

**Description of *Chaetogonopteron chaeturum* sp. n.,
a very common Dolichopodid fly from South Thailand
(Insecta Diptera Dolichopodidae)***

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Abstract

Chaetogonopteron chaeturum sp. n., belonging to an ancestral group in the genus, is described and illustrated. It is an eurytopic species, mainly found in humid, shaded areas. It is common and widespread in South Thailand (found in 88% of the sampled localities at the end of the rainy season), and it is also supposed to occur in the rest of Thailand, as evidenced by observations in Central and Northeast Thailand.

Keywords : Diptera, Dolichopodidae, *Chaetogonopteron*, new species.

Introduction

Dolichopodid flies are very common, small predacious flies which are usually abundant in humid biotopes. They are found in swamps, in various types of rain forests and along riverbanks. They are a diverse group and therefore are suitable bio-indicators for the grade of perturbation of a site, and thus useful for the assessment of biotope quality.

We estimate that several hundred dolichopodid species occur in Thailand, but few have been named so far. Even many of the most common species are undescribed. In this paper we describe a new abundant species and give an overview of the biotopes where it is found. It is a primitive member of the large genus *Chaetogonopteron*, formerly part of the genus *Sympycnus* (see MEUFFELS & GROOTAERT, 1997), which is very diverse in tropical regions. Several species of the Oriental *Chaetogonopteron* have been described by BECKER (1922), DE MEIJERE (1916) and HOLLIS (1964). In addition,

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Ch. campsicnemoides, described from Papua New Guinea by MEUFFELS & GROOTAERT (1987), is also reported in Thailand. However, many more species remain to be described.

The present report is the eighth in a series of papers dealing with the diptero-fauna of Thailand (GROOTAERT & MEUFFELS, 1997a, 1997b, 1998a, 1998b, 1998c, 1999; MEUFFELS & GROOTAERT, 1998). More papers on new taxa are in preparation.

Material and methods

Materials were collected by the first author mostly by net sweeping in a wide variety of biotopes (swamps, swamp forests, rain forests, rubber plantations, rice fields, etc.) mainly situated in the south of Thailand. Only few sites in Central and Northeast Thailand have been visited so far. Provisionally, the materials are preserved in alcohol in the collections of the "Koninklijk Belgisch Instituut voor Natuurwetenschappen" in Brussels, but voucher specimens are deposited in the collections of the zoology department of Srinakharinwirot University, Bangkok.

Systematic part

Chaetogonopteron chaetorum sp. n.

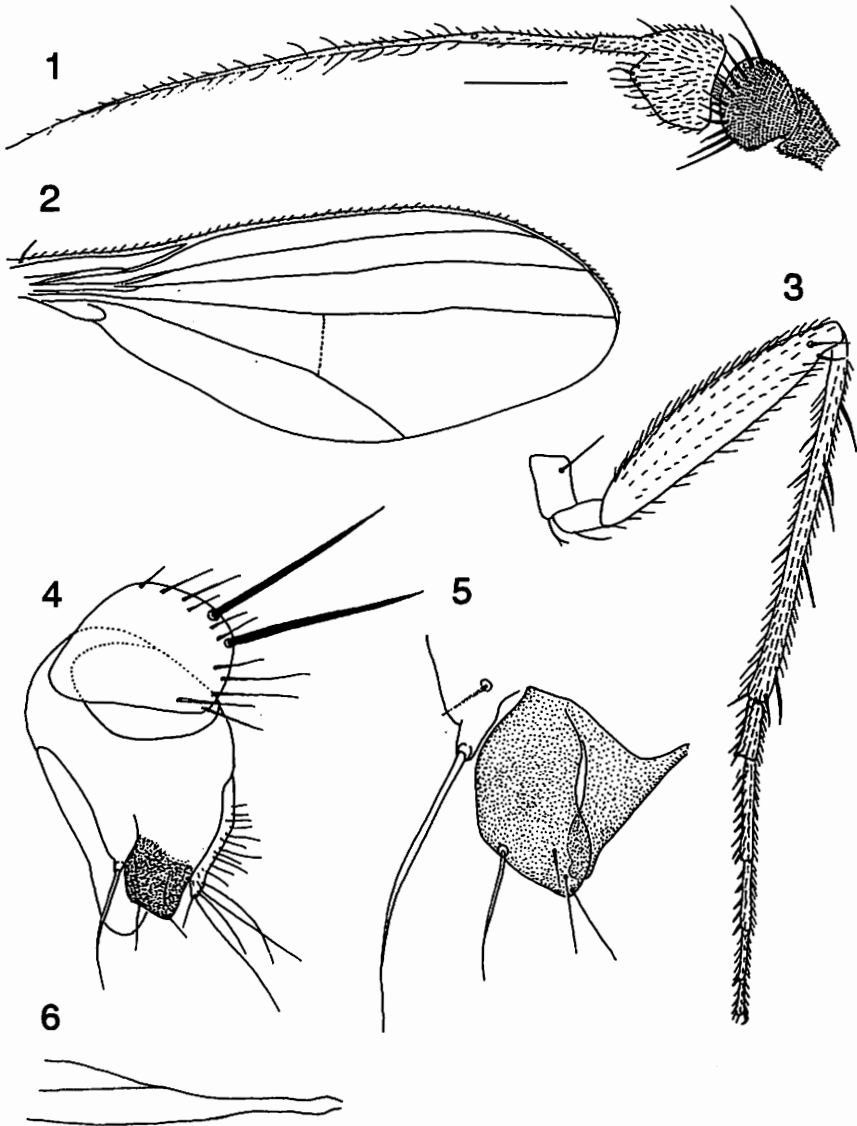
A moderately large species, largely yellow coloured. Second tarsal segment of hind leg not shortened; no clidium. Acr biseriate. 8th abdominal sternum of male with 2 macrochetae. Eyes of male touching each other at middle of face, eyes of female nearly touching.

Male

Body length 2.5-2.8 mm (average 2.6 mm); wing length 2.3-2.8 mm (average 2.6 mm).

Head. Frons and face with shining dark metallic green ground colour. Eyes touching each other at middle of face. Palpi yellow, with sparse short black hairs, each with two thin black bristles. Rostrum yellow. Occiput greenish black, rather dull. 2 long, diverging ocellars; 2 slightly shorter, converging verticals; 2 minute postocellars; 2 rather short postverticals, not longer than the uppermost postoculars, and not in line with them. Postoculars uniseriate, black. Antennae (Fig. 1) short; first and second segments dark brown; third segment yellow. Second segment with short black marginals, longest above. Third segment triangular with rounded basal angles, and a rather blunt apex, about as long as deep. Arista dorsal, shortly pubescent, about four times as long as antenna; basal arista segment very short.

Thorax and scutellum yellow. Mesoscutum with a large, dark, metallic green shining area, extending from first pair of dc to hind margin of mesoscutum, widening on middle of thorax and surpassing there the lines of dc. A



Figs 1-6. *Chaetogonopteron chaetorum* sp. n. paratype ♂ (sample no. 96035). 1 : Antenna; 2 : Wing; 3 : Hind leg anteriorly; 4 : Genital capsule with sternum eighth; 5 : Epandrial lobe and surstyli; 6 : Tip of aedeagus. Scale 0.1 mm.

small black spot on pteropleura, and two small brown spots behind wing root. Acr short, biseriata; 5 dc. Scutellum with two marginals, without lateral hairs. 1 thin black propleural bristle, with a tiny hairlet above it.

Legs, including coxae, yellow. Mid coxae with a very small black dot on its hinder upper corner, and a vague brownish longitudinal streak exteriorly.

Fore leg. Coxa anteriorly with sparse brown hairs; near base a few erect bristly hairs; near apex a row of about 5 black bristles of unequal length. Femur with tiny preapical av and pv. Tibia as long as femur; a short, inconspicuous anterodorsal serration; 1 preapical pv; at anteroventral apical rim a dense fringe of yellow hairlets, from which a thin anterior apical bristle arises. First tarsal segment with a short anteroventral serration. Length of tibia and tarsal segments (in mm) : 0.8 : 0.5 : 0.25 : 0.2 : 0.13 : 0.1.

Mid leg. Coxa anteriorly with sparse black hairs; 1 black exterior bristle. Trochanter with a small black dorsal bristle and some short hairs. Femur with an anterior preapical, and preapical av and pv, both shorter than the anterior preapical. Tibia about as long as femur; 3 ad, 2 pd, 2 av, 1 pv; 4 apicals. First tarsal segment with some ventral spinules. Length of tibia and tarsal segments (in mm) : 1.25 : 0.65 : 0.35 : 0.3 : 0.18 : 0.1.

Hind leg. Coxa with a black exterior bristle. Trochanter with some short bristles. Femur with an anterior preapical, and preapical av and pv, both shorter than the anterior preapical. Tibia longer than femur; 1 ad, 3 dorsal bristles, 1 rather strong preapical dorsal bristle; about 3 short and weak ventral bristles; 3 apicals. First tarsal segment shortened, broadened towards tip, bearing 2 short apicals; second tarsal segment ventrally with a row of about 6 short spinules. Length of tibia and tarsal segments (in mm) : 1.35 : 0.2 : 0.35 : 0.3 : 0.2 : 0.13.

Wing (Fig. 2) rather brownish tinged. r4+5 and m1+2 apically nearly parallel. Wing boss near tp. Length ratio of basal and apical parts of m1+2 about 2 : 3. Tp feebly convex, shorter than apical part of m3+4 (5 : 7). Anal vein only indicated by a fold. Halteres yellow. Squamae yellow, with dark cilia.

Abdomen yellow; venter paler coloured; terga 2, 3, 4, and 5 each with a small, triangular brown median spot at anterior border. Hairs on terga black. Marginal bristles on terga rather weak, not very long, black. Sterna with short black hairs. Hypopygium (Figs 4-6) small, yellow, with black surstyli (Fig. 5); on 7th tergum 2 black macrochetæ (Fig. 4).

Female

Body length 2.4-2.9 mm (average 2.68 mm); wing length 2.4-2.95 mm (average 2.65 mm).

Resembles the male in every aspect. Eyes nearly touching on face. On abdomen usually large brown saddle spots on terga 2, 3, 4, and 5. Oviscapt yellow; each hemitergite with a row of 4 close-set acanthæ.

Variability

The size of the specimens varies between 2.4 and 2.9 mm with an average around 2.6 mm. The macrochetæ on the eighth sternum of the male are some-

times absent. It is not clear if this was originally so or if they are broken off. The description of male and female is based on specimens of sample no. 96075 (Phang-Nga, Sa Nangmanora).

Phenology

As can be seen in the chapter dealing with the materials, *Ch. chaetorum* sp. n. is most abundant at the end of the rainy season in South Thailand. In the rain forests it is still present during the dry season but it becomes less abundant at the end of the dry season.

Distribution and biotopes

Chaetogonopteron chaetorum sp. n. is present in a wide variety of biotopes such as primary and secondary rain forests, acidic swamp forest but also in quite perturbed areas such as river borders in mature rubber plantations. It prefers humid biotopes that are a little shaded. It can be considered as an eurytope species.

During the present study we mainly sampled the south of Thailand and only few sites in Central and Northeast Thailand have been visited so far. Nevertheless, it was found in all these regions; hence, we suppose that the species is present all over Thailand.

Material examined : Holotype σ : Phang-Nga province : Phang-Nga, Sa Nangmanora, 12.IV.1996 (sample no. 96075).

Paratypes : Ranong province : Bok Kai Waterfalls, 4.IV.1996, 4 $\sigma\sigma$, 3 ♀♀ , rocks of waterfall (no. 96023); 4 $\sigma\sigma$, 1 ♀ , puddles and bamboo (no. 96022); 2 $\sigma\sigma$, 6 ♀♀ , fallen leaves (no. 96024). Ban Bang Khang, 2 $\sigma\sigma$, 1 ♀ , river banks (no. 98034). Phang-Nga Province : Khao Sok, Mae Yai, 6.IV.1996, 1 σ , 3 ♀♀ , fallen leaves and waterfall (no. 96032); Khao Sok Park, 6.IV.1996, 8 $\sigma\sigma$, 5 ♀♀ , river borders, sand banks (no. 96035); Khanim waterfalls, 7.IV.1996, 13 $\sigma\sigma$, 6 ♀♀ , river borders (no. 96041); Phang-Nga, Sa Nangmanora Park (Manghora), 12.IV.1996, 7 $\sigma\sigma$, 2 ♀♀ , pools in primary rain forest (no. 96074); 13.IV.1996, 10 $\sigma\sigma$, 16 ♀♀ , pools in primary rain forest (no. 96075); 23.X.1997, 2 $\sigma\sigma$, 3 ♀♀ , primary rain forest, banks of waterfalls (no. 97103); 2 $\sigma\sigma$ secondary rain forest, banks of waterfalls (no. 97104); 5.V.1998, 1 σ , banks of water fall in primary rain forest (no. 98001) ; 1 σ , 10 ♀♀ (no. 98002); 6 $\sigma\sigma$, 5 ♀♀ (no. 98003); 2 ♀♀ (no. 98004). Thap Put, 13.IV.1996, 17 $\sigma\sigma$, 23 ♀♀ , river in primary rain forest (no. 96076); 23.X.1997, 29 $\sigma\sigma$, 12 ♀♀ , along river in primary rain forest, (no. 97106); 23.X.1997, 3 $\sigma\sigma$, 1 ♀ , primary rain forest (no. 97107); 5.V.1998, 1 ♀ (no. 98009). Sri Phang-Nga N.P., 8.V.1998, 1 ♀ , primary rain forest (no. 98032), 1 σ , 1 ♀ (no. 98033). Kapong, 6.V.1998, 1 σ , swamp forest (no. 98020). Krabi Province : Su-Saan Hawy, 24.X.1997, 3 $\sigma\sigma$, cave near mangrove (no. 97112); Huai waterfall, 24.X.1997, 4 $\sigma\sigma$, 1 ♀ riverbanks, open areas (no. 97113); Krabi, 25.X.1997, 13 $\sigma\sigma$, 7 ♀♀ (no. 97114); Hin Pheng waterfall, 25.X.1997, 3 $\sigma\sigma$, 2 ♀♀ , primary rain forest (no. 97116); 3 $\sigma\sigma$, 1 ♀ , secondary rain forest (no. 97117). Trang Province : Pak Meng, 25.X.1997, 1 σ , acidic swamp forest (no. 97120); Trang, 26.X.1997, 16 $\sigma\sigma$, 13 ♀♀ , riverbanks in secondary rain forest (no. 97121); Klong Lamchan, 27.X.1997, 2 $\sigma\sigma$, 5 ♀♀ , pools and muddy banks of ponds (no. 97126); 6 km down Klong Lamchan, 27.X.1997, 10 $\sigma\sigma$, 10 ♀♀ , riverbanks, gallery forest (no. 97128); Sai Rung waterfalls, 27.X.1997, 5 $\sigma\sigma$, 13 ♀♀ , secondary rain forest (no. 97129); Palian, 1.XI.1997, 6 $\sigma\sigma$, 2 ♀♀ , riverbanks (no. 97153). Palian, 1.XI.1997, 64 $\sigma\sigma$, 52 ♀♀ , secondary rain forest (no. 97154). Satun Pro-

times absent. It is not clear if this was originally so or if they are broken off. The description of male and female is based on specimens of sample no. 96075 (Phang-Nga, Sa Nangmanora).

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vince : Chalung, 29.X.1997, 1♀, riverbanks (no. 97139); Ban Du Son, 29.X.1997, 4♂♂, 1♀, bamboo forest (no. 97141). Road Palian to La-Ngu, 20 km before La-Ngu, 1.XI.1997, 5♂♂, 2♀♀, secondary rain forest (no. 97155). *Songkhla Province* : Ban Khlong Kua, 29.X.1997, 27♂♂, 12♀♀, secondary rain forest (no. 97142); Ton Nga Chang falls, 29.X.1997, 6♂♂, 1♀, river in primary rain forest (no. 97145); Ban Huai Mo, 30.X.1997, 1♂, swamp forest (no. 97150). *Nakhon Nayok Province* : Muang Don Lakon, 13.XI.1997, 1♀, bamboo forest, wet area (no. 97171); Ka-Ang waterfalls, 14.XI.1997, 2♂♂, 1♀, near torrent, dry area (no. 97173); 6♂♂, 6♀♀, torrent (no. 97177). *Prachin Buri Province* : near Khao Yai, 15.XI.1997, 1♂, 1♀, shaded area on muddy pond banks (no. 97179). *Loei Province* : Na Haeo Biological Station, 23.V.1998, 1♂, 3♀♀, river banks beneath water fall (no. 98068, alt. 560 m); 3♂♂, 2♀♀ (no. 98069); 24.V.1998, 2♀♀ (no. 98071).

Discussion

Since only the first tarsal segment of the hind leg is shortened and there is no clidium, *Ch. chaeturum* sp. n. belongs to a rather restricted group within the genus *Chaetogonopteron*. Further, it is a small, almost completely yellow species and that is why it should only be compared with *Ch. vagus* (BECKER, 1922), *Ch. rutilus* (BECKER, 1922) and *Ch. rutiloides* (HOLLIS, 1964). *Ch. chaeturum* has a yellow hypopygium with black surstyli whereas *Ch. vagus* has a brownish black hypopygium and *Ch. rutilus* and *Ch. rutiloides* have only yellow appendages on the hypandrium. In fact, we suppose that it is closest to *Ch. rutiloides*. However, the latter has a small basal green spot on the scutellum, while the scutellum is completely yellow in *Ch. chaeturum*; it has ventral hairs on the second and third tarsal segment of the fore leg (no such hairs in *Ch. chaeturum*), the postocular row does not extend below to the hind border of the mouth (it does in *Ch. chaeturum*) and the first tarsal segment of the hind tarsus is one third of the length of the following segment (slightly more than half the length in *Ch. chaeturum*). Of course, the most obvious character is the pair of black macrochetæ on the eighth sternum in the male. We are however not sure if this character lacks in *Ch. rutiloides*, since it could have been broken off in the types.

All species of the genus *Chaetogonopteron* have the basal tarsal segment of the hind leg shortened and most have the second tarsal segment shortened as well. In this case, the latter segment generally bears a curious appendage, called the "clidium". *Ch. chaeturum* sp.n. has only the first tarsal segment of the hind leg shortened and does not possess a clidium. Therefore, it is considered to belong to a more ancestral group of species within the genus *Chaetogonopteron*. In addition, the acrostichals are biseriata. Remarkable is the possession of a pair of macrochetæ on the eighth sternum of the male genital capsule, a feature otherwise only found in the subfamily Diaphorinae.

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