



New species and new records of *Manota* Williston (Diptera, Mycetophilidae) from Thailand

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Table of contents

Abstract	2
Introduction	2
Material and methods	2
Descriptions of new species	3
<i>Manota avita</i> sp. n.	3
<i>Manota chelapex</i> sp. n.	4
<i>Manota chi</i> sp. n.	8
<i>Manota epigrata</i> sp. n.	10
<i>Manota obtecta</i> sp. n.	13
<i>Manota prisca</i> sp. n.	14
<i>Manota seducta</i> sp. n.	16
<i>Manota subferrata</i> sp. n.	18
<i>Manota tetrachaeta</i> sp. n.	20
<i>Manota vesicaria</i> sp. n.	22
New records of <i>Manota</i> in Thailand	22
<i>Manota aconcinna</i> Hippa, 2008	22
<i>Manota acutangula</i> Hippa, 2006	24
<i>Manota ancylochaeta</i> Hippa, 2008	25
<i>Manota clavulosa</i> Hippa, 2008	25
<i>Manota collina</i> Hippa, 2008	25
<i>Manota cristata</i> Hippa, 2008	26
<i>Manota globigera</i> Hippa, 2006	26
<i>Manota inflata</i> Hippa, 2008	26
<i>Manota oblonga</i> Hippa, 2008	26
<i>Manota oligochaeta</i> Hippa, 2006	27
<i>Manota ovata</i> Hippa, 2006	27
<i>Manota pectinata</i> Hippa, 2006	27
<i>Manota pellii</i> Hippa, 2008	28
<i>Manota perlobata</i> Hippa, 2008	28
<i>Manota perpusilla</i> Hippa, 2006	28
<i>Manota planilobata</i> Hippa, 2008	30
<i>Manota procera</i> Hippa, 2006	31
<i>Manota roslii</i> Hippa, 2006	31
<i>Manota simplex</i> Hippa, 2006	32
Acknowledgements	32
References	32

Abstract

The following 10 new species are described: *Manota avita*, *M. chelapex*, *M. chi*, *M. epigrata*, *M. obtecta*, *M. prisca*, *M. seducta*, *M. subferrata*, *M. tetrachaeta*, and *M. vesicaria*. New records of the following species are given: *Manota aconcinna* Hippa, *M. acutangula* Hippa, *M. ancylochaeta* Hippa, *M. clavulosa* Hippa, *M. collina* Hippa, *M. cristata* Hippa, *M. globigera* Hippa, *M. inflata* Hippa, *M. oblonga* Hippa, *M. oligochaeta* Hippa, *M. ovata* Hippa, *M. pectinata* Hippa, *M. pelli* Hippa, *M. perlobata* Hippa, *M. perpusilla* Hippa, *M. planilobata* Hippa, *M. procera* Hippa, *M. roslii* Hippa, and *M. simplex* Hippa. The taxonomy of *M. perpusilla*, *M. planilobata* and *M. procera* is discussed and new descriptions of the hypopygia of the two former species are given.

Key words: Diptera, Mycetophilidae, *Manota*, new species, Oriental region, Thailand

Introduction

For many years the fungus gnat genus *Manota* was represented in the Oriental region by a single species, from Sri Lanka (Senior-White 1922). In recent years, the number of Oriental species has increased to 58, which is almost one half of the world fauna, which currently comprises some 140 species. The additions have been mostly from the northern part of the region, Malaysia and Thailand (Hippa 2006, 2008a, Hippa and Papp 2007), with only one from Maluku Utara, Indonesia (Hippa 2007). Many new species have also been described recently from the eastern parts of the Palaearctic region: mainland China (Ševčík 2002), Korea (Papp 2004), Japan (Hippa and Kjærandsen 2009) and Taiwan (Papp 2004), but no species common to these two regions have yet been found.

So far as the fauna of Thailand is concerned, the first study of *Manota* was made by Hippa and Papp (2007). They discovered 9 species, of which one was previously described from Malaysia (Hippa 2006), one described from New Guinea (Hippa 2007) and seven new species. Later, Hippa (2008a) studied part of the material collected by the “Thailand Inventory Group for Entomological Research (TIGER)” in the Thailand national parks (see www.sharkeylab.org), and found 12 additional new species and another 3 species which were previously known from Malaysia. As a result of these studies, the total number of *Manota* species recorded from Thailand reached 32.

During the past year, I have had the opportunity of studying additional samples of Sciaroidea collected by the “TIGER” project. In the material there are 289 specimens of *Manota*, 257 males and 32 females. The number of species represented by males is 29. Of these, 10 are new species, whilst all the others had been found earlier in Thailand. Most of the females are still unidentified, but two could be associated with named males. The aim of this paper is to describe and name the new species, to present new taxonomic data on some of the previously described species and to give the new records for all the species found in the material.

Material and methods

The material was preserved in ethanol. Some specimens which I could identify under a stereomicroscope are still in alcohol. In most cases I have detached the abdomen from specimens, or only the apical part of the abdomen, and macerated the detached part in warm concentrated potassium hydroxide (KOH). I have further detached the hypopygium beyond segment 8. After washing in water and step-wise dehydration in alcohol, I have placed the parts of the abdomen for a few seconds in clove oil (eugenol), after which I have mounted them in “Euparal” between two pieces of cover glass, which enables the specimen to be studied from both sides under a compound microscope. Such preparations are now attached to glass slides by a couple of strips of adhesive tape across their edges and are easily detached when needed. Other parts of the body were not treated with potassium hydroxide, but after dehydration I mounted them as they were in “Euparal”.

The morphological terminology follows Hippa and Papp (2007) except for the tegmen which is here

called aedeagus. The latter term is more logical because in *Manota* the vas deferens terminates at the apex of the sclerite. The terminology of the male hypopygium is explained in Figs 5 and 7, and that of the female terminalia in Fig. 1. The wing venation is practically identical in all the Oriental species (Fig. 1 E), and so it is not mentioned in the descriptions here except for *M. avita*, which differs from the other species. The setae marking the reduced sections of M, A1 and A2 and the presence or absence of scattered setae on the posterior part of the wing membrane are not described because observation of the setae has been uncertain in most of the specimens.

Illustrations were made with the aid of a drawing tube attached to a Leitz Diaplan compound microscope.

The material is deposited in the following institutions: Queen Sirikit Botanic Garden, Chiang Mai (QSBG), The Natural History Museum of Los Angeles County, Los Angeles (LACM), and The Swedish Museum of Natural History, Stockholm (SMNH).

The following abbreviations are used in the figures: aed = aedeagus, aed a = aedeagal apodeme, cr = cercus, cr 1 = basal segment of cercus, cr 2 = distal segment of cercus, dm 1 = lobe at dorsal mesial margin of gonocoxa, gs = gonostylus, gx = gonocoxa, gx a = gonocoxal apodeme, gx l = apicolateral lobe of gonocoxa, gx d = dorsal mesial margin of gonocoxa, gx v = ventral mesial margin of gonocoxa, hpr = hypoproct, jx b = basal body of juxtagonostylar seta or setae, jx s = juxtagonostylar seta or megaseta, pa l = paraapodemal lobe, ps l = parastylar lobe, st 7–st 10 = sternite 7–sternite 10, tg 7–tg 9 = tergite 7–tergite 9.

Descriptions of new species

Manota avita sp. n.

Figs 1 A, C, D, F, 2 A–D

Male. Colour. Head brown, face and clypeus paler brown or yellowish-brown. Antenna brown, scapus, pedicellus and first one or two flagellomeres paler brown. Mouthparts pale yellowish. Thorax brown, prothorax and ventral part of mesothorax more or less distinctly paler brown. Legs pale yellowish, coxae 2 and 3 infuscated at apex, the latter more or less distinctly also on a lateral patch at base, trochanters 2 and 3 infuscated, femora 2 and 3 infuscated on basal fifth especially on dorsal and ventral sides. Wing greyish-brown, slightly darker at anterior margin (Fig. 1 D); haltere yellowish-brown with dark brown knob. Abdomen brown, the sternites 1–4 paler. All the setosity pale, yellowish or brownish, the thicker setae seeming darker than the finer setae and trichia. **Head.** Antennal flagellomere 4, Fig. 2 A. Maxillary palpus, Fig. 1 C: palpomere 3 with the apicomeresial extension almost absent, without curved sensilla; palpomere 4 with parasegment. Number of strong postocular setae 12–13. **Thorax.** Anepisternum non-setose, anterior basalare non-setose, preepisternum 2 non-setose, laterotergite setose, with 16–46 setae, episternum 3 non-setose or setose with 1–2 setae. **Wing,** Fig. 1 D: R1 meets C near the middle length of wing. Length 2.0–2.5 mm. **Hypopygium,** Figs 2 B–D: Sternite 9 long, extending almost to the level of base of gonostylus, lateral margin sharply delimited, the sides convergent, posterior margin transverse, anterior margin very deeply incised, the setae similar to the ventral setae of gonocoxa. Ventral mesial margin of gonocoxa sinuous, short. Three lobes observable ventro-mesially on the gonocoxa: of these two are conical and have apical setae, the third has a flat spiralled apical part and a cylindrical basal part. All of these may be parts of a complex parastylar lobe. Paraapodemal lobe not identified. Tergite 9 developed and sclerotized, with 4–11 setae. Dorsal mesial margin of gonocoxa simple, posteriorly roundly curved laterad to form the simple posterior margin. At the dorsal mesial margin of gonocoxa, beyond the middle, with a finger-like lobe bearing 5 apical megasetae. Two juxtagonostylar setae present: each of these a strongly modified megaseta, one arrowhead-shaped, the other flattened and winding, both setae arising from a common basal body which is longer than the megasetae. Gonostylus bilobed with a broad ventral lobe and a narrow dorsal lobe originating laterally from the former and curving mesad, the ventral side of the ventral lobe evenly rather short setose, on the dorsal side with a mesial short-setose ridge and an apicolateral short-setose area, the dorsal lobe non-setose.

Aedeagus subtriangular, without lateral shoulders, the apical part straight, not curved ventrad. Hypoproct posteriorly small but extending nearly to the middle of gonostylus, with ca. 10 setae on each half. Cerci mesially separate, unusually shaped, curved.

Female. Similar to male. Antennal flagellomere 4, Fig. 1 A. The number of large postocular setae 13–16. Laterotergite with 30–39 setae. Episternum 3 with 2–4 setae. Wing length 2.3–2.6 mm. Apical part of abdomen, Fig. 1 F: tergite 9 on each side with 4 long setae arising from large basal bodies.

Discussion. *M. avita* differs from all other described *Manota* by having tergite 9 sclerotized in the male. In all other known species, this is membraneous except for the anterior margin which may be more or less strongly sclerotized. The female differs from the other described *Manota* females by having four long setae, arising from large basal bodies on each half of tergite 9, instead of only two. *M. avita* is the second known *Manota* which lacks a well-developed apicomerial thumb-like apophysis or lobe on palpomere 3 as well as the curved sensilla associated with it. Only the South African *M. natalensis* Jaschhof and Mostovski is similar in this respect (Jaschhof and Mostovski 2006). There may be other similar Afrotropical species (Hippa 2008b). *M. avita* belongs to those few *Manota* which have a non-setose anepisternum. The other similar species are *M. ctenophora* Matile (New Caledonia), *M. forceps* Hippa and Papp (Thailand), *M. maorica* Edwards (New Zealand), *M. serawei* Hippa (New Guinea), *M. taedia* Matile (New Caledonia) and *M. unifurcata* Lundström (Europe), but there are a few Afrotropical and Neotropical species for which this character is not known. For practical identification purposes, the male of *M. avita* is easy to distinguish by its unique gonostylus with a broad ventral and narrow dorsal lobe, the latter beginning from the basolateral margin of the former and curving over it.

Etymology. The name is from Latin, *avita*, meaning ancestral, and refers to the primitive impression given by the fly with its well-developed tergite 9.

Types. *Holotype.* Male, THAILAND, Chiang Mai, Doi Inthanon NP, Kew Maepan Trail, 18°33.162'N 98°28.81'E, 2200 m, Malaise trap 3–61.iii.2007, Y. Areeluck leg., T1807 (in QSBG).

Paratypes. 2 males with same data as holotype (in QSBG and SMNH); 2 males with same data except 22–29.iv., T1847 (in QSBG).

Other material studied. 1 female with same data as holotype except 15–22.iv., T1841 (in QSBG); 1 female with same data except 22–29.iv., T1847 (in QSBG); 1 female, Doi Inthanon NP, checkpoint 2, 18°31.559'N 98°29.941'E, 1700 m, Malaise trap 22.vii.–2.viii.2006, Y. Areeluck leg., T121 (in SMNH); 1 female, Doi Inthanon NP, campground pond, 18°32.657'N 98°31.482'E, 1200 m, Malaise trap 27.ix.–5.x.2006, Y. Areeluck leg., T348 (in QSBG).

Manota chelapex sp. n.

Figs 3 A, B, C

Male. **Colour.** Head pale brown, frons, vertex and dorsal part of occiput darker brown. Antenna brown, scapus, pedicellus, and flagellomeres 1–2 pale brown ventrally. Mouthparts pale yellowish. Thorax pale brown, dorsomedially darker brown, on scutum the darker colour widening towards posterior margin. Legs unicolorous pale yellowish. Wing unicolorous greyish-brown; haltere yellowish-brown with dark brown knob. Abdomen brown. All the setosity pale, yellowish or brownish, the thicker setae seeming darker than the finer setae and trichia. **Head.** Antennal flagellomere 4, Fig. 3 A. Palpomere 3 of maxillary palpus with apicomerial extension, with 2 apically expanded curved sensilla; palpomere 4 with parasegment. Number of strong postocular setae ca. 11. **Thorax.** Anepisternum setose, with 29 setae, anterior basallare setose, with 4 setae, preepisternum 2 setose, with 17 setae, laterotergite non-setose, episternum 3 setose, with ca. 5 setae. **Wing.** Length 1.7 mm. **Hypopygium,** Figs 3 B, C: Sternite 9 very long, extending to the middle of gonostylus, lateral margin sharply delimited, the sides converging to a sclerotized narrow posterior process, anterior margin with a rather shallow incision, the setae similar to the adjacent ventral setae of gonocoxa. Ventral mesial margin of gonocoxa unusual, with a triangular non-setose plate-like lobe at the margin of

sternite 9 and partly covering the base of a large postero-mesad directed non-setose lobe. Parastylar lobe long, almost as long as the gonostylus, with two or three apical setae. Paraapodemal lobe distinct (Fig. 3 C), in ventral view covered by the mesial lobes of gonocoxa and the parastylar lobe. Dorsal mesial margin of gonocoxa simple. Two juxtagonostylar setae present, of these one is an unmodified seta, the other a slightly

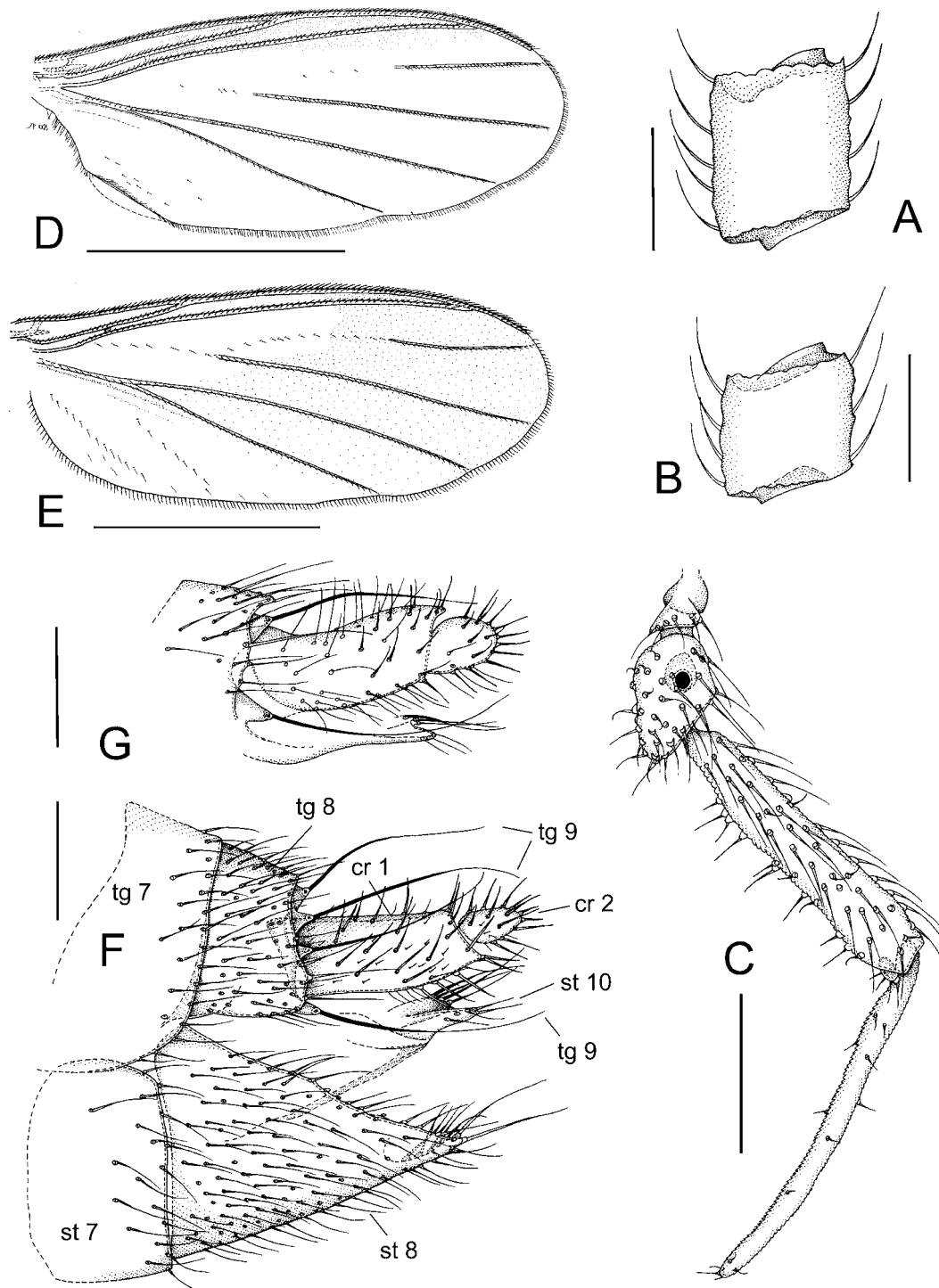


FIGURE 1. Female antennal flagellomere 4, lateral view (A, B), male maxillary palp, dorsal view (C), male (D) and female (E) wing, dorsal view, and apical part of female abdomen, lateral view (G, F). **A, C, D, F:** *Manota avita* sp. n. (from Doi Inthanon NP, D and C paratypes). **B, E, G:** *M. collina* Hippa (from Doi Inthanon NP). Scale for A and B 0.05 mm, for C, F and G 0.1mm and for D and E 1.0 mm.

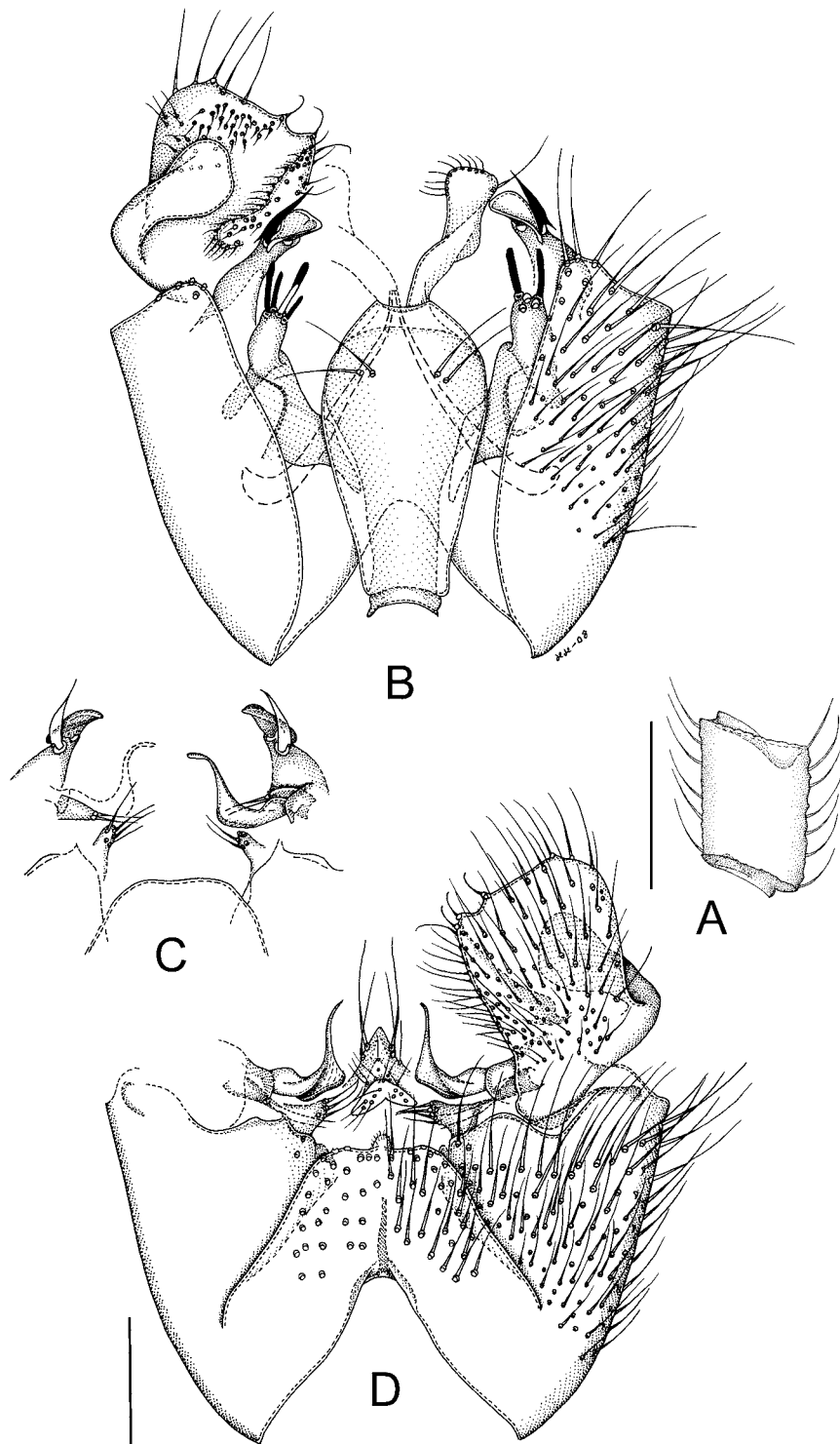


FIGURE 2. *Manota avita* sp. n. (holotype): **A.** Antennal flagellomere 4, lateral view. **B.** Hypopygium, dorsal view. **C.** Mesial structures of gonocoxa, ventral view. **D.** Hypopygium, ventral view. Scale 0.10 mm.

sigmoid strong megaseta, both arising from a common basal body which is about one-fourth of the length of the megaseta. Gonostylus rather small, with a broad basal half and a narrow apical half, the sparse normal setosity on ventral and dorsal side largely restricted to basal half of gonostylus, a conspicuous long seta subapically on the lateral margin, at apex a group of ca. 4 closely-placed megasetae which are directed mesad. Aedeagus elongate-subtriangular, without distinct lateral shoulders, in the single mount extending posteriorly

as far as apex of gonostylus and further than hypoproct, its apical part unusually broad and parallel-sided, vas deferens terminating rather far basad from the apex without any conspicuous orifice. Hypoproct extending posteriorly nearly to the apex of gonostylus, with ca. 12 evenly distributed setae on each half. Cerci mesially separate.

Female unknown.

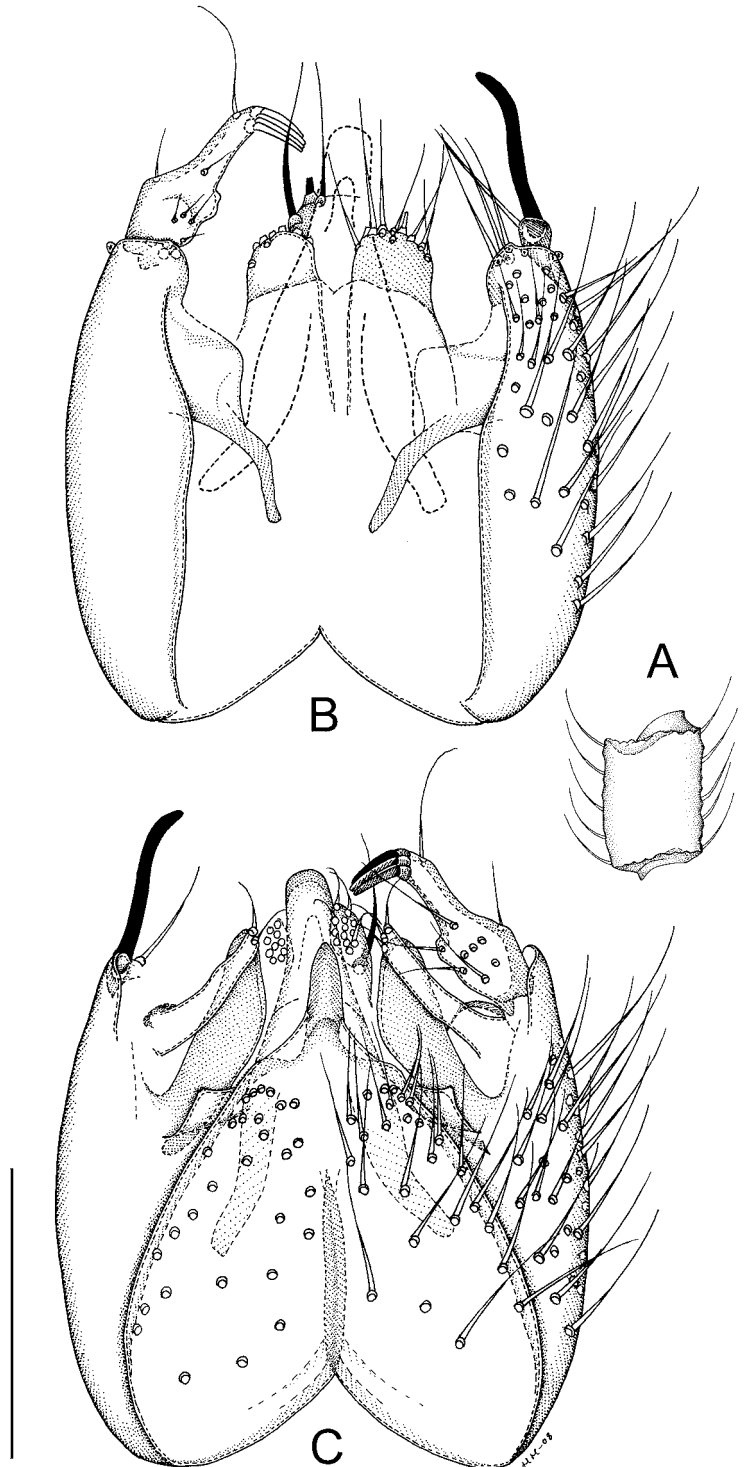


FIGURE 3 *Manota chelapex* sp. n. (holotype). A. Antennal flagellomere 4, lateral view. B. Hypopygium, dorsal view. C. Hypopygium, ventral view. Scale 0.10 mm.

Discussion. *M. chelapex* is not similar to any other described *Manota*, but is reminiscent in some characters of *M. tunoi* Hippa and Kjaerandsen from the Ryukyu Islands: both species have a laterally well delimited unusually long sternite 9 and a large lobe arising from the ventral mesial margin of gonocoxa. *M. chelapex* differs from *M. tunoi* e.g. by the following characters: 1) there is a narrow finger-like sclerotized process postero-medially on sternite 9; 2) the parastylar lobe is very long, as long as the gonostylus, not short, almost rudimentary; 3) the apical part of the aedeagus is simple and the vas deferens terminates far basad of the apex, whilst in *M. tunoi* there is a pair of apico-lateral lobes and the vas deferens terminates in a small process medially between the lobes; 4) the gonostylar megasetae are in an apical group, whilst in *M. tunoi* there is one apical megaseta and three longitudinal comb-like rows of ca. 10 megasetae on the apical half of gonostylus, one of the rows being ventral, one lateral and one dorsal in position. A long sternite 9, which extends posteriorly to the level of the base of gonostyli, is not uncommon in *Manota* (e.g. Fig. 7 B), but in these cases it is laterally fused with the gonocoxa.

Etymology. The name is formed from Greek *chele* or Latin *chela*, claw, and Latin *apex*, tip, and refers to the claw-like megasetae at the tip of gonostylus.

Types. *Holotype*. Male, THAILAND, Sakon Nakhon, Phu Phan NP, dry Dipterocarpus forest at foothill forest unit, 17°9.921'N 103°54.485'E, 206 m, Malaise trap 6–13.x.2006, Winlon Kongnara leg., T699 (in QSBG).

Manota chi sp. n.

Figs 4 A, B, C

Male. **Colour.** Head pale brown, frons, vertex and dorsal part of occiput darker brown. Antennal scapus, pedicellus and flagellomeres 2–4 pale brown, the rest of flagellum darker greyish-brown with the apical flagellomere paler than the others. Mouthparts pale yellowish. Thorax pale brown, posterior half dorsally brown, ventral part of preepisternum 2 paler than the other parts of pleura. Legs pale yellowish, the apices of coxae 2 and 3 and their trochanters indistinctly infuscated, femur 3 infuscated at base and on apical third. Wing unicolorous greyish; haltere yellowish-brown with dark brown knob. Abdomen brown. All the setosity pale, yellowish or brownish, the thicker setae seeming darker than the finer setae and trichia. **Head.** Antennal flagellomere 4, Fig. 4 A. Palpomere 3 of maxillary palpus with apicomeresial extension, with 4 apically expanded curved sensilla; palpomere 4 with parasegment. Number of strong postocular setae 9–10. **Thorax.** Anepisternum setose, with 22–25 setae, anterior basalare setose, with 3–5 setae, preepisternum 2 setose, with 16–25 setae, laterotergite non-setose, episternum 3 setose, with 3–8 setae. **Wing.** Length 1.6 mm. **Hypopygium,** Figs 4 B, C: Sternite 9 about half the ventral length of gonocoxa, lateral margin sharply delimited, posterior margin with or without a shallow medial notch, anterior margin deeply incised, the setae similar to the adjacent ventral setae of gonocoxa. Ventral mesial margin of gonocoxa simple, convex. Parastylar lobe large, with numerous setae at margin. Paraapodemal lobe distinct, well exposed in ventral view or concealed by the gonocoxa. Dorsal mesial margin of gonocoxa simple, subapically with a broad lobe with a few marginal setae; the latter covering a plate-like lobe with ventrally directed setae of which setae 5–10 are stronger and form a curved row. At apico-dorsal margin of gonocoxa with a prominent seta with a small but distinct basal body. Two juxtagonostylar setae present, both rather unmodified curved megasetae which are widely separated and arise from a low common basal body. Gonostylus simple, elongate-oval, both ventral and dorsal sides with moderately long unmodified setae, at the mesial margin with a row of 5 strong setae differing from the other setosity. Aedeagus elongate-subtriangular, with weak lateral shoulders, the apical structures unusual: apical tube elongated and directed posteriad, laterally flanked by two narrow lamellae giving the image of a three-forked apex; towards base from this three-forked apex with two lamellae arising laterally from the aedeagus and crossing each other on its ventral side. Hypoproct posteriorly extending to middle of gonostylus, with a large crescent-shaped medial plate, ventrally with ca. 10 setae in a transversely oblique row on each half. Cerci mesially separate.

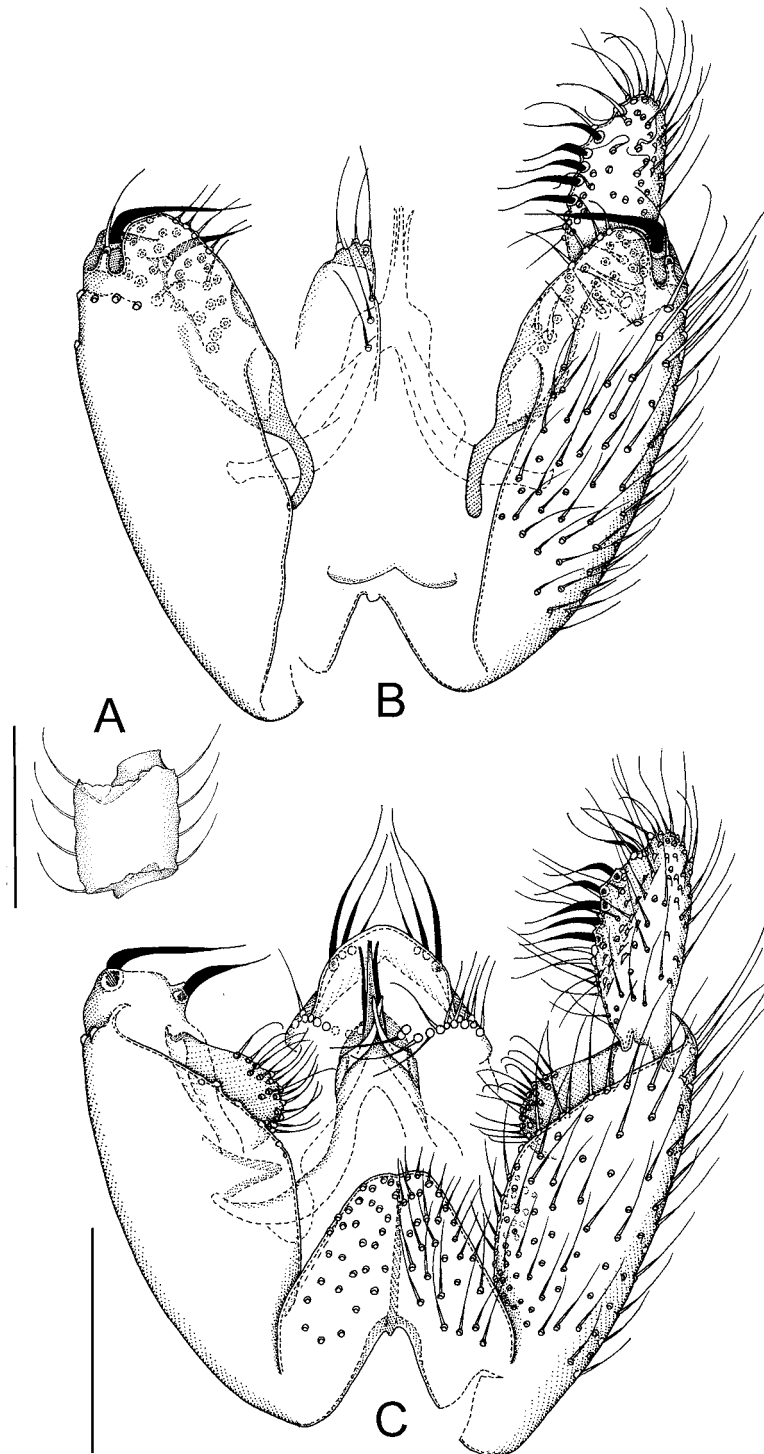


FIGURE 4. *Manota chi* sp. n. (holotype). **A.** Antennal flagellomere 4, lateral view. **B.** Hypopygium, dorsal view. **C.** Hypopygium, ventral view. Scale 0.10 mm.

Discussion. *M chi* is similar to *M. planilobata* and *M. subeducta*. It is distinguished from both as well as from all other described *Manota* by its unusual aedeagus which has a three-forked apex and subapical ventrally crossed lobes. *M. chi* is also distinguished from these two species by many other characters, e.g. in *M. chi* the setae on the plate-like lobe subapically at the dorsal mesial margin of gonocoxa are more numerous, the posterior margin of sternite 9 is less deeply notched, the gonostylus has a more oval outline and its strong

mesial setae are in an evenly spaced row at the middle of gonostylus, not with one of the setae near the middle of the mesial margin, and the others are placed subapically. *M. chi*, *M. planilobata* and *M. subseducta* resemble *M. seducta* and *M. clavulosa* but differ e.g. by having a crescent-shaped plate on the hypoproct and by having the setae on the hypoproct in one transverse row. See also under *M. seducta*.

Etymology. The name is derived from the Greek letter *chi* and refers to the two *chi*-like crossing lamellae on the aedeagus.

Types. *Holotype.* Male, THAILAND, Nakhon Ratchasima, Khao Yai NP, evergreen forest near tiger trail, 14°27.511'N 101°22.408'E, 760 m, Malaise trap 19–26.vi.2007, Pong Sandao leg., T2229 (in QSBG).

Paratypes. 2 males with same data as the holotype (in QSBG and SMNH); 1 male with same data except 12–19.vi.2007, Wirat Sukho leg., T2226 (in QSBG).

***Manota epigrata* sp. n.**

Figs 5 A, B, C, 6 A, B

Male. **Colour.** Head pale brown, frons, vertex and occiput darker brown, antennal flagellum slightly darker than scapus and pedicellus, mouthparts pale yellowish. Thorax pale brown, posterior part especially on dorsal side more or less extensively and intensively darker brown. Legs pale yellowish, in some specimens femora 2 and 3 with inconspicuous infuscation at base. Wing unicolorous greyish-brown; haltere yellowish-brown with dark brown knob. Abdomen brown, sternites 1–4 paler. All the setosity yellowish or brownish, the thicker setae seeming darker than the finer setae and trichia. **Head.** Antennal flagellomere 4, Fig. 5 A. Palpomere 3 of maxillary palpus with apicomerial extension, with 4–5 apically expanded curved sensilla; palpomere 4 with parasegment. Number of strong postocular setae 8–11. **Thorax.** Anepisternum setose, with 41–56 setae, anterior basalare non-setose, preepisternum 2 setose, with 18–23 setae, laterotergite non-setose, episternum 3 setose, with 8–15 setae. **Wing.** Length 1.7–2.1 mm. **Hypopygium,** Figs 5 B, C, 6 A, B: Sternite 9 about one half of the ventral length of gonocoxa, lateral margin sharply delimited, posterior margin transverse, anterior margin deeply incised, the setae similar to the ventral setae of gonocoxa, a couple of the posterolateral setae stronger than the others. Ventral mesial margin of gonocoxa slightly sigmoid. Parastylar lobe large, with a thick transversely directed seta on mesial margin and two thinner more anterior setae arising from a small lobe. Paraapodemal lobe distinct, well exposed in ventral view. Dorsal mesial margin of gonocoxa simple except for a subapical weakly expressed setose lobe. Gonocoxa with a large apico-lateral lobe with three or four prominent setae on mesial margin. Two juxtagonostylar setae present, both being rather unmodified megasetae which are subequal in size, slightly curved and arising from a common basal body which is about half the length of the setae. Gonostylus simple, elongate, with rather short unmodified setae ventrally, apically with three or four long flattened setae, subapically on dorsal side with a slightly tuberculate area with curved setae, otherwise the dorsal side almost non-setose. Aedeagus subtriangular, short, the lateral shoulders distinct but rather weak, the apex curved ventrad. Hypoproct posteriorly scarcely reaching the middle of gonostylus, ventrally with ca. 12 setae in a longitudinal row on each half. Cerci mesially separate.

Female unknown.

Discussion. *M. epigrata* is similar to *M. ancylonema*. It is distinguished e.g. 1) by the juxtagonostylar setae which are gently curved, not geniculate, and 2) by having two setae, not only one, arising from a small secondary anterior lobe on the parastylar lobe. I previously included (Hippa 2008a) the holotype and the paratype from Doi Inthanon NP under *M. ancylchaeta* with the suggestion that they would belong to a different species. The more extensive material which I have now studied from several localities shows that the observed differences are quite constant. On one occasion, both species were found in the same Malaise trap catch. The three specimens listed under other material below have a small subapical lobe with a couple of long setae at the mesial margin of the gonostylus (Fig. 6 A), unlike the holotype and the paratypes (Fig. 5 B).

Etymology. The name is an artificial combination of letters to resemble a Latin adjective.

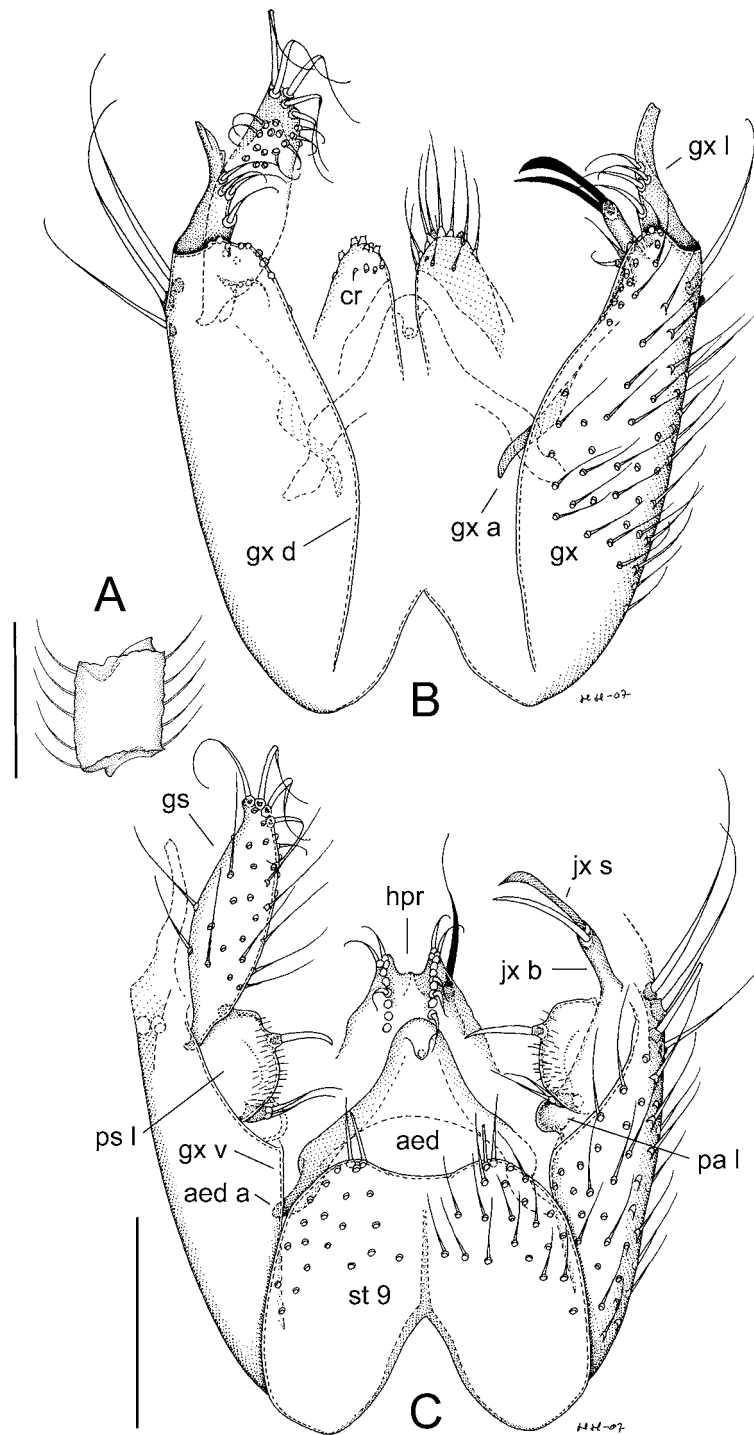


FIGURE 5. *Manota epigrata* sp. n. (holotype). **A.** Antennal flagellomere 4, lateral view. **B.** Hypopygium, dorsal view. **C.** Hypopygium, ventral view. Scale 0.10 mm.

Types. *Holotype.* Male, THAILAND, Chiang Mai, Doi Inthanon NP, Kew Mae Pan, 2200 m, 18°33.163'N 98°28.8'E, Malaise trap 24–30.viii.2006, Y. Areeluk leg., T233 (in QSBG).

Paratypes. 1 male, THAILAND, Chiang Mai, Doi Inthanon NP, campground pond, 1200 m, Malaise trap 16–24.viii.2006, Y. Areeluk leg., T183 (in QSBG); 1 male, Phetchabun, Khao Kho NP Nursery, 16°52.581'N 101°8.06'E, 520 m, Malaise trap 12–19.x.2006, Somchai Chatchumnan & Sa-ink Singtong leg., T808 (in QSBG); 1 male Phetchabun, Nam Nao NP, Hill evergreen forest, 16°44.371'N 101°34.06'E, 834 m, Malaise

trap 27.xi–4.xii.2006, Leng Jantiep leg., T1327 (in SMNH); 1 male, Phetchabun, Thung Salaeng Luang NP, Gang Wang Nam Yen, pine forest, 16°36.284'N 100°53.128'E, 749 m, pan trap 18–19.vi.2007, Pongpitak & Sathit leg., T2054 (in QSBG); 1 male, same data except 16°35.805'N 100°52.286'E, 726 m, Malaise trap 16–13.vii.2007, T2070 (in QSBG).

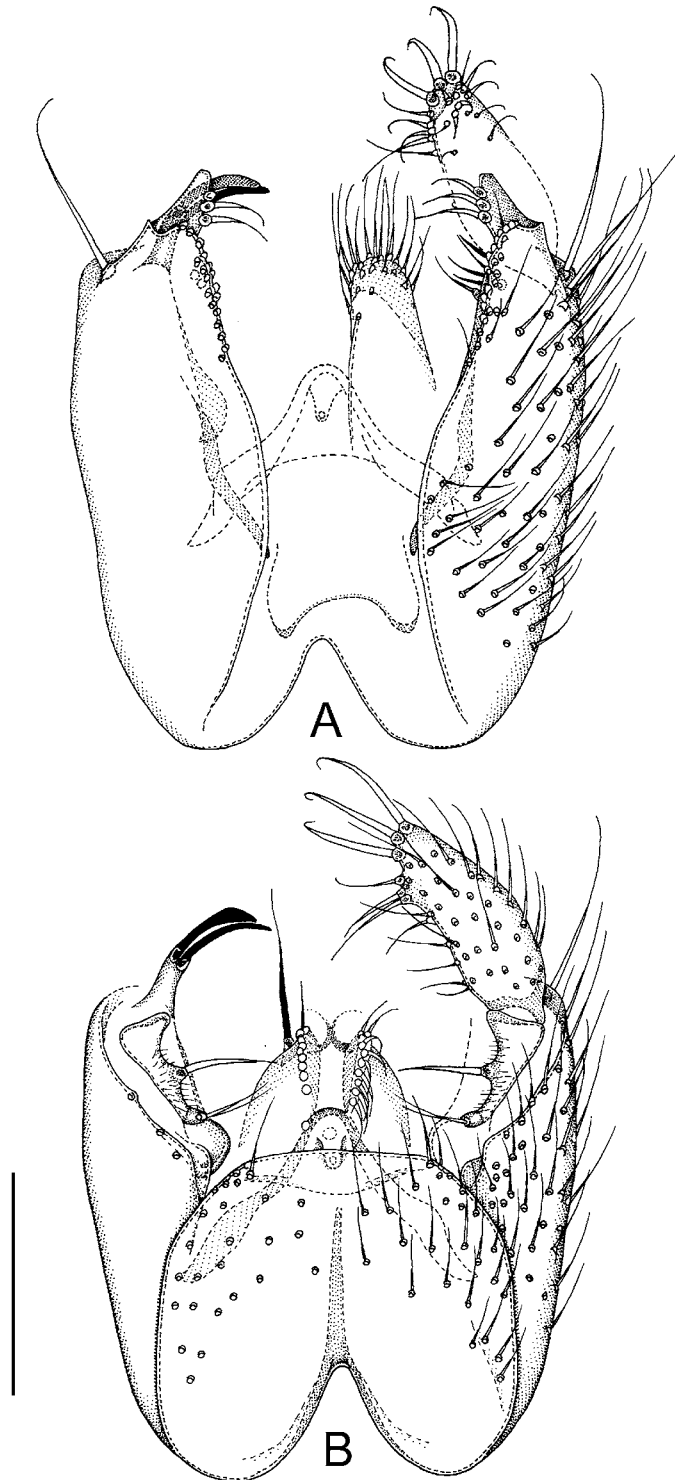


FIGURE 6 *Manota epigrata* sp. n. (from Chaiyaphum). **A.** Hypopygium, dorsal view. **B.** Hypopygium, ventral view. Scale 0.10 mm.

Other material. 1 male, THAILAND, Chaiyaphum, Pan Hin Ngam NP, dry evergreen forest (Thepana waterfall), 15°38.884'N 101°25.84'E, 605 m, Malaise trap 19–25.x.2006, Katae Sa-nog & Buakaw Adnafai leg., T667 (in QSBG); 1 male, same data except dry Dipterocarpus forest at Lan Hin Nau, 15°37.683'N 101°23.323'E, 681 m, 7–13.ix.2006, T850 (in QSBG); 1 male, Phitsanulok, Thung Salaeng Luang NP, mixed deciduous forest (Gang Sopa waterfall), 16°52.642'N 100°49.441'E, 481 m, Malaise trap 14–21.x.2006, Pongpitak Pranee leg., T762 (in QSBG).

***Manota obtecta* sp. n.**

Figs 7 A, B, C

Male. Colour. Head dark brown, face and clypeus pale yellowish-brown, mouthparts pale yellowish, antenna dark brown, scapus, pedicellus and the two basalmost flagellomeres ventrally paler brown. Thorax brown, prothorax, anterior part of scutum and ventral part of preepisternum 2 paler. Legs pale yellowish, the apices of coxae 2 and 3 and their trochanters infuscated, femur 3 indistinctly infuscated on basal third. Wing unicolorous greyish-brown; haltere yellowish-brown with dark brown knob. Abdomen brown, sternites 1–4 paler yellowish. All the setosity yellowish or brownish, the thicker setae seeming darker than the finer setae and trichia. **Head.** Antennal flagellomere 4, Fig. 7 A. Palpomere 3 of maxillary palpus with apicomeresial extension, with 4 apically expanded curved sensilla; palpomere 4 with parasegment. Number of strong postocular setae 10–12. **Thorax.** Anepisternum setose, with 22–38 setae, anterior basalare setose, with 10–17 setae, preepisternum 2 non-setose, laterotergite setose, with 20–26 setae, episternum 3 setose, with 7–12 setae. **Wing.** Length 1.6–1.8 mm. **Hypopygium,** Figs 7 B, C: Sternite 9 laterally fused with gonocoxa, extending posteriorly as far as the ventral posterior margin of gonocoxa, anterior margin with a shallow incision, the setae similar to ventral setae of gonocoxa. Parastylar lobe sickle-shaped, the apex directed obliquely posteriad, with several apical setae. Paraapodemal lobe absent. Dorsal mesial margin of gonocoxa sinuous, at middle with a plate-like lobe bearing 8–9 blunt-ended megasetae at its posterior margin, subapically with a large flattened, apically rounded megaseta. One juxtagonostylar seta present: an unmodified strong seta arising from a basal body which is about half the length of the seta. Gonostylus short and broad, with a subapical laterodorsal lobe, with rather short unmodified setae ventrally, largely non-setose dorsally, with two prominent long setae subapically at mesial margin, some of the setae on the lateral lobe conspicuously curved. Aedeagus with a narrow apical part and prominent lateral shoulders giving rise to basal part that is several times broader, the apex of aedeagus curved ventrad. Hypoproct large, posteriorly extending nearly as far as the apex of gonostylus, with ca. scattered 30 setae on each half. Cerci mesially separate.

Female unknown.

Discussion. *M. obtecta* is similar to *M. clausa* Hippa, known from the Malay Peninsula. It is distinguished e.g. by the following characters: 1) there is a large flat megaseta subapically at the mesial margin of gonocoxa; 2) the megasetae on the flat lobe at the middle of the dorsal mesial margin of the gonocoxa are larger and fewer in number; and 3) the parastylar lobe is flat and curved, not conical and straight. Even the conspicuously bilobed gonostylus probably distinguishes *M. obtecta* from *M. clausa*. I have restudied the types of the latter: the mounts of both the holotype and the paratype are such that the exact structure of the gonostylus is difficult to see, but it seems that there is only a slight indication of a subapical laterodorsal lobe.

Etymology. The name is from Latin, *obtecta*, covered over, and refers to the large sternite 9 which in ventral view covers part of the other mesial structures of the hypopygium.

Types. *Holotype.* Male, THAILAND, Nakhon Ratchasima, Khao Yai NP, Cobra zone near Fire protection office, 14°28.524'N 101°22.928'E, 757 m, Malaise trap, 12–19.vi.2007, Pong Sandao leg. T2224 (in QSBG). *Paratypes.* 1 male, same data as holotype except for 5–12.vi.2007, T2221 (in QSBG); 1 male, Phetchabun, Thung Salaeng Luang NP, Gang Wang Nam Yen, pine forest, 16°36.284'N 100°53.128'E, 749 m, Malaise trap 29.vi–6. vii.2007, Pongpitak & Sathit leg. T2066 (in SMNH).

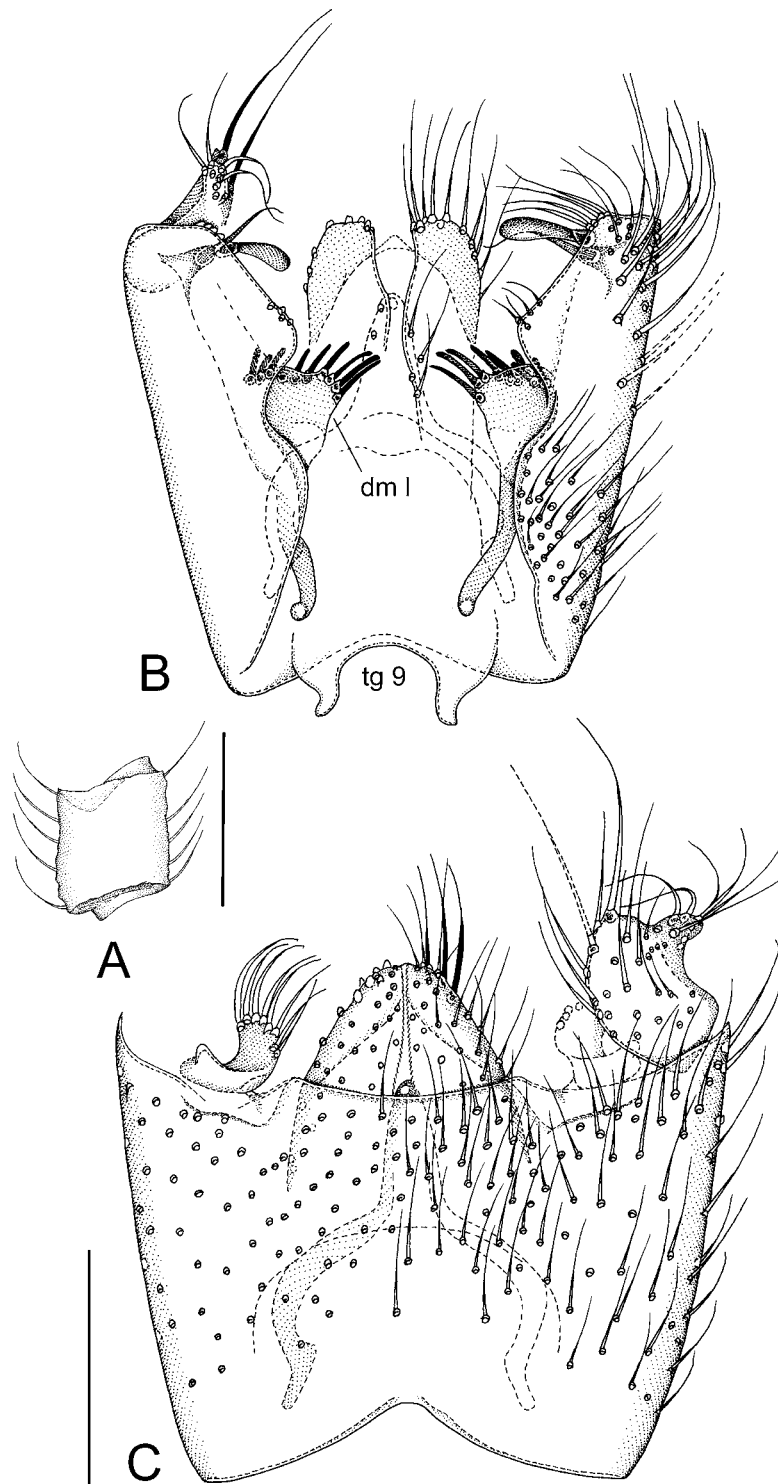


FIGURE 7. *Manota obsecta* sp. n. (holotype). **A.** Antennal flagellomere 4, lateral view. **B.** Hypopygium, dorsal view. **C.** Hypopygium, ventral view. Scale 0.10 mm.

***Manota prisca* sp. n.**

Figs 8 A–E

Male. **Colour.** Head pale brown or yellowish-brown, frons, vertex and dorsal part of occiput darker brown.

Antenna brown, scapus and pedicellus slightly paler brown. Mouthparts pale yellowish. Thorax brown, prothorax, anterior margin of scutum and ventral half of preepisternum 2 pale brown, the intensity of the paler areas varying between specimens. Legs pale yellowish, trochanters 2 and 3 infuscated, basal third of femora 2 and 3 more infuscated with variable intensity. Wing unicolorous greyish-brown; haltere yellowish-brown with dark brown knob. Abdomen brown, sternites 1–4 appearing paler, especially laterally. All the setosity pale,

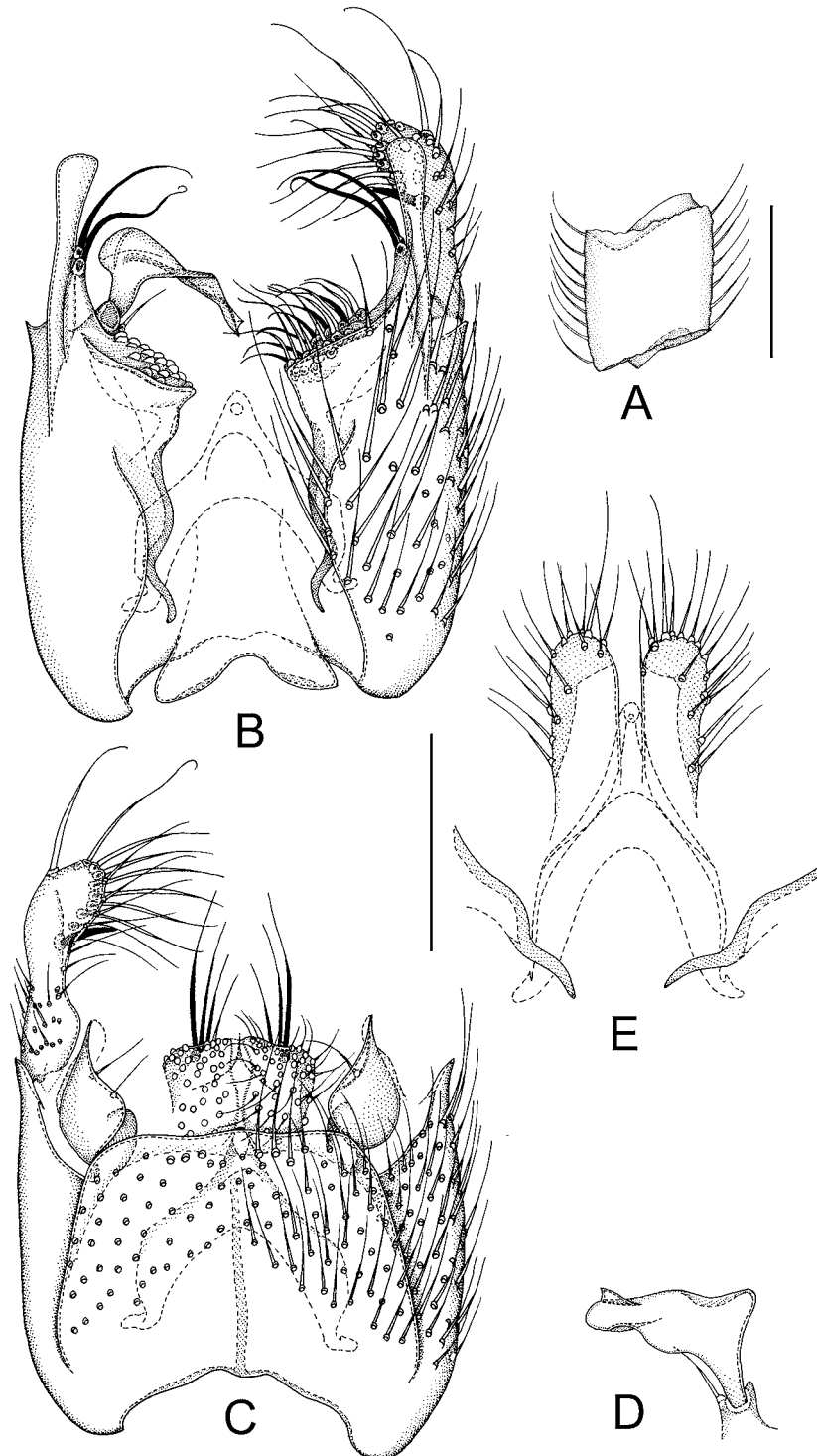


FIGURE 8. *Manota prisca* sp. n. (C, B holotype, A, D, E paratypes). **A.** Antennal flagellomere 4, lateral view. **B.** Hypopygium, dorsal view. **C.** Hypopygium, ventral view. **E.** Cerci with associated structures, dorsal view. **D.** Juxtagonostylar setae, dorsal view. Scale 0.10 mm.

yellowish or brownish, the thicker setae seeming darker than the finer setae and trichia. **Head.** Antennal flagellomere 4, Fig. 8 A. Palpomere 3 of maxillary palpus with apicomeral extension, with 4–5 apically expanded curved sensilla; palpomere 4 with parasegment. Number of strong postocular setae 11–12. **Thorax.** Anepisternum setose, with 56–78 setae, anterior basalar non-setose, preepisternum 2 setose, with 20–32 setae, laterotergite non-setose, episternum 3 setose, with 10–24 setae. **Wing.** Length 1.9–2.6 mm. **Hypopygium,** Figs 8 B–E: Sternite 9 very large, subquadrangular, about three-fourths of the ventral length of gonocoxa, lateral margin sharply delimited, posterior margin transversely straight, anterior margin shallowly concave, the setae similar to the ventral setae of gonocoxa. Ventral mesial and apical margin of gonocoxa confluent, simple, concave. Parastylar lobe broad, varying much in shape depending on the position, with one or two setae on the mesial side. Paraapodemal lobe distinct, usually partly covered by sternite 9 and parastylar lobe in ventral view. Dorsal mesial margin of gonocoxa rather simple on anterior part, beyond middle with a plate-like lobe bearing numerous strong setae. Dorsal apical margin of gonocoxa with two strong setae arising from a long common basal body. Laterally from the latter with a long flat non-setose lobe. Two juxtagonostylar setae present, one a normal rather small seta, the other a large flat many-lobed megaseta, both the setae arising from a low common basal body. Gonostylus rather long, in dorsal and ventral aspect narrow, in lateral and mesial aspect much broader, setosity on basal parts short, on apical part long, absent on broad ventral and mesial areas, the long mesioventral setae on apical part of gonostylus forming a conspicuous curved row, at the middle of dorsal mesial margin with one megaseta. Aedeagus subtriangular, with lateral shoulders, the apical part curved ventrad. The position of hypoproct varying between the mounts, in some cases extending posteriorly to the basal part of gonostylus, in other cases extending further, up to just over their tips, with ca. 40 evenly distributed setae on each half. Cerci mesially separate.

Female unknown.

Discussion. *M. prisca* is not similar to any other described *Manota*. It is at once distinguished by the long, flat and non-setose apico-lateral lobe on the dorsal side of the gonocoxa, and also by the unique shape and chaetotaxy of the gonostylus. *M. prisca* is somewhat reminiscent of those *Manota* which have a large, broad and anteriorly weakly incised sternite 9, setose plate-like-lobe at the dorsal mesial margin of gonocoxa and a large hypoproct, e.g. *M. obtecta* (Fig. 7 B), but differs by having the lateral margin of sternite 9 free, not fused with the gonocoxa.

Etymology. The name is from Latin, *prisca*, of former times or ancient, and refers to the primitive impression given by the fly with its large sternite 9, which is not fused with the gonocoxa laterally.

Types. *Holotype.* Male, THAILAND, Phetchabun, Thung Salaeng Luang NP, Gang Wang Nam Yen, 16°37.178'N 100°53.504'E, 706 m, Malaise trap 31.v.–7.vi.2007, Pongpitak Pranee & Sathit leg., T2087 (in QSBG).

Paratypes. 1 male with same data as the holotype except 7–14.v.2007, T2089 (in QSBG). 1 male, Phetchabun, Nam Nao NP, Hill evergreen forest, 16°44.402'N 101°34.56'E, 883 m, Malaise trap, Leng Jantiep leg., T1326 (in QSBG), 1 male, Chiang Mai, Doi Inthanon NP, Checkpoint 2, 18°31.554'N 98°29.94'E, 1700 m, Malaise trap 24.xi.–1.xii.2006, Y. Areeluk leg., T1870 (in SMNH), 1 male with same data except 9–16.ii.2007, T1799 (in QSBG), 1 male with same data except 19–26.i.2007, T1915 (in QSBG).

Manota seducta sp. n.

Figs 9 A–D

Male. **Colour.** Head pale brown, frons, vertex and dorsal part of occiput darker brown. Antenna brown, scapus and pedicellus slightly paler brown. Mouthparts pale yellowish. Thorax rather unicolorous brown. Legs pale yellowish, apex of coxa 2, base of coxa 3, trochanters 2 and 3 obscurely infuscated, base and apical third of femur 3 more strongly infuscated, especially the apical part which is almost as dark as thoracic dorsum. Wing unicolorous greyish-brown; haltere yellowish-brown with dark brown knob. Abdomen brown,

all the sternites appearing paler. All the setosity pale, yellowish or brownish, the thicker setae seeming darker than the finer setae and trichia. **Head.** Antennal flagellomere 4, Fig. 9 A. Palpomere 3 of maxillary palpus with apicomerial extension, with 4 apically expanded curved sensilla; palpomere 4 with parasegment. Number of strong postocular setae 10–11. **Thorax.** Anepisternum setose, with 30–39 setae, anterior basalare setose, with 3–7 setae, preepisternum 2 setose, with 17 setae, laterotergite non-setose, episternum 3 setose, with 5 setae. **Wing.** Length 2.1–2.2 mm. **Hypopygium,** Figs 9 B–D: Sternite 9 about half of the ventral length

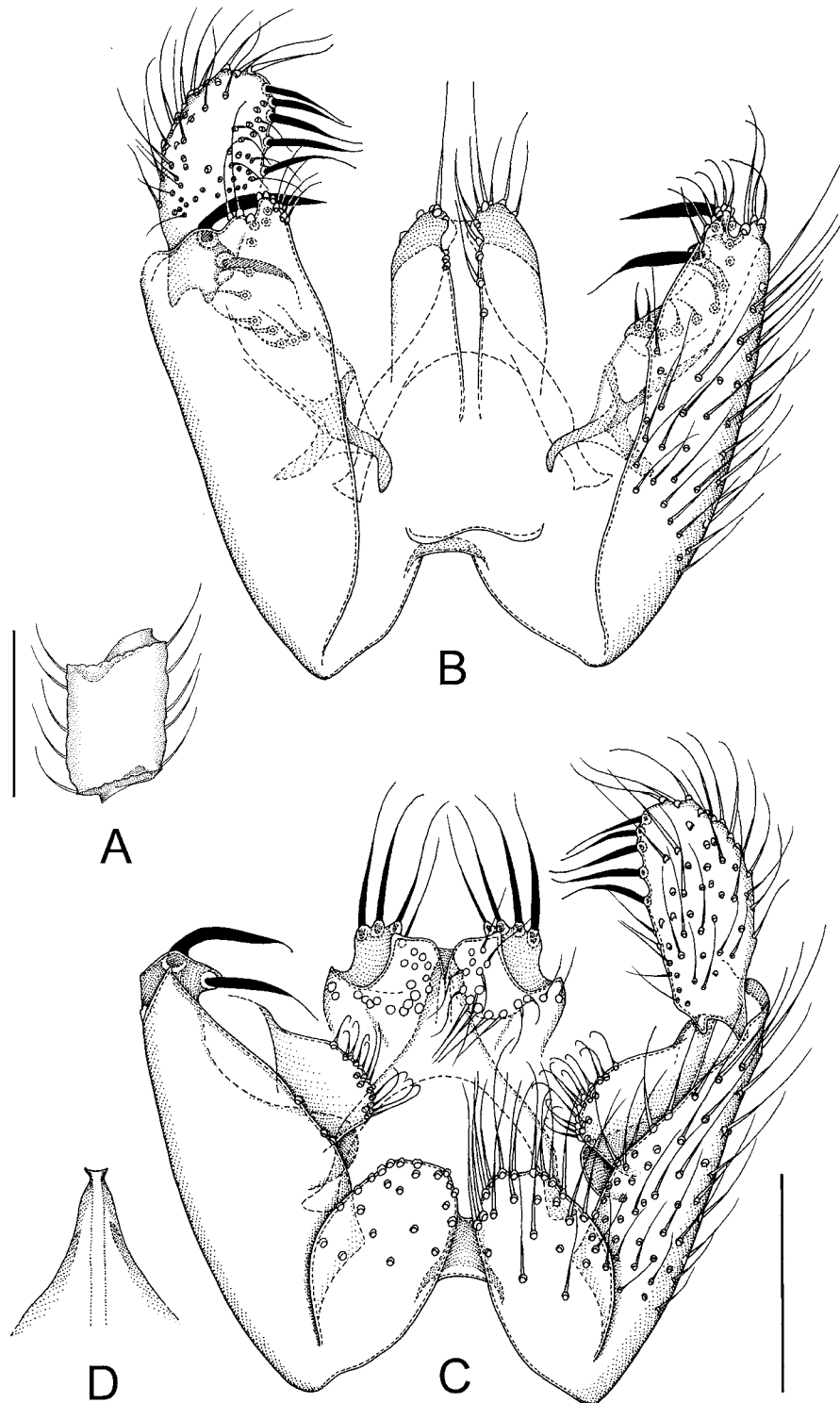


FIGURE 9. *Manota seducta* sp. n. (holotype). **A.** Antennal flagellomere 4, lateral view. **B.** Hypopygium, dorsal view. **C.** Hypopygium, ventral view. **D.** Apex of aedeagus, ventral view. Scale 0.10 mm.

of gonocoxa, lateral margin sharply delimited, posterior margin with a deep medial notch continuing anteriorly as a medial furrow dividing the sternite into two halves, anterior margin deeply incised, the setae long, similar to the adjacent ventral setae of gonocoxa. Ventral mesial margin of gonocoxa simple, convex. Parastylar lobe large, with numerous setae at margin. Paraapodemal lobe distinct, well exposed in ventral view. Dorsal mesial margin of gonocoxa simple, subapically with a small setose lobe; with a plate-like lobe at the apical part of the dorsal mesial margin, placed on a more ventral level and bearing a curved row of ca. 10 strong pointed setae on its ventral side. Two juxtagonostylar setae present, both rather unmodified megasetae which are widely separated and arise from a low common basal body. Gonostylus simple, elongate-oval, both ventral and dorsal sides with moderately long unmodified setae, at the apical half of the mesial margin with a row of 5 strong setae differing from the other setosity. Aedeagus elongate-subtriangular, with weak lateral shoulders, the apical part straight, not curved ventrad. Hypoproct posteriorly extending to the middle of gonostylus, with ca. 15 setae on each half, three of the setae at posterior margin conspicuously strong. Cerci mesially separate.

Female unknown.

Discussion. *M. seducta* resembles *M. clavulosa* from which it is distinguished e.g. by the following characters: 1) the hypoproct has posteriorly a transverse row of three strong setae plus one weaker one, whilst in *M. clavulosa* there is only one strong and one weak seta; 2) the mesial setae on the hypoproct are very long and fine, whilst in *M. clavulosa* they are short and claw-like; 3) the ventral plate-like lobe at the apical part of the dorsal mesial margin of gonocoxa has on its ventral side a row of ca. 10 strong sharp setae, whilst in *M. clavulosa* the number of setae is ca. 5 and they are very strong and blunt; 4) the strong setae at the mesial margin of the gonostylus are much longer than in *M. clavulosa* and they are all about equal in length, not decreasing in length towards the apex of gonostylus as in *M. clavulosa*. *M. seducta* and *M. clavulosa* resemble *M. chi*, *M. planilobata* and *M. subeducta*, from which they differ e.g. by lacking a crescent-shaped large lobe on the hypoproct. All the mentioned species resemble *M. mirifica*, *M. submirifica* and *M. aconcinna* but differ by the symmetrical apex of the aedeagus.

Etymology. The name is from Latin, *seducta*, apart, and refers to the widely separated halves of sternite 9.

Types. *Holotype.* Male, THAILAND, Chiang Mai, Doi Inthanon NP, Checkpoint 2 18°31.554'N 98°29.94'E, 1700 m, Malaise trap 23.ii.–2.iii.2007, Y. Areeluk leg., T1775 (in QSBG).

Paratypes. 1 male with same data as the holotype except 29.iv.–6.v.2007, T1857 (in SMNH).

***Manota subferrata* sp. n.**

Figs 10 A, B, C

Male. **Colour.** Head brown, face and clypeus paler brown. Antenna brown, scapus and pedicellus paler brown. Mouthparts pale yellowish. Thorax brown, posterior part especially on the dorsal side more or less extensively and intensively darker brown. Legs pale yellowish, trochanters 2 and 3 more or less infuscated, hind femur infuscated on basal third, especially on dorsal and ventral sides. Wing unicolorous greyish- or yellowish-brown; haltere yellowish-brown with dark brown knob. Abdomen brown, sternites 3–4 paler. All the setosity yellowish or brownish, the thicker setae seeming darker than the finer setae and trichia. **Head.** Antennal flagellomere 4, Fig. 10 A. Palpomere 3 of maxillary palpus with apicomeresial extension, with 5–6 apically expanded curved sensilla; palpomere 4 with parasegment. Number of strong postocular setae 11. **Thorax.** Anepisternum setose, with 46–61 setae, anterior basalare non-setose, preepisternum 2 setose, with 21–27 setae, laterotergite non-setose, episternum 3 setose, with 16–21 setae. **Wing.** Length 1.7–2.1 mm. **Hypopygium,** Figs 10 B, C: Sternite 9 about half of the ventral length of gonocoxa, lateral margin sharply delimited, posterior margin membranous, transverse, anterior margin deeply incised, the setae similar to the shorter ventral setae of gonocoxa. Ventral mesial margin of gonocoxa slightly sigmoid, the setae at the margin conspicuously stronger than the more lateral setae. Parastylar lobe slightly oblique and sickle-shaped, narrowing anteriorly, with two setae anteriorly. Paraapodemal lobe distinct, well exposed in ventral view. Dorsal mesial margin of gonocoxa simple, apically roundly angular with setae at the margin. Laterad from the

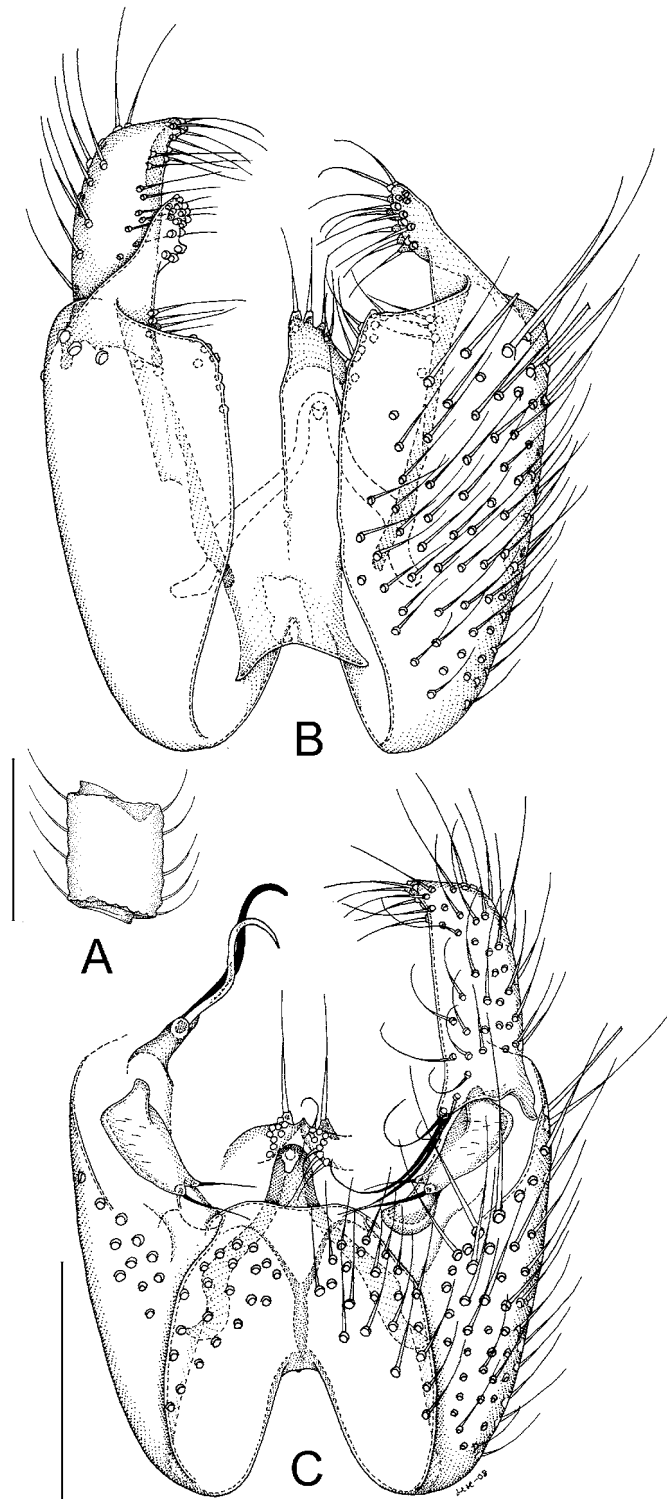


FIGURE 10. *Manota subferrata* sp. n. (holotype). **A.** Antennal flagellomere 4, lateral view. **B.** Hypopygium, dorsal view. **C.** Hypopygium, ventral view. Scale 0.10 mm.

latter with a long apico-lateral lobe bearing numerous apicomeres and a few basomesial setae. Two juxtagonostylar setae present, both of them slender megasetae which are subequal in size and sigmoid, and arise from a common basal body which is about one-third of the length of the setae. Gonostylus simple, elongate, both apico- and baso-mesially produced lobe-like, the ventral side nearly completely moderately long setose, the dorsal side with similar setae but at middle and basally largely non-setose, at the baso-mesial lobe-like angle with a group of three conspicuously long setae. Aedeagus subtriangular, with lateral shoulders,

the apex curved ventrad. Hypoproct posteriorly extending to the level of the base of gonostylus, ventrally with ca. 10 setae in a mesial longitudinal zone on each half. Cerci mesially separate.

Female unknown.

Discussion. *M. subferrata* is similar to *M. ferrata*, known from Selangor, Malaysia. The two species are distinguished e.g. by following characters: 1) in *M. subferrata* the setae of sternite 9 are subequal, whilst in *M. ferrata* there are 3–4 setae on the posterior part which are conspicuously stronger than the others, equalling the difference between the setae on sternite nine and those at the ventral mesial margin of gonocoxa in Fig. 10 B; 2) in *M. subferrata* the baso-mesial angle of gonostylus forms a heel-like lobe, whilst in *M. ferrata* it is rounded; 3) in *M. subferrata* the long setae on the latter structure do not greatly differ in thickness from the other nearby setae, whilst in *M. ferrata* they are twice as thick; and 4) in *M. subferrata* the setae apico-dorsally on the gonostylus do not differ much from the other nearby setae, whilst in *M. ferrata* there are ca 10 setae which are conspicuously strong.

Etymology. The name is derived from Latin *sub-*, somewhat, and the name of *Manota ferrata* and refers to the close similarity of the two species.

Types. *Holotype.* Male, THAILAND, Phetchabun, Nam Nao NP, Hill evergreen forest, 16°44.402'N 101°34.56'E, 883 m, Malaise trap 20–27.xi.2006, Leng Jantiep leg., T1326 (in QSBG).

Paratypes. 2 males with same data as holotype except 16°44.387'N 101°34.531'E, 838m, Malaise trap 20–27.xi.2006, Noopien Hongyothee leg. T1325 (in QSBG and SMNH); 1 male with same data except 16°44.371'N 101°34.549'E, 834m, Malaise trap 27.xi.–4.xii.2006, Leng Jantiep leg., T1327 (in QSBG).

***Manota tetrachaeta* sp. n.**

Figs 11 A, B, C

Male. **Colour.** Head brown, face pale brown. Antenna brown, scapus and pedicellus slightly paler brown. Mouthparts pale yellowish. Thorax rather unicolorous brown. Legs (tibia and tarsus 1 and femur, tibia and tarsus 2 lost) pale yellowish, apical part of coxa 2 posteriorly and basal fourth of femur 3 infuscated, the latter especially dorsally and ventrally. Wing unicolorous greyish-brown; haltere yellowish-brown with dark brown knob. Abdomen brown, the basal sternites apparently paler than the others. All the setosity pale, yellowish or brownish, the thicker setae seeming darker than the finer setae and trichia. **Head.** Antennal flagellomere 4, Fig. 11 A. Palpomere 3 of maxillary palpus with apicommesial extension, with 4 apically expanded curved sensilla; palpomere 4 with parasegment. Number of strong postocular setae 11. **Thorax.** Anepisternum setose, with 67 setae, anterior basalar non-setose, preepisternum 2 setose, with 14 setae, laterotergite non-setose, episternum 3 setose, with ca. 9 setae. **Wing.** Length 2.2 mm. **Hypopygium,** Figs 11 B, C: Sternite 9 about half of the ventral length of gonocoxa, lateral margin sharply delimited, posterior margin transverse, membranous, anterior margin deeply incised, the setae similar to the adjacent ventral setae of gonocoxa. Ventral mesial margin of gonocoxa simple, membranous, with a very strong seta at the middle. Parastylar lobe sickle-shaped, oblique, with two setae anteriorly. Paraapodemal lobe distinct, well exposed in ventral view. Dorsal mesial margin of gonocoxa simple, with a rounded setose lobe subapically and apically. Two juxtagonostylar setae present: both are strong sigmoid megasetae, one with blunted, the other with attenuated apex, both arising from a common basal body which is about half the length of the megasetae. Gonostylus simple, elongate-oval, apically slightly curved, ventrally and laterally covered by moderately long setosity, dorsally and mesially with shorter setosity only at apex and on basal half, with a row of 4 very long setae at dorso-mesial margin. Aedeagus subtriangular, with lateral shoulders, the apical part curved ventrad. Hypoproct posteriorly reaching between the base and the middle of gonostylus, with ca. 15 setae on each half. Cerci mesially separate.

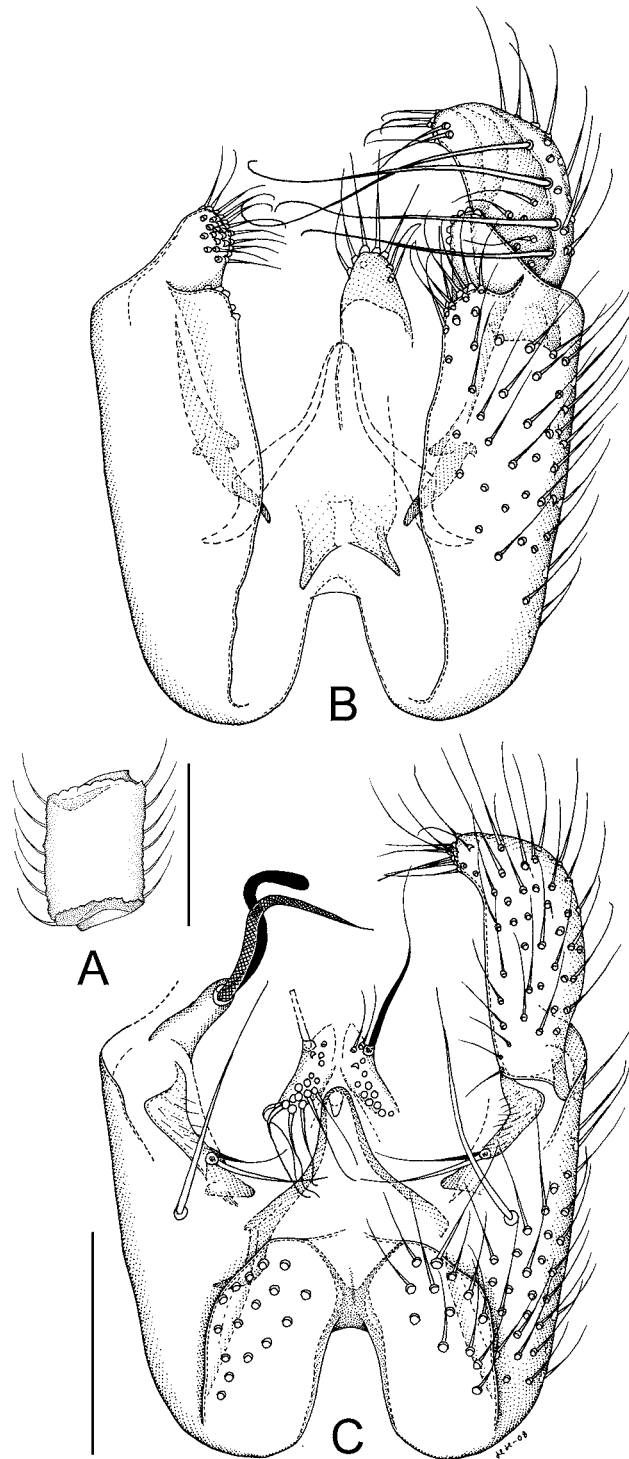


FIGURE 11. *Manota tetrachaeta* sp. n. (holotype). **A.** Antennal flagellomere 4, lateral view. **B.** Hypopygium, dorsal view. **C.** Hypopygium, ventral view. Scale 0.10 mm.

Female unknown.

Discussion. *M. tetrachaeta* represents a rather common Oriental type of *Manota*: the preepisternum 2 is setose, the laterotergite is non-setose, the parastylar lobe is sickle-shaped and there are two subequal juxtagonostylar megasetae arising from a long common basal body. *M. tetrachaeta* is not especially similar to any single species in this group. It is distinguished from all the similar species by the strong and long seta at the ventral mesial margin of gonocoxa and by the four very long transverse setae at the dorsal mesial margin of the gonostylus. At first sight, *M. tetrachaeta* is reminiscent of *M. crinita* because of the transversely

directed long gonostylar setae, but in the latter the setae are at the ventral mesial margin.

Etymology. The name is derived from the Greek words *tetra*, four, and *chaite*, hair, and refers to the four long setae on the gonostylus.

Types. *Holotype.* Male, THAILAND, Chiang Mai, Doi Inthanon NP, Checkpoint 2 18°31.554'N 98°29.94'E, 1700 m, Malaise trap 24.xi.–1.xii.2006, Y. Areeluk leg., T1870 (in QSBG).

***Manota vesicaria* sp. n.**

Figs 12 A, B, C

Male. **Colour.** Head pale brown, frons, vertex and the dorsal part of occiput dark brown. Antennal scapus and pedicellus pale brown, flagellum darker brown. Mouthparts pale yellowish. Thorax pale brown, posterior part of scutum and all of scutellum darker brown. Legs unicolorous pale yellowish. Wing unicolorous greyish-brown; haltere yellowish-brown with dark brown knob. Abdomen brown, segments 2 and 3 apparently a little paler than the others. All the setosity pale, yellowish or brownish, the thicker setae appearing darker than the finer setae and trichia. **Head.** Antennal flagellomere 4, Fig. 12 A. Palpomere 3 of maxillary palpus with apicomerial extension, with 5–6 apically expanded curved sensilla; palpomere 4 with parasegment. Number of strong postocular setae 10–11. **Thorax.** Anepisternum setose, with 41–47 setae, anterior basalare non-setose, preepisternum 2 setose, with 12–18 setae, laterotergite non-setose, episternum 3 setose, with 12–17 setae. **Wing.** Length 1.7 mm. **Hypopygium,** Figs 12 B, C: Sternite 9 about half the length of gonocoxa, lateral margin sharply delimited, posterior margin transverse, with a shallow medial notch, anterior margin deeply incised, the setae similar to the adjacent ventral setae of gonocoxa. Ventral mesial margin of gonocoxa simple, with an inconspicuous lobe-like convexity at the level of the paraapodemal lobe, marginal setae conspicuously longer than the more lateral setae. Parastylar lobe sickle-shaped, with two or three setae at apex. Paraapodemal lobe well exposed in ventral view, inflated. Dorsal mesial margin of gonocoxa simple, convex, subapically with a strong seta arising from a large basal body. Two juxtagonostylar setae present: both strong, sigmoid, sharp-ended megasetae arising from a common basal body which is about half the length of the megasetae. Gonostylus simple, elongate-oval, ventrally and laterally covered with unmodified long setae, dorsally largely non-setose except for a subapical tuberculate area with rather short setae, apico-mesially with a dense comb-like row of 5 long setae which differ from the other setosity. Aedeagus subtriangular, with lateral shoulders, the apical part curved ventrad. Hypoproct posteriorly reaching between the base and middle of gonostylus, with ca. 12 setae on each half, lateral in position. Cerci mesially separate.

Female unknown.

Discussion. *M. vesicaria* is similar to *M. pellii*. It is distinguished e.g. 1) by having an inflated globular paraapodemal lobe instead of a small flattened one; 2) by having a comb-like row of very long setae apico-mesially on the gonostylus instead of having short curved setae here; and 3) by having the setae on the hypoproct placed in a lateral row or zone, not in a row at the mesial margin of each half.

Etymology. The name is derived from Latin, *vesica*, bladder, *vesicaria*, having a nature of bladder, referring to the inflated paraapodemal lobes.

Types. *Holotype.* Male, THAILAND, Phitsanulok, Thung Salaeng Luang NP, mixed deciduous forest, 16°50.563'N 100°51.757'E, 481 m, Malaise trap 25.ix.–2. x.2006, Pongpitak Pranee leg., T933 (in QSBG).

Paratypes. 1 male, same data as holotype except 18–25.ix.2006, T930 (in SMNH).

New records of *Manota* in Thailand

***Manota aconcinna* Hippa, 2008**

New records. 1 male, Phitsanulok, Thung Salaeng Luang NP, mixed deciduous forest (Gang Sopa waterfall),

16°52.642'N 100°49.441'E, 481m, Malaise trap 14–21.x.2006, Pongpitak Pranee leg., T762 (in QSBG); **1 male**, Loei, Phu Kradueng NP, dry evergreen forest (Pong neep forest unit), 16°56.589'N 101°42.074'E, 273m, Malaise trap 4–11.xi.2006, Sutin Glong-lasae leg., T792 (in QSBG); **1 male**, Phetchabun, Thung Salaeng Luang NP, pine forest; Gang Wang Nam Yen, 16°36.284'N 100°53.128'E, 749m, litter sample 15–18.vi.2007, Pongpitak & Sathit leg. T2050 (in QSBG); **1 male** with same data except pan trap 18–19.vi.2007, T2054 (in QSBG); **2 males** with same data except 16°35.805'N 100°52.286'E, 726m, Malaise trap 22–29.vi.2007, T2064 (in QSBG and SMNH); **3 males** with same data except Malaise trap 6–13.vii.2007, T2070

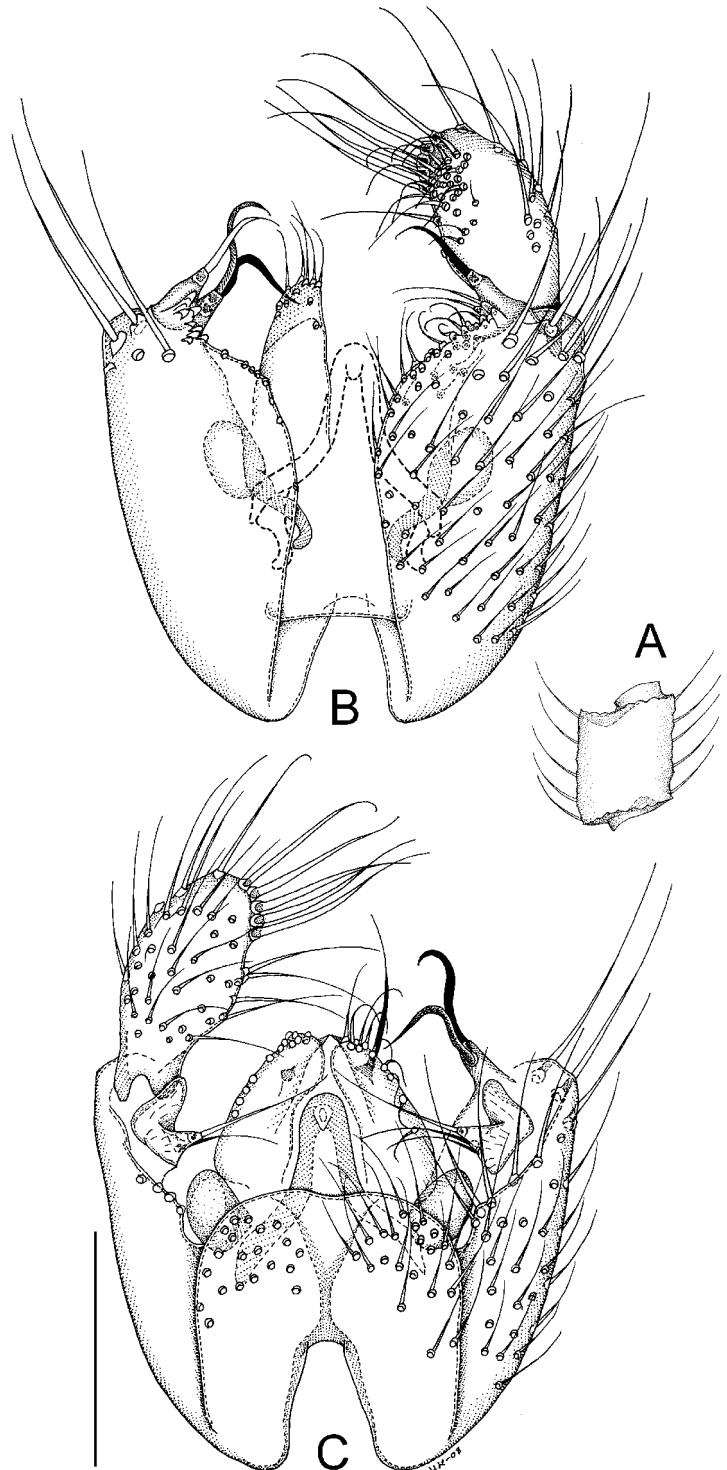


FIGURE 12. *Manota vesicaria* sp. n. (holotype). **A.** Antennal flagellomere 4, lateral view. **B.** Hypopygium, dorsal view. **C.** Hypopygium, ventral view. Scale 0.10 mm.

(in QSBG and SMNH); **1 male** with same data except 16°37.178'N 100° 53.504'E, 706m, Malaise trap 31.v.–7.vi.2007, Pongpitak Pranee & Sathit leg., T2087 (in QSBG); **1 male**, Nakhon Ratchasima, Khao Yai NP, cobra zone near fire protection office, 14°28.524'N 101°22.928'E, 757m, Malaise trap 12–19.vi.2007, Pong Sandao leg., T2224 (in QSBG); **1 male** with same data except evergreen forest near tiger trail, 14°27.511'N 101°22.408'E, 760m, Malaise trap 12–19.vi.2007, Wirat Sukho leg., T2226 (in QSBG); **2 males**, Nakhon Nayok, Khao Yai NP, behind Training Center, 14°27.119'N 101°21.482'E, 699m, Malaise trap 12–19.v.2007, Wirat Sukho leg. T2268 (in QSBG); **1 male**, Khao Yai NP, entrance of Hnong Pak Chee Trail, 14°27.115'N 101°21.951'E, 733m, Malaise trap 26.v.–2.vi.2007, Wirat Sukho leg., T2273 (in QSBG).

Remarks. This species was previously known only from the holotype from Pa Hin Ngam NP, Chaiyaphum, and one paratype from Doi Inthanon NP, Chiang Mai, Thailand (Hippa 2008a).

***Manota acutangula* Hippa, 2006**

New records. **1 male**, Loei Phu Kradueng NP, dry evergreen forest, (Pong neep forest unit), 16°56.589'N 101° 42.74'E, 273 m, Malaise trap 4–11.xi.2006, Sutin Glong-lasae leg., T792 (in QSBG); **1 male** with same data except 2–10.x.2006, T957; **1 male**, same data except 5–12.xi.2006, T1116; **1 male**, Chaiyaphum, Tat Tone NP, dry Dipterocarpus forest near swamp at Sab somboon forest unit, 16°1.059'N 101° 58.603'E, 674 m, Malaise trap 5–12.xi.2006, Tawit Jaruphan leg., T1137 (in QSBG); **1 male**, Phetchabun, Khao Kho NP, mixed deciduous forest, 16°32.561'N 100°2.479'E, 537 m, Malaise trap 19–6.xii.2006, Saink Singtong leg., T1184 (in QSBG); **3 males**, Phetchabun, Thung Salaeng Luang NP, Gang Wang Nam Yen, pine forest, 16°36.284'N 100°53.128'E, 749 m, pan trap 18–19.vi.2007, Pongpitak & Sathit leg., T2054 (in QSBG); **1 male**, same data except 20–21.vi.2007, T. 2056; **1 male**, same data except 16°35.789'N 100°52.769'E, 732 m, Malaise trap 22–29.vi.2007, T2062; **1 male** with same data except 16°35.805'N 100°52.286'E, 726 m, Malaise trap 22–29.vi.2007, T2064; **1 male** with same data except 16°36.284'N 100°53.128'E, 749 m, Malaise trap 29.vi–6. vii.2007. Pongpitak & Sathit leg. T2066 (in QSBG). **1 male** with same data except; **1 male** with same data except 16°35.789'N 100°52.769'E, 732 m, Malaise trap 6–13.vii.2007, T2068; **1 male** with same data except 16°35.805'N 100°52.286'E, 726 m, Malaise trap 6–13.vii.2007, T2070; **4 males**, Thung Salaeng Luang NP, Gang Wang Nam Yen, 16°36.587'N 100°53.395'E, 753 m, Malaise trap 17–24.v.2007, Pongpitak Pranee & Sathit leg, T2080; **1 male** with same data except 16°37.531'N 100°53.745'E, 721 m, Malaise trap 17–24.v.2007, T2082; **3 males** with same data except 16°36.587'N 100°53.395'E, 753 m, Malaise trap 24–31.v.2007, T2083; **2 males** with same data except 16°37.178'N 100°53.504'E, 706 m, Malaise trap 24–31.v.2007, T2084; **4 males** with same data except 16°36.587'N 100°53.395'E, 753 m, Malaise trap 7–14.vi.2007, T2089; **1 male** with same data except 16°37.531'N 100°53.745'E, 721 m, Malaise trap 17–24.v.2007, T2091; **1 male**, Nakhon Nayok, Khao Yai NP, Lum Ta Kong View Point, 14°25.82'N 101°23.754'E, 744 m, Malaise trap 19–26. iv.2007. Wirat Sukho leg., T2129 (in QSBG); **1 male**, Khao Yai NP, entrance of Hnong Pak Chee Trail, 14°27.115'N 101°21.951'E, 733 m, Malaise trap 26.v.–2.vi.2007, T2273 (in SMNH); **1 male** with same data except Khao Yai NP, evergreen forest near Hnong Pakchee, 14°27.119'N 101°21.482'E, 699 m, Malaise trap 26.v.–6. 2.vi.2007, Pong Sandao leg., T2274 (in LACM); **3 males**, Nakhon Ratchasima, Khao Yai NP, Cobra zone near Fire protection office, 14°28.524'N 101°22.928'E, 757 m, Malaise trap 5–12.vi.2007, Pong Sandao leg. T2221 (in QSBG); **1 male** with same data except Malaise trap 12–19. vi.2007, T2224 (in QSBG). **1 male** with same data except for Malaise trap 19–26.vi.2007, T2227 (in QSBG).

Remarks. The species was previously known from Pahang, Malaysia (Hippa 2006, 2008a) and Doi Inthanon NP, Chiang Mai and Nam Nao NP, Pechabun, Thailand (Hippa 2008a).

Manota ancylochaeta Hipps, 2008

New records. **1 male**, Chaiyaphum, Pa Hin Ngam NP, dry evergreen forest (Thepana waterfall), 15°38.884'N 101°25.84'E, 605m, Malaise trap 19–25.x.2006, Katae Sa-nog & Buakaw Adnafai leg., T667 (in QSBG); **1 male** with same data except dry dipterocarp forest at Lan Hin Nau, 15°37.683'N 101°23.323'E, 681m, Malaise trap 7–13.ix.2006, T850 (in QSBG); **1 male**, Sakon Nakhon, Phu Phan NP, dry dipterocarp forest at foothill forest unit, 17°9.921'N 103°54.485'E, 206m, Malaise trap 13–19.x.2006, Winlon Kongnara leg., T702 (in QSBG); **1 male** with same data except creek at entrance of Huay Nam Pung forest unit, 16°54.63'N 103°54.266'E, 281m, Malaise trap 6–13.xi.2006, Sailom Tongboonchai leg., T1094 (in QSBG); **1 male**, Loei, Phu Kradueng NP, dry evergreen forest (Pong neep forest unit), 16°56.589'N 101°42.074'E, 273m, Malaise trap 4–11.xi.2006, Sutin Glong-lasae leg., T792 (in QSBG); **1 male**, Nakhon Nayok, Khao Yai NP, Khao Keow spirit house, 14°22.96'N 101°23.253'E, 750m, Malaise trap 5–12.ix.2006, Pong Sandao leg., T909 (in QSBG); **1 male** with same data except Malaise trap 26.ix.–3.x.2006, T916 (in QSBG); **1 male** with same data except Lum Ta Kong View Point, 14°25.565'N 101°23.442'E, 726m, Malaise trap 5–12.iv.2007, Pong Sandao leg., T2121 (in QSBG); **2 males** with same data except behind Training Center, 14°27.119'N 101°21.482'E, 699m, Malaise trap 12–19.v.2007, Wirat Sukho leg. T2268 (in SMNH).

Remarks. *M. ancylochaeta* was recently described (Hipps 2008a), from the holotype from Khao Kho NP, Phetchabun, and one paratype from Khao Yai, Nakhon Nayok, and two other males from Doi Inthanon NP, Chiang Mai, Thailand, and one male from Pahang, Malaysia. In this paper, the two males from Doi Inthanon NP are included under *M. epigrata*.

Manota clavulosa Hipps, 2008

New records. **2 males**, Chiang Mai, Doi Inthanon NP, Checkpoint 2, 18°31.554'N 98°29.94'E, 1700m, Malaise trap 23.ii.–2.iii.2007, Y. Areeluck leg. T1775 (in QSBG); **5 males**, with same data except Malaise trap 2–9.iii.2007, T1781 (in QSBG); **3 males** with same data except Malaise trap 23.iii–1.v.2007, T1822 (in QSBG); **3 males** with same data except Malaise trap 15–22.iv.2007, T1845 (in SMNH); **1 male** with same data except Malaise trap 29.iv–6.v.2007, T1857 (in QSBG); **1 male**, Thung Salaeng Luang NP, Gang Wang Nam Yen, 16°37.178'N 100°53.504'E, 706m, Malaise trap 17–24.v.2007, Pongpitak Pranee & Sathit leg., T2081 (in QSBG).

Remarks. Only the holotype male, one paratype male and one female of this species were previously known, all from Doi Inthanon NP, Chiang Mai, Thailand (Hipps 2008a).

Manota collina Hipps, 2008

Fig. 1 B, E, G

New records. **4 males** and **1 female**, Chiang Mai, Doi Inthanon NP, Checkpoint 2, 18°33.162'N 98°28.81'E, 1700m, Malaise trap 2–9.iii.2007, Y Areeluck leg., T1781 (in QSBG); **3 males**, Doi Inthanon NP, Kew Maepan Trail, 18°33.162'N 98°28.81'E, 2200m, Malaise trap 2–9.iii.2007, Y. Areeluck leg. T1777 (in QSBG); **1 male** with same data except Malaise trap 9–16.iii.2007, T1807 (in SMNH); **2 males** with same data except Malaise trap 16–23.iii.2007, T1813 (in QSBG); **5 males** with same data except Malaise trap 23.iii.–1.v.2007, T1819 (in QSBG); **7 male** and **1 female** with same data except Malaise trap 1–8.v.2007, T1824 (in QSBG); **1 male** with same data except Malaise trap 8–15.v.2007, T1828 (in QSBG); **3 males** and **1 female** with same data except Malaise trap 8–15.v.2007, T1829 (in QSBG); **5 males** with same data except Malaise trap 15–22.iv.2007, T1841 (in QSBG); **7 males** with same data except Malaise trap 22–29.iv.2007, Y. Areeluck leg., T1847 (in QSBG). **1 male**, Doi Inthanon NP, summit marsh, 18°35.361'N 98°29.157'E, 2500m, Malaise trap 22–29.iv.2007, Y. Areeluck leg., T1846 (in QSBG)

Remarks. *M. collina* was previously known only from the holotype male and a paratype male from summit forest, 2500 m, Doi Inthanon NP, Chiang Mai, Thailand (Hippa 2008a). The female was previously unknown. It is similar to the male and can be distinguished from the other Oriental species by the broadly infuscated apical part of the wing (Fig. 1 E). The flagellomere 4 (Fig. 1 B) is rather long for a female, but similar species do occur. The terminalia (Fig. 1 G) are of the common *Manota* type with two long setae on each side of tergite 9 and with two-segmented cercus.

***Manota cristata* Hippa, 2008**

New records. **1 male**, Chiang Mai, Doi Inthanon NP Kew Maepan Trail, 18°33.162'N 98°28.81'E, 2200m, Malaise trap 23.iii.–1.v.2007, Y. Areeluck leg., T1819 (in QSBG); **2 males** with same data except Malaise trap 15–22.iv.2007, T1841 (in SMNH); **1 male** with same data except Malaise trap 22–29.iv.2007, T1847 (in QSBG).

Remarks. Only the holotype from Checkpoint 2, 1700 m, Doi Inthanon NP, Chiang Mai, Thailand, was known previously (Hippa 2008a).

***Manota globigera* Hippa, 2006**

New record. **1 male**, Chiang Mai, Doi Inthanon NP Kew Maepan Trail, 18°33.162'N 98°28.81'E, 2200m, Malaise trap 9–16.iii.2007, Y. Areeluck leg. T1807 (in QSBG).

Remarks. *M. globigera* was previously recorded from Selangor, Malaysia (Hippa 2006) and Checkpoint 2, 1700 m, Doi Inthanon NP, Chiang Mai, Thailand (Hippa 2008a).

***Manota inflata* Hippa, 2008**

New records. **1 male**, Chaiyaphum, Pa Hin Ngam NP, nature trail at Lan Hin Nau, 15°37.615'N 101°23.436'E, 668m, Malaise trap 1–7.ix.2006, Katae Sa-nog & Buakaw Adnafai leg., T845 (in QSBG); **1 male** with same data except Pa Hin Ngam NP, dipterocarp forest at Lan Hin Nau, 15°37.683'N 101°23.323'E, 681m, Malaise trap 13–19.ix.2006, T853 (in SMNH); **1 male** with same data except Tat Tone NP, Chaiyapoom forest fire station, 16°0.738'N 102°1.342'E, 195m, Malaise trap 5–12.xii.2006, Tawit Jaruphan & Orawan Budsawong leg., T1368 (in QSBG); **1 male**, Nakhon Ratchasima, Khao Yai NP, cobra zone near fire protection office, Malaise trap, 19–26.vi.2007, Pong Sandao leg., T2227 (in SMNH); Nakhon Nayok, Khao Yai NP, evergreen forest near Hnong Pak Chee, 14°27.119'N 101°21.482'E, 699m, Malaise trap 26.v.–2.vi.2007, Pong Sandao leg., T2274 (in QSBG); **1 male**, Phetchabun, Thung Salaeng Luang NP, Kaeng Wang Nam Yen, 16°37.178'N 100°53.504'E, 706m, Malaise trap 24–31.v.2007, Pongpitak Pranee & Sathit leg. T2084 (in QSBG); **1 male**, Phitsanulok, Thung Salaeng Luang NP, mixed deciduous forest, 16°50.563'N 100°51.757'E, 481m, Malaise trap 25.ix.–2.x.2006, Pongpitak Pranee leg. T933 (in QSBG); **2 males**, Sakon Nakhon, Phu Phan NP, north of well, 17°3.543'N 103°58.452'E, 312m, Malaise trap 5–11.i.2007, Sailom Tongboonchai leg., T1516 (in QSBG).

Remarks. *M. inflata* was previously known from the holotype and 16 paratypes from Vachirathan Falls, campground pond and Kew Mae Pan, Doi Inthanon NP, Chiang Mai, Thailand (Hippa 2008a).

***Manota oblonga* Hippa, 2008**

New records. **1 male**, Loei, Phu Ruea NP, Suan hin Palee, 17°29.863'N 101°20.554'E, 1178m, pan trap

6–7.x.2006, Patikhom Tumtip leg., T629 (in SMNH); **1 male** with same data except Phu Ruea NP, Hua Dong Tham Sun, 17°29.54'N 101°20.995'E, 1130m, Malaise trap 5–12.xi.2006, T1115 (in QSBG); **2 males**, Phetchabun, Nam Nao NP, hill evergreen forest, 16°44.402'N 101°34.56'E, 883m, Malaise trap 20–27.xi.2006, Leng Jantiep leg., T1326 (in QSBG); **1 male** with same data except Malaise trap 27.xi.–4.xii.2006, Noopien Hongyothee leg., T1329 (in QSBG);

Remarks. Previously known only from the holotype male from Vachirathan Falls, Doi Inthanon NP, Chiang Mai, Thailand (Hippra 2008a).

Manota oligochaeta Hippra, 2006

New records. **1 male**, Phitsanulok, Thung Salaeng Luang NP, mixed deciduous forest (Gang Sopa waterfall), 16°52.464'N 100°49.665'E, 501m, Malaise trap 14–21.x.2006, Pongpitak Pranee leg., T763 (in QSBG); **1 male**, Phetchabun, Khao Kho NP, nursery, 16°52.581'N 101°8.06'E, 520m, Malaise trap 12–19.x.2006, Somchai Chatchumnan and Sa-ink Singtong leg., T808 (in QSBG); **1 male**, Phetchabun, Nam Nao NP, hill evergreen forest, 16°44.402'N 101°34.56'E, 883m, Malaise trap 20–27.xi.2006, Leng Jantiep leg., T1326 (in QSBG); **1 male** with same data except 16°36.587'N 100°53.395'E, 753m, Malaise trap 7–14.vi.2007, T2089 (in QSBG); **1 male**, Phetchabun, Thung Salaeng Luang NP, Kaeng Wang Nam Yen, 16°37.531'N 100°53.745'E, Malaise trap 29.xi.–6.xii.2006, T1165 (in QSBG); **1 male**, Gang Wang Nam Yen, 16°37.178'N 100°53.504'E, 706m, Malaise trap 24–31.v.2007, Pongpitak Pranee & Sathit leg. T2084 (in QSBG); **1 male**, Nakhon Nayok, Khao Yai NP, Nhong Ping Khao Keow, 14°23.094'N 101°23.055'E, 733m, Malaise trap 19–26.ix.2006, Wirat Sook-kho leg., T913 (in QSBG); **2 males** with same data except Khao Yai NP, Khao Keow, spirit house, 14°22.96'N 101°23.253'E, 750m, Malaise trap 26.ix.–3.x.2006, Pong Sandao leg. T916 (in SMNH); **1 male**, Nakhon Ratchasima, Khao Yai NP, Dong Ngu How area, 14°28.524'N 101°22.928'E, 757m, Malaise trap 12–19.xii.2006, Pong Sandao leg., T1306 (in QSBG); **1 male** with same data except Malaise trap 19–23.xii.2006, T1309 (in QSBG);

Remarks. The species was previously known from Selangor, Malaysia (Hippra 2006), Thung Kai Botanic Garden, Khao Chong Botanic Garden and Khao Pu-Khao Ya NP, Trang Province, Thailand (Hippra and Papp 2007) and Khao Yai NP, Nakhon Nayok, Thailand (Hippra 2008a).

Manota ovata Hippra, 2006

New records. **1 male**, Phetchabun, Thung Salaeng Luang NP, pine forest; Gang Wang Nam Yen, 16°36.284'N 100°53.128'E, 749m, pan trap 18–19.vi.2007, Pongpitak & Sathit leg., T2054 (in QSBG); **1 male**, Nakhon Ratchasima, Khao Yai NP, evergreen forest near tiger trail, 14°27.511'N 101°22.408'E, 760m, Malaise trap 5–12.vi.2007, Pong Sandao leg., T2223 (in QSBG); **2 males** with same data except Malaise trap 12–19.vi.2007, Wirat Sukho leg., T2226 (in SMNH).

Remarks. *M. ovata* was previously recorded from Selangor, Malaysia (Hippra 2006), Khao Chong Botanic Garden, Trang Province, Thailand (Hippra and Papp 2007) and Khao Yai NP, Nakhon Nayok, Thailand (Hippra 2008a).

Manota pectinata Hippra, 2006

New records. **2 males**, Phitsanulok, Thung Salaeng Luang NP, mixed deciduous forest (Gang Sopa waterfall), 16°52.464'N 100°49.665'E, 501m, Malaise trap 14–21.x.2006, Pongpitak Pranee leg., T763 (in SMNH); **1 male** with same data except Thung Salaeng Luang NP, pine forest; Gang Wang Nam Yen, 16°36.284'N 100°53.128'E, 749m, pan trap 18–19.vi.2007, Pongpitak & Sathit leg., T2054 (in QSBG); **1**

male, Phetchabun, Nam Nao NP, hill evergreen forest, 16°44.371'N 101°34.549'E, 834m, Malaise trap 20–27.xi.2006, Leng Jantiep leg., T1324 (in QSBG); **1 male** with same data except 16°37.178'N 100°53.504'E, 706m, Malaise trap 24–31.v.2007, T2084 (in QSBG); **1 male** with same data except Malaise trap 11–18.xii.2006, Noopien Hongyothee leg., T1333 (in QSBG); **1 male** with same data except Heliport, 16°43.113'N 101°35.134'E, 889m, Malaise trap 1–8.i.2007, T1440 (in QSBG); **1 male**, Chiang Mai, Doi Inthanon NP, Checkpoint 2, 18°31.554'N 98°29.94'E, 1700m, Malaise trap 15–22.iv.2007, Y. Areeluck leg., T1845 (in QSBG); **1 male** with same data except Vachirathan Fall, 18°32.31'N 98°36.048'E, 700m, Malaise trap 10–17.xi.2006, T1934 (in QSBG).

Remarks. *M. pectinata* was previously recorded from Selangor, Malaysia (Hippa 2006), three localities in Trang Province, Thailand (Hippa and Papp 2007), and Doi Inthanon NP, Chiang Mai, Thailand (Hippa 2008a).

***Manota pelli* Hippa, 2008**

New records. **1 male**, Nakhon Nayok, Khao Yai NP, Khao Keow spirit house, 14°22.96'N 101°23.253'E, 750m, Malaise trap 5–12.ix.2006, Pong Sandao leg., T909 (in QSBG); **1 male**, Phetchabun, Thung Salaeng Luang NP, pine forest; Gang Wang Nam Yen, 16°36.284'N 100°53.128'E, 749m, pan trap 18–19.vi.2007, Pongpitak & Sathit leg., T2054 (in QSBG); **2 males** with same data except 16°35.789'N 100°52.769'E, 732m, Malaise trap 22–29.vi.2007, T2062 (in QSBG); **1 male** with same data except 16°35.805'N 100°52.286'E, 726m, Malaise trap 22–29.vi.2007, T2064 (in QSBG); **1 male** with same data except 16°37.178'N 100°53.504'E, 706m, Malaise trap 24–31.v.2007, T2084 (in QSBG); **1 male** with same data except 16°37.531'N 100°53.745'E, 721m, Malaise trap 24–31.v.2007, T2085 (in QSBG); **1 male** with same data except 16°36.587'N 100°53.395'E, 753m, Malaise trap 7–14.vi.2007, T2089 (in QSBG); **2 males**, Nakhon Ratchasima, Khao Yai NP, elephant trail near fire protection office, 14°28.285'N 101°22.57'E, 751m, Malaise trap 19–26.vi.2007, Wirat Sukho leg., T2228 (in SMNH); **1 male** with same data except Khao Yai NP, near Training Center 2, 14°24.515'N 101°22.432'E, 750m, pan traps 7–8.ii.2007, Pong Sandao leg., T2237 (in QSBG).

Remarks. *M. pelli* was previously known only from the holotype from Khao Yai, Nakhon Nayok, Thailand (Hippa 2008a).

***Manota perlobata* Hippa, 2008**

New records. **1 male**, Chiang Mai, Doi Inthanon NP Checkpoint 2, 18°31.554'N 98°29.94'E, 1700m, Malaise trap 15–22.iii.2007, Y. Areeluck leg. T1845 (in QSBG).

Remarks. Only two specimens were previously known, the holotype from the same locality as the new record above and a paratype from northern Burma (Hippa 2008a).

***Manota perpusilla* Hippa, 2006**

Figs 13 A–F

New records. **1 male**, Nakhon Nayok, Khao Yai NP, Lum Ta Kong View Point, 14°25.82'N 101°23.754'E, 744 m, Malaise trap 26.iv.–2.v.2007, Pong Sandao leg., T2132 (in SMNH); **1 male**, Nakhon Ratchasima, Khao Yai NP, Cobra zone near Fire protection office, 14°28.524'N 101°22.928'E, 757 m, Malaise trap 12–19.vi.2007, Pong Sandao leg., T2224 (in SMNH).

Remarks. *M. perpusilla*, which was described from one male from Selangor, Malaysia (Hippa 2007), was subsequently reported from Khao Chong Botanic Garden (1 male) and Thung Khai Botanic Garden (2 males),

Trang Province, Thailand (Hippa and Papp 2007). The present specimens are rather conspicuously larger than the holotype, wing length 1.8–2.0 contra 1.3 mm, the antennal flagellomeres are longer (Fig. 13 A, B), the gonostyli are apically more pointed and the juxtagonostylar megasetae are different, especially the more dorsal one, which is rod-like and short instead of being flattened and as long as the more ventral one (Fig. 13 C–F, Hippa 2006: fig. 16 B). These specimens may represent a new species. The material published by Hippa and Papp (2007) has not been restudied in present context.

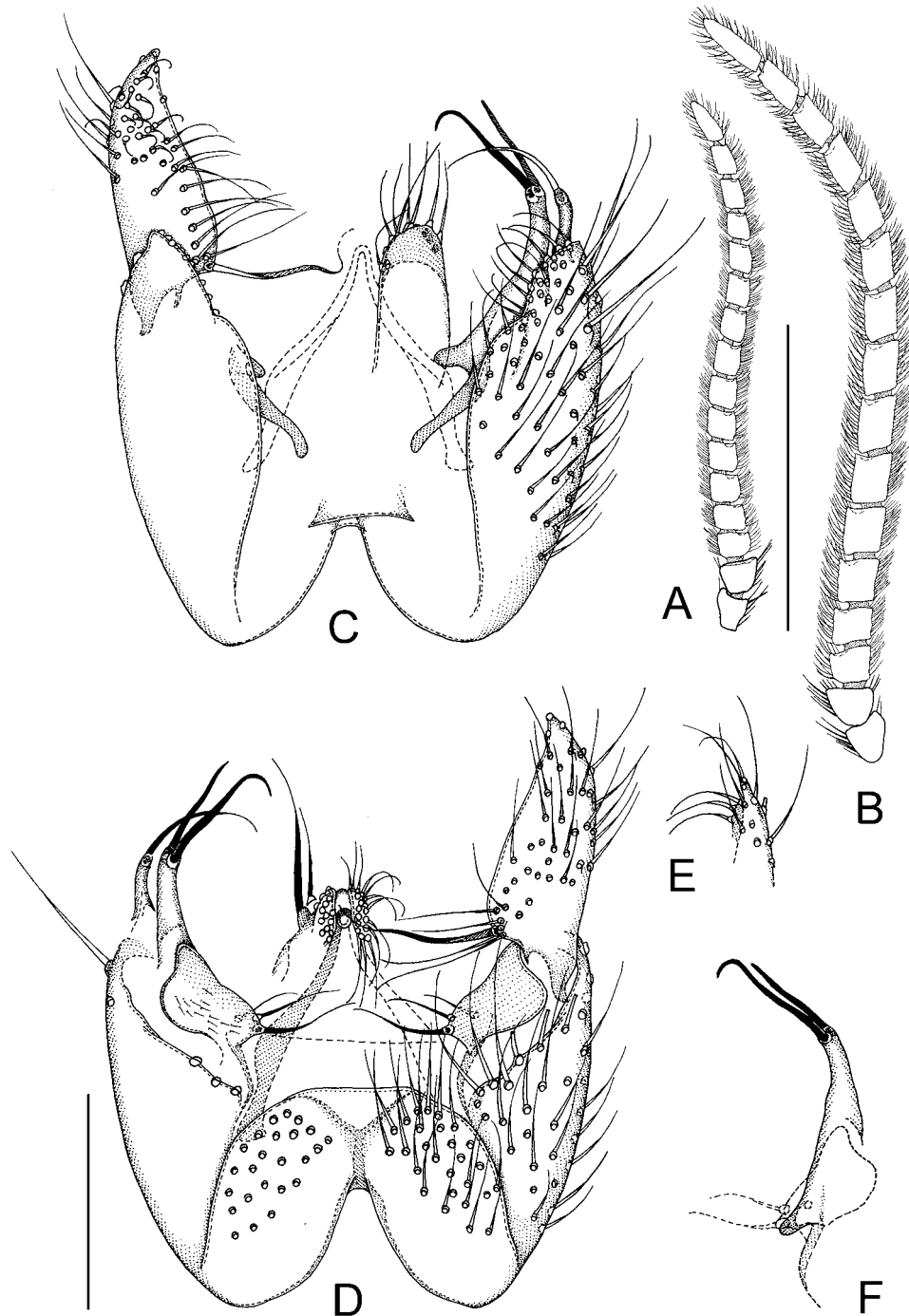


FIGURE 13. *Manota perpusilla* Hippa (A holotype, B, C, D from Nakhon Ratchasima, E, F from Nakhon Nayok). **A, B.** Antenna, lateral view. **C.** Hypopygium, dorsal view. **D.** Hypopygium, ventral view. **E.** Apex of gonostylus, ventral view. **F.** Parastylar lobe and juxtagonostylar megasetae, ventral view. Scale 0.10 mm.

Manota planilobata Hippa, 2008

Figs 14 A, B, C

New record. 1 male, Phetchabun, Thung Salaeng Luang NP, Kaeng Wang Nam Yen, 16°36.587'N 100°53.395'E, 706 m, Malaise trap 22–29.xi.2006, no collector, T1160 (in SMNH).

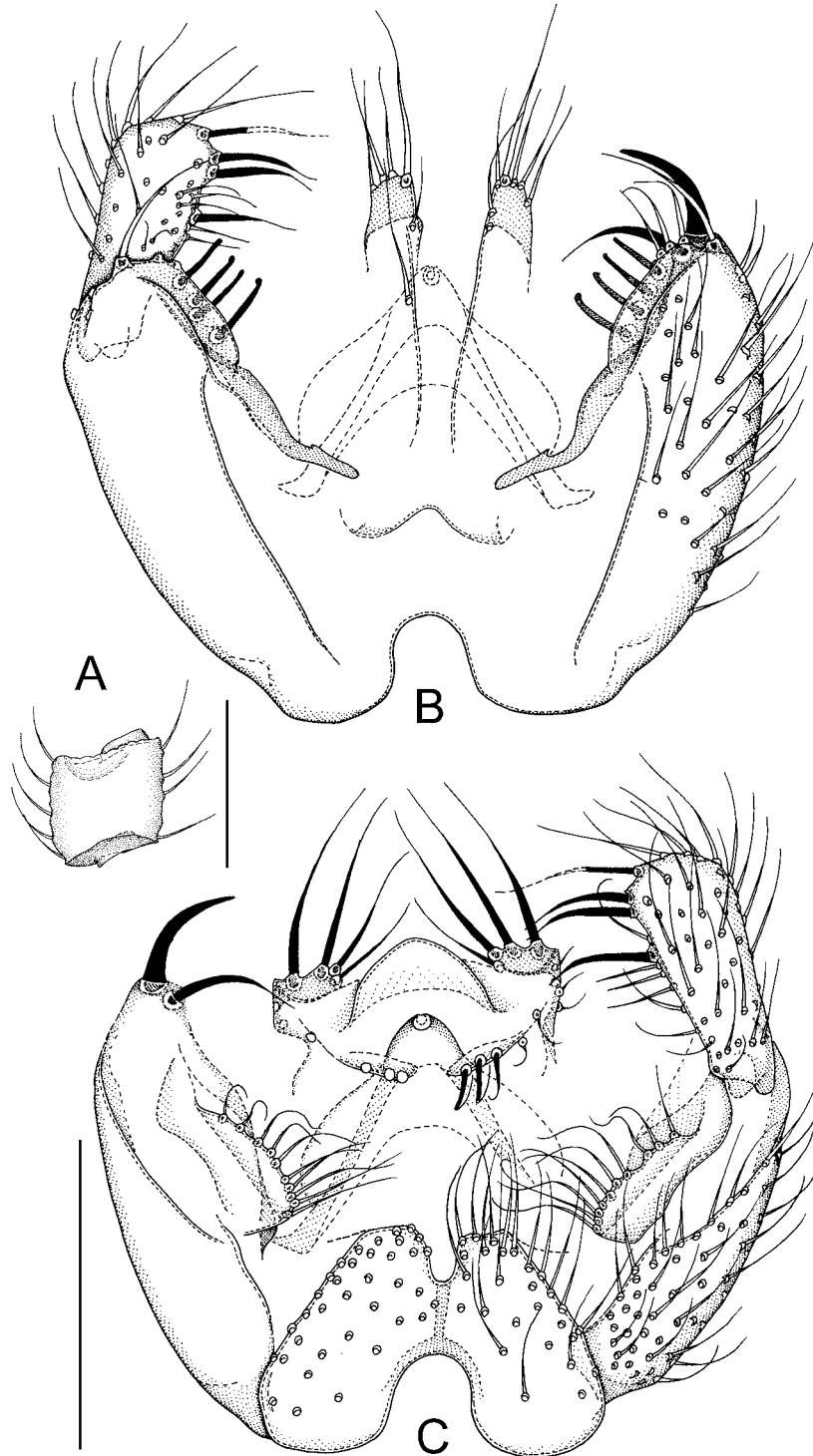


FIGURE 14. *Manota planilobata* Hippa (from Phetchabun). **A.** Antennal flagellomere 4, lateral view. **B.** Hypopygium, dorsal view. **C.** Hypopygium, ventral view. Scale 0.10 mm.

Remarks. This species was recently described from only the holotype male from Doi Inthanon NP, Chiang Mai, Thailand (Hippa 2008a). The new male (Figs 14 A, B, C) differs in many respects and may represent a different species: the parastylar lobe is broader with the mesial margin less angular, the paraapodemal lobe is smaller, the plate-like mesial lobe subapically on the dorsal side of gonocoxa has the setae fewer and stronger, and the shape of the gonostylus is less angular and the strong setae on its mesial side are much longer.

***Manota procera* Hippa, 2006**

New records. **1 male**, Phitsanulok, Thung Salaeng Luang NP, mixed deciduous forest (Gang Sopa waterfall), 16°52.464'N 100°49.665'E, 501m, Malaise trap 14–21.x.2006, Pongpitak Pranee leg., T763 (in QSBG); **1 male**, Nakhon Nayok, Khao Yai NP, Khao Keow spirit house, 14°22.96'N 101°23.253'E, 750m, Malaise trap 5–12.ix.2006, Pong Sandao leg., T909 (in QSBG); **1 male** with same data except Lum Ta Kong View Point, 14°25.82'N 101°23.754'E, 744m, Malaise trap 5–12.iv.2007, T2123 (in QSBG); **1 male** with same data except Malaise trap 26.iv.–2.v.2007, T2132 (in QSBG); **1 male**, Phetchabun, Thung Salaeng Luang NP, Kaeng Wang Nam Yen, 16°37.178'N 100°53.504'E, pan trap 17–18.xi.2006, T1152 (in QSBG); **2 males** with same data except 16°36.587'N 100°53.395'E, Malaise trap 16–22.xi.2006, no collector, T1157 (in QSBG); **1 male** with same data except Malaise trap 6–13.xii.2006, T1166 (in QSBG); **1 male** with same data except pine forest; Gang Wang Nam Yen, 16°35.789'N 100°52.769'E, 732m, Malaise trap 22–29.vi.2007, Pongpitak & Sathit leg., T2062 (in QSBG); **2 males** with same data except Thung Salaeng Luang NP, Gang Wang Nam Yen, 16°36.587'N 100°53.395'E, 753m, Malaise trap 31.v.–7.vi.2007, Pongpitak Pranee & Sathit leg., T2086 (in SMNH); **1 male** with same data except Malaise trap 7–14.vi.2007, T2089 (in QSBG); **1 male** with same data except 16°37.178'N 100°53.504'E, 706m, Malaise trap 31.v.–7.vi.2007, T2087 (in QSBG); **1 male**, Nakhon Ratchasima, Khao Yai NP, moist evergreen forest at Dong Suer Paan, 14°27.511'N 101°22.408'E, 760m, Malaise trap 5–12.xii.2006, Pong Sandao leg., T1305 (in QSBG); **1 male** with same data except Malaise trap 19–23.xii.2006, T1311 (in QSBG); 3 males with same data except cobra zone near fire protection office, 14°28.524'N 101°22.928'E, 757m, Malaise trap 5–12.vi.2007, T2221 (in QSBG); **1 male** with same data except Malaise trap 19–26.vi.2007, T2227 (in QSBG); **1 male** with same data except evergreen forest near tiger trail, 14°27.511'N 101°22.408'E, 760m, Malaise trap 12–19.vi.2007, Wirat Sukho leg., T2226 (in QSBG); **3 males** with same data except Malaise trap 19–26.vi.2007, Pong Sandao leg., T2229 (in SMNH); **1 male** with same data except Elephant Trail near Fire protection office, 14°28.285'N 101°22.57'E, 751m, Malaise trap 26.vi.–2.vii.2007, Wirat Sukho leg., T2231 (in QSBG); **2 males** with same data except evergreen forest near Hnong Pakchee, 14°27.119'N 101°21.482'E, 699m, Malaise trap 5–12.v.2007, Pong Sandao leg. T2265 (in QSBG).

Remarks. The species was previously known from Selangor (Hippa 2006) and Sarawak (Hippa 2008a), Malaysia and Thung Kai and Khao Chong Botanic Gardens, Trang Province, Thailand (Hippa and Papp 2007). Some of the new specimens are difficult to distinguish from *M. calcarata* Hippa or *M. transversa* Hippa, which may indicate that all the three nominal species are conspecific.

***Manota roslii* Hippa, 2006**

New records. **1 male**, Phitsanulok, Thung Salaeng Luang NP, dry evergreen forest, 16°50.277'N 100°52.917'E, 486m, Malaise trap 25.ix.–2.x.2006, Pongpitak Pranee leg., T932 (in QSBG); **1 male**, Phetchabun, Thung Salaeng Luang NP, Kaeng Wang Nam Yen, 16°37.178'N 100°53.504'E, pan trap 17–18.xi.2006, no collector, T1152 (in QSBG); **1 male** with same data except Kaeng Wang Nam Yen, 16°37.531'N 100°53.745'E, Malaise trap 16–22.xi.2006, T1159 (in QSBG); **2 males**, Thung Salaeng Luang NP, pine forest, Gang Wang Nam Yen, 16°36.284'N 100°53.128'E, 749m, pan trap 18–19.vi.2007, Pongpitak

& Sathit leg., T2054 (in SMNH); **1 male** with same data except pan trap 20–21.vi.2007, T2056 (in QSBG); **1 male** with same data except pan trap 22–23.vi.2007, T2058 (in QSBG); **1 male** with same data except 16°35.789'N 100°52.769'E 732m, Malaise trap 22–29.vi.2007, T2062 (in QSBG); **2 males** with same data except 16°36.284'N 100°53.128'E 749m, Malaise trap 29.vi.–6.vii.2007, T2066 (in QSBG); **1 male** with same data except 16°36.587'N 100°53.395'E, 753m, Malaise trap 17–24.v.2007, Pongpitak Pranee & Sathit leg. T2080 (in QSBG); **1 male** with same data except 16°37.531'N 100°53.745'E, 721m, Malaise trap 17–24.v.2007, T2082 (in QSBG); **2 males** with same data except 16°37.178'N 100°53.504'E, 706m, Malaise trap 24–31.v.2007, T2084 (in QSBG); **1 male** with same data except 16°37.531'N 100°53.745'E, 721m, Malaise trap 24–31.v.2007, T2085 (in QSBG); **2 males** with same data except 16°36.587'N 100°53.395'E, 753m, Malaise trap 31.v.–7.vi.2007, T2086 (in QSBG); **2 males** with same data except 16°37.178'N 100°53.504'E, 706m, Malaise trap 31.v.–7.vi.2007, T2087 (in QSBG); **1 male** with same data except 16°37.531'N 100°53.745'E, 721m, Malaise trap 31.v.–7.vi.2007, T2088 (in QSBG); **2 males** with same data except 16°36.587'N 100°53.395'E, 753m, Malaise trap 7–14.vi.2007, T2089 (in SMNH); **3 males** with same data except 16°37.178'N 100°53.504'E, 706m, Malaise trap 7–14.vi.2007, T2090 (in QSBG); **1 male**, Nakhon Ratchasima, Khao Yai NP, evergreen forest near tiger trail, 14°27.511'N 101°22.408'E, 760m, Malaise trap 5–12.vi.2007, Pong Sandao leg., T2223 (in QSBG); **2 males** with same data except Malaise trap 12–19.vi.2007, Wirat Sukho leg. T2226 (in QSBG).

Remarks. *M. roslii* was previously recorded from Selangor (Hippa 2006) and Pahang (Hippa 2008a), Malaysia, and Nam Tok Nam Pan Forest Park, Trang Province (Hippa and Papp 2007), and Doi Inthanon NP, Chiang Mai (Hippa 2008a), Thailand.

***Manota simplex* Hippa, 2006**

New record. **2 males**, Nakhon Ratchasima, Khao Yai NP, evergreen forest near tiger trail, 14°27.511'N 101°22.408'E, 760m, Malaise trap 12–19.vi.2007, Wirat Sukho leg. T2226 (in QSBG and SMNH).

Remarks. *M. simplex* was previously known from Selangor, Malaysia (Hippa 2006) and Khao Yai NP, Nakhon Nayok, Thailand (Hippa 2008a).

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