2002; Blank et al., 2013; Doychev, 2015; Liston et al., 2019). However, it is necessary to note that the Bulgarian sawfly fauna is still not well studied.

This note reports two new sawfly species for the fauna of Bulgaria.

Material and methods

The studies were conducted in 2021 in two localities in Bulgaria – Plovdiv City and Iskra Village (Fig. 1). The main characteristics of the studied areas and collection of the biological material are given in Table 1.

The biological material was collected on host plants as late-instar larvae. After collection, the sawfly larvae were transported to the entomological laboratory of Forest Protection Station in Plovdiv.

The larvae were reared in Petri dishes in laboratory conditions at room temperatures (18–22 °C). The samples were observed daily. The emerged adults were identified by the keys of Smith (1974) and Zhelohovtsev et al. (1988). Identification of sawfly larvae was made according to Pschorn-Walcher (1982).

Table 1. Main characteristics of the studied areas.

<table>
<thead>
<tr>
<th>Locality</th>
<th>Geographical coordinates</th>
<th>Altitude, m a.s.l.</th>
<th>Host plant</th>
<th>Studied biological material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plovdiv City</td>
<td>42°08’18.89”N, 24°46’10.60”E</td>
<td>160</td>
<td>\textit{Pinus sylvestris} L.</td>
<td>8 larvae and adults</td>
</tr>
<tr>
<td>Iskra Village</td>
<td>41°54’27.36”N, 25°07’27.84”E</td>
<td>340</td>
<td>\textit{Alnus glutinosa} (L.) Gaertn.</td>
<td>15 larvae</td>
</tr>
</tbody>
</table>

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The reared adults are deposited in entomological collection of Forest Research Institute in Sofia.

**Results and discussion**

*Gilpinia socia* (Klug, 1812)
(Hymenoptera: Diprionidae)

Material examined: gregarious larvae on 8-year-old *Pinus sylvestris* in the park of Forestry Protection Station in Plovdiv – 28 May 2021 (Fig. 2 A); collection of late-instar larvae – 08 June 2021; pupation in laboratory condition – in the period 09–15 June 2021; adult emergence – between 30 June and 23 August 2021 (1♂, 7♀♀); leg. M. Dobreva & N. Zlatanov; det. G. Georgiev.

The late-instar larvae of *G. socia* reach a length of 20–25 mm. The head is dark brown. The body is dark green, almost black, with a fine white central stripe, white mottled longitudinal stripe laterally and white spots around the stigmata (Fig. 2 B). The pupae are coloured light brown (Fig. 2 C).

In its imaginal stage, the genus *Gilpinia* differs from *Diprion* by the larger cenchri and the smaller metascutellum, and from *Neodiprion* by the much longer petiole of anal cell of hindwing and densely sculptured abdominal terga. Body of the female of *G. socia* is mostly reddish yellow (Fig. 2 D), with black spots — one on the head between the eyes and three on the mesonotum, mesosternum and metanotum. The tip of the scutellum is black, the legs are light brownish red, and the antennae are reddish brown with 19–20 segments. The males of *G. socia* resemble *G. pallida*, but the antennae have 20 double setae (*G. pallida* has 18–19 double setae). Body length of the males and females is 6.0–7.0 mm and 8.0–9.5 mm, respectively.

The genus *Gilpinia* includes a dozen species in Europe, eight of which are trophically associated with pines (Pschorn-Walcher, 1982). The larvae of five species live alone, and only three species (including *G. socia*) feed gregariously.
Gilpinia socia is a boreomontane species, native in Europe, distributed in Austria, Croatia, Czech Republic, Slovakia, European Russia, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Poland, Switzerland and Ukraine (Liston, 1995; Kupková et al., 2014). At low altitudes, G. socia is bivoltine, but in the mountains it has one generation per year (Pschorn-Walcher, 1982). It is associated with Pinus sylvestris, P. mugo Turra and P. nigra Arn. (Pschorn-Walcher, 1982; Liston, 1995).

Hemichroa crocea (Geoffroy, 1785)
(Hymenoptera: Tenthredinidae)

Material examined (larvae only): collection of late-instar gregarious larvae on Alnus glutinosa along Kayaliika River in the land of Iskra Village (Plovdiv District) – 23 June 2021; shoot defoliation varies between 10 and 40% (Fig. 3 A); leg. M. Dobreva & N. Zlatanov; det. G. Georgiev.

The larvae of H. crocea are brightly coloured, yellowish and greenish, with black longitudinal stripes (Fig. 3 B, C), unlike the uniform green larvae of H. australis (Serville, 1823) (Pschorn-Walcher, 1982). H. crocea larvae feed gregariously on the margin of the leaves of Alnus spp., Betula spp., Corylus spp. and Salix spp., in contrast to the larvae of H. australis, which live alone on Betula spp. and Alnus spp. (Sundukov, 2017). In Bulgaria, H. australis was reported under the synonymous name Hemichroa alni (Linnaeus, 1758) (Vassilev, 1978). At present, only the above mentioned two species of the genus are known in Europe. In Ukraine, a third species (Hemichroa
*Hemichroa crocea* is a Holarctic species, widely distributed from the British Isles, through central and northern Europe, to the Russian Far East, Japan, northern India, reaching into the Oriental Region in China, and transcontinental in North America (Prous et al., 2019). At lower altitudes, the species usually develops two overlapping generations per year (the larvae feed in June–July and August–September), but in the mountains it is mainly univoltine (egg-laying is usually observed in late July–mid-August, and feeding the larvae until the end of September) (Pschorn-Walcher, 1982).

In conclusion, it could be noted that the new records increase the species composition of the Bulgarian sawfly fauna.

### References


Georgiev G. 1996 *Diplostichus janithrix* Hart. (Diptera, Tachinidae) – a parasitoid on *Gilpinia* sp. (Hymenoptera: Diprionidae) and new species for...
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New species of Pscoptera (Insecta) from East Africa

Dilian Georgiev

Department of Ecology and Environmental Conservation, University of Plovdiv, 24 Tsar Assen Street, 4000 Plovdiv, Bulgaria, diliangeorgiev@gmail.com; https://orcid.org/0000-0003-2885-4895

http://zoobank.org/11EB9B8D-B87A-42F0-9365-96E5C00B3180

Abstract: Four new Pscoptera species were described as new to science from the coastal area of East Africa: Echinopsocus keniensis n. sp., Cerobasis lienhardi n. sp., Lithoseopsis juliani n. sp. (Kenya), and Mepleres gurusamyi n. sp. (Zanzibar). One Nanopsocus species was found only in a nymph stage, and was supposed to be representative of an unknown species too.

Keywords: Africa, Insecta, coastal, new species, tropical

Introduction

The Pscoptera fauna of the equatorial and tropical Africa is not well known. Recently the Unguja Island was studied (Georgiev, 2021) but the previous study in East Africa was carried out about 40 years ago by Broadhead & Richards (1982). Many areas of the east coast of the continent are still white spots considering the species diversity of the psocids. In this paper four new Pscoptera species were described as new to science, and one, found only in a nymph stage, was supposed to be representative of an unknown species too.

Material and methods

Pscoptera were collected from the east coast of Africa – Zanzibar and Kenya by beating the vegetation. The specimens were stored in 96% ethanol. The photos (specimens in glycerin) were taken by a camera Canon PowerShot SX500IS through the eyepiece of a light microscope Optika and Carl Zeiss-Jena. Type material was deposited at the National Museum of Natural History (NMNH) – Sofia, Bulgaria, and the collection of the author. The species discussed in the paper were considered according to original descriptions, redescriptions, and published identification keys. Measurements followed Lienhard (1998). Species diversity and distributions is according Johnson et al. (2022).

Measurements abbreviations: LC = body length; A = antenna length, P3, P4: third and fourth segments of maxillary palp, F+tr = hind femur and trochanter length; T = hind tibia length; t1, t2, t3 = tarsomeres of hindtarsus (lengths measured from condyle to condyle), FW = forewing, HW = hindwing, D = anteroposterior diameter of the compound eye, IO = shortest distance between compound eyes.

Results and discussion

Lepidopsocidae

Echinopsocus keniensis n. sp.

Material examined: Holotype: 1 ♀, 27.2.2022, Kenya, Diani Beach area, edge of a coastal forest, a pile of old mats mixed with dry leaves beneath a baobab (Adansonia digitata), S04 19 55.3 E39 34 01.7, 36 m
a.s.l., NMNH – Sofia, Bulgaria; paratypes: 3 ♀♀, 27.2.2022, Kenya, Diani Beach area, edge of a coastal forest, a pile of old mats mixed with dry leaves beneath a baobab (*Adansonia digitata*), S04 19 55.3 E39 34 01.7, 36 m a.s.l., NMNH – Sofia, Bulgaria, 2 ♀♀, Kenya, Diani Beach area, edge of a coastal forest, a pile of old mats mixed with dry leaves beneath a baobab (*Adansonia digitata*), S04 19 55.3 E39 34 01.7, 36 m a.s.l., 27.2.2022, D. Georgiev coll.; additional material: 1 ♀, 27.2.2022, Kenya, Diani Beach area, coastal forest in a hotel yard, from palm leaf mats on a roof of a shelter, S04 20 10.2 E39 34 00.7, 18 m a.s.l., D. Georgiev coll.; 6 ♀♀, 5.3.2022, from the type locality, D. Georgiev coll.

Type locality: Kenya, Diani Beach area, edge of a coastal forest, a pile of old mats mixed with dry leaves beneath a baobab (*Adansonia digitata*), S04 19 55.3 E39 34 01.7, 36 m a.s.l. (Fig. 1).

Description: Female: Colouration: Living specimens brown. Yellowish-white when preserved. Head with dark lateral band on each side from anterior margin of the eye to the antennal socket (Fig. 2E). Very small patches of brown pigment present on vertex and frons but do not form specific pattern. Mandibles with darker cutting edges and teeth. Antennae and palpi greyish light-brown. Compound eyes green. Thorax and abdomen yellowish-brown, without any pattern. Forewings transparent. Femurs white-yellowish, tibia and tarsi darker, light brown. Scales with two types of colouration: brown and pale yellowish. Setae brownish slightly darker than the body, and create a brownish tinge to ethanol preserved yellowish specimens. Morphology: Head densely setose (Fig. 2G). Ocelli absent (but two patches of reddish-brown pigment present near the frontal sutures, which could be rudimentary ocelli, Fig. 2F). Antennae relatively long,
almost reaching the tip of the abdomen, over 40 segmented, consisted by relatively growing segments to the antennal tip. Lacinia wide, parallel sided, lateral denticle wide with two cusps, and distal denticle brunched at its base by small single cusp, and a tip with two cusps (Fig. 2D). Forewings curved, hard (when damaged at its base they break, not tear), relatively long, covering the abdomen to its tip. Venation distinctive, typical for the genus (Fig. 2C). Hindwings absent. Scales moderately elongate, oval-spindle shaped.

Measurements (in mm): Holotype (female): LC = 1.28; F+tr = 0.40; T = 0.60; t1 = 0.1, t2, t3 = 0.03, FW = 1.02, D = 0.1, IO = 0.3, IO/D = 3.0.

Diagnosis: There were only two species from the genus known before this study (Enderlein, 1903; Smithers 1984). The new species is most similar in wing shape with *E. erinaceus* Enderlein, 1903 (New Guinea) which is the type species of the genus. The new species differs from it by its green eyes (versus black), the lack of spine-like setae at the coastal margin at the base of the wing, regularly broad lacinia (versus broad towards apex), and not so sharply pointed wing tip. In addition the wings of *E. erinaceus* are black, while in *E. keniensis* n. sp. are transparent, creamy.

Etymology: Named after the country in which the species was found.

Habitat: A species that possibly prefers to inhabit dry palm leaves. In both of the localities the new species was found in dry mats of palm leaves (Fig. 1).

**Trogidae**

*Cerobasis lienhardi* n. sp.

Material examined: Holotype: 1 ♀, 3.3.2022, Kenya, Diani Beach area, open scrubs at coastal rocks near the beach, S04 20 52.6 E39 33 53.2, 1 m a.s.l., NMNH – Sofia, Bulgaria; additional material: 2 nymphs, 1.3.2022, Kenya, Diani Beach area, broadleaf coastal forest, from branches of bushes and trees, S04 20 20.3 E39 34 04.2, 2 m a.s.l., NMNH – Sofia, Bulgaria; 2 nymphs, 3.3.2022, Kenya, Diani Beach area, open
scrubs at coastal rocks near the beach, S04 20 52.6 E39 33 53.2, 1 m a.s.l., D. Georgiev coll.

Type locality: Kenya, Diani Beach area, open scrubs at coastal rocks near the beach, S04 20 52.6 E39 33 53.2, 1 m a.s.l. (Fig. 3)

Description: Colouration: Body yellowish-white with specific pattern on head, thorax, dorsal abdominal area and legs. Compound eyes greyish-green. Vertex with a lot of small round brown spots concentrated mainly around the eyes and the coronal suture. Two brown irregular spots on frons below both of the frontal suturae. Frons with three darker brown-blackish bands, of which the middle one is shorter and preceded by a small median spot, the other two convergent towards this spot, shaping and arrow tip like structure (Fig. 4A). Dark lateral band on each side from anterior margin of the eye to the antennal socket, and extending behind the eye to the lateral side of the thorax, where it widens (Fig. 4C). The area around the base of the antennas and their base itself with irregular brown spots. The further antennal segments at the firstly with a light proximal and dark distal part, towards the end of the antenna completely dark. Postcypeus creamy with two darker bands on each side, and one in the middle. Maxillary palpus yellow with an exception of P4 which is brown. Thorax creamy with three more rows of irregular brown spots at its dorsal side. Legs yellow with blackish-brown transverse band-like spots: one at the distal part of the femur, and two on the tibia, one at its proximal and one at its distal part. Claws, t2 and t3 a little darker, greyish. Ventral area of the abdomen yellow. Its dorsal area is with a specific pattern of rows of large irregular brown spots consisted of lighter and darker pigment, and blackish-brown dots (Fig. 4A, B). Clunium blackish-brown, darker than the rest of the abdomen. Epiproct and paraprocts yellow with on brown spot each. Morphology: Apterous species. Eyes relatively small, almost three times the length of the
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distance between them (IO/D = 2.5). Antennae short, a little bit extending the middle half of the body. Thorax wide compared to the head width, in a proportion almost 1:1 considering their maximal width. Femurs compared with body length relatively long. Metatibia with 2 apical spurs, a longer and shorter one. Gonapophyses elongate, typical of the genus, with outer edge deeply pigmented. (Fig. 4D). Paraprocts with two strong spurs with short setae. Epiproct with short setae, only a few longer ones present at its base.

Measurements (in mm): LC = 1.20; A = 0.70, P3 = 0.06, P4 = 0.1, F+tr = 0.40; T = 0.45, t1 = 0.14, t2 = 0.04, t3 = 0.06, D = 0.08, IO = 0.20, IO/D = 2.5, LC/F+tr = 3.0.

Diagnosis: From all 30 known species from the genus, C. lienhardi has similarities with 7 of them (Lienhard, 1998; Garcia-Aldrete, 1993). The differences are as follows:

Cerobasis alpha Garcia-Aldrete, 1993 (Mexico) is similar by the arrow-like pattern on frons, leg colouration and the proportion IO/D (= 2.31). It differs by its pale brown body (while in C. lienhardi it is yellow), and black eyes (versus greyish-green).

Cerobasis amorosa Lienhard, 1995 (Cyprus) is also similar in external view but it has black eyes and anchor-shaped pattern on forehead.

Cerobasis denticulata Lienhard, 1996 (Canary Islands) is similar in external view but it has 4 apical spurs on metatibia, versus 2 in the new species.

Cerobasis insularis Lienhard, 1996 (Canary Islands) has colourless femurs and is brachypterous.

Cerobasis socotrae Lienhard, 1995 (Socotra Island) is larger but with shorter femur (LC/F = 4.5–4.6), black eyes and not well defined frons pattern.

In well coloured specimens of Cerobasis canariensis (Enderlein, 1910) (Canary Islands) the frons pattern could be similar to this one of the new species but it is brachelytroptere, and having uniformly dark brown femurs.

Some specimens of the Holarctic Cerobasis annulata (Hagen, 1865) could also resemble the new species, especially considering the frons pattern, but this species does not have any pattern on the dorsal abdominal area, and a transverse blackish-brown band of the proximal parts of the femur. In addition this species is micropterous, while C. lienhardi is apterous.

Fig. 4. Cerobasis lienhardi n. sp.: A, B – dorsal and lateral view of the holotype, C – lateral view of the head with base of the antenna, maxillary palp and front leg visible, D – lateral view of the gonapophysis (scale bar refer to A and B).
Etymology: Named after the outstanding and respected expert on Psocoptera, Charles Lienhard (Natural History Museum of Geneva).

Habitat: The species was found on branches of bushes and trees in two habitats: open scrubs at coastal rocks near the beach (type locality), and dry coastal broad leaf forest (Fig. 3).

Remarks: Unable to fly, many species from the genus Cerobasis are endemics and have mainly coastal distribution. Due to the fact that the coast of East Africa has not been studied in terms of species diversity of psocids, finding a new species for science was expected. Species of this genus can also be found on many nearby islands, especially Madagascar, Mascarene and Seychelles.

Amphientomidae

Lithoseopsis juliani n. sp.

Material examined: Holotype: 1 ♀, 4.3.2022, Kenya, S of Mombasa, coastal area of the Indian Ocean, mangrove scrubs at the estuary of the small river of Kongo, S04 15 30.3 E39 35 41.3, 6 m a.s.l., NMNH – Sofia, Bulgaria; paratypes: 1 ♀, 4.3.2022, from the type locality, NMNH – Sofia, Bulgaria; 1 ♀, 4.3.2022, from the type locality, D. Georgiev coll.

Type locality: Kenya, S of Mombasa, coastal area of the Indian Ocean, mangrove scrubs at the estuary of the small river of Kongo, S04 15 30.3 E39 35 41.3, 6 m a.s.l. (Fig. 5).

Description: Female: Colouration: In living specimens scales of the forewings forming silver-grey appearance with a lot of small brown and black dots and spots, head brown (Fig. 6D). After preservation in ethanol turning brown. Compound eyes with lighter and darker grey stripes (Fig. 6B). Ocelli reddish brown. Head brown with darker vertical stripes on medial margins of compound eyes (stopping shortly above lateral ocelli) and on either side of median epicranial suture. Antennae brown. Postclypeus in dorsal part with reticulate pattern. Labrum dark brown. Maxillary palps brown with paler middle segment. Lacinia reddish-brown (Fig. 6G). Thorax light brown-yellowish with specific V-shaped dark brown marking.
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(Fig. 6A, E). Forewings brown-blackish with paler distal part. Veins at the distal half brown, at the proximal half white (Fig. 6C). Hindwings hyaline, smoky. Legs brown. Abdomen brown. Dorsally with darker transverse pigmentation on the tergites and one darker longitudinal stripe along the middle area. Morphology: Ocelli 3, relatively big, situated almost in one line. Lateral ocellus very close to the compound eye (Fig. 6B). Epicranial suture indistinct. Eyes large, diameter almost as the distance between them. Lacinia curved, outer tine with many small cusps, inner tine much shorter. Forewing bluntly tapered at the apex, with specific shape, wings venation shown on Fig. 6C. Fore-femoral comb consisted of over 21 spines (23 counted of the holotype). Subgenital plate broad with long setae at its apex and shorter at the ventral area, sclerite T-shaped. Gonapophyses slender, hairless. Paraprocts and epiproct with long setae (longer than those of the subgenital plate).

Measurements (in mm): LC = 1.64, A = 0.64, F+tr = 0.60, T = 0.82; t1 = 0.36, t2 = 0.06, t3 = 0.07, FW = 2.1, HW = 1.68, D = 0.28, IO = 0.34, IO/D = 1.21.

Diagnosis: The ocelli are situated in a line, the lateral ocelli are close to the compound eye, characteristic feature of the genus Lithoseopsis. From all 9 known species from the genus, by wing shape L. juliani n. sp. is most similar to L. brasiliensis García-Aldrete, Da Silva-Neto & Lopes Ferreira, 2018 (García-Aldrete et al., 2018). This species has different color of the eyes (black vs grey, striped), ocelli (hyaline vs reddish-brown), and forewing colouration (pale yellowish vs blackish-brown), and fore-femoral comb with lower number of spines (16–21 vs 23). In addition the Brazilian species has different habitat preference (troglophilous), while L. juliani was found in open bushy area.

Etymology: Named after my son Julian Georgiev who also participated in the trip to Kenya and enjoyed its nature.

Habitat: The species was collected from branches of bushes at a sandy river bank near the Indian Ocean (Fig. 5).

Pachytroctidae

Nanopsocus sp.

Material examined: 1 nymph, 27.2.2022, Kenya, coastal area, south of Mombasa, at the estuary of the small river of Kongo, bushes and trees at sandy river bank, S04 15 30.8 E39 35 43.5, 4 m a.s.l., D. Georgiev coll.; 2 nymphs, 28.2.2022, Kenya west of Diani Road, savannah, mixed bushes and trees near an agricultural building, dry branches with dry leaves, S04 19 43.0 E39 33 44.6, 1 m a.s.l., D. Georgiev coll. (Fig. 7).

Description: Colouration: Yellowish-white species with brown pattern (Fig. 8A, B). Vertex white with brownish pigment near the compound eyes. Frons with V – shaped brown pattern. Brown band of irregular
Fig. 7. Habitat view of one of the localities where *Nanopsocus* sp. nymphs were collected (Kenya west of Diani Road, savannah, mixed bushes and trees near an agricultural building, S04 19 43.0 E39 33 44.6).

Fig. 8. External view of the largest nymph of *Nanopsocus* sp. collected: A – dorsal view, B – lateral view, C – lacinial lip (scale bar for A and B).
spots extends from the postcypeus to the paraprocts. Another such band present below it. Compound eyes grey. Ocelli reddish-brown. Antennae brown, darker at their base. Palpi brown, smoky. Thorax yellowish-white with the mention lateral pattern. Abdomen the same, only a row of small brown spots present on its mid line of the dorsal area. Legs and undeveloped wings creamy, smoky. Morphology. Claws assymetrical, typical for the genus. Antennae not extending the body length. Lacinia with four cusps: two shorter of equal length, and two longer, again with same length (Fig. 8C).

Measurements of the largest nymph collected on 28.2.2022 (in mm): LC = 0.96, F = 0.20, T = 0.38, FW = 0.55, HW = 0.45, D = 0.12, IO = 0.25, IO/D = 2.08.

Remarks: The three Nanopsocus nymphs collected differ from all five known species (Badonnel, 1969, 1973, 1976; Baz, 1990; Lienhard, 1998), by its specific lacinial tip and body colouration. It should be noted that the species known of this genus are very few and it can be supposed that some more will be described in the future. One of the priority habitats to look for is the tropical coastal areas, which are in general poorly studied till now.

Pseudocaeciliidae

**Mepleres gurusamyi n. sp.**

Reexaminations of Mepleres specimens erroneously reported as *Mepleres maculatus* Broadhead & Richards, 1982 by Georgiev (2021) for Unguja Island revealed that they belong to a new species to science.

Material examined: Holotype: 1 ♀, 2.3.2021, Tanzania, Zanzibar, Unguja Island, Michamwi.
Peninsula, sandy coastal scrubs with scattered trees, S06 08 20.8 E39 29 28.8, 3 m a.s.l., NMNH – Sofia, Bulgaria; paratypes: 1 ♀, 1 ♂, 2.3.2021, from the type locality, NMNH – Sofia, Bulgaria, 1 ♀, 2.3.2021, from the type locality, D. Georgiev coll.; additional material: 1 nymph 2.3.2021, from the type locality, D. Georgiev coll.

Type locality: Tanzania, Zanzibar, Unguja Island, Michamwi Peninsula, sandy coastal scrubs with scattered trees, S06 08 20.8 E39 29 28.8, 3 m a.s.l. (Fig. 9).

Description: Female: Colouration: Light brown species, after long preservation in ethanol body turning yellow with brown-reddish patches. Head paler, yellowish-white with a darker lateral band on each side from anterior margin of the eye to the antennal socket. Vertex and frons with specific brown-reddish pattern (Fig. 10A). Postcypeus darker, brownish. Eyes grey (Fig. 10K). Ocelli reddish. Maxillary palp pale. Antennae pale, turning darker at the distal half. Mandibles brownish with dark brown distal edge. Thorax and abdomen brown. Subgenital plate well defined dark brown. Front and middle pair of legs with whitish femora and creamy tibiae and tarsi, hind legs darker, brown, including the femora. Claws black. Forewing with specific pattern of brown spots: Three big spots can be differentiated: one at the area of 1A and Cu2, one in the middle of the wing, forming a transverse stripe going from the middle of areola postica to the pterostyagma, where it widens and almost cover it, and one small spot at the wing tip situated mainly between R2+3 and R4+5. Smaller spots also present in other areas of the wing as can be seen on Fig. 10D. Veins brown except R, R1 and Cu2 which are white. Hindwing hyaline having only a thin brown stripe at its distal upper periphery (not visible in Fig. 10F). Morphology. A relatively small species of Mepleres. Female: Antennae shorter than the body with
long setae. Eyes small, distance between them almost five times as the eye diameter. Lacinia is curved and has a narrow base, widens in its distal part, the apex has two simple denticles, longer and shorter, forming an acute angle (Fig. 10H). Subgenital plate wide, heart shaped (Fig. 10I). Gonapophyses with very long setae. Paraprocts with two patches of three long, curved hairs (Fig. 10J). Hairs on epiproct shorter but extending it tip. The sensorium on the dorso-lateral surface of the paraproct is well defined and with many (over 12) relatively long trichobothria. Male: Colour as female (after one year in ethanol head pattern not visible, eyes turned black and hind femora went paler, Fig. 10B). Antennae and forewings longer than those in female and extending over the body length. Eyes very large, distance between them almost as equal as the eye diameter. Phalosome elongated oval-shaped (Fig. 10C).

Measurements (in mm): Holotype (female): LC = 1.42, F+tr = 0.41, T = 0.61, t1 = 0.19, t2 = 0.08, FW = 1.40, HW = 1.12, D = 0.08, IO = 0.37, IO/D = 4.6; paratype (female): LC = 1.48, A = 0.90; paratype (male): LC = 1.16, F+tr = 0.36, T = 0.50, t1 = 0.38, t2 = 0.16, FW = 1.3, A = 1.26, D = 0.18, IO = 0.17, IO/D = 0.94.

Diagnosis: From all 61 known species from the genus Mepleres, only three have forewing pattern similar to Mepleres gurusamyi n. sp., with a transverse band in the wing middle area, and a dark pigment at the wing apical part (Banks, 1937; Turner, 1975; Yoshizawa, 1997).

Mepleres avisonus (Turner, 1975) (Jamaica): in M. gurusamyi n. sp. the transverse band of the forewing widens upwards and covers almost the entire pterostygma. The stripe in M. avisonus covers only a part of the pterostygma and broadens at its middle part between Rs and M. Two species differs and by the shapes of their subgenital plates.

Mepleres morimotoi (Yoshizawa, 1997) (Bangladesh): tip of the forewing does not have big spot at its apical area, only a little dark pigment present at R4+5 and M1; Rs + M longer than M (shorter in the new species); central cell narrower at the level of Rs; larger species (LC = 1.9–2.1 mm). It has to be noted that the subgenital plates in both species are similar but the hairs of the gonapophyses and paraprocts are much longer in M. gurusamyi n. sp. (longer than the length of the corresponding structures, Fig. 10I). In males the phalosomes are different: in M. morimotoi it is elongated pear-shaped, and in M. gurusamyi n. sp. it is elongated oval-shaped. Both species differ and by the setation of the epiproct: in the new species setae are longer and extending over its tip.

Mepleres transversus (Banks, 1937) (Taiwan, China, Thailand) is about twice larger that the new species (LC = 3 mm), and forewings much marked with brown.

Etymology: Named after Ramesh Gurusamy (Zoological Survey of India) for his help with many of the literature sources needed for this publication, and especially for the scanned descriptions of the Chinese species of Mepleres.

Habitat: The species was collected from branches of bushes in a dry sandy area of coastal scrubs (Fig. 9).

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References


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