

A new species of *Hercostomoides* Meuffels et Grootaert, 1997 from Indonesia with notes and new combinations for some Oriental Sympycninae (Diptera: Dolichopodidae)

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Abstract

The formerly Oriental genus *Hercostomoides* Meuffels et Grootaert, 1997 is recorded from the Australasian Region for the first time. A new species *Hercostomoides bhartii* sp. n. from Papua Province of Indonesia is described. *Hercostomoides indonesianus* (Hollis, 1964) and *Telmaturgus acutatus* (Yang et Grootaert, 1999) are recorded from India for the first time. The following re-combinations (comb. nov.) are proposed: *Chaetogonopteron acuticorne* (Frey, 1928) (*Pycsymnus*), *C. albifimbriatum* (Parent, 1932) (*Sympycnus*), *C. apicale* (De Meijere, 1916) (*Sympycnus*), *C. appendicium* (Parent, 1932) (*Sympycnus*), *C. argentipes* (De Meijere, 1916) (*Sympycnus*), *C. argyropus* (Parent, 1932) (*Sympycnus*), *C. arunense* (Hollis, 1964) (*Sympycnus*), *C. bisulcum* (Becker, 1922) (*Sympycnus*), *C. coei* (Hollis, 1964) (*Sympycnus*), *C. collectum* (Walker, 1857) (*Dolichopus*) [= *C. triplex* (Becker, 1922) (*Sympycnus*)], *C. gloriosum* (Frey, 1925) (*Pycsymnus*), *C. gummigutti* (Becker, 1922) (*Sympycnus*), *C. luteoviride* (Parent, 1932) (*Pycsymnus*), *C. maculatum* (Parent, 1932) (*Pycsymnus*), *C. magnificum* (Parent, 1935) (*Sympycnus*), *C. majus* (De Meijere, 1916) (*Sympycnus*), *C. metallescens* (De Meijere, 1916) (*Sympycnus*), *C. minutulum* (Parent, 1932) (*Sympycnus*), *C. nodicorne* (Becker, 1922) (*Sympycnus*), *C. strenuum* (Becker, 1922) (*Sympycnus*), *C. tenerum* (Becker, 1922) (*Sympycnus*), *C. thienemanni* (Stackelberg, 1931) (*Pycsymnus*), *C. vermiculatum* (Parent, 1932) (*Pycsymnus*), *Telmaturgus acutatus* (Yang et Grootaert, 1999) (*Chaetogonopteron*), *T. chebalingensis* (Wang, Yang et Grootaert, 2005) (*Chaetogonopteron*), *T. concavus* (Yang et Grootaert, 1999) (*Chaetogonopteron*), *T. dorsiniger* (Yang et Grootaert, 1999) (*Chaetogonopteron*), *T. revanasiddaiahi* (Olejníček, 2002) (*Chaetogonopteron*), *T. shettyi* (Olejníček, 2002) (*Chaetogonopteron*), *T. simplicipes* (Becker, 1908) (*Sympycnus*) [= *T. tenuemarginatus* (Strobl, 1909) (*Teuchophorus*)], = *T. turbidus* (Becker, 1922) (*Sympycnus*), = *T. basalis* (Curran, 1926) (*Syntormoneura*), = *T. placidus* (Curran, 1926) (*Sympycnus*), = *T. luteicinctus* (Parent, 1926) (*Sympycnus*), = *T. apiciniger* Yang et Grootaert, 1999 (*Chaetogonopteron*), *T. singularis* (Yang et Grootaert, 1999) (*Chaetogonopteron*).

Keywords: *Hercostomoides*, *Chaetogonopteron*, *Sympycnus*, *Telmaturgus*, new species, new combination, new record, Indonesia, India.

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Introduction

The genus *Hercostomoides* Meuffels et Grootaert, 1997 is a monotypic genus of the subfamily Sympycninae. It accommodates a single species, *H. indonesianus* (Hollis, 1964) known previously from eastern Oriental Region. The genus was placed in the subfamily Sympycninae, sharing most of the hypopygial structures with *Chaetogonopteron* De Meijere, 1914, *Sympycnus* Loew, 1857, *Syntormon* Loew, 1857, and *Teuchophorus* Loew, 1857 (Meuffels and Grootaert, 1997a; Grichanov, 2011a, b). Treating the collection of the Zoological Museum of Moscow State University, Moscow, Russia, I have found an

additional undescribed species of *Hercostomoides* collected in the Papua Province of Indonesia. Consequently, the genus is recorded here for the first time from the Australasian Region. This paper presents also new records of *H. indonesianus* and *Telmaturgus acutatus* (Yang et Grootaert, 1999) from the Orissa and West Bengal, states of India; new records for *Telmaturgus simplicipes* (Becker, 1908) and new combinations for some Oriental sympycnine species.

Material and Methods

A new *Hercostomoides* species discovered is described here and illustrated with a Zeiss Discovery V-12 stereomicroscope and an AxioCam MRc5 camera. Morphological terminologies mainly follow Cumming and Wood (2009). Body length is measured from the base of the antenna to the posterior tip of epandrium. Wing length is measured from the base to the wing apex. The types of new species and other materials examined are housed at the Zoological Museum of Moscow State University, Moscow, Russia (ZMUM) and at the Zoological Institute of the Russian Academy of Sciences, St. Petersburg (ZIN). Information on collecting circumstances and permits is not available from the ZMUM collection. General distribution of species is given after Grichanov (2014).

TAXONOMY

Genus *Hercostomoides* Meuffels et Grootaert, 1997

Remarks: See Meuffels et Grootaert (1997a) for diagnosis of the genus *Hercostomoides*. The genus was created for *Telmaturgus indonesianus* Hollis, 1964, and compared with the genus *Telmaturgus* because of the bulging roof-like female clypeus on head in both genera. The authors (Meuffels et Grootaert, 1997a) also noted dorsally setose antennal scape in that species, the main character of the genera of the subfamily Dolichopodinae including *Hercostomus* Loew, 1857. Nevertheless, the setose scape is present in species of the sympycninae genera *Anepsiomyia* Bezzi, 1902, *Ceratopos* Vaillant, 1952, in some species of *Syntormon* Loew, 1857 and genera of some other subfamilies. The broad bulging face is a female secondary sexual character (FSSC) found in *Syntormon* and *Ceratopos*, in some species of *Teuchophorus*. Almost all characters included in the original description of *Hercostomoides* are characteristic of the *Syntormon* generic concept (keeping in mind the variability of body colour, antenna morphology and male leg ornamentation in *Syntormon* species). In addition, I noticed the presence of fine hairs on metaepimeron of *Hercostomoides* species, the main character distinguishing *Syntormon* from the closely related genus *Parasyntormon* Wheeler, 1899 (Speight et al., 1995).

However, I prefer to save the generic position of *Hercostomoides* with the following diagnostic characters: distal sections of veins M_{1+2} and R_{2+3} are distinctly divergent (achalcine-like) in both sexes; antennal pedicel (seen on inside face) is slightly projecting into the postpedicel; postpedicel is rounded at apex in both sexes; propleuron bears strong black bristle and few short pale hairs above fore coxa; hind femur has no anterior preapical bristle. *Syntormon* representatives never have divergent veins M_{1+2} and R_{2+3} , their pedicel is usually strongly projecting into the postpedicel; postpedicel has acute or pointed apex in at least males; propleuron bears several pale hairs or setae of about equal length on lower portion; hind femur usually bears anterior preapical bristle.

The sympycninae genera with the setose dorsally antennal scape (in all or some species) can be distinguished by use of the following key:

1. Distal sections of wing veins M_{1+2} and R_{2+3} distinctly divergent in both sexes; propleuron bearing strong bristle in addition to few short pale hairs above fore coxa (Oriental, New Guinea).....*Hercostomoides*
- Distal sections of wing veins M_{1+2} and R_{2+3} parallel or convergent; propleuron without strong bristle, bearing several pale hairs or setae of about equal length above fore coxa.....2
2. Antennal postpedicel with almost basal arista-like stylus, tapering to a rounded tip; male fore femur and tibia finely spinose beneath (West Palaearctic).....*Anepsiomyia*
- Antennal postpedicel with apical or subapical arista-like stylus (dorsal to dorsoapical in females), usually pointed at tip; male fore femur and tibia rarely setose beneath 3
3. Crossvein *dm-cu* straight, forming nearly right angle with longitudinal wing axis; male arista-like stylus simple; male eyes not contiguous (Cosmopolitan).....*Syntormon*
- Crossvein *dm-cu* sinuate and unusually angled in both sexes; arista-like stylus bearing apical flag in male; male eyes joined across the face (West Palaearctic)*Ceratopos*

Hercostomoides bhartii Grichanov sp. n. (Figs. 1–6)

[urn:lsid:zoobank.org:act:70591529-98D9-4B75-AB04-B539F01B462A](https://doi.org/10.21203/rs.3.rs-1151529-v1)

Description: *Male: Head* (Fig. 1): Vertex and frons metallic black-violet with weak grey pruinosity; setae black; strong verticals, strong diverging ocellars present; 2 short postverticals in row with postocular setae; lower postoculars black; face narrowed beneath antennae, at middle half as wide as face under antennae; face black, grey pollinose, and clypeus covered with dense white pruinosity and distinctly separating eyes; frontal-clypeal suture evident; eye facets uniform; antenna black; scape setose dorsally; pedicel asymmetrical, medianly with thumb-like projection; postpedicel large, trapezoidal, 1.4 times longer than basal height; arista-like stylus middorsal, simple, with distinct hairs; length ratio of scape to pedicel to postpedicel to stylomeres 1 and 2 (in mm), 0.08/0.08/0.18/0.09/0.47; proboscis black; palpus dark yellow, with black seta and pale hairs.

Thorax: Black, grey pollinose, mesonotum slightly shining; 2-3 small setae in front of posterior spiracle; metaepimeron with row of white hairs; setae black; 1 strong propleural bristle below; acrostichals uniseriate, well developed; 5 strong dorsocentrals present decreasing in length anteriorly; median scutellar seta strong, lateral seta very small.

Legs: Mostly yellow-brown; fore and hind coxae brown; mid coxa black; fore femur at base and mid femur mostly brown; hind femur blackish dorsally; tibiae and basitarsi dark yellow, and tarsi brown to black from tip of basitarsus; leg vestiture black; fore coxa with short anterior hairs and 4-5 distolateral setae; mid coxa with short anterior setae and bristle at apex; hind coxa with lateral bristle at 1/2; fore femur with posteroventral preapical seta; fore tibia with short but distinct anterodorsal setal serration along distal half; tarsomeres 3 to 5 with erect to semierect dorsal setae, longest on segment 4 (MSSC); mid femur ventrally bare, with anterior and posteroventral preapical bristles; mid tibia with 3 anterodorsals, 2 posterodorsals, 1 anteroventral, and apical cirlet of bristles; hind femur without preapical setae; hind tibia with 3 anterodorsals, 4 posterodorsals, with row of fine ventral setae, and apical cirlet of bristles; hind basitarsus with ventral row of 6

setae, as long as tarsomere diameter; tarsomeres 2-3 with ventral row of spinules; podomeres (from tibia to fifth tarsomere) length ratio (in mm): fore leg: 0.69/0.39/0.18/0.14/0.11/0.10, mid leg: 1.03/0.46/0.24/0.17/0.10/0.11, hind leg: 1.24/0.29/0.26/0.18/0.12/0.12.

Wing: Membrane hyaline; anal angle weak; veins brown; R_{4+5} and M diverging from base to wing margin, with M ending slightly behind wing apex; cross-vein dm-cu slightly convex; ratio of costal section between R_{2+3} and R_{4+5} to that between R_{4+5} and M_{1+2} (in mm): 0.3/0.26; basal section of M_{1+2} shorter than distal section; ratio of cross-vein dm-cu to distal part of CuA_1 (in mm): 0.19/0.37; lower calypter brown, with black cilia; halter black.

Abdomen: Entirely black, with black setae; hypopygium small, black, with black surstylus and cercus.

Measurements (mm): Body length 1.9-2.1, wing length/width 2.1/0.7, antenna length 0.75.

Female: unknown.

Material examined: *Holotype*. ♂, Indonesia: W Papua, Wamena, Baliem Resort env., 4.06°S, 139.03°E, 2000 m, 16–25.XII. 2014, N. Vikhrev [ZMUM]. *Paratypes*. 3♂, same data [ZIN, ZMUM].

Diagnosis: The new species is close to *Hercostomoides indonesianus*, differing from the latter in entirely black antenna, trapezoidal shape of postpedicel, black body, much darker legs, black halters etc. *H. indonesianus* individuals have mainly yellow antenna on ventral side, elongate-ovate postpedicel, yellow-brown thorax and abdomen, yellow halters and hypopygium, yellow legs including fore and mid coxae.

Etymology: This species is named in honor of well-known entomologist Dr. Himender Bharti (Department of Zoology and Environmental Sciences, Punjabi University, Patiala, Punjab, India).

New records

Hercostomoides indonesianus (Hollis, 1964)
= *Telmaturgus indonesianus* Hollis, 1964a: 264
(Figs. 7–10)

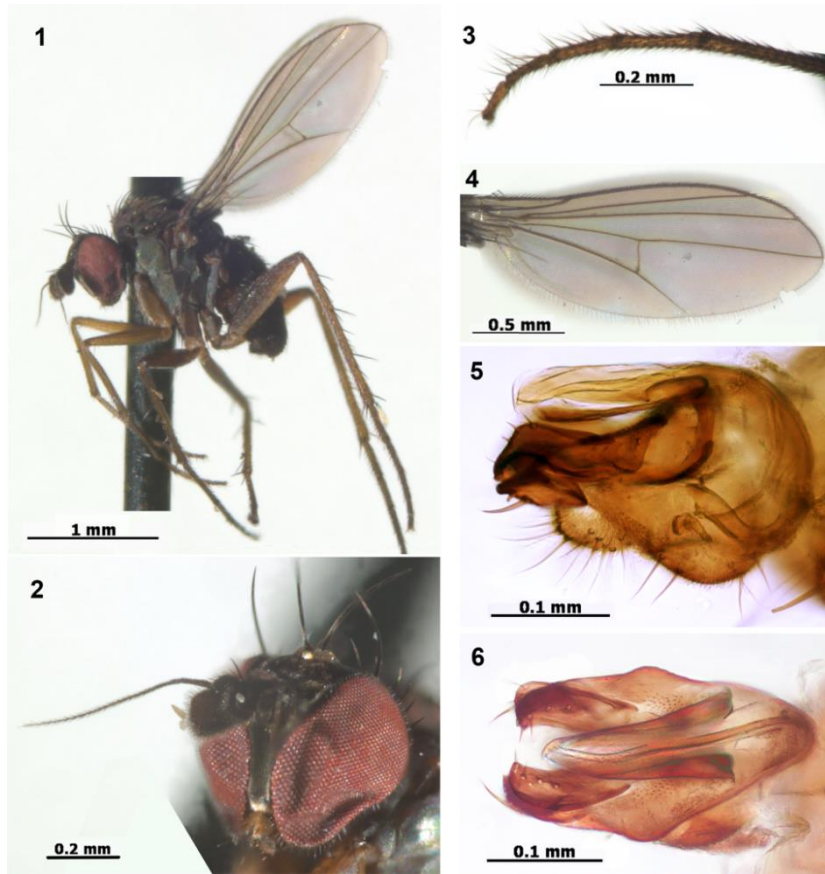


Fig. 1-6. *Hercostomoides bhartii* Grichanov, sp. n. (male): 1. Habitus; 2. Head; 3. Fore tarsus; 4. Wing; 5. Hypopygium, lateral view; 6. Hypopygium, ventral view

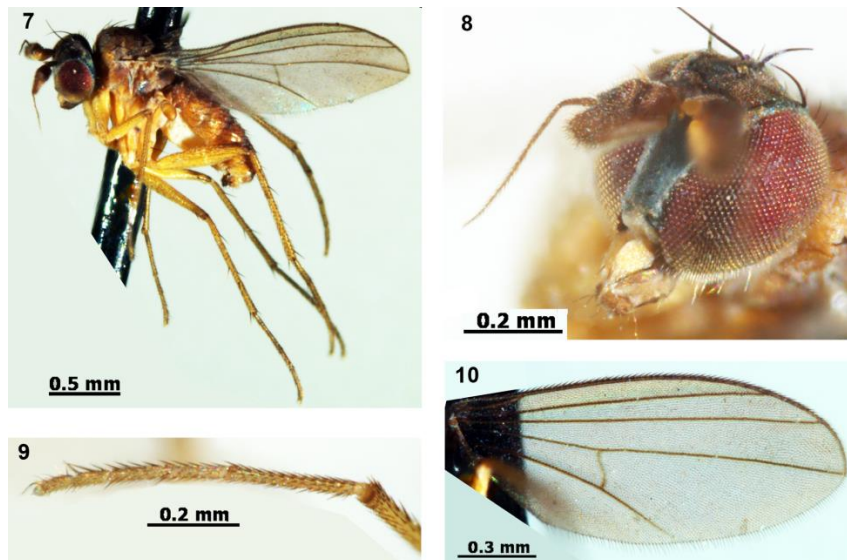


Fig. 7-10. *Hercostomoides indonesianus* (Hollis, 1964) (male): 7. Habitus; 8. Head; 9. Fore tarsus; 10. Wing

Material examined: 1♂, **India:** Orissa, Gop, 19.982°N, 86.016°E, 8-9.i.2014, K. Tomkovich [ZMUM]; 1♂, **Thailand:** S Pattaya, 26.xi.2006, N. Vikhrev [ZMUM]; 1♂, Mae Hong Son Prov., Pai, 19.3583°N, 98.4468°E, 500 m a. s. l., 15-24.xii.2010, K. Tomkovich [ZIN]; 1♂, Chon Buri, Ban Kled, beach Sai Kaew, 12.44.5411°N, 100.50.4646°E, 16.xi.2006, A.L. Ozerov [ZMUM]; 1♂, **Malaysia:** Sabah st., Beringgis beach, 5.79°N, 115.99°E, 19-26.ii.2014, N. Vikhrev [ZMUM].

Distribution: China (Guangdong, Guangxi, Hainan, Zhejiang), Indonesia (Java, Sumatra), Malaysia (Sarawak), Philippines, Singapore, Thailand, Vietnam. New species for India.

New combinations

Looking for relatives of *Hercostomoides* species in old literature within the closest sympycnine genera, I have found many misidentifications of known species at the generic level. I establish here new combinations for the described species in order to facilitate future revision of the subfamily Sympycninae in the Oriental Region. The replacements are based on clearly pronounced and illustrated male and female secondary sexual characters (MSSC and FSSC) of generic importance that do not require study of type material. The main confusion in the subfamily is related with the *Chaetogonopteron* (= *Pycsymnus* Frey, 1925), *Sympycnus* and *Telmaturgus* generic concepts. See Grichanov (2011a) and Yang *et al.* (2011) for an identification keys to these and other sympycnine genera. The listed and closely related sympycnine genera *Teuchophorus* and *Olegonegrobovia* Grichanov, 1995, can be distinguished by use of the following key:

1. Male anterior tarsomeres modified at least weakly, usually shortened, but with basitarsus often elongate; some of the tarsomeres often flattened or ornamented with processes, spines or remarkable hairs; last four hind tarsomeres simple, regularly decreasing in length; male hind basitarsus often ornamented with remarkable setae or hairs; female clypeus strongly bulging (Cosmopolitan).....*Telmaturgus*
- Fore tarsomeres simple or shortened, rarely ornamented with remarkable hairs; last four hind tarsomeres of male usually irregularly

- decreasing in length; male hind basitarsus rarely ornamented with remarkable setae or hairs; female clypeus not bulging (except for *Teuchophorus longifrons* Bickel, 1983, and *T. queenslandicus* Bickel, 1983)2
2. Two rather than one postverticals, strong ventral subapical seta on hind tibia, wing veins R_{4+5} and M_{1+2} slightly divergent rather than parallel, strongly oblique crossvein *dm-cu* forming acute (ca. 60°) angle with CuA_1 ; mid femur with ventral bristles in basal part; male wing costa often with long and thick stigma beyond R_1 ; epandrial foramen mostly middorsal (Cosmopolitan except for Neotropics)*Teuchophorus*
- One postvertical seta; wing veins R_{4+5} and M_{1+2} parallel; epandrium with mostly left basolateral foramen; other features various.....3
3. Five pairs of strong dorsocentrals; two basal hind tarsomeres shortened; male hind tarsomere 2 with apicoventral worm-like process; tarsomere 3 longer than tarsomere 2; tarsomere 4 shorter than tarsomere 3 (Oriental, Afrotropical, Palaearctic and Australasian).....*Chaetogonopteron*
- Usually 6, rarely 5 pairs of strong dorsocentrals; two basal hind tarsomeres not shortened; male hind tarsomere 2 never having worm-like process4
4. Proepisternum without setae, with microscopic hairs; male anterior tarsomeres simple; male hind tarsomere 3 shorter than 2, often bearing one or more modified setae; tarsomere 4 usually longer and thinner than 3, often polished; male anal wing lobe without strong setae; dorsal and ventral surstyli separated (Cosmopolitan)*Sympycnus*
- Proepisternum with seta; male anterior tarsomeres rarely simple, usually shortened; last four hind tarsomeres regularly decreasing in length, simple; strong setae usually present at end of male anal wing lobe; dorsal and ventral surstyli fused almost to apex (Afrotropical and probably Oriental)*Olegonegrobovia*

***Chaetogonopteron acuticorne* (Frey, 1928), comb. nov.**

= *Pycsymnus acuticornis* Frey, 1928: 19
 = *Sympycnus acuticornis* (Frey, 1928); Dyte, 1975: 254

Remarks: The genus *Pycsymnus* was synonymized with *Chaetogonopteron* by Meuffels *et* Grootaert (1997b). However, *Pycsymnus acuticornis* was not transferred to the latter. The species was described with male hind tarsus with short basitarsus bearing a seta and short second segment bearing a worm-like apical process along with several setae (Frey, 1928). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016).

Distribution: Philippines.

***Chaetogonopteron albifimbriatum* (Parent, 1932), comb. nov.**

=*Sympycnus albifimbriatus* Parent, 1932a: 118

Remarks: The species was described and illustrated with male hind tarsus with short and enlarged basitarsus, and next segment short and bearing a worm-like apical process (Parent, 1932a). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species has also a diagnostic setation on the fore leg.

Distribution: Indonesia (Sumbawa).

***Chaetogonopteron apicale* (De Meijere, 1916), comb. nov.**

=*Sympycnus apicalis* De Meijere, 1916: 251

Remarks: The species was described and illustrated with male hind tarsus with very short basitarsus and next segment, the latter bearing a remarkable process (De Meijere, 1916). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species also has a diagnostic setation on the mid leg and hind tibia.

Distribution: China (Taiwan), Indonesia (Java), Pakistan, Philippines.

***Chaetogonopteron appendicitum* (Parent, 1932), comb. nov.**

=*Sympycnus appendicitus* Parent, 1932a: 115

Remarks: The species was described and illustrated with male hind tarsus with short and enlarged basitarsus, and next segment short and bearing a bifurcated apical process (Parent, 1932a). These characters clearly refer

the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species also has a diagnostic setation on the fore tarsus and mid tibia.

Distribution: Indonesia (Flores).

***Chaetogonopteron argentipes* (De Meijere, 1916), comb. nov.**

=*Sympycnus argentipes* De Meijere, 1916: 247

Remarks: The species was described and illustrated with male hind tarsus with very short triangular basitarsus bearing ventral seta, and very short second segment, the latter bearing a filiform sinuate apical process (De Meijere, 1916). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species also has a diagnostic setation on the fore leg.

Distribution: China (Taiwan), Indonesia (Java).

***Chaetogonopteron argyropus* (Parent, 1932), comb. nov.**

=*Sympycnus argyropus* Parent, 1932a: 119

Remarks: The species was described and illustrated with male hind tarsus with short and enlarged basitarsus, and next segment short and bearing a worm-like apical process (Parent, 1932a). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species also has a diagnostic setation on the fore leg.

Distribution: Indonesia (Flores).

***Chaetogonopteron arunense* (Hollis, 1964), comb. nov.**

=*Sympycnus arunensis* Hollis, 1964b: 102

Remarks: The species was described with six strong dorsocentrals on mesonotum, male hind tarsus with short and enlarged basitarsus and next segment short and bearing a bifid lobe apico-ventrally (Hollis, 1964b). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species also has a diagnostic setation on the fore and mid tarsi.

Distribution: Nepal.

***Chaetogonopteron bisulcum* (Becker, 1922), comb. nov.**

=*Sympycnus bisulcus* Becker, 1922: 94

Remarks: The species was described with six strong dorsocentrals on mesonotum, simple male fore tarsus, male hind tarsus with very short and thickened basitarsus and next segment, the latter bearing an apical process (Becker, 1922). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016).

Distribution: China (Taiwan), India, Myanmar, Philippines.

***Chaetogonopteron coei* (Hollis, 1964), comb. nov.**

=*Sympycnus coei* Hollis, 1964b: 102

Remarks: The species was described and illustrated with six strong dorsocentrals on mesonotum, male hind tarsus with short and enlarged basitarsus with 2 long pale hairs ventrally, next segment shorter than basitarsus and with a bilobed ventral appendage, 3rd tarsal segment longer than segments 4 and 5 together and with a ventral row of short bristles (Hollis, 1964b). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016).

Distribution: Nepal.

***Chaetogonopteron collectum* (Walker, 1857), comb. nov.**

=*Dolichopus collectus* Walker, 1857: 121

=*Sympycnus collectus* (Walker, 1857);

Parent, 1934: 9

=*Sympycnus triplex* Becker, 1922: 102;

Parent, 1934: 9

=*Chaetogonopteron triplex* (Becker, 1922),

comb. nov.

Remarks: The species was described with male hind tarsus with short basitarsus, enlarged and fringed at apex, and short second segment, the latter bearing a sinuate ornamented process (Becker, 1922). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species also has a diagnostic setation on the fore and mid tarsi.

Distribution: China (Taiwan), Malaysia.

***Chaetogonopteron gloriosum* (Frey, 1925), comb. nov.**

=*Pycsymnus gloriosus* Frey, 1925: 21

=*Sympycnus gloriosus* (Frey, 1925); Dyte,

1975: 255

Remarks: The genus *Pycsymnus* was synonymized with *Chaetogonopteron* by Meuffels and Grootaert (1997b). However, *Pycsymnus gloriosus* was not transferred to the latter. The species was described with male hind tarsus with short thick basitarsus bearing a thickened basal seta and short second segment bearing a worm-like apical ornamented process (Frey, 1925). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016).

Distribution: Philippines.

***Chaetogonopteron gummigutti* (Becker, 1922), comb. nov.**

=*Sympycnus gummigutti* Becker, 1922: 95

Remarks: The species was described with six strong dorsocentrals on mesonotum, male hind tarsus with short and enlarged basitarsus and next segment short and bearing a worm-like process (Becker, 1922). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species also has a diagnostic setation on the fore and mid tarsi and tibiae.

Distribution: India (West Bengal), Myanmar, Nepal.

***Chaetogonopteron luteoviride* (Parent, 1932), comb. nov.**

=*Pycsymnus luteoviridis* Parent, 1932b: 230

=*Sympycnus luteoviridis* (Parent, 1932b); Dyte, 1975: 255

Remarks: The genus *Pycsymnus* was synonymized with *Chaetogonopteron* by Meuffels and Grootaert (1997b). However, *Pycsymnus luteoviridis* was not transferred in the latter. The species was described and illustrated with male hind tarsus with short and enlarged basitarsus, and next segment short and bearing a worm-like apical process (Parent, 1932b). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species has also a diagnostic setation on the fore and mid tarsi.

Distribution: China (Taiwan).

***Chaetogonopteron maculatum* (Parent, 1932), comb. nov.**

=*Pycsymnus maculatus* Parent, 1932b: 231

=*Sympycnus maculatus* (Parent, 1932b);
Dyde, 1975: 255

Remarks: The genus *Pycsymnus* was synonymized with *Chaetogonopteron* by Meuffels and Grootaert (1997b). However, *Pycsymnus maculatus* was not transferred in the latter. The species was described and illustrated with male hind tarsus with short and enlarged basitarsus, and next segment short and bearing a worm-like apical process (Parent, 1932b). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species also has a diagnostic setation on the fore tarsus and mid leg, and remarkable spot on wing.

Distribution: China (Taiwan), Sri Lanka.

***Chaetogonopteron magnificum* (Parent, 1935), comb. nov.**

=*Sympycnus magnificus* Parent, 1935: 214

Remarks: The species was described and illustrated with male hind tarsus with short and enlarged basitarsus, and next segment short and bearing a worm-like apical process (Parent, 1935). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species also has a diagnostic setation on the fore and mid tarsi.

Distribution: Malaysia.

***Chaetogonopteron majus* (De Meijere, 1916), comb. nov.**

=*Sympycnus major* de Meijere, 1916: 250

Remarks: The species was described and illustrated with male hind tarsus with short basitarsus bearing 2 ventral setae, and next segment bearing a remarkable apical process (De Meijere, 1916). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species has also a diagnostic flag on the arista-like stylus of antenna.

Distribution: Indonesia (Java).

***Chaetogonopteron metallescens* (De Meijere, 1916), comb. nov.**

=*Sympycnus metallescens* de Meijere, 1916: 250

Remarks: The species was described and illustrated with male hind tarsus with short basitarsus and next segment bearing a

remarkable apical process (De Meijere, 1916). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016).

Distribution: Indonesia (Java, Flores).

***Chaetogonopteron minutulum* (Parent, 1932), comb. nov.**

=*Sympycnus minutulus* Parent, 1932a: 117

Remarks: The species was described and illustrated with male hind tarsus with short and enlarged basitarsus, and next segment short and bearing a worm-like apical process (Parent, 1932a). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016).

Distribution: Indonesia (Sumbawa).

***Chaetogonopteron nodicornis* (Becker, 1922), comb. nov.**

=*Sympycnus nodicornis* Becker, 1922: 100

=*Telmaturgus nodicornis* (Becker, 1922);
Maslova *et al.*, 2008: 44

Remarks: The species type was examined by Maslova *et al.* (2008), who recombined it with *Telmaturgus* based on the presence of 4 dorsocentral bristles on mesonotum and apical flag on the arista-like stylus of male antenna. However, Becker (1922) described the male hind tarsus of his new species with short and fringed basitarsus and next segment being short and bearing a stalk-like processes. Any modification of male fore tarsus and broad female face were not mentioned by both Becker and Maslova *et al.* This complex of characters clearly refers the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016).

Distribution: China (Taiwan).

***Chaetogonopteron strenuum* (Becker, 1922), comb. nov.**

=*Sympycnus strenuus* Becker, 1922: 101

Remarks: The species was described with male hind tarsus with very short and enlarged triangular basitarsus bearing a seta at middle and very short second segment bearing a worm-like process (Becker, 1922). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016).

Distribution: Philippines, Sri Lanka.

***Chaetogonopteron tenerum* (Becker, 1922), comb. nov.**

=*Sympycnus tener* Becker, 1922: 103

Remarks: The species was described and illustrated with male hind tarsus with very short basitarsus bearing a curved seta and very short second segment bearing a worm-like process and several setae at apex (Becker, 1922). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species has also a diagnostic setation on the fore and mid legs and hind tibia.

Distribution: China (Taiwan).

***Chaetogonopteron thienemanni* (Stackelberg, 1931), comb. nov.**

=*Pycsymnus thienemanni* Stackelberg, 1931: 779

=*Sympycnus thienemanni* (Stackelberg, 1931); Meuffels et Grootaert, 1987: 318

Remarks: The genus *Pycsymnus* was synonymized with *Chaetogonopteron* by Meuffels and Grootaert (1997b). However, *Pycsymnus thienemanni* was not transferred in the latter. The species was described with male hind tarsus with very short basitarsus bearing a curved seta and very short second segment bearing worm-like process (Stackelberg, 1931). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species also has a diagnostic setation on the fore and mid legs and remarkable wing maculation.

Distribution: Indonesia (Java).

***Chaetogonopteron vermiculatum* (Parent, 1932), comb. nov.**

=*Sympycnus vermiculatus* Parent, 1932a: 116

Remarks: The species was described and illustrated with male hind tarsus with short and enlarged basitarsus, and next segment short and bearing a worm-like apical process (Parent, 1932a). These characters clearly refer the species to the current concept of the genus *Chaetogonopteron* (Grichanov, 2011a; Bickel and Martin, 2016). The species has also a diagnostic setation on the fore leg.

Distribution: Indonesia (Sumbawa).

***Telmaturgus acutatus* (Yang et Grootaert, 1999), comb. nov.**

=*Chaetogonopteron acutatum* Yang and Grootaert, 1999: 267

Material examined: 1♂, India: West Bengal, Kalimpong (Lower Tanek), 27.06°N, 88.44°E, 625m a.s.l., 1-11.xii.2013, K. Tomkovich [ZMUM].

Remarks: The male studied has four dorsocentrals on mesonotum, strongly modified male fore tarsus and unmodified segments of male hind tarsus (see also Yang and Grootaert, 1999). These characters clearly refer the species to the current concept of the genus *Telmaturgus* (Grichanov, 2011b; Runyon, 2012).

Distribution: China (Yunnan). New species for India.

***Telmaturgus chebalingensis* (Wang, Yang et Grootaert, 2005), comb. nov.**

=*Chaetogonopteron chebalingense* Wang et al., 2005: 215

Remarks: The species was described with one hair-like and five strong dorsocentrals on mesonotum, modified male fore tarsus (segments 2-5 shortened, segments 4-5 bearing erect setae), unmodified male hind tarsus with non-shortened segments 1-2 and with regularly decreasing in length segments 2-5 (Wang et al., 2005). These characters clearly refer the species to the current concept of the genus *Telmaturgus* (Grichanov, 2011b; Runyon, 2012).

Distribution: China (Guangdong).

***Telmaturgus concavus* (Yang et Grootaert, 1999), comb. nov.**

=*Chaetogonopteron concavum* Yang and Grootaert, 1999: 271

Remarks: The species was described with one hair-like and five strong dorsocentrals on mesonotum, modified male fore tarsus (basitarsus as long as other segments combined), unmodified segments 2-5 of male hind tarsus and widely separated eyes on female face (Yang and Grootaert, 1999). These characters clearly refer the species to the current concept of the genus *Telmaturgus* (Grichanov, 2011b; Runyon, 2012).

Distribution: China (Yunnan).

***Telmaturgus dorsiniger* (Yang et Grootaert, 1999), comb. nov.**

=*Chaetogonopteron dorsinigrum* Yang and Grootaert, 1999: 271

Remarks: The species was described with four strong dorsocentrals on mesonotum, modified male fore tarsus (basitarsus 2 times as long as other segments combined), unmodified segments 2-5 of male hind tarsus (Yang and Grootaert, 1999). These characters clearly refer the species to the current concept of the genus *Telmaturgus* (Grichanov, 2011b; Runyon, 2012).

Distribution: China (Yunnan).

***Telmaturgus revasiddaiahi* (Olejníček, 2002), comb. nov.**

=*Chaetogonopteron revasiddaiahi* Olejníček, 2002: 54

Remarks: The species was described with four dorsocentrals on mesonotum, somewhat modified male fore tarsus (prolonged basitarsus and other segments shortened), hind basitarsus bearing ventral setae, and unmodified segments 2-5 of male hind tarsus (Olejníček, 2002). These characters clearly refer the species to the current concept of the genus *Telmaturgus* (Grichanov, 2011b; Runyon, 2012).

Distribution: India (Bangalore).

***Telmaturgus shettyi* (Olejníček, 2002), comb. nov.**

=*Chaetogonopteron shettyi* Olejníček, 2002: 54

Remarks: The species was described with one small and four strong dorsocentrals on mesonotum, modified male fore tarsus (basitarsus long, bent, thickened at apex, and other segments shortened), hind basitarsus bearing ventral setae, and unmodified segments 2-5 of male hind tarsus (Olejníček 2002). These characters clearly refer the species to the current concept of the genus *Telmaturgus* (Grichanov, 2011b; Runyon, 2012).

Distribution: India (Bangalore).

***Telmaturgus simplicipes* (Becker, 1908), comb. nov.**

=*Sympycnus simplicipes* Becker, 1908: 46; Grichanov, 2008: 45, fig. 28; Negrobov *et al.*, 2017: figs. 20-25 (designation of lectotype and paralectotypes)

=*Teuchophorus tenuemarginatus* Strobl, in Czerny and Strobl, 1909: 188; Grichanov and Tomkovich, 2009: 108

=*Telmaturgus tenuemarginatus* (Strobl, 1909), **comb. nov.**

=*Sympycnus turbidus* Becker, 1922: 105; Evenhuis and Bickel, 2012: 17, **syn. nov.**

=*Telmaturgus turbidus* (Becker, 1922), **comb. nov.**

=*Syntormoneura basalis* Curran, 1926: 16; Grichanov, 2008: 22

=*Telmaturgus basalis* (Curran, 1926), **comb. nov.**

=*Sympycnus placidus* Curran, 1926: 37; Grichanov, 2008: 22

=*Telmaturgus placidus* (Curran, 1926), **comb. nov.**

=*Sympycnus luteicinctus* Parent, 1926: 134, **syn. nov.**

=*Chaetogonopteron luteicinctum* (Parent, 1926); Yang and Saigusa, 2001: 509; Yang *et al.*, 2011: 1314, figs. 817, 842c-e

=*Telmaturgus luteicinctus* (Parent, 1926), **comb. nov.**

=*Chaetogonopteron apicinigrum* Yang and Grootaert, 1999: 268; Yang *et al.*, 2011: 1285, fig. 823, **syn. nov.**

=*Telmaturgus apiciniger* (Yang and Grootaert, 1999), **comb. nov.**

Material: 1♂, China: Guizhou [...], 28.v.2002, 1350m, *Chaetogonopteron luteicinctum* (Parent), det. Yang, 2002 (ZIN); 1♂, Myanmar: Shan state, env. Nyaungshwe, 20.66°N, 96.96°E, 26-30.xi.2009, N. Vihrev (ZMMU); 2♂, 3♀, Indonesia: West Papua, Merauke env., 8.55°S, 140.43°E, 9-15.xii.2014, N. Vihrev (ZMMU); 2♂, Indonesia: West Papua, Wamena Baliem Resort env., 2000 m, 4.06°S, 139.03°E, 16-25.xii.2014, N. Vihrev (ZMMU); 3♂, 5♀, South Africa: Natal, Pietermaritzburg env., 20.vii.2008, Grichanov (ZIN).

Distribution: Type locality: Spain: Canary Is., Teneriffe. Palaearctic: Abkhazia, Austria, Azerbaijan, Czech Republic, Egypt, France, Germany, Greece incl. Crete, Iran, Iraq, Israel, Italy, Japan, N Kazakhstan, Korea, Kyrgyzstan, Russia (Adygea, Krasnodar), Spain incl. Canary Is., Tadjikistan, Turkey (Afyonkarahisar, Kütahya, Uşak), Uzbekistan; Afrotropical: DR Congo, Kenya, South Africa; Oriental: China (Fujian, Guizhou, Henan, Hong Kong, Guangdong, Guangxi, Macau, Shanghai, Taiwan, Yunnan, Zhejiang), India (Kashmir, West Bengal), Indonesia (Flores), Myanmar, Nepal, Philippines, Sri Lanka; Australasian: Australia, Hawaii, Papua New Guinea, Solomon Islands. New for Myanmar.

Remarks: Until recently this small species was overlooked in many countries of the Old World tropics and subtropics. Grichanov (2008) noted the identity of *S. simplicipes* material collected from Central Asia, the Mediterranean Region and Tropical Africa, and placed South African *Syntormoneura basalis* Curran, 1926 and *Sympycnus placidus* Curran, 1926 in synonymy with *S. simplicipes*. Grichanov & Tomkovich (2009) synonymized Spanish *Teuchophorus tenuemarginatus* Strobl, 1909 with this species. The species was also reported from Korea and Taiwan. Evenhuis & Bickel (2012) found no difference between *S. turbidus* material collected from Japan, Oriental China (Hong Kong, Taiwan), India, Flores, Macao, Nepal, Philippines, Sri Lanka, Australia, Hawaii, Papua New Guinea and Solomon Islands.

For this study I have compared the habitus and genitalia of hundreds *S. simplicipes* males from South Africa, Oriental China, Myanmar, Papua New Guinea, Japan and western parts of the Palaearctic Region and have found no difference. All male specimens examined have fore basitarsus bearing a row of elongate ventral setae on basal half and a row of elongate lateral setae at apex (MSSC). It is worth noting that published descriptions of *S. simplicipes*, *S. turbidus*, *S. luteicinctus* and *C. apicinigrum* did not note a weak ornamentation of fore tarsus in males. Females of the species have only a single small ventral seta at the base of the fore basitarsus, but having a broad face and strongly bulging clypeus (FSSC). A male from Guizhou Province of China identified by Ding Yang as *Chaetogonopteron luteicinctum* (ZIN), the description of this species by Parent (1926) and the detailed descriptions and figures of *Chaetogonopteron luteicinctum* and *C. apicinigrum* by Yang *et al.* (2011) are identical to the studied *S. simplicipes* material from the Afrotropical and Palaearctic Regions. Yang *et al.* (2011) distinguished *C. luteicinctum* from *C. apicinigrum* by the biseriate rather than uniseriate acrostichals on mesonotum mainly. Nevertheless, this character is individually variable in *S. simplicipes*, and the acrostichals are usually uniseriate anteriorly and biseriate posteriorly, sometimes irregularly uniseriate or biseriate along entire row length. The known descriptions of *S. turbidus* do not differ from the *S. simplicipes* species concept. As a result,

I consider it likely that *S. turbidus*, *S. luteicinctus* and *C. apicinigrum* are conspecific with *S. simplicipes*. Unfortunately, types of *S. turbidus* were not found in the European museums (e.g. Grichanov, 2008; Maslova *et al.*, 2008; Negrobov *et al.*, 2017), being probably lost. Designation of *S. turbidus* neotype is desirable to confirm that hypothesis. At the same time, the type localities of *C. apicinigrum* (Xishuangbanna, Yunnan) and *S. turbidus* (Kurseong, West Bengal) are rather close to each other. Summarizing data on the global distribution of *S. simplicipes*, *S. turbidus*, *S. luteicinctus* and *C. apicinigrum*, my study of their descriptions and morphology of available specimens from many countries, I propose here their synonymization.

The combination of modified male fore tarsomeres and strongly bulging female clypeus suggests the placement of *S. simplicipes* within the genus *Telmaturgus*, excluding it from *Sympycnus* (see Grichanov, 2011b; Runyon, 2012). The presence of 6 pairs of dorsocentrals on mesonotum in *S. simplicipes* is unusual for the most part of *Telmaturgus* species, though this character was described for males of some Afrotropical species (but with reduced first two pairs) and for females of Indonesian species (Hollis, 1964a; Grichanov, 2008).

***Telmaturgus singularis* (Yang et Grootaert, 1999), comb. nov.**

=*Chaetogonopteron singulare* Yang and Grootaert, 1999: 275

Remarks: The species was described with four strong dorsocentrals on mesonotum, modified male fore tarsus (basitarsus nearly as long as other segments combined, thickened at apex; next segment thickened), male hind tarsus with non-shortened segments 1-2 and with regularly decreasing in length segments 2-5 (Yang and Grootaert, 1999). These characters clearly refer the species to the current concept of the genus *Telmaturgus* (Grichanov, 2011b; Runyon, 2012).

Distribution: China (Yunnan).

Discussion

Hercostomoides indonesianus is a common Oriental species distributed widely from India to Philippines. *H. bhartii* sp. n. is found only on the New Guinea Island, being probably endemic of the island. The island is

traditionally included in the Australasian zoogeographical region, representing the northern edge of the Australian tectonic plate (Bickel and Dyte, 2016; Bickel and Martin, 2016). Thus, the *Hercostomoides* is discovered in the region for the first time.

Hercostomoides indonesianus and *Telmaturgus acutatus* are recorded here from India for the first time. As a result, the fauna of Indian long-legged flies has reached to 164 species (see Grichanov, 2016).

A total of 23 sympycnine species have been transferred to the genus *Chaetogonopteron*, and 8 species have been transferred to the *Telmaturgus* in this paper. As a result, the total number of *Chaetogonopteron* species reached to 103 (including 91 Oriental species), and the number of *Telmaturgus* species reached to 27 (including 11 Oriental species). In contrast, the genus *Sympycnus* has lost 23 species. Nevertheless, the *Sympycnus* with about 250 mainly New World species (Grichanov, 2017) is still a holding genus keeping many poorly described and illustrated small-sized dolichopodids. The Oriental *Sympycnus* fauna now contains 20 species, which mostly need a revision of type material. *Sympycnus* is also very diverse in Australia and New Zealand with many undescribed species (D. Bickel, 2017 pers. comm.). At the same time, the genus *Chaetogonopteron* needs revision on the regional scale. I suspect that many old Oriental species have been re-described as new ones during the recent decades.

The re-placements in this paper are based on MSSC and FSSC of generic importance that correspond to the *Chaetogonopteron* and *Telmaturgus* generic concepts. These genera are in fact marginal groups or satellites of *Sympycnus*, being distinguished by remarkable apomorphies. *Telmaturgus* can be defined by a combination of such synapomorphies as modified male fore tarsomeres and strongly bulging female clypeus in addition to bare antennal scape and regularly decreasing in length last four segments of hind tarsus. Adult males of *Chaetogonopteron* have the two basal segments of the hind tarsus greatly shortened, with tarsomere 2 often bearing an elongate process (clidium). Females cannot readily be separated from those of *Sympycnus* (Meuffels and Grootaert, 1997b). There are no known synapomorphies characterising *Sympycnus*. As

such, the genus is recognised by the absence of characters which define the other sympycnine genera (Grichanov and Brooks, 2017).

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