

NEW SPECIES AND RECORDS OF HYPSELOTHYREA
DE MEIJERE (DIPTERA, DROSOPHILIDAE)*

L. PAPP (2004)

Department of Zoology, Hungarian Natural History Museum
Baross u. 13, H-1088 Budapest, Hungary; e-mail: lpapp@zoo.zoo.nhmus.hu

Nine new species, *Hypselothyrea africana* sp. n. (Guinea), *H. deficiens* sp. n. (Thailand), *H. mixta* sp. n. (India), *H. paralanigera* sp. n. (Thailand), *H. paratenuis* sp. n. (Viet Nam, Thailand), as well as *H. (Deplanothyrea) amputata* sp. n. (Indonesia: Sumatra), *H. (D.) formosana* sp. n. (Taiwan), *H. (D.) longimana* sp. n. (India) and *H. (D.) subaptera* sp. n. (India) are described. A key for the subgenus *Deplanothyrea* OKADA is given. With 31 original figures.

Key words: Diptera, Drosophilidae, *Hypselothyrea*, taxonomy, Oriental and Afrotropical region

INTRODUCTION

The drosophilid flies in the genus *Hypselothyrea* are conspicuous with their mostly ant-like appearance, patterned wing (in most species) and definite, medially flat (in profile nose-like) carina. They are related to *Tambourella* WHEELER with the absence of postocellars, basally rather narrowing (“ant-like”) abdomen, and with – mostly shiny – always sharply demarcated frontal shield (postfrons without orbitalia separated as such). In addition, they have 1 postpronotal and katepisternal seta each (contrary to *Liodrosophila*). Other characteristics they share with *Liodrosophila* are their rather sharply pointed oviscapes and a row of short black spines on the anteroventral surface of fore femur (in most species).

In general, it is rather easy to recognise the species of this genus (seldom so in a high number of drosophilid genera). *Hypselothyrea* species are mainly Oriental or known from New Guinea (OKADA 1980), one species is known from the Seychelles Islands. Most recently CHASSAGNARD *et al.* (1998) reported on three species of *Hypselothyrea (Deplanothyrea)* but in lack of male specimens they left them undescribed. The classical papers are old, indeed (DE MEIJERE 1906, DUDA 1926, 1928). OKADA (1980) published a modern revision with the description of seven new species. There he described also a subgenus, *Deplanothyrea* for those species, where the scutellum is not upright.

Hypselothyrea is one of the lineages of drosophilids, which tend to be reduced-winged. That is mostly a consequence of their terricolous habits. The first drosophilid species, a *Hypselothyrea (Deplanothyrea)*, totally wingless and with-

* This paper dedicated to the memory of late Prof. JÁNOS BALOGH

out halteres was described by PAPP (1979) from India (Madras). No wonder that the specimens of that apterous species were captured by coleopterists sieving forest soils. During my visits to the Geneva Museum I found further specimens collected similar way, which are described below. I found additional, normally winged but undescribed species in the collection of the Hungarian Natural History Museum, Budapest. And finally, in the finalising phase of this work, I received a *Hypselothyrea* material, collected by Dr. BERNHARD MERZ (Muséum d'Histoire naturelle Genève) in Thailand in 2001.

In morphological terminology OKADA (1980) is followed in every possible case; except for some terms, where BÄCHLI's (1998) summary of the drosophilid morphology is the reference.

The types and other material are deposited in the Department of Zoology, Hungarian Natural History Museum, Budapest, Hungary (HNHM) and in the Entomologie, Muséum d'Histoire naturelle Genève, Switzerland (MHNG); some specimens are in the collection of the Taiwan Forestry Research Institute, Taipei (TFRI).

TAXONOMY

Hypselothyrea DE MEIJERE, 1906

Type species: *H. dimidiata* DE MEIJERE, 1906; designated by OKADA (1956: 38) (subsequent des.).

Subgenus *Hypselothyrea* s. str.

***Hypselothyrea africana* sp. n.**

(Fig. 1)

Holotype male (HNHM): "Guinea, Coyah – 21. X. 1967., leg. Ferencz."

Measurements in mm: body length 2.30, wing length 2.05, wing breadth 0.40 only.

Body black, mesonotum granulated, thoracic pleura and abdomen shiny.

Frontal shield granulose, dark brown with bluish shine. Orbitalia very finely white microtomentose, i.e. subshiny. Face shiny light brown, carina nose-like in profile, broad (0.075 mm subapically), medially flat, sharply and strongly prominent (i.e. medial surface flat with sharp edges). One pair of long and thick fronto-orbitals in medial position. Vibrissa broken off on our specimen (but cannot be strong), peristomals rather weak. Hairs on eyes very short. Palpus black with a ca. 0.1 mm long apical seta. Arista with 8 dorsal and 5 ventral long branches and a moderate fork.

Mesonotum blackish with bluish shine, finely granulose. Scutellum totally black, extremely upright, its dorsal profile broken below the level of scutellar setae, its height over scutum 0.125 +

0.225 mm. One pair of strong, slightly prealar dorsocentrals. Anterior scutellars very long (0.36 mm) thick, cruciate, they emerge from small protuberances. Pleura shiny black.

Legs yellow, incl. fore coxa. Fore femur with minute thornlets anteroventrally.

Wing in a highly stenopterous form, its pattern is remarkably similar to that of *H. tenuis* (OKADA 1980: fig. 4). Vein R_{2+3} runs very close to costal vein in its distal 7/10, curvatures are finer than in *tenuis* but the distances to costa at two places are less than the diameter of vein R_{2+3} . C-index extremely high, not precisely measurable on the slightly curved wing, ca. 3.45. C3 fringe hardly discernible, on 1/4 of whole length. Halteres with yellowish stalk and brown knob.

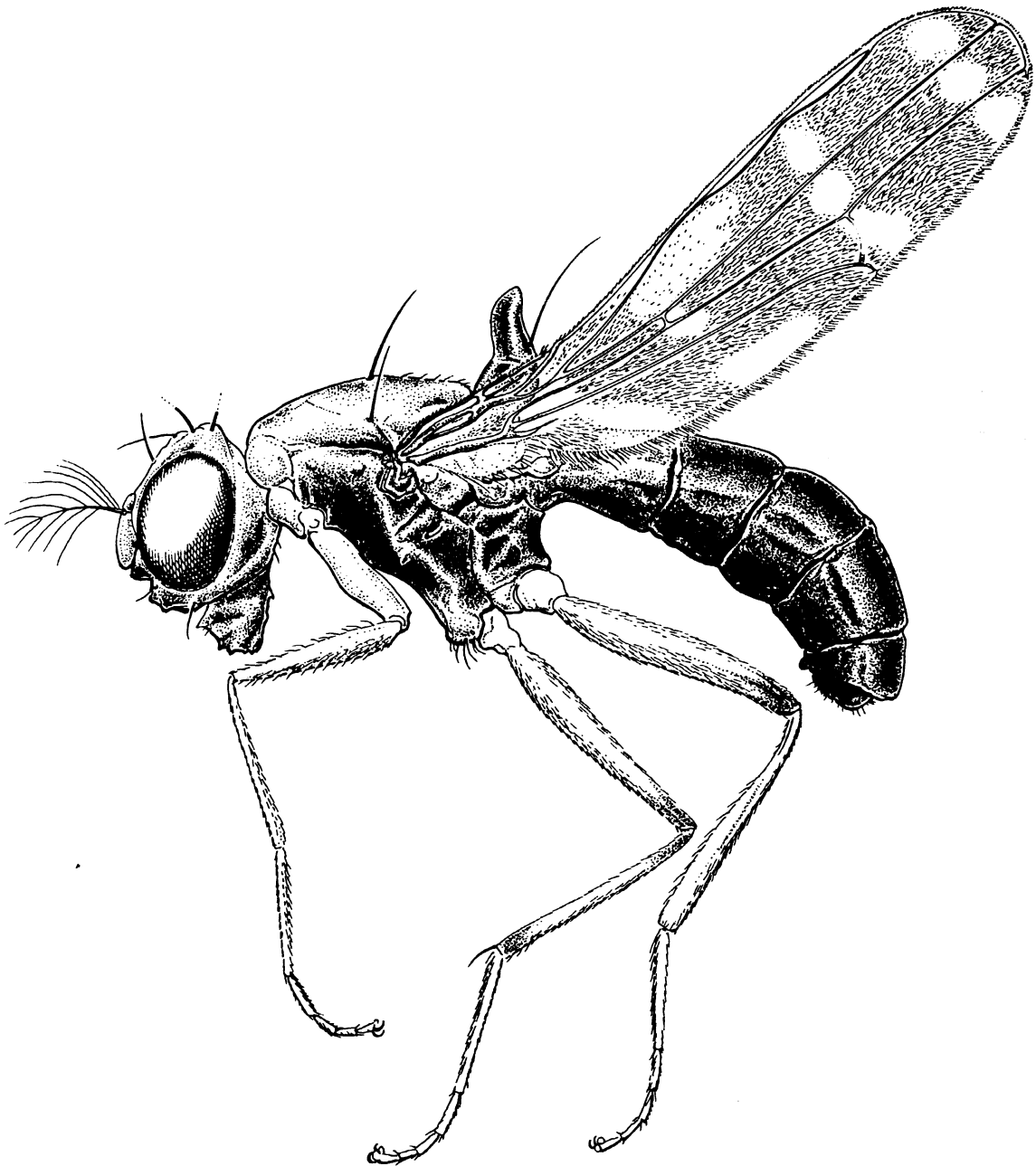


Fig. 1. *Hypselothyrea africana* sp. n., holotype male (del. A. Szappanos)

Abdomen very narrow, basal two segments hardly broader than half head breadth.

Male inner genitalia not studied. Epandrium small, cerci comparatively large like in *H. tenuis* (cf. OKADA 1980: fig. 17).

Distribution. This is the first described *Hypselothyrea* species from the African continent (cf. CHASSAGNARD *et al.* 1998, OKADA 1980).

Hypselothyrea africana sp. n. is related to *H. tenuis* OKADA, 1980, a Papua New Guinean species. Actually I do not know a species which would be closer to it (wing pattern highly similar, etc.). However, the differences are definite. This is a strongly stenopterous species, with the wing length 5 times more than wing breadth. While apex of scutellum is white in *tenuis*, that of the new species is wholly black. It has 8 dorsal long branches on arista (5 in *tenuis*). Since the differences found are more than enough to recognise this new species, I did not dissect the unique holotype.

Hypselothyrea brevipennis DE MEIJERE, 1906

DE MEIJERE 1906: 195.

Material studied (HNHM): holotype female: double mounted through a 10×5×1.2 mm Sambucus-like bricklet, minuten covered by and transferred into FeS (?Ag₂S) crystals, the original hole of minuten 4 mm deep, dark, the minuten was broken, the specimen repinned into bricklet behind the original hole; right wing on a white label pinned under the specimen, which is without head and abdomen, also hind legs lost and all setae broken.

Labels on holotype: 1) [printed card, 11×4 mm] Sattelberg Huon Golf [on reverse side] “IX. 25.”; 2) [printed card, 10×4 mm] N. Guinea, Biró 1898, 3) [grey paper, 5×4 mm] “4” (a collection label of Biró or of the HNHM; an additional label between 3) and 4), printed number, 39, I think it as an identity label of DE MEIJERE during his studies; 4) [dirty white paper, 20*9 mm, handwriting of DE MEIJERE] “*Hypselothyrea brevipennis* de Meij. Type. de Meij. det.05.”; 5) [red margined Holotypus label of the HNHM, without writing].

Wing length 1.31 mm, wing breadth 0.485 mm.

Another, topotypic female was found in the HNHM (rusty needle, double mounted in a Sambucus-like bricklet of 12×9×5 mm with rusty minuten; specimen without head, left wing and left hind leg): labels 1) – 3) as on the holotype; the last one is obviously a collection label referring to the same locality as of the type, 4) [dirty white paper, 18×10 mm, handwriting of DUDA] “*Hypselothyrea brevipennis* de Meij. ♀ d. Duda”, 5) [yellow paper, 15×8 mm, handwriting of DUDA] “1. Flügel fotogr.”.

There is a third pin in the HNHM, which is obviously a head of this species. Labels 1)–3) as above, 4) “*Hypselothyrea brevipennis* ♀ det. Duda” (DUDA’s handwriting, i.e. labelled by DUDA, which emerges a mystery, since labels 1) and 2) were printed in Budapest).

The head may belong to any of the two specimens. This head is without setae and left antennae and glued massively on a plastic (celluloide) label. Right antenna

with 6 dorsal and 3 ventral long arisal rays, frontal shield granulose. As a matter of course, I cannot decide whether the holotype specimen is a male or a female (cf. BÄCHLI 1984b: 30).

OKADA (1980) did not see the type of this species and some of its characters were erroneously given there. This is why I add some additional features here.

I was able to detect only the posterior pair of dorsocentrals. Mesonotum microgranulose, mat, dark graphite-grey. Scutellum comparatively small, upright. Legs not unicolorous, as stated by OKADA: fore coxa, basal half of fore femur, basal 3/5 of mid and hind femora, whole mid tibia, mid and hind tarsi yellow, fore tarsus (except for the dark base of metatarsus) whitish, apical half of fore femur, apical 2/5 of mid and hind femora and fore tibia dark; right tibia of the second specimen is brown. Wing patterned (see fig. 4 of DUDA (1928)): dark brown with 3 light transverse bands consisting of 3 confluent light spots each, Cx 3.0 or so, 2.95 on holotype.

OKADA's (1980) key is improper to identify this species, which is otherwise a very distinct one.

Hypselothyrea deficiens sp. n. (Figs 2–4)

Holotype male (MHNG): N Thailand 900, Chiang Mai Prov., Doi Suthep-Pui N.P., What Phrathat – 18.80N/98.91E, 16. X. 2000, MERZ & SCHWENDINGER leg.

Paratypes (MHNG, 2 m, 1 f in HNHM): 1 male (HNHM, gen. prep., abdomen with genitalia in a microvial with glycerol), 1 female: data same as for holotype; 1 female (HNHM, abdomen lost during preparation): *ibid.*, 950, 17. X.; 1 male: *ibid.*, 1100, 18.81N/98.91E, 17. X.; 1 male: *ibid.*, 19. X.; 1 male: *ibid.*, 26. X., B. MERZ leg.; 3 males, 1 female (1 male in HNHM): *ibid.*, 17. X., B. MERZ leg.; 1 male (in alcohol): Thaïlande, Khao Yai Nat. Park, aux environs de "Headquarters", 750–850 m, leg. D. H. BURCKHARDT et I. LÖBL, 26. XI.–3. XII. 1985, No. 28b [tamisage de débris végétaux].

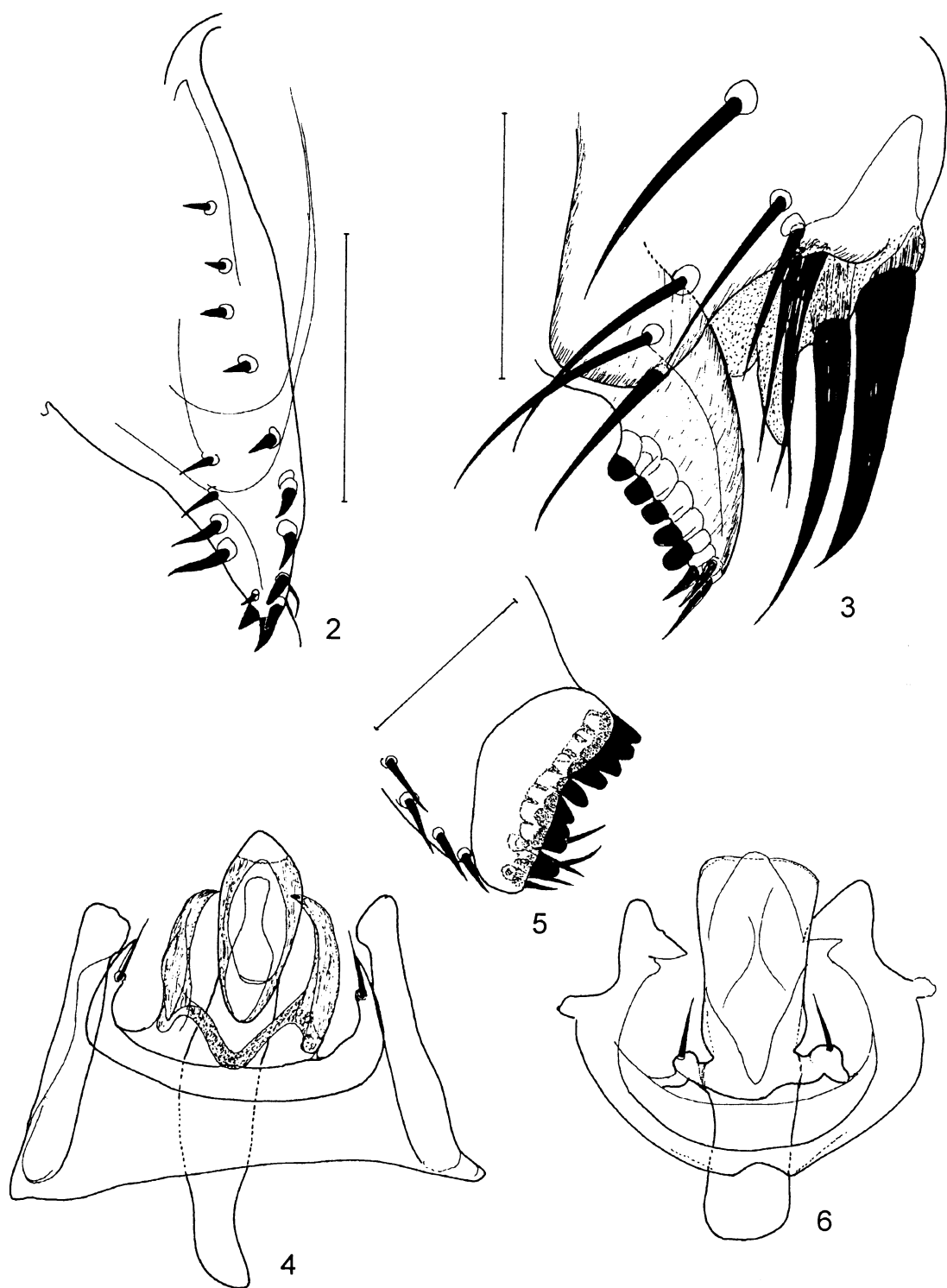
Measurements in mm: body length 2.16 (holotype, measured along downcurved abdomen), 1.95–2.20 (paratypes), wing length 2.02, 1.78–2.05, wing breadth 0.59, 0.51–0.60.

Body ochre, shiny, caudal part of mesonotum, dorsal surface of scutellum, as well as caudal and ventral parts of pleurae diffuse brown.

Frontal shield quadrate, shiny yellow. Antenna darker brown dorsally, brownish yellow ventrally in its whole length. Arista with 3 long curved dorsal and 2 long curved ventral rays behind long curved apical fork. First flagellomere with 0.02 mm long cilia apically. Facial keel similar to that of *H. guttata*: reaches not much more ventrally than 1/2 of face, dorsal surface flat, ventral edge nearly sharp. Frontal setae as usual, ocellars 0.25 mm long.

Two pairs of strong dorsocentral setae, acrostichals in 2 well-ordered rows.

Legs three-coloured: fore coxa, mid and hind tarsi yellow, fore tibia and tarsi, basal half of mid and hind femora whitish, apices of femora and base of fore femur, as well as mid and hind tibiae black.



Figs 2–6. 2–4 = *Hypselothyrea deficiens* sp. n.: 2 = oviscapt, sublateral view, 3 = apex of epandrium and surstylus, broadest extension, 4 = hypandrium and genitalia, ventral view. 5–6 = *H. fascipennis* DE MEIJERE: 5 = surstylus, broadest extension, 6 = hypandrium and genitalia, ventral view. Scale bars: 0.1 mm (Figs 2, 4, 6), 0.05 mm (Fig. 3), 0.05 mm (Fig. 5)

Wing patterned, similarly to *H. paraguttata* (see OKADA 1980: fig. 3), darker colour caused mainly by the density and dark colour of membrane microtrichia and also by the colour of membrane itself. Veins brown on areas of dark colour, ochre on light spots. Costa undulately bent on mg_2 section. No distal spot in r_1 cell. C index 0.66 mm / 0.74 mm, i.e. 0.89. Anal cell open, anal vein short bacilliform, not continued distally to anal cell.

Abdomen basically shiny darker yellow, caudal margins of tergites 2 to 5 (in some males also medial 2/3 of tergites 4 to 6) with gradually longer black transverse stripes.

Male genitalia (Figs 3–4) peculiar with 2 extremely long and thick thorns (Fig. 3) on epandrium apically. Surstylus with 5 prenisetae only. Also inner genitalia are unique (Fig. 4): parameres developed into a pair of extremely large and thick processes, which is quite unusual in this species group.

Apex of female oviscapt (Fig. 2) laterally turned, consequently, not possible to make a good figure in a clear lateral view. Positioning of armature is not much different from that of *H. guttata*, but pegs are more acute and also longer.

I found another undescribed sp.n. of the *H. guttata* species group: 1 male (MHNG, defected specimen, e.g. antennae lost): Thailand, Doi Suthep-Pui N.P., 1300m, Huay Khok Ma, 19. XII. 2001, P. SCHWENDINGER leg. For differentiating characters see the key for the species of this species group.

Hypselothyrea dimidiata DE MEIJERE, 1906

DE MEIJERE 1906: 194.

Material studied: syntype male (HNHM): labels as given by de JONG (2000: 65).

Thorax incl. scutellum, frons and also most of the legs are yellow, which make this species easily recognisable. The syntype now in the Berlin Museum must have been also in the HNHM (cf. DUDA 1928: 85). He did not mean to keep a duplicate, since he did not describe this species (cf. BÄCHLI 1984a).

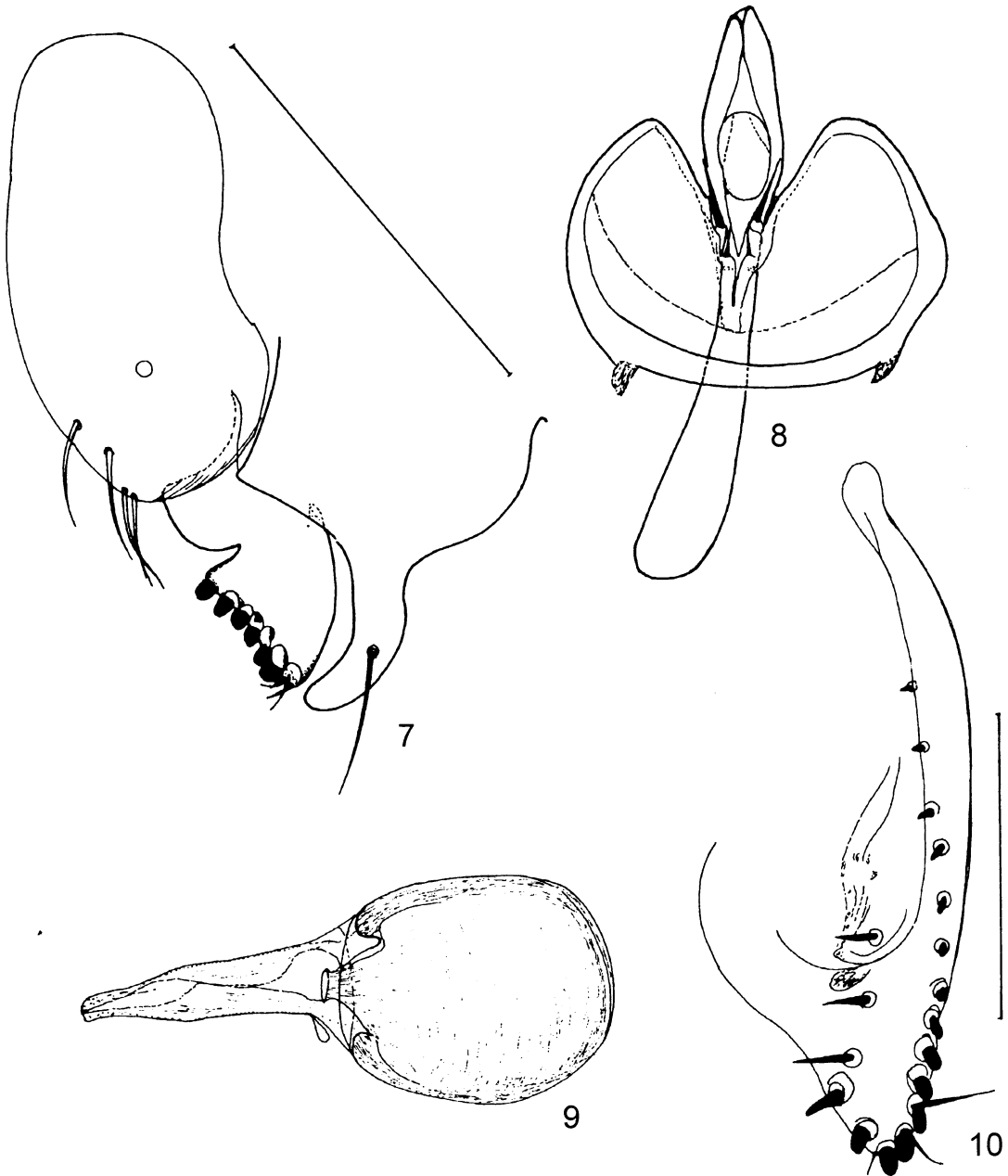
Hypselothyrea fascipennis DE MEIJERE, 1906 (Figs 5–6)

DE MEIJERE 1906: 194.

Material studied: 2 males (HNHM): India, Anamalai Hills, Tamil Nadu, No. 318, 31. III. 1980, leg. TOPÁL; 1 female (MHNG): INDIA, [Madras] Palni Hills, 23 km E de Kodaikanal, 15-XI-1972, 1200 m, BESUCHET – LÖBL – MUSSARD, No. 29.

The types were thought to be lost, but de JONG (2000) found one of the syntypes in the Berlin Museum. OKADA (1980) keyed also this species correctly, contrary to the situation that he did not have specimens with him. In order to facili-

tate identifications in the future, I made two figures on male genitalia. I was able to see only one pair (rather strong, thick) of setae on parameres (Fig. 6), phallus rather robust, broad apically; surstylus (Fig. 5) with 9 prenisetae and additional thick setae, which emerge on the medial surface.



Figs 7–10. Terminalia of *Hypselothyrea guttata* DUDA: 7 = apex of epandrium, cercus and surstylus, broadest extension (subventral view), 8 = hypandrium and genitalia, ventral view, 9 = spermatheca, 10 = oviscapt, sublateral view. Scale bars: 0.1 mm (Fig. 7), 0.1 mm (Figs 8–10)

Hypselothyrea guttata DUDA, 1926 (Figs 7–10)

DUDA 1926: 56.

Material studied: Thailand: 1 male (MHNG): Khao Yai Nat. Park, Khao Khieo, 1150 m, 28. XI. 85, leg. I. LÖBL et BURCKHARDT, No. 29; 1 male (MHNG): *ibid.*, 26. XI.–3. XII. 85, No. 28b.; N Thailand: 4 males, 2 females (MHNG, HNHM): Doi Suthep-Pui N.P., 18.80N/98.92E, 17. X. 2000, B. MERZ leg.; 3 males, 1 female (MHNG): *ibid.*, 26. X.; 1 male (MHNG): *ibid.*, 27. X.; 5 males, 1 female (MHNG, HNHM): What Suandok, 18.79N/98.97E, 330 m, 19. X.; 4 males, 2 females (MHNG, 1 m in HNHM): *ibid.*, 1250, nr Phuphing Palace, 18.80N/98.90E, 1. XI., MERZ & SCHWENDINGER leg.; 2 males (MHNG): *ibid.*, 1100 m, What Phrathat, 18.81N/98.91E, 17. X., MERZ & SCHWENDINGER leg.; 1 male (MHNG): *ibid.*, 1200, 18.80N/98.92E; 1 male (MHNG): *ibid.*, 900, 18.80N/98.92E, 16. X.; 3 males, 8 females (MHNG, HNHM): *ibid.*, 1300 m, Huay Khok Ma, 19. XII. 2001, P. SCHWENDINGER leg.; 1 male, 2 females (MHNG): 1500 m, Nan Prov., Doi Wao, W of Tha Wang Pha, 18. XII. 2002/22, 19.08.13N/100.38.29E, P. SCHWENDINGER leg.; 1 female (MHNG): 1720, Huai Nam Dang NP, 18 km E Pui, 19.31N/98.60E, 22. X. 2000, B. MERZ & SCHWENDINGER leg.; 46 males, 30 females: (HNHM): TAIWAN, Nantou Hsien: Shuili, forest undergrowth, Sep 30, 2000, leg. L. PAPP, No. 12; 3 males, 9 females (HNHM, TFR): TAIWAN, Kaohsiung Hsien, Liukuei, Shan-Ping LTER Site, creek valley, Mar 31–Apr 1, 2003, No. 13, L. PAPP & M. FÖLDVÁRI; 1 male (HNHM): *ibid.*, over/along a creek, April 2–3, leg. L. PAPP, No. 15; 1 female (HNHM): *ibid.*, over/along a creek, April 2, leg. M. FÖLDVÁRI, No. 18; 4 males, 4 females (HNHM, TFR): Ilan Hsien, Fu-Shan LTER Site, along/over a small river, March 26, leg. L. PAPP, No. 4; 3 males, 1 female (HNHM): *ibid.*, along a forest path, March 27, L. PAPP & M. FÖLDVÁRI, No. 9; 4 males, 1 female (HNHM): Vietnam, Cuc phuong, Ninh binh, 6–18./9. V. 1966., leg. TOPÁL. In all probability there are additional specimens in the HNHM in the drosophilid material from collecting of L. PAPP and M. FÖLDVÁRI in Taiwan in 2003.

Male genitalia (Figs 7–9) unique with the long digitiform anteroventral process of epandrium, which bears a long seta (Fig. 7). Phallus (Fig. 8) comparatively small, apex blunt. Parameral setae not in the plane of hypandrium + gonopods: the two pairs are not situated in a plane but above each other.

Female oviscapt (Fig. 10) with mainly blunt marginal and acute lateral pegs. Spermatheca (Fig. 9) short ovoid, surface smooth.

This is probably the commonest species of the genus, which is widespread in the Oriental region from India to Taiwan and Java.

Hypselothyrea paraguttata TAKADA et MOMMA, 1975 (Figs 11–13)

TAKADA et MOMMA 1975: 21.

Material studied: Thailand: 1 male (MHNG; defected, left wing glued under the specimen, genitalia in microvial with glycerol): Thailand, 2000 m, Chiang Mai Prov., Doi Pha Hom Pak, W of Fang, /17, 15. XII. 2002, 20.02.43N/99.08.43E, P. SCHWENDINGER leg.; 1 female (HNHM): 1500 m, Nan Prov., Doi Wao, W of Tha Wang Pha, 18. XII. 2002/22, 19.08.13N/100.38.29E, P. SCHWENDINGER leg.

I found one male and one female specimens of a species close to *H. guttata*, which I think *H. paraguttata*. However, male genitalia seem different from those, which OKADA (1980: figs 25–26) gave for this species. I guess the long thick setae on anterior ventral part of epandrium, which emerge above each other and adherent on a longer section, may have resulted in a view depicted by OKADA. At least I do not know any other form with two dark spots in r_1 cell and 11 prenisetae on surstylus (Fig. 11). I depicted also phallus in lateral view (Fig. 12), although shape in this view depends on the extent latero-extension of left and right halves of phallus (my figure is different from that of OKADA). The question will be adequately answered by a study of the type of *H. paraguttata* only.

The differentiating characters to *H. guttata* are given in a short key below. The colour of scutellum, as given by OKADA (1980) such a character, is misleading (a rather high proportion of *H. guttata* has dark scutellum).

A KEY FOR THE *H. GUTTATA* SPECIES GROUP

1. Wing with only 1 (basal) spot in r_1 radial cell. Fore femur with a row of black anteroventral peg-like setae 2
- Wing with 2 dark spots in r_1 cell. Fore femur with or without a row of anteroventral setae 3
2. Male epandrium apically with 2 extremely long and thick thorns (Fig. 3).
Surstylus with 5 prenisetae only *H. deficiens* sp. n.
- Male epandrium apically with strong but normal setae only. Surstylus with 13 prenisetae undescribed sp. n. from Thailand
3. Fore femur with a row of black anteroventral peg-like bristles. Surstylus with 6 prenisetae only (Fig. 7) *H. guttata* DUDA, 1926
- Fore femur without a row of peg-like anteroventral bristles. Surstylus with 11 prenisetae (Fig. 11) *H. paraguttata* TAKADA et MOMMA, 1975

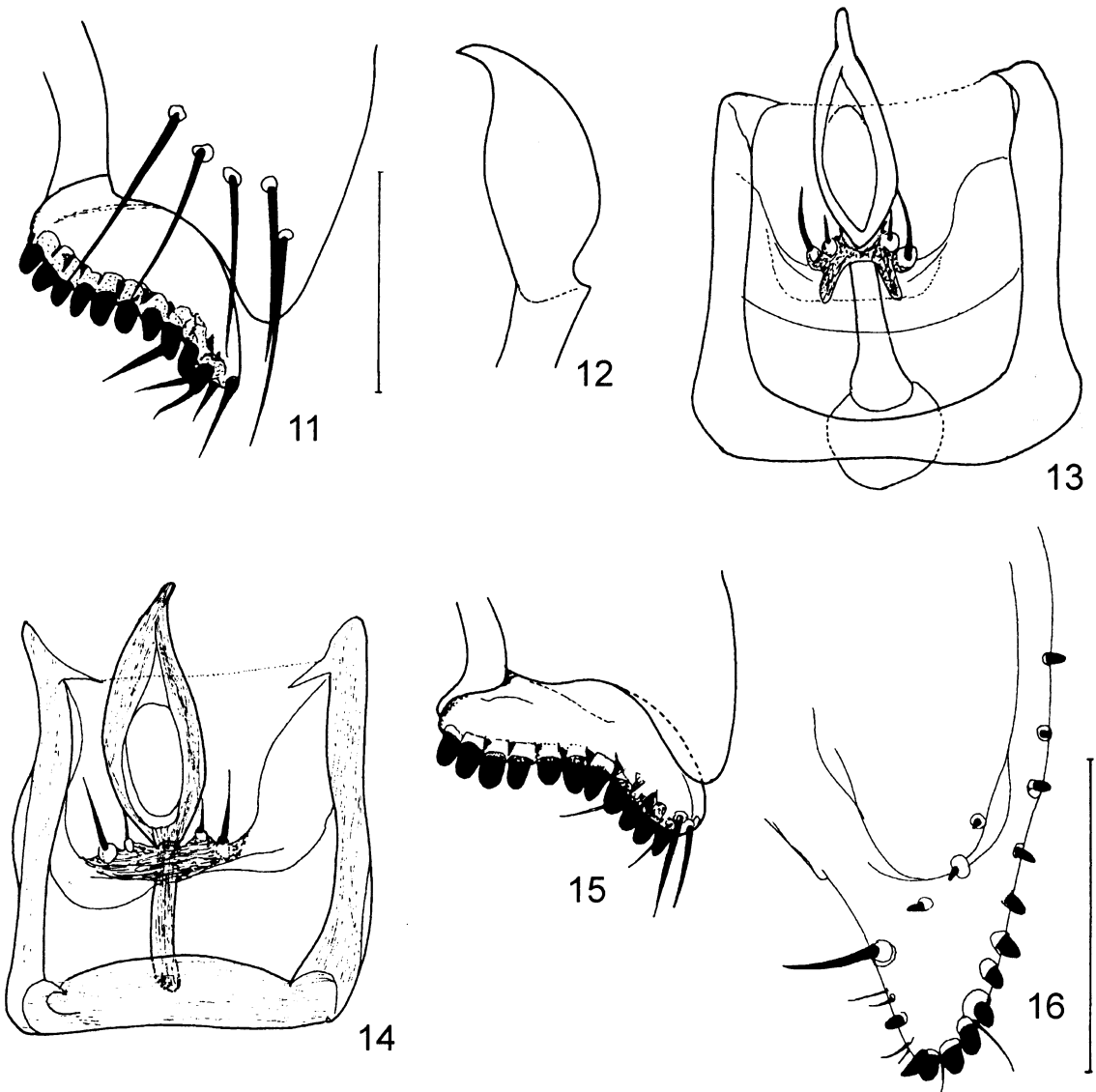
Hypselothyrea lanigera DUDA, 1928

DUDA 1928: 88.

Material studied: syntype female (HNHM, double mounted on a (?) silver minuten, right wing missing but otherwise in a good state of preservation): 1) [printed card, 11×4 mm] N. Guinea, Biró 1899; 2) [printed card, 11×4 mm] Sattelberg, Huon Golf [on reverse side] “V.”; 3) [dirty white paper,

16×10 mm] “*Hypselothyrea lanigera* n sp ♀ det DUDA” (DUDA’s handwriting), 4) [red margined Syntypus label of the HNHM] “*Hypselothyrea lanigera* Duda, G. Bächli det. 1983” (G. BÄCHLI’s handwriting).

This specimen agrees in every respect with the species, which OKADA (1980) described and keyed. Ventral surface of scutellum and tergites 4–6 covered with dense white setulae. *H. paralanigera* sp. n. is not closely related, e.g. fore tibia is



Figs 11–16. 11–13 = *Hypselothyrea paraguttata* TAKADA et MOMMA, male terminalia: 11 = surstylus, broadest extension, 12 = phallus, lateral view, 13 = hypandrium and genitalia, ventral view. 14–16 = *H. mixta* sp. n., paratypes, terminalia: 14 = hypandrium and genitalia, ventral view, 15 = surstylus, broadest extension, 16 = oviscapt, lateral view. Scale bars: 0.05 mm (Figs 11, 15), 0.1 mm (Figs 12–14, 16)

light in this species and black in *H. paralanigera*. I do not detect lateral scutellar setae, body is mainly black and frontal shield granulose, while *H. paralanigera* has small but distinct lateral scutellars, its thorax is lighter and frontal shield is shiny.

***Hypselothyrea mixta* sp. n.**

(Figs 14–16)

Holotype female (HNHM): India, Ghum, W. Bengal – 1967. IV. 19., leg. TOPÁL.

Paratypes (HNHM): 3 females: same data; 1 male (HNHM, abdomen with genitalia in a plastic microvial with glycerol): India, Calcutta, West Bengal, No. 436, 30. V. 1980., leg. TOPÁL.

Measurements in mm: body length 2.25 (holotype), 2.02–2.25 (paratypes), wing length 2.80, 2.45–2.80, wing breadth 0.91, 0.85–0.92.

Body ochre or lighter brown, first flagellomere and lateral parts of tergites brownish.

Frontal shield shiny, trapezoidal. Orbital plate occupied half breadth of the area between frontal shield and eye. Face yellow, shiny, carina $3/5$ length of facial plate, sharply bordered laterally, 0.11 mm at broadest. Fronto-orbitals are rather strong, pro- and reclinate with a minute hair between them. Postocular setulae longer than usual, 0.09 mm. Vibrissal length 0.187 on holotype. Palpus with a 0.11 mm long apical and a 0.09 mm long ventral seta. Arista with 3 dorsal and 2 ventral long branches.

Mesonotum finely granulated, that is, not strongly shiny. Scutellum actually not upright, dorsal profile convex, scutellum comparatively short, 0.21 mm. Dorsocentrals in 2 strong pairs. Anterior scutellars half as long as apicals, apical scutellars emerge subapically. Pleura unicolorous, brown on the male paratype, ochre (probably discoloured) in the female type specimens.

Legs yellow, only fore femur and a wide subapical ring on hind femur brown (legs discoloured, i.e. all yellow in the female specimens, incl. holotype). Fore femur with 8–9 short black teeth on the anteroventral surface of apical $1/2$ – $3/5$.

Wing patterned, similarly as in *H. guttata*, but there are two light spots in cell r_{4+5} distally to the apex of R_{2+3} , C-index 0.82, C3 fringe 0.43. Halteres light brown.

Abdomen shiny, yellow medially but brownish on lateral parts of tergites.

Male genitalia small. Epandrium neither without a finger-like process nor with a large spine. Surstylus (Fig. 15) with 11 prenisetae plus some true setae on anterior apex. Phallapodeme (Fig. 14) comparatively short and thin, medial parameral setae distinct, lateral ones thick and medium long.

Female oviscapt (Fig. 16) narrowly triangular. Ventral pegs fine and blunt, dorsal edge with a rather strong thick acute seta.

Distribution. India (West Bengal).

Hypselothyrea mixta sp. n. is an easily recognisable species. In OKADA'S (1980) key it runs to *guttata*–*pseudoguttata*, if we regard the scutellum upright (which is not the case). Indeed, the scutellum not upright, its dorsal profile convex, basal scutellars are half as long as apicals, while the ratio is only $1/3$ in *guttata*. Apical scutellars emerge subapically, while they are subventral in *guttata*. I cannot exclude that the new species related to *guttata* species group though the difference in wing pattern, etc. seems significant.

Hypselothyrea paralanigera sp. n.

(Figs 17–19)

Holotype male (MHNG): N Thailand 330, Chiang Mai Prov., Chiang Mai (Suandok), 18.79N/98.97E, 29. X. 2000, B. MERZ.

Paratypes: 6 males, 2 females (MHNG, 3 m, 1 f in HNHM): same data as for the holotype; 2 males (MHNG, HNHM): *ibid.*, 18. X.; 2 males, 1 female (MHNG): 350, Chiang Mai (Univ.), 18.80N/98.95E, 31. X.; 4 males, 3 females (MHNG, 1 m, 1 f in HNHM): 900, Chiang Mai Prov., Doi Suthep-Pui N.P., What Phrathat, 18.80N/98.92E, 16. X. 2000, B. MERZ & SCHWENDINGER leg.; 2 males (MHNG): *ibid.*, 950/1100, 17./27. X.; 1 male, 3 females (MHNG, 1 f in HNHM): 4–800, Chiang Mai Prov., Doi Suthep-Pui N.P., Palad Trail, 18.79N/98.93E, 16. X., B. MERZ & SCHWENDINGER leg.; 1 male (MHNG): Mae Hia, 18.77N/98.94E, 18. X., 400 m, B. MERZ leg.; 2 males (MHNG, HNHM): What Suandok, 18.79N/98.97E, 19. X., 330 m; 2 males, 1 female (MHNG): Doi Suthep-Pui N.P., 18.79N/98.93E, 16. X., B. MERZ leg.; 1 female (MHNG): *ibid.*, 18.80N/98.92E, 17. X. 1 female (MHNG): MALAYSIA: Kedah, Langkani Island, Beringin Beach, 6.17.50N/99.51.39E, 3. XII. 2001, P. SCHWENDINGER leg.

Measurements in mm: body length 2.30 (holotype), 2.05–2.45 (paratypes), wing length 1.85 (holotype), 1.80–1.90 (paratypes), wing breadth 0.55, 0.52–0.58.

Head black, cheeks and subocular part of genae grey dusted. Thorax mainly, abdomen wholly black. Anterior part of mesonotum, incl. notopleura yellowish brown and also parts of anepisternum and katepisternum similarly lighter. Metanotum, caudal part of anepisternum and meron dark but grey dusted.

Frontal shield much longer than broad. Orbitals confluent with vertical lateral plates, bright shiny. Arista with (5)–6 dorsal and (3)–4 ventral long curved rays behind long curved apical fork. Facial keel flat dorsally, broad (0.06–0.07 mm at broadest), nose-like in profile, down to 2/3 of face.

Mesonotum granulose. Two pairs of dorsocentrals, no acrostichals. Basal scutellar present but small (0.075–0.09 mm) and fine. Ventral surface of scutellum without dense white setulae, contrary to *H. lanigera*.

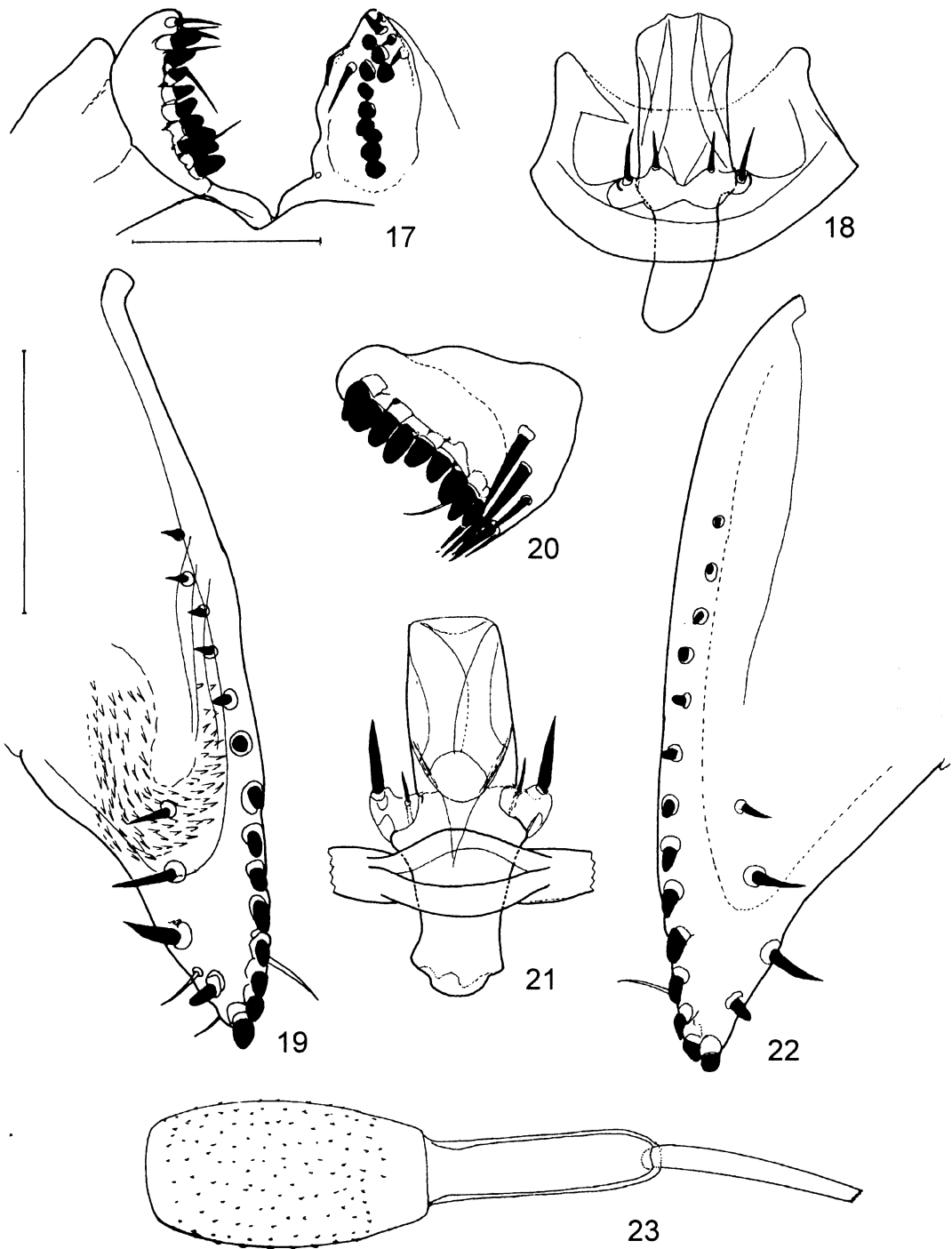
Wing slightly reduced and rather strongly narrowed, clear, light greyish, veins yellow, basal veins ochre. C index (holotype) 0.85 mm / 0.47 mm, i.e. 1.81. Halter reduced, dirty yellow, medial section darker.

Fore femur with a row (about 20) peg-like anteroventral thornlets and with a row of 4–5 thick and acute posteroventral setae. Apical half of fore femur, basal 2/3 of fore metatarsus, fore and hind tibiae black (or very dark brown), fore coxa, basal half of femora, mid tibia, most parts of fore tarsomeres and mid tarsus yellow (or even whitish in some specimens), hind tarsomeres brown. Fore femur dark in its whole length in some specimens.

Abdomen without macrochaetae. Caudally directed (subterminal) tergites not covered with short dense white setulae, as typical for *H. lanigera*. Male genitalia comparatively small, surstylus (Fig. 17) not large, with 10 prensisetae, not in one row. Both phallus and phallapodeme (Fig. 18) short and thick, medial parameral setae rather strong, lateral ones medium-sized.

Female oviscapt (Fig. 19) rather long and apical part narrowed, ventral marginal setae (pegs) partly acute, dorsal setae strong (thick) and acute.

H. paralanigera sp. n. keys to *H. lanigera* DUDA in OKADA's (1980) key. Its shiny frontal shield and lack of dense white setulae on ventral surface of scutellum and on caudal tergites makes it easily separable from *H. lanigera* (New Guinea).



Figs 17–23. 17–19 = *Hypselothyrea paralanigera* sp. n., paratypes, terminalia: 17 = surstyli, in view (almost ventral) of the broadest extension of the right surstylus, 18 = hypandrium and genitalia, ventral view (hypandrium is almost perpendicular to this plane), 19 = oviscapt, lateral view. 20–23 = *H. paratenuis* sp. n., paratypes, terminalia: 20 = surstylus, broadest extension (subventral view), 21 = medial part of hypandrium and genitalia, ventral view (hypandrium is almost perpendicular to this plane), 22 = oviscapt, lateral view, 23 = spermatheca (drawn when in water). Scale bars: 0.05 mm (Figs 17, 20), 0.1 mm (Figs 18–19, 21–23)

***Hypselothyrea paratenuis* sp. n.**

(Figs 20–23)

Holotype male (HNHM): Vietnam, Cuc phuong, Ninh binh – 6–18. V. 1966., leg. TOPÁL.

Paratypes: Thailand: 1 male, 1 female (MHNG, genitalia prep. in microvial with glycerol): N Thailand, 1250, Chiang Mai Prov., Doi Suthep-Pui N.P., nr Phuphing Palace, 18.80N/98.90S, 19. X. 2000, MERZ & SCHWENDINGER leg.; 1 female (HNHM): *ibid.*, 26. X.; 1 female (MHNG): *ibid.*, 1100, above What Phrathat, 18.80N/98.92E, 27. X., MERZ & SCHWENDINGER leg.; 1 female (HNHM): *ibid.*, 18.81N/98.91S, 17. X.

Measurements in mm: body length 3.0 (holotype, caudal half of abdomen strongly down-curved), 3.10–3.30 (paratypes), wing length 2.05 (holotype), 2.25–2.35 (paratypes), wing breadth 0.70 (holotype), 0.71–0.72 (paratypes).

Mostly black. Mesonotum dull brown (holotype) or black (paratypes), pleura shiny, in detail: mesonotum granulose, metanotum and dorsal part of anepimeron microtomentose, pleura otherwise shiny black. Abdomen shiny black. This is a *Hypselothyrea* of rather robust, strongly ant-like appearance.

Frontal shield actually does not exist in this species. Vertical setae long and thick, emerge on a massive large tubercle. Ocellar structures (ocelli and ocellar setae) on a high tubercle. Instead of a frontal shield, a pair of interfrontal ridges present laterally to ocellar tubercle. Orbitalia similarly modified: a pair of orbital ridges present bearing a pair of long thick anterior proclinate and posterior reclinate fronto-orbital pairs each. Those 7 tubercles/ridges are subshiny, other parts of frons brown (black) microtomentose. Eye densely hairy. Face subshiny in general, shiny below carina. Carina nose-like in profile, very broad, subapically 0.16 mm, slightly more than 1/3 breadth of facial plate (!). Cheeks narrow, white microtomentose. Vibrissa strong, 0.235 mm, emerging on small tubercles. Peristomals weak. Eyes with long fine hairs. Clypeus comparatively very strong, 0.15 mm high, protruding below mouth opening. Palpus brown with a 0.15 mm long apical and a 0.11 mm long ventral medial seta/hair. Arista with 6 dorsal and 2–3 ventral long branches.

Mesonotum dull brown, microgranulate. Scutellum light brown, upright, 0.41 mm (!) high over scutum, dorsal profile not broken. Two pairs of extremely strong dorsocentrals. Apical scutellars very long and thick, scutellar length 0.43 mm, apical scutellars 0.51 mm on a paratype female (more than 0.5 mm long, but apex broken on holotype). Ventral surface of scutellum without dense white setulae. No acrostichals.

Legs ochre, shiny, fore and hind tibia dark brown (except for bases and apices) in holotype, mainly black but fore coxa, basal part of mid and hind femora, whole mid tibia as well as fore tarsomeres and mid and hind tarsi yellow (paratypes). Fore femur with a long row of thick black anteroventral thornlets.

Wing patterned, reduced both in length and width (only 2/3 body length). Veins brown. A little more than apical fourth of wing light (very light brownish), wing otherwise dark brown with light, diffusely bordered spots in cell r_{2+3} above R-M and in cubital cell between levels of cross-veins. Cross-veins also bordered by light spots. Anal cell closed, with a very short, slightly basally directed vein appendage of anal vein. C-index 1.56, C3 fringe on 3/8. Alula with 0.10 mm long marginal hairs. Halteres reduced in size, only 0.25 mm long, light brown.

Abdomen much narrowed subbasally; at caudal end of tergite 2 0.36 mm broad only (head 0.95 mm broad), without macrochaetae. Tergites 1 to 3 modified with a sagittal low blunt ridge and a pair of shallow emarginated groove laterally to it. This complex occupies 1/3 of tergal breadth. Tergites 4–6 dorsally with white setulae, which are less dense than in *H. lanigera*.

Epandrium comparatively very small, cerci nearly as high as epandrium. Surstylus (Fig. 20) slightly bilobed, outer (lateral) lobe with four thick, comparatively long setae, 9 prensisetae. Phallus rather short and thick (Fig. 21), phallapodeme particularly thick, lateral parameral setae extremely thick.

Female oviscapt (Fig. 22) similar to that of *H. paralanigera*, but dorsal (lateral) setae definitely shorter. Spermatheca (Fig. 23) much longer than broad, surface with small scales (spermathecae weakly sclerotized: after a short wash in sodium-hydroxyde they collapsed and it was possible to make drawing when put them in water only).

Distribution. Viet Nam, Thailand.

Hypselothyrea paratenuis sp. n. is a peculiar species with reduced wings. I am afraid, though it keys to *H. tenuis* OKADA, 1980, which was described from New Guinea (Mt. Missim, Wau), they are not closely related. Please note that OKADA did not put his *H. tenuis* correctly into the key: that species is with 1 pair of dorsocentrals.

Hypselothyrea scutellata OKADA, 1980

Material studied: 1 male (MHNG): Thaïlande, Kaeng Krachan, 200 m, 16. XI. 1985, leg. BURCKHARDT et I. LÖBL, No. 23.; 1 male (MHNG): ibid., 26.XI.–3. XII. 1985, No. 28b.

It was described from Thailand, Sarawak and Sabah.

These specimens agree in every respect with OKADA's (1980) concept for this species.

Subgenus *Deplanothyrea* OKADA, 1980

Type species: *Hypselothyrea breviscutellata* DUDA, 1928: 82 (orig. des.).

***Hypselothyrea (Deplanothyrea) amputata* sp. n.**

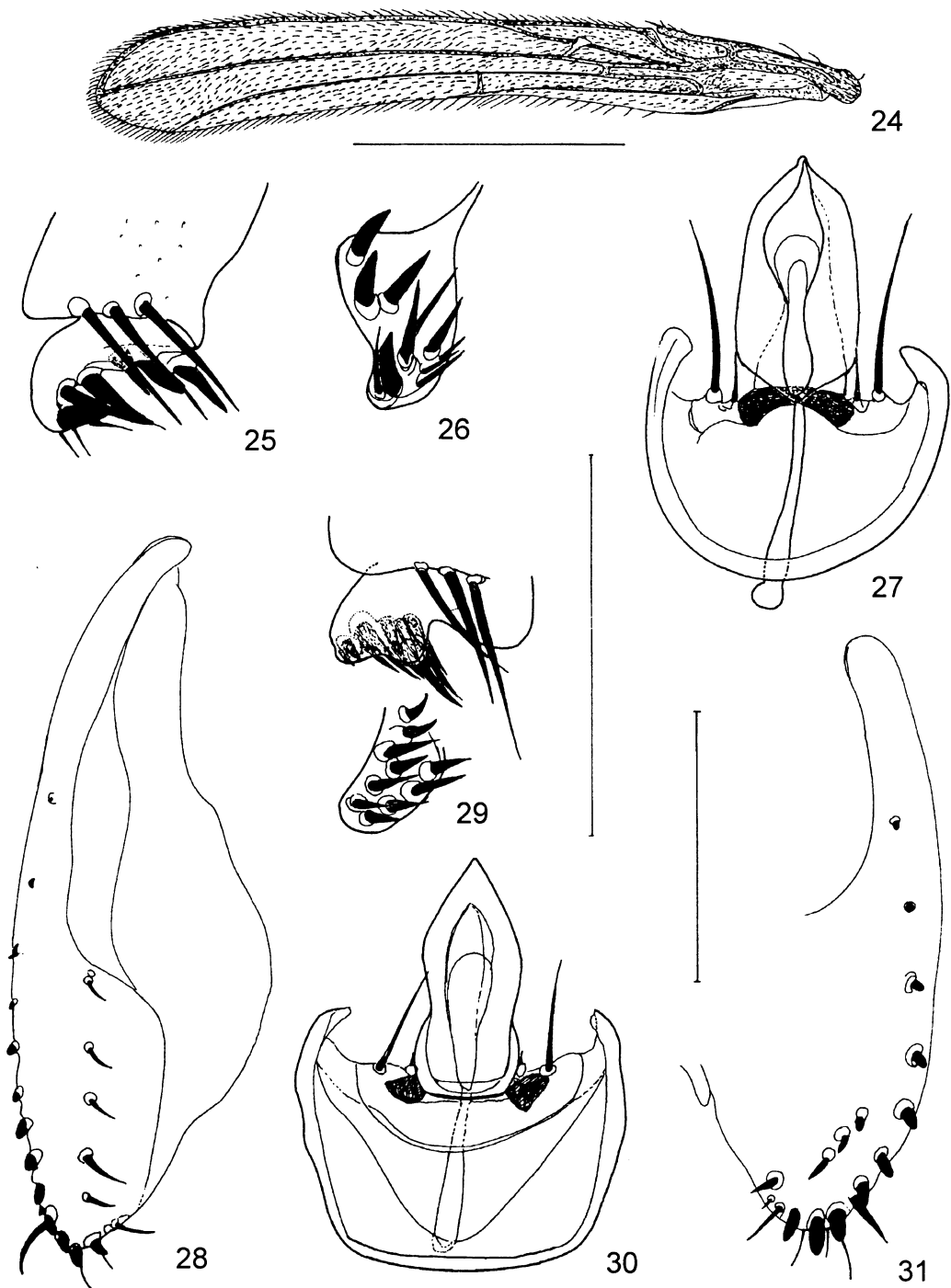
(Figs 24–27)

Holotype male (MHNG): Indonesie, Sumatra (Lac Maninjau): Garonggong, sur le versant du lac, 22. VII. 1984, leg. J. ROBERT (W), No. 18 [extraction par appareil Winkler-Moczarski].

Measurements in mm: body length 1.75, wing length 1.18, wing breadth (at broadest, i.e. subapically) 0.15.

Body much faded in alcohol, now light brown (probably dark brown when alive).

Frontal shield trapezoid, smooth and shiny. Carina only on 1/2 of facial plate. Anterior fronto-orbital pair proclinate and slightly latero-clinate, distinctly shorter than posterior one; ocellar and vertical setae strong. First flagellomere joins pedicel ventrally, first flagellomere with 0.02 mm long



Figs 24–31. 24. *Hypselothyrea (Deplanothyrea) amputata* sp. n., holotype male, wing. 25–31. *H. (D.) terminalia*: 25–27 = *H. (D.) amputata* sp. n., holotype, 25 = apex of epandrium and surstylus, broadest extension, 26 = surstylus, broadest extension, medial view, 27 = hypandrium and genitalia, ventral view. 28 = *H. (D.) formosana* sp. n., paratype, oviscapt, lateral view. 29–30 = *H. (D.) longimana* sp. n., paratype: 29 = surstyli, in view of the broadest extension of the right surstylus, 30 = hypandrium and genitalia, ventral view. 31 = *H. (D.) subaptera* sp. n., paratype female, oviscapt. Scale bars: 0.4 mm (Fig. 24), 0.05 mm (Figs 25–26, 29), 0.1 mm (Figs 27–28, 30–31)

cilia. Palpus with strong apical seta. Arista with 6 dorsal and 2 ventral long branches (rays) behind apical fork.

Mesonotum not granulated. Scutellum short, 0.12 mm long, 0.175 mm broad, not upright, but apical scutellars rather perpendicularly upright, 0.21 mm long; basal scutellars present only as 0.035 mm long setulae. Dorsocentrals in 2 pairs. Other thoracic setae: 1 anterior notopleural (posterior one present only as a small hair), 2 supra-alar (anterior one latero-clinate, posterior one upright and slightly inclinate), 1 postalar (only 1/2 as long as posterior dc and much thinner); 1 normal katepisternal pair of setae. Two rows of minute acrostichals.

Legs light brown, tarsi even paler. Fore femur without anteroventral spinules, 1 strong posteroventral seta only

Wing reduced, not only shortened, but also cubital and anal regions almost completely lost (Fig. 24). C-index 0.41. Halteres smaller than normal.

Male genitalia basically as in other species of *Deplanothyrea*, e.g. surstylar thorns never in one row and much larger than in *H. (Hypselothyrea)*: they are not prenisetae. Epandrium with at least 3 long and thick setae ventrally. Surstylus (Figs 25–26) with strong, mostly very thick thorns on almost their medial surface. Phallus broad (Fig. 27), phallapodeme thin, lateral setae of parameres extremely long.

Female unknown.

Distribution. Indonesia (Sumatra).

Hypselothyrea amputata sp. n. is a strongly reduced-winged species. It is probably related to *H. vanarasiensis* GUPTA (2 pairs of dorsocentrals, wing hyaline, etc.). However, not only its wing reduction but also details of male genitalia make it easily identifiable (another note under *H. (D.) longimana* sp. n.).

Hypselothyrea (Deplanothyrea) aptera L. PAPP, 1979

Material studied: 3 paratypes (HNHM); 3 males, 9 females (MHNG, 1 male, 2 females in HNHM): S India, [Madras] Kodaikanal, 2200 m, 10. I. 1972, leg. R. Mussard, No. In-72/9; 1 male (MHNG): *ibid.*, 1200 m, 10. I., No. In-72/1.

The latter specimens are the same in every respect as the type specimens; no wonder, since they were captured very close to the type locality of the holotype of this species.

Hypselothyrea (Deplanothyrea) breviscutellata DUDA, 1928

The holotype female ought to have been found in the HNHM but the type is obviously lost. BÄCHLI (1982, 1984b), while revising the types of the Palaearctic species of Drosophilidae and the drosophilid types of the HNHM, did not find it. It was not found either in the collection of the Berlin Museum, where DUDA's collection is preserved (BÄCHLI 1984a). I have not traced anything in the files of the HNHM about its loan to anybody.

The species is otherwise slightly reduced-winged (cf. DUDA 1928: fig. 1). A redescription was given by OKADA (1956). Later he (OKADA 1980) summarised its differentiating characters and published also figures on male genitalia. There is no reason not to accept OKADA's concept of this species but since *H. breviscutellata* is the type species of the subgenus *Deplanothyrea*, it would be advisable to designate a neotype for this species.

Hypselothyrea (Deplanothyrea) formosana sp. n.

(Fig. 28)

Holotype female (HNHM): TAIWAN, Nantou Hsien: Shuili, forest undergrowth, Sep 30, 2000, leg. L. PAPP, No. 12.

Paratypes: 1 female (TFRI): Kaohsiung Hsien, Liukuei, Shan-Ping LTER site, along a creek, April 3, 2003, No. 19, L. PAPP & M. FÖLDVÁRI; 1 female (HNHM, genitalia prep. in a microvial with glycerol): *ibid.*, over/along a creek, April 2–3, leg. L. PAPP, No. 15.

Measurements in mm: body length 2.45 (holotype), 2.48, 2.74 (paratypes), wing length 2.40 (holotype), 2.40, 2.66 (paratypes), wing breadth 0.91, 0.88, 0.92.

Body black.

Frons rather narrow, only 0.275 mm above ptilinum (head 0.82 mm broad). Frontal shield deeply granulose. Orbitalia narrow, shiny. Face black, shiny, carina on 2/3 of facial height, rounded ventrally, 0.12 mm at widest. Fronto-orbitals well developed, pro- and reclinate, a minute reclinate hair between them. No postocellars, minute setulae in that position only 0.01 mm long. Vibrissa medioclinate and upcurving. Palpus normal but its apical bristle very long, 0.15 mm. Arista with 3 dorsal and 2 ventral very long branches behind apical fork: they are most similar to those of *H. (D.) aptera* L. PAPP, 1979 (fig. 1).

Mesonotum black subshiny, granulose. Scutellum not upright, granulose, only 0.225 mm long, apical scutellars cruciate 0.40 mm long. Dorsocentrals in 2 pairs, both strong. Two rows of fine acrostichals. Anterior scutellars thin and only 0.15 mm. Pleura black granulose with a 0.275 mm long katapisternal.

Legs mostly yellow, fore coxa shiny blackish brown, fore femur and apical 1/3 of hind femur brown. Fore femur anteroventrally with a row of small black thornlets.

Wing patterned in a unique way. There is a large central brown spot between R_{2+3} , dM-Cu and hind wing margin, leaving cell r_{2+3} , wing apex, a narrow hind margin and dM-Cu area clear. A diffuse unshaped brown spot from R_1 apex down to apex of Cu and another small spot from R_{2+3} towards R-M, joining the large spot behind R-M but leaving R-M clear. C-index 2.65, C3 fringe 0.48 (!). Halteres brown.

Abdomen black shiny, only slightly narrowed basally (at middle of tergite 2 half as broad as abdomen at broadest). Tergites without long setae, i.e. marginal setae only slightly longer than discal ones.

Female genitalia: oviscapt (Fig. 28) shiny black with narrowly rounded apex. Ventral marginal pegs comparatively small, dorsal (lateral) setae rather long and acute. Actually armature of oviscapt is massively different from that of *H. (D.) subaptera* sp. n. and also from that of *H. (D.) breviscutellata* DUDA (see fig. 19C of OKADA 1980)

Distribution. Taiwan.

Hypselothyrea (Deplanothyrea) formosana sp. n. is a peculiar species. I think it a true *Deplanothyrea* although its wing is patterned and abdomen not much narrowed basally. It cannot be a *Tambourella* species, since it has no postocellars but there are two rows of acrostichals on it. In any case, it is not close to *H. (D.) notabilis* (LAMB) and *H. (D.) vanarasiensis* GUPTA, whose wings are hyaline. It is probably closer to *H. (D.) aptera* PAPP, 1979. It is unusual to describe a species based on females in drosophilids. However, the body characteristics are unique enough to recognise this species easily.

***Hypselothyrea (Deplanothyrea) longimana* sp. n.**
(Figs 29–30)

Holotype male (MHNG): INDIA: Meghalaya, Khasi Hills, Nongpoh, 700 m, 5. XI. 1978, leg. CLAUDE BESUCHET et IVAN LÖBL, No. 42b (left fore tarsi lost, some setae broken but otherwise in good condition; when described in alcohol, later prepared with critical point drier).

Paratypes: 1 male (MHNG, base of abdomen and scutellar area damaged), 1 male (HNHM, a faint, immature specimen, genitalia prep., in a microvial): data same as for holotype.

Measurements in mm: body length 1.86 (holotype, with abdomen downcurved), 2.14, 2.145 (paratypes).

Body brown, ventral parts of pleura darker brown. Structure of body, particularly so for the abdomen, similar to *H. (D.) subaptera* sp. n.

Anterior fronto-orbital thick but definitely shorter than posterior one. Palpal seta 0.105 mm long. Vibrissa 0.065 mm, posterior genal seta 0.07 mm long. Carina distinct, angular, but reaches middle of facial plate only. Arista with 5 dorsal and 2 ventral rays behind apical fork.

No postpronotal seta, notopleural small, both supra-alar pairs strong and upright, 1 strong pair of dorsocentral setae (0.34 mm long), postalar weak (0.083 mm). Acrostichal microchaetae minute, in 2 row, intra-alar microchaetae rather scattered, in more or less distinct 2*2 rows. Subscutellum distinct (as that of the Tachinidae), scutellum only 0.12 mm long (paratype). Apical scutellar seta perpendicular, 0.33 mm long, no basal scutellars.

Legs, incl. basitarsi, dark brown. Bases of femora lighter and tarsomeres 2–5 light yellow. Fore femur with 6 minute anteroventral thornlets, no posteroventral row of setae but only a subapical long posteroventral seta.

Completely wingless and without halteres.

Tergite 2 and 3 with 2 pairs each of extremely long thick, perpendicular submarginal setae (longest 0.275 mm), other (discal and marginal) abdominal setae also rather strong.

Male epandrium subventrally with 3 long thick setae (similarly to *H. (D.) amputata* sp. n.) (Fig. 29). Strong thick thorn emerge almost evenly on medial surface of surstylus (Fig. 29). Inner genitalia (Fig. 30) similar to those of *H. (D.) amputata*, but both medial and lateral parameral setae are shorter.

Female unknown.

Based on similarities in male genitalia, I think, this new species is related to *H. (D.) amputata* (although it has only 1 pair of dorsocentrals); they are probably

derivatives of the same stem species. The very distant occurrence of these two species makes us to think of several other unknown wingless or reduced-winged species of this group in soils of SE Asia.

***Hypselothyrea (Deplanothyrea) subaptera* sp. n.**

(Fig. 31)

Holotype female (MHNG, left scutellar seta broken but otherwise in good condition): INDIA, W. Bengal, distr. Darjeeling, entre Kalimpong et Algarah, 1400 m, 8. X. 1978, leg. C. BESUCHET et I. LÖBL, No. 5 [Tamisage dans un reste de forêt, au pied de rochers] (when described in alcohol but later prepared by a critical point drier).

Paratype female (HNHM, right wing lost, scutellar area much defected, genitalia in a micro-vial): *ibid.*, 13 km N Ghoom, 1500 m, 15. X., No. 15 [Tamisage dans un forêt dégradée].

Measurements in mm: body length 2.25 (holotype), 1.87 (paratype), wing length 0.615, 0.52.

Body dark brown.

Head large, 0.715 mm broad. Frontal shield trapezoid: 0.12 mm broad anteriorly, 0.22 mm broad posteriorly. Frons beside frontal shield finely lineate (parallel to sides of shield). All frontal setae strong. Carina low but broad, 0.083 mm at broadest (subapically), gena only 0.03 mm broad below eye. Vibrissa 0.10 mm, apical palpal seta 0.11 mm long. Arista with 4 dorsal and 2 ventral long branches (rays) behind fork.

Mesonotum shiny. Scutellum not upright, 0.19 mm long, flat, apical scutellars 0.30 mm long, no basal scutellars at all. Postpronotal pair of setae present (0.05 mm long on holotype), 1 notopleural, 1 shorter dorsocentral (only 0.105 mm long), 2 supra-alar and 1 small postalar (only 0.075 mm long) pairs. Two rows of small acrostichals and 2x2 rows of intra-alar microchaetae.

Fore femur and all tibiae dark brown, mid and hind femora with light yellow basal fourth, light brown apical 2/5 and a dark brown broad ring medially. Fore coxa light, basitarsi brown, tarsomeres 2–5 light. Fore femur with a basal posterior seta, with a row (6 setae on holotype, 4 on paratype) of rather long and thick posteroventral thorns (length up to 0.06 mm) and 1 long subapical posteroventral seta preceding them, also with 3 thinner setae more basally in the same row. Fore femur also with an anteroventral row of 11–12 small dark thornlets.

Wings reduced to a short thread-like scale. Wing width at middle only 0.035 mm, of the veins only C and R₁ discernible. No halteres.

Abdomen ant-like. Segment 1 narrow, base of segment 3 also narrow, even narrower than tergite 2 (0.187 mm on holotype). Tergite 2 with 3 pairs of submarginal setae (medial pair 0.285 mm long), tergites 3 to 5 with 1 pair of medial submarginal and 2 pairs of more lateral submarginal and discal setae each. Sternites small and pale.

Oviscapt (Fig. 31) comparatively short and rather broadly rounded apically. Marginal (ventral) pegs comparatively large and blunt, dorsal (lateral) setae acute but rather small.

Male not known.

Distribution: India.

Hypselothyrea subaptera sp. n. is a peculiar species, even if we do not regard its much reduced wing. Though the armature of fore femur is peculiar, I am sure it is a *Hypselothyrea* (it has no postocellars and frons is longer than broad, i.e. it can-

not be a *Tambourella* species). I do not think that it would be closely related to *H. (D.) longimana* sp. n.; for differentiating character see the key below.

Hypselothyrea (Deplanothyrea) vanarasiensis Gupta, 1974

Material studied: 1 female (MHNG): Ceylan, Gampaha, 5. XII. 1972, leg. C. BESUCHET et I. LÖBL, 61a. [Jardin botanique, tamisages au pied de grande arbres avec lianes].

This is probably a rare species, known from India and Sri Lanka (OKADA 1980). Its species distinctness to *H. notabilis* (Seychelles) needs corroboration (cf. OKADA 1980).

KEY TO THE SPECIES OF THE
SUBGENUS DEPLANOTHYREA OKADA, 1980

- | | | |
|----|---|---|
| 1 | Wing reduced or absent | 2 |
| – | Wings of normal shape and mostly in normal size | 5 |
| 2 | A row of strong anteroventral spinules and a row of strong and long posteroventral setae on fore femur present. Wings reduced to a short thread-like scale. Female oviscapt (Fig. 31) | <i>H. (D.) subaptera</i> sp. n. |
| – | No anteroventral row of spinules and only 1 subapical posteroventral seta on fore femur | 3 |
| 3. | Wing reduced, not only shortened, but also cubital and anal regions almost completely lost (Fig. 2). Two pairs of dorsocentrals. Sumatra | <i>H. (D.) amputata</i> sp. n. |
| – | Totally wingless species | 4 |
| 4. | Abdomen barrel-shaped (PAPP 1979: fig. 1). Two pairs of dorsocentrals | <i>H. (D.) aptera</i> L. PAPP 1979 |
| – | Abdomen ant-like. Only 1 pair of dorsocentral setae | <i>H. (D.) longimana</i> sp. n. |
| 5. | Only 1 pair of dorsocentral setae. Wing hyaline, C-index 0.9. Carina low | <i>H. (D.) breviscutellata</i> DUDA, 1928 |
| – | Two pairs of dorsocentral setae | 6 |

6. Wing patterned, C-index 2.65. Facial carina large, carina on 2/3 of facial height. Taiwan *H. (D.) formosana* sp. n.
- Wing hyaline, C-index 0.7 7
7. Seychelles *H. (D.) notabilis* (LAMB, 1914)
- India *H. (D.) vanarasiensis* GUPTA, 1974

OKADA (1980) presumed that the above two species might be conspecific. I have not had the opportunity to study *H. (D.) notabilis* during this project so I must leave this question open.

*

Acknowledgements – This study was supported by the Hungarian National Scientific Research Fund (OTKA, No. T042540). I am grateful to Dr. CLAUDE BESUCHET and Dr. IVAN LÖBL, the former curators of the Geneva Museum, as well as to the present curator, Dr. BERNHARD MERZ, for the long and renewed loan of the specimens. I am grateful to Dr. BERNHARD MERZ for sending me *Hypselothyrea* specimens from his collections in Thailand and for advice, and to NIGEL WYATT (The Natural History Museum, London) for information on the type specimen of *H. notabilis* (LAMB, 1914).

REFERENCES

- BÄCHLI, G. (1982) On the type material of Palearctic species of Drosophilidae. *Beitr. Entomol.* **32**(2): 289–301.
- BÄCHLI, G. (1984a) Die Drosophiliden-Typen der Dipterensammlung des Zoologischen Museums in Berlin. *Mitt. Zool. Museum Berlin* **60**(2): 229–261.
- BÄCHLI, G. (1984b) Catalog of the types of Drosophilidae in the Hungarian Natural History Museum, Budapest (Diptera). *Folia ent. hung.* **45**(2): 27–41.
- BÄCHLI, G. (1998) 3.45. Family Drosophilidae. Pp. 503–513. In: PAPP, L. & DARVAS, B. (eds): *Contributions to a Manual of Palaearctic Diptera*. Science Herald, Budapest.
- CHASSAGNARD, M.-T., TSACAS, L. & LACHAISE, D. (1998) A further contribution on the Drosophilidae of Malawi, with first record of Hypselothyrea from the African mainland. *Annals Natal Museum* **39**: 133–141.
- DUDA, O. (1926) Fauna sumatrensis. (Beitrag Nr. 26.) Drosophilidae (Dipt.). *Supplementa entomologica* **14**: 42–116.
- DUDA, O. (1928) Beitrag zur Kenntnis der südostasiatischen Drosophilidengattung Hypselothyrea de Meijere (Dipt.). *Annl. Mus. Nat. Hung.* **25**: 79–90.
- JONG, H., DE (2000) *The types of Diptera described by J.C.H. de Meijere*. Backhuys Publishers, Leiden, 271 pp.
- LAMB, C. G. (1914) The Percy Sladen Trust Expedition to the Indian Ocean in 1905, etc. No. XV: – Diptera: Heteroneuridae, Ortalidae, Trypetidae, Sepsidae, Micropezidae, Drosophilidae, Geomyzidae, Milichiidae. *The Transactions Linnean Soc. London*, ser. 2, **16**(4): 307–372.

- MEIJERE, J. C. H., DE (1906) Über einige indo-australische Dipteren des Ungarischen National Museums bez. des Naturhistorischen Museums zu Genua. *Annl's Mus. Nat. Hung.* **4**: 165–196.
- OKADA, T. (1956) *Systematic study of Drosophilidae and allied families of Japan*. Gihodo Co. Ltd, Tokyo, 183 pp.
- OKADA, T. (1980) A revision of the genera *Hypselothyrea* de Meijere and *Tambourella* Wheeler (Diptera, Drosophilidae). *Kontyû, Tokyo* **48**(4): 501–516.
- PAPP, L. (1979) On apterous and reduced-winged forms of the families Drosophilidae, Ephydriidae and Sphaeroceridae (Diptera). *Acta zoologica hungarica* **25**(3–4): 357–374.
- TAKADA, H. & MOMMA, L. (1975) Distribution and population constitution of *Drosophila* in South-east Asia and Oceania II. Drosophilidae in the suburbs of Kuala Lumpur, West Malaysia. *J. Fac. Sci Hokkaido Univ. (6) Zool.* **20**: 9–48.

Received October 20, 2003, accepted December 17, 2003, published June 30, 2004