Coniopterygidae from Vietnam (Neuroptera)

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Coniopterygidae from Vietnam (Neuroptera) — The examined coniopterygid material, which was collected in the southern part of Vietnam, comprises nine species. Five of them (Heteroconis helenae sp.n., Heteroconis monserrati sp. n., Coniocompa mahunkai sp. n., Cryptoscenea diversicornis sp. n. and Coniopteryx (Coniopteryx) zomboki sp. n.) are described as new. The genus Cryptoscenea earlier was not known from continental South East Asia.

Key words: Coniopterygidae, new species, new data, Vietnam.

INTRODUCTION

The coniopterygid fauna of Vietnam is almost unknown. Earlier only a single species (Heteroconis vietnamensis Meinander, 1990) was reported from here. In 1994 a collecting trip was carried out by researchers of the Hungarian Natural History Museum in the southern part of the country (Mahunka et al. 1995). As a result of this journey, about fifty neuropterous specimens were collected, and most of them was coniopterygid. This coniopterygid material comprises four already known, and five new species. The collecting data of the determined species and the new descriptions are given below.

The collectors in every case were: Dr. Sándor Mahunka, Dr. Lajos Zombori and the author. Thus, apart from the holotypes of the new species, their names are not mentioned in the text.

As regards the male and female terminalia, I follow the terminology used by Meinander (1972) and by New (1990).
Heteroconis helenae sp. n.
(Figs 1-5)


Description — Palpi and the sclerotized parts of the head capsule dark brown. There is not corniform projection between the male antennae. Antennae 18-segmented. Flagellar segments 7–8 and 11–15 brown, scape, pedicel and the other flagellar segments white. Scape about three times, pedicel two times as long as broad. Length of antenna 1.0–1.1 mm. Eyes black and rather small.

Length of fore wing 2.7–3.0 mm, of hind wing 2.5–2.7 mm. Wing membranes mostly brown, but along some veins and near their apex colourless (Fig. 1). Basal cross veins Rs–M and M–Cu₁ of fore wing meet M between the median thickenings. In hind wing radial cross vein meets Rs on branch R₂+₃, but very close to the fork.

Thorax pale ochreous with brown apodemes and shoulder spots, and with a brown dorsal band on prothorax. Legs ochreous or light brown, but coxa and trochantin darker. Abdomen white.

Male genitalia (Figs 2–4) well sclerotized. Gonocoxite proximally wide, caudally slender. Stylus large, wide. Ninth sternite rather narrow and curved backwards with a weak, in lateral view acute, projection. Hypandrium has a caudal projection, ending in a median and two lateral spines (similar to the ventral process of some other Heteroconis species, e.g. H. pape?zsis Meinander, 1990). Behind the rather long dorso-lateral apodemes there is a separate dorsal projection on the penis. End of the penis curved up- and forwards.

In the female terminalia (Fig. 5) the gonapophyses laterales fused into a short and wide plate with a distinct apical incision. Their lobes densely haired with some stronger bristles. Caudal part of receptaculum seminis with two lobes, one of which is the continuation of the duct, well sclerotized and provided with very strong spines inside (Sziráki 1998, Fig.1 as “Heteroconis sp.1”).

Remarks — Because of the absence of the corniform projection on the male head and the features of wing venation the new species somewhat resembles the Malayan H. fusca Meinander, 1972, but owing to the long and wide stylus, the shape of the gonocoxite, the caudal projection of the hypandrium and the structure of female terminalia, Heteroconis helenae differs clearly from all hitherto described Heteroconis species.

Etymology — I dedicate this species to my wife.
Figs 1–2. *Heteroconis helenae* sp. n. – 1: wings; 2: male genitalia, lateral view. Scale in Fig. 1: 0.5 mm, in Figs 2–5: 0.04 mm, *cp* = caudal projection of hypandrium, *dl* = dorsolateral apodeme of penis, *dp* = dorsal projection of penis, *ep* = end of penis, *goc* = gonocoxite, *st* = stylus, *s9* = ninth sternite

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Figs 3–5. *Heteroconis helenae* sp. n. – 3: male genitalia, ventral view; 4: penis, dorsal view; 5: gonapophyses laterales and bursa copulatrix, ventral view. Scale Figs 3–5: 0.04 mm
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**Heteroconis monserrati** sp. n.  
(Figs 6–8)


Description — Head capsule and maxillary palpi light brown, labial palpi white. Eyes rather small, black. Antennae 18-segmented, 1.2 mm long. Scape (Fig. 6) large, four times as long as distally broad. The basal fifth part distinctly narrower than the others both in lateral and dorsal view. Between the eyes, above the unsclerotized part of frons, there are two stout knobs, while between the antennae there is a short, in dorsal view slender, laterally subtriangular “corniform structure” (Fig. 6). Scape, pedicel, the first six, and the last two flagellar segments white, the others dark brown.

Dorsal side and apodemes of the thorax brown, its other parts and the abdomen is white. Coxa and trochantin light brown, legs otherwise white. Wing membrane hyaline with a very slight brownish tinge. Length of fore wing 2.6 mm, of hind wing 2.3 mm. Cross veins Rs–M and M–Cu1 of fore wing meet M between thickenings. Radial cross vein of hind wing meets Rs on its stem.

Male genitalia as in Figs 7–8: sclerotized part of 9th tergite narrow with strong lateral projection caudally. Gonocoxite separated from 9th tergite, and connected distally to the styli, which are elongated plates with very strong bristles on the inner side. Ninth sternite weakly sclerotized, hypandrium indistinct. Ventral projection of 9th sternite and caudal projection of hypandrium acute and apparently melt. Sclerotized part of tenth sternite caudally acute, in dorsal view lyriform, in lateral view sinuated. Penis sclerite moderately large, with rather short proximal and dorsal, and distinct lateral apodemes. Its tube between the proximal and dorsal apodemes S-shaped, while after the dorsal apodemes bent downwards.

Remarks — The new species is closely allied with *H. angustipennis* Monserrat, 1982. The main distinctive features of *Heteroconis monserrati* are:

- scape and — among others — the last two flagellar segments white, while in *H. angustipennis* brown;
- the sclerotized part of the 9th tergite has a distinct lateral projection, while this part of male genitalia in *H. angustipennis* without any projections (Monserrat 1982: Figs 28–29);
- tenth sternite of males in dorsal view lyriform, while in *H. angustipennis* caudally it has three rounded lobes.

Etymology — I name this new species in honour of Victor Monserrat, the excellent Spanish neuropterologist.
Figs 6–8. *Heteroconis monserrati* sp. n. – 6: head, dorsal view; 7: male genitalia, lateral view; 8: male genitalia, ventral view. Scale: 0.04 mm, goc = gonocoxite, p = penis, pr = ventral projection of ninth sternite + caudal projection of hypandrium, st = stylus, s10 = tenth sternite, t9 = ninth tergite

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Coniocompsa mahunkai sp. n.
(Figs 9–11)


Description — Most of the colour of the body light ochreous, but the head capsule and the shoulder spots brown, maxillae and the rather small eyes black. Antennae of males 18–21-segmented, 1.0–1.1 mm, of females 17–18-segmented, 0.8 mm long. Scape about as long as broad, pedicel 1.5 times longer than broad, most of the flagellar segments 1.5 times broader than long.

Fore wing (Fig. 9) 2.5–2.7 mm, distinctly falcated. Hind wing 2.3–2.5 mm. Wing membrane light brown with dark spots near to cross veins and at the endings of longitudinal veins on the fore wing.

Male genitalia as in Figs 10–11: Ectoproct small, rounded, moderately sclerotized. Styli almost as long as parameres. Penis thick, dorsally slightly concave, ventrally and apically rounded, while at the tip in lateral view bifurcated. Its apical part covered by dense hairs.

In female internal genitalia the bursa copulatrix well sclerotized, in lateral view triangular. Duct of receptaculum seminis rather long, distally widened. Receptaculum seminis tubular, continued in an extremely long, strongly coiled ductus seminalis (Sziráki 1998, Fig. 2 as “Conioconzpsa sp.1”).

Remarks — Male genitalia of the new species seems to be similar to C. smithersi Meinander, 1972 and perhaps to C. postmaculata Yang, 1964.

The main distinctive features of Coniocompsa mahunkai are:
– the falcate fore wing;
– the apically rounded, and near to the apex in lateral view bifurcated penis.

Etymology — I dedicate this new species to one of the collectors, Sándor Mahunka.

Cryptoscenea diversicornis sp. n.
(Figs 12–15)


Paratypes: 1 female, same data as holotype; 2 males, Da Lat, Institute of Biology, 5. XII. 1994., beating from pine trees. All deposited in the Hungarian Natural History Museum, Budapest.

Description — Most of the colour of the body ochreous, but the legs, the palpi and the sclerotized parts of the head capsule light brown, shoulder spots darker brown. Large parts of the frons unsclerotized. Antennae 22–23-segmented, 1.0–1.1 mm long. Scape
Figs 9–1. *Coniocompsa mahunkai* sp. n. – 9: left fore wing; 10: male genitalia, lateral view; 11: male genitalia, ventral view. Scale in Fig 9: 0.5 mm, in Figs 10–11: 0.04 mm, p = penis, pa = paramere, st = stylus

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Figs 12–15. Cryptoscenea diversicornis sp. n. – 12: male terminalia, lateral view; 13: male terminalia, ventral view; 14: male internal genitalia, lateral view; 15: male internal genitalia, ventral view. Scale: 0.04 mm, cp = coxopodite, e = ectoproct, p = penis, pa = paramere, st = stylus

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fusiform and about 1.5 times as long as broad distally. Pedicel slightly longer than broad. The first flagellar segment 1.5 times as long as broad, while most of the flagellar segments about as long as broad. Scape, pedicel and the ventral part of the 10th and 12–14th segments from the tip of the flagellum light brown, the last seven flagellar segments rather dark brown, while the other flagellar segments light ochreous.

The rather broad wings light brown without any pattern. Length of fore wing 2.1–2.7 mm, of hind wing 1.9–2.4 mm. Both fore and hind wings slightly more than two times as long as broad. Marginal fringers of fore wing minute, of hind wing rather long. Cross veins of costal area indistinct. Radial crossvein strikes Rs on its branch R_{2+3}. Cu_{1} of hind wing runs for more than half its length so close to M that no membrane is visible between veins.


Remarks — The new species is rather distinct from all the hitherto described Cryptoscenea species, but in some features of the male genitalia (the broad paramere, the presence of an anterior apodeme on the synscleritous ninth tergite and sternite) it resembles C. hoelzeli Szirhki, 1997 and C. ohmi Sziráki, 1997.

Main distinctive features of Cryptoscenea diversicornis sp.n. are:
- the short antennae with light and dark segments;
- broad wings;
- broad sinuous paramere in male genitalia.

It is worth mentioning that this interesting species is the first representative of the genus Cryptoscenea in continental SE Asia.

**Spiloconis sexguttata** Enderlein, 1907

Material — Da Lat, Institute of Biology, 4. XII. 1994., beating from bushes in the forest around the institute, 1 female specimen; Da Lat, Thac Datanla waterfall, about 1200 m a.s.l., 7. XII. 1994., beating from the vegetation in the close environs of the Waterfall, 2 male and 1 female specimens. This species was already known from Japan, China, Taiwan and Thailand. Its occurrence in Vietnam was expected, thus it is new for the fauna.

**Coniopteryx (Coniopteryx) zomborii** sp. n.  
(Figs 16–18)


Paratype: 1 male, Vietnam, Da Lat, Cam Ly area, 8. XII. 1994., beating and sweeping from arboreal vegetation. Deposited in the Hungarian Natural History Museum, Budapest.
Figures 16-18. *Coniopteryx zonolborii* sp. n. – 16: male terminalia, lateral view; 17: male terminalia, ventral view; 18: male terminalia caudal view. Scale: 0.04 mm, ga = gonarcus, hy = hypandrium, ib = inner branch of processus apicalis, ob = outer branch of processus apicalis, p = penis, pa = paramere, st = stylus.

**Description** — Head light brown, frons prominent, eyes black, large, palpi light ochreous. Antennae 27-segmented, 1.1–1.3 mm long. Scape swollen, pale ochreous, slightly longer than broad. Pedicel and flagellar segments brown (the last eight segments lighter than the others). Pedicel more than 1.5 times as long as broad, most of the flagellar segments slightly broader than long. The last eight segments are flattened. Scale
like hairs on the whole surface of pedicel and of some flattened flagellar segments, while those are in a broad apical ring on the other flagellar segments. Ordinary hairs in two whorls on basal antennal segments, but scattered on the apical ones. Setae present.

Thorax, legs and abdomen light ochreous, shoulder spots light brown. Length of fore wing 2.2–2.3 mm, of hind wing 1.8 mm. Wing membrane hyaline.

Male genitalia as in Figs 16–18: Hypandrium in lateral view slightly broader than high. Apodeme along anterior margin ventrally incomplete. Processus terminalis distinct, median apical incision rounded. Processus lateralis rather short. Gonarcus wide, short. Stylus forked, its outer branch has a small thorn. Processus ventralis of paramere small. Processus apicalis bifurcated: outer branch pointed, inner one hooked. The inner branches of the two parameres are connected with a membrane above the penis. The penis sclerite consists of two thin rods.


The main distinctive features of *Coniopteryx (C.) zofofovii* are:
- apical part of the antennae flattened;
- scale-like hairs present on the whole surface of pedicel;
- setae are present on the flagellar segments;
- the apodeme at the anterior margin of hypandrium incomplete;
- caudal end of parameres bifurcate;
- a small thorn is present on the stylus.

Etymology — I dedicate this new species to one of the collectors, Lajos Zombori.

### Coniopteryx (Coniopteryx) bispinalis Liu et Yang, 1993

Material — Da Lat, Thac Prenn waterfall, 1120 m a.s.l., 10. XII. 1994., beating from branches of broad-leaved bushes and trees along a water-course, 1 male specimen. This species was described from South China, and hitherto was known only from the type locality, new to the fauna of Vietnam.

### Coniopteryx (Coniopteryx) insularis Meinander, 1972

Material — Da Lat, Institute of Biology, 4–9. XII. 1994., collecting by HgV-lamp on the balcony of institute, 2 male specimens. Hitherto this coniopterygid was known from Okinawa and Taiwan (Meinander 1990), thus it is new to the fauna of Vietnam.

### Coniopteryx (Coniopteryx) pallescens Meinander, 1972

Material — Da Lat, Institute of Biology, 9. XII. 1994., collecting by HgV-lamp on the balcony of institute, 1 male specimen. Hitherto this coniopterygid species was known only from its type locality, Taiwan (Meinander 1990), new to the fauna of Vietnam.
Coniopteryx spp.

Material — Da Lat, Institute of Biology, 6. XII. 1994., collecting by HgV-lamp on the balcony of institute, 1 female specimen; Da Lat, Cam Ly area, 8. XII. 1994., beating and sweeping from the arboreal vegetation, 1 female specimen; Da Lat, Thac Prenn waterfall, 1120 m a.s.l., beating from branches of Pinus trees and bamboo-thicket, 3 female specimens; Da Lat, Institute of Biology, 13. XII. 1994., beating from deciduous trees in the park of the institute, 1 female specimen.

The identification of females of most of the Asian Coniopteryx species now is impossible at species level.

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REFERENCES


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