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CHALASTONEPSIA ORIENTALIS GEN. N., SP. N., A SECOND GENUS IN THE TRIBE METANEPSIINI (DIPTERA, MYCETOPHILIDAE)

Söli, G. E. E., 1996. *Chalastonepsia orientalis* gen. n., sp. n., a second genus in the tribe Metanepsiini (Diptera, Mycetophilidae). – Tijdschrift voor Entomologie 139: 79-83, figs. 1-8. [ISSN 0040-7496]. Published 15 October 1996.

The genus *Chalastonepsia* is erected for a new species from Malaysia, *C. orientalis*. The genus has numerous characters in common with *Metanepsia* Edwards, and the two are likely sister-groups. The new genus differs most markedly from *Metanepsia* in having a complete radial sector, a well developed Sc, and a relatively short stem of the median fork; further, the male terminalia are very different in the two genera. Awaiting a phylogenetic analysis of the family the tribe Meranepsiini is maintained, and an emended diagnosis is given in order to include *Chalastonepsia*. The sistergroup of the tribe is likely to be found among genera in the tribe Gnoristini.

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Key words. – Mycetophilidae, Metanepsiini, new genus, new species, Malaysia.

The Metanepsiini is usually regarded to represent one of five tribes in the subfamily Sciophilinae in the family Mycetophilidae (e.g. Matile 1971, Hutson et al. 1980, Vockeroth 1981). Some authors, however, prefer to rank these tribes at the level of subfamilies (e. g. Tuomikoski 1966, Hennig 1973, Väisänen 1984, 1986, Matile 1989). Metanepsiini hitherto included a single genus, *Metanepsia* Edwards, 1927, erected for the Javanese species, *M. javana* Edwards, 1927. Later seven more species were described from the Afrotropical region (Matile 1971, 1972, 1975, 1980).

In the collection of the Natural History Museum in London a peculiar looking specimen was found among the pinned, unidentified Oriental material of Mycetophilidae. The specimen, a male, had long-stalked, strongly setose flagellomeres, and reduced mouthparts. The species must be attributed to the tribe Meranepsiini, but could not be ascribed to the genus *Metanepsia*.

METHODS AND TERMINOLOGY

The pinned specimen was cleared and slide mounted in Canada balsam. In addition, slide mounted marerial of three Afrotropical species of *Metanepsia* was studied. The terminology used in the description follows Vockeroth (1981) and McAlpine (1981).

Chalastonepsia gen. n.

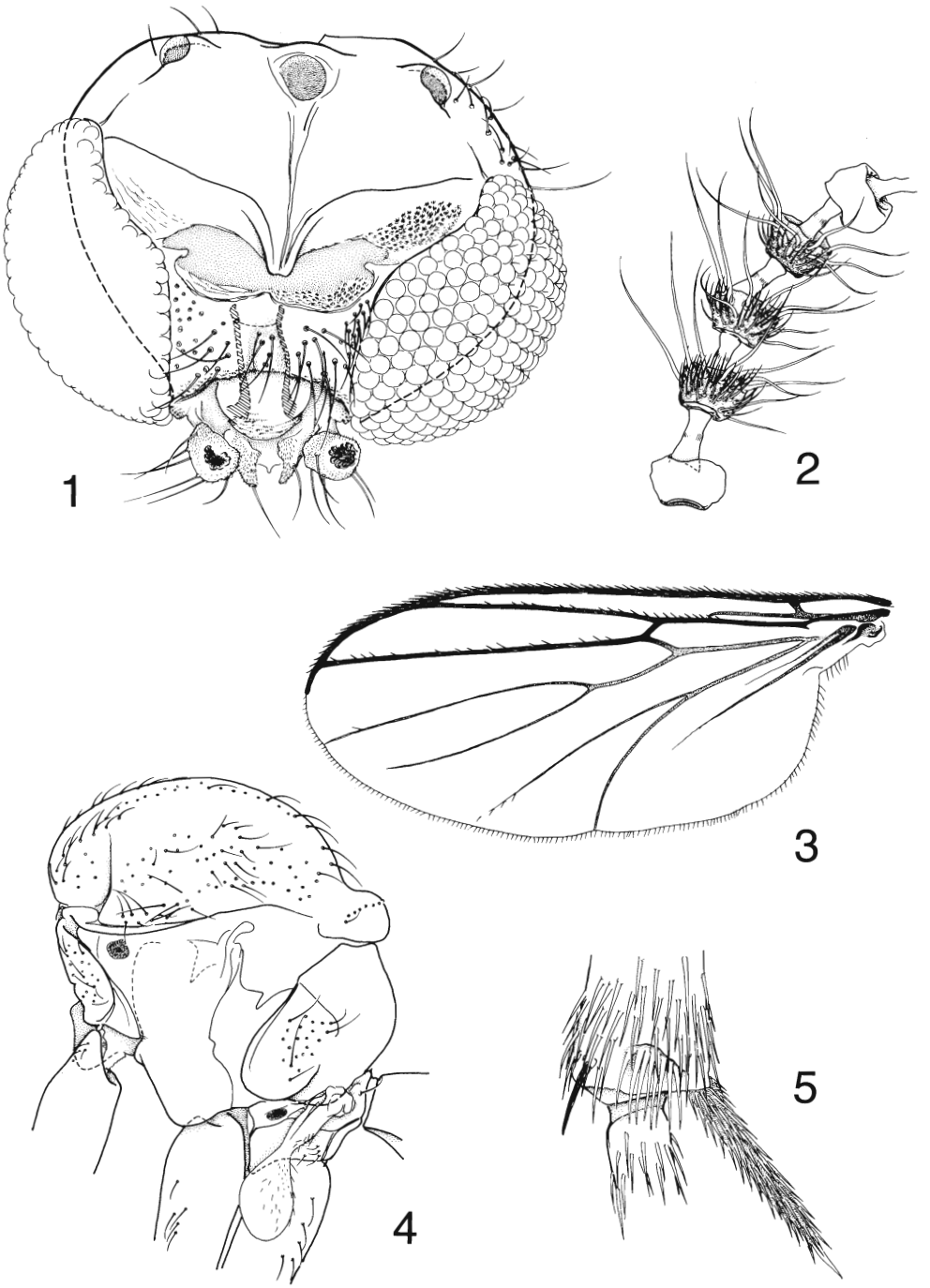
Type species. – *Chalastonepsia orientalis* sp. n., by present designation.

Diagnostic characters. – Reduced mouthparts, one-segmented palpus and bead-like flagellum, each flagellomere bulbous with a long stalk-like apical portion, basal part with numerous long setae.

Etymology. – From Greek, *chalaston*, a chain, referring to the outlining of the male flagellum, and *Metanepsia*, a related genus.

Description

Head. – Antennae inserted below middle of head. Scape and pedicel with numerous small, erect setae. Fourteen flagellomeres, 1-13 with bulbous basal part with circle of very long curved setae and distinctly prolonged, stalk-like apical part; last flagellomere conical. Three ocelli, of equal size, situated along straight transverse line. Lateral ocelli well separated from eye margin. Eyes large, median margin evenly rounded with very shallow incision above antennal socket. Eyes with few small hair-like setae. Back of head with numerous, evenly dispersed setae. Postgenae well developed, with median convexity below occipital foramen. Frons with broad suture between median ocellus and frontal rubercle. Frontal tubercle distinct, bilobate. Face subquadrate, shorter than wide, setose. Clypeus rounded, bare. Cibarial pump well developed. Ptementum strongly reduced. Labrum not traceable. Labella small. Stipes weak, apparently fused, bare. Lacinia absent. Palpi strongly reduced, only one visible segment, palpomere 3, with some erect setae, and distinct sensory pit, forming a hollow depression dorsally.



Figs. 1-5. *Chalastonepsia orientalis* gen. n., sp. n.. – 1, head, frontal view; 2, flagellomeres 7-11; 3, wing; 4, thorax (outline of anepisternum uncertain, see text); 5, anteroapical depressed area of fore tibia.

Thorax. – Scutum with rather short acrostichal and dorsocentral setae, and somewhat longer lateral setae; areas in-between bare. Prescutal suture distinct. Scutellum with transverse row of small setae. Antepronotum about twice as large as proepisternum, both setose. Proepimeron large, triangular and bare. Basisternum with some small setae. Anepisternum bare. Katepisternum partly coveting basal portion of mid-coxa, bare. Basalare with large, triangular, interior apodeme. Pleural suture complete, curved. Anepimeron well sclerotized with distinct cleft dorsally. Laterotergite ovate, not protruding, setose. Mediotergite bare. Metakatepisternum with some setae.

Wings. – Wing surface on both sides densely clothed with irregularly arranged microtrichia. Costa well produced beyond tip of R_{4+5}. Sc long, bare, apical portion weaker and bent towards R_1. Crossvein Sc-r absent. R_1 and R_{4+5} with dorsal setae only. Rs distinct, oblique. Median and cubital fork both complete, M_2 falling short of wing margin. Point of furcation of CuA slightly before crossvein r-m; CuP short and fold-like. Anal vein well developed.

Legs. – Tibial trichia all irregularly arranged. Some larger apical setae on tibia 1 to 3, and several much smaller setae dispersed along entire length. First tarsomere on mid and hind leg with some distinct setae on ventral half. Fore tibia with anteroapical depressed area very shallow, with some erect trichia. Spurs well developed, shaggy; spur formula 1: 2: 2. Empodium well developed. Tarsal claws with two larger and one smaller ventral tooth.

Abdomen. – Segments 1-8 with well developed sternites and tergites, all setose. Male segment 7 and 8 both reduced, basally narrowed, segment 8 about twice as long as segment 7.

Male terminalia (figs. 6-8). – Tergite 9 very large, entirely covering gonocoxites dorsally, with numerous dorsal and ventral setae. Cerci large, rounded; hypoproct well developed. Gonocoxites small, entirely fused ventrally, each with one long gonocoxal apodeme. Gonostylus small. Aedeagus wide and short. Paramere apparently vestigial.

Remarks. – Due to damage caused by pinning, the exact outline of the anepisternum, anapleural suture and basalares remains uncertain.

Systematics

From the number of shared characters with *Metanepsia*, the two genera are likely sistergroups. Among characters supporting such an arrangement are the reduced mouthparts, the one-segmented palpi and the poorly developed anteroapical depressed area of the fore tibia. In addition the two genera both have a bilobate and distinct frontal tubercle, a nearly bare frons, a costa produced beyond tip of R_{4+5}, and the tibial setae poorly developed. *Chalastonepsia* differs from *Metanepsia* in having a complete radial sector, a well developed Sc, a relatively short stem of the median fork, point of furcation of CuA close to wing base, gonocoxites fused for most of their length, and male tergite 9 very large and covering proctiger.

Chalastonepsia orientalis sp. n.

(figs. 1-8)

Type. – Holotype ♂: Malaysia, Malay peninsula, Pahang, Fraser's Hill, 4000 ft., 29.v.1932, H. M. Pendlebury (BMNH)

Description

Male (n=1). Total length 2.60 mm. Flagellum 1.22 mm, or 1.4 times as long as scutum and scutellum together.

Coloration. – Unicoloured, yellowish brown, wings somewhat lighter.

Head (figs. 1, 2). – Each flagellomere with curved setae longer than entire flagellomere; all trichia and setae situated in small, rounded depressions. Lateral ocelli separated from eye margin for distance about 2.1 times, and from median ocellus by about 2.4 times their diameter. Weak, interrupted suture present between lateral ocellus and eye. Frons with 1 seta in front of median ocellus. Face 0.4 times as long as broad, with 53 setae. Clypeus ovate, about 0.9 times as long as broad.

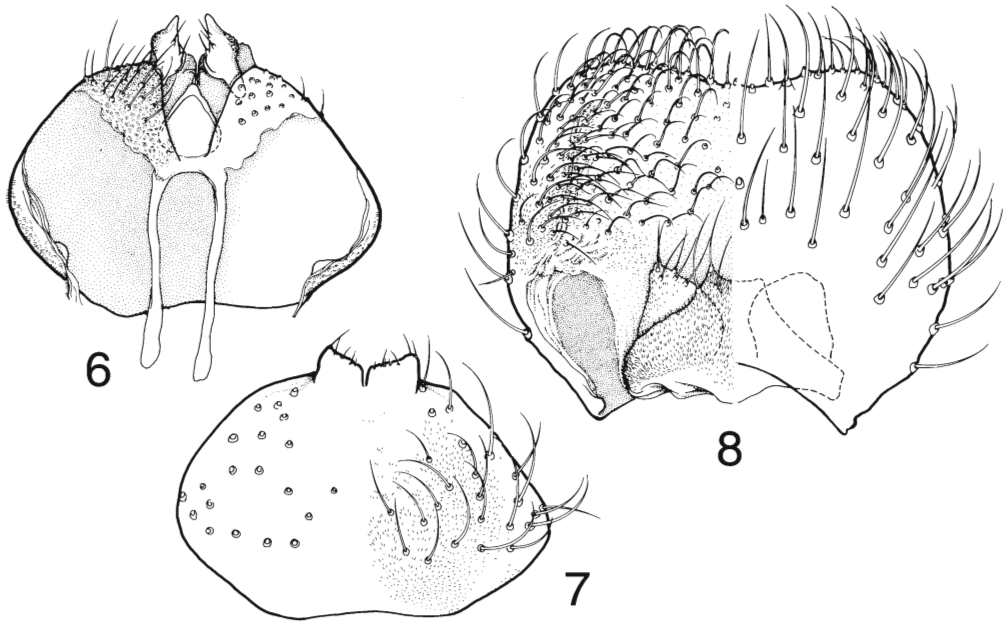
Thorax (fig. 4). – Medially divided basisternum with 5 setae. Scutellum with 14 small setae. Laterotergite with 23 setae. Metakatepisternum with 4-5 setae.

Wings (fig. 3). – Wing length 2.11 mm, measuted from distal median plate. Length to width 2.1. Sc 0.24 times wing length. M-petiole 2.7 times as long as r-m. Length of M_1 and M_2 to the length of M-petiole 2.94 and 2.06, respectively. M-basis about as long as CuA-petiole. Length of CuA_1 and CuA_2 to the length of CuA-petiole 1.67 and 1.11, respectively. Anal vein well developed, 1.30 times as long as CuA-petiole. All branches posteriorly of radius bare, except for 0-3 dorsal setae near the wing margin on each of M_1 and CuA_2.

Legs (fig. 5). – Setae on tibiae with weakly developed alveoli. Anteroapical depressed area with 8 erect trichia. Ratio femur to tibia for legs 1 to 3: 0.98; 1.04; 0.88. Ratio tibia to tarsus for legs 1 to 3: 1.71; 1.68; 2.10. Spur lengths in relation to tibial diameter, measured apically: 1.9; 2.1, 2.9; 2.2, 2.7.

Abdomen. – Abdominal sternites 2 and 3 seemingly with two longitudinal fold lines.

Terminalia (figs. 6-8). – Gonocoxites small, entirely fused ventrally, produced in two heavily sclerotized median lobes. Dorsal portion of gonocoxite poorly



Figs. 6-8. Male terminalia of *Chalastonepsia orientalis* gen. n., sp. n. – 6, dorsal view, tergite 9 and proctiger removed; 7, ventral view; 8, tergite 9 and proctiger (left, ventral view; right, dorsal view).

developed, setose. Two very long gonocoxal apodemes, fused by transverse bridge where gonocoxites meet dorsally. Gonostylus small, attached posteriorly, bearing 2-3 small median setae. Aedeagus broad, subtriangular. Tergite 9 very large with several erect setae dorsally, and numerous curved setae ventrally. Proctiger situated ventrobasally of tergite 9 and attached to this by strong membranes. Cercus rounded, with several erect setae apically. Hypoproct more or less triangular with 2 submedian, erect setae.

DISCUSSION

The systematical position of the tribe Metanepsiini in the family Mycetophilidae is uncertain. According to Matile (1971) *Metanepsia* can not be ascribed the tribe Mycomyini as it does not have the tibial trichia arranged in definite lines; neither can it be ascribed the tribe Sciophilini due to the absence of macrotrichia (or setae) on the wing membrane. These characters are commonly regarded as good synapomorphies for the species in each of the two tribes. Furthermore, Matile (1971) rejects the inclusion of *Metanepsia* in the Leiini as it lacks an empodium, and has a reduced seventh abdominal segment, a long R_1 and a very short, and incomplete Rs. Due to the very long stem of the median fork and the reduced Rs, Matile also rejects a possible inclusion in the Gnoristini.

As the new genus invalidates some of the last statements, the possible relationship to the Gnoristini and Leiini demands a closer examination.

Metanepsia and *Chalastonepsia* both feature several other characters found among the Gnoristini, all present in *Palaeodocosia* Meunier, 1904 and *Syntemna* Winnertz, 1863, most of them also in *Dziedzickia* Johannsen, 1909: anepimeron with a distinct cleft, presence of one or more erect setae behind basis of halter, Sc ending in R, frontal tubercle protruding and bilobate, scutum with bare stripes, and metakatepisternum setose. Another character typical for the Gnoristini is the reduction of abdominal segments 7 and 8.

Except for the anepimeral cleft, these characters are also present in some genera outside the Gnoristini, and thus do not form a basis for any conclusive remarks. When present in the Leiini, this often applies to either of the two closely related genera *Ectrepesthoneura* Enderlein 1911 and *Tetragoneura* Winnertz, 1846. These two genera take a rather isolated position within the tribe, and were both tentatively included in the Gnoristini by Väisänen (1986) in his delimitation of the tribe. An additional character indicating a possible relationship between *Chalastonepsia, Ectrepesthoneura* and *Tetragoneura* is the absence of ventral setae on the radial veins.

The discrimination between the Gnoristini and

Leiini is still far from satisfactory, and the monophyly of each of the two tribes are highly questionable. Most likely, the sistergroup of the Metanepsiini will be found among genera included in the Gnoristini, above all indicated by the presence of a distinct and deep anepimeral cleft.

In having several characters in common with the Gnoristini it seems justified to ask whether Metanepsiini should be maintained as a separate tribe, or its two genera should be include in the Gnoristini. In several respects the current classification of the Mycetophilidae is unsatisfactory, and principally based on Holarctic representatives. However, awaiting a more thorough assessment of its phylogeny, including representatives from other biogeographical regions, the tribe Metanepsiini is maintained. In doing so, a revised diagnosis based on Matile (1971) is presented.

Revised diagnosis of the Metanepsiini

Three ocelli. Frons bare or with a few small setae; frontal tubercle weakly or distinctly bilobate. Mouthparts reduced; palpus with one visible segment. Tibia with trichia irregularly arranged, without strong setae except for a few apicals. Anteroapical depressed area of fore tibia absent or weakly developed. Wing membrane without macrotrichia or setae. Sc long, faint towards apex. Rs well developed, about as long as crossvein r-m, or very short and incomplete; R_1 long. Crossvein r-m relatively short, oblique. Petiole of median fork 0.3 to 1.0 rimes as long as M_1; M_2 reaching wing margin or falling short of this. Point of furcation of cubital fork slightly before crossvein r-m or close to wing margin.

ACKNOWLEDGEMENTS

My best thanks to Brian Pitkin, Natural History Museum, London, for his assistance during my stay in April 1995, and to Loïc Matile, Muséum national d'Histoire naturelle, Paris; Trond Andersen, Museum of Zoology, Bergen; and to Paul Beuk, Zoölogisch Museum, Amsterdam, for commenting upon the manuscript.

This study was funded by the Research Council of Norway (NFR), grant no. 107171/720.

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Received: 24 July 1995
Accepted: 12 March 1996