

RESEARCH PAPER

Four new species and new records of *Manota* (Diptera: Mycetophilidae) from Sulawesi, Indonesia

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Abstract. Four new *Manota* species are described from the northern part of Sulawesi: *M. ashleyi* sp. nov., *M. axillata* sp. nov., *M. loriculata* sp. nov. and *M. spathigera* sp. nov. New records are given for the following species: *M. dolichothrix* Hippa & Ševčík, 2010 (South Sulawesi), *M. horrida* Hippa, 2006 (North Sulawesi), *M. ovata* Hippa, 2006 (North Sulawesi), *M. paulula* Hippa & Ševčík, 2013 (North Sulawesi) and *M. pectinata* Hippa, 2006 (South Sulawesi). In addition, *M. hamulata* Colless, 1966 is recorded from Bacan Island, Maluku Utara. The number of Oriental *Manota* species is now set at 102 and the number of species from Sulawesi at 14.

Key words. Diptera, Mycetophilidae, *Manota*, taxonomy, Sulawesi, Oriental region

ZooBank: <http://zoobank.org/urn:lsid:zoobank.org:pub:5D5FE0BE-6412-4470-9A7D-8170F3BA6397>

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Introduction

The genus *Manota* (type species *M. defecta* Williston, 1896), the nominal genus of the subfamily Manotinae of Mycetophilidae, has been on the cutting edge of fungus gnats' taxonomic studies during recent decades, within which there are more new *Manota* species described than for the rest of all mycetophilids combined (for references see <http://www.sciarioidea.info/>). Members of *Manota*, in spite of uniform general facies (see e.g. HIPPA et al. 2017: Fig. 2), exhibit extraordinary morphological diversity in male genitalia that has allowed the recognition of 276 species worldwide (KURINA et al. 2017 and references therein). There are 98 *Manota* species described so far from the Oriental Region (for reviews see HIPPA & ŠEVČÍK 2010, 2013, ŠEVČÍK et al. 2014, HIPPA & SAIGUSA 2016) that is supposed to also be the centre of diversification for the whole subfamily Manotinae (JASCHHOF et al. 2011). However, the region is quite unevenly studied with the majority of the species described from Thailand (e.g. HIPPA 2009, 2011) and Peninsular Malaysia (HIPPA 2006), while other areas have obtained much less attention, mostly because a lack of any study material. Only six species of *Manota* have hitherto been recorded

from Sulawesi Island (HIPPA & ŠEVČÍK 2013). Five of them, *M. abscissa* Hippa & Ševčík, 2013, *M. aciculata* Hippa & Ševčík, 2013, *M. licina* Hippa & Ševčík, 2013, *M. loricata* Hippa & Ševčík, 2013 and *M. paulula* Hippa & Ševčík, 2013, are from South Sulawesi, and a widespread Oriental species, *M. pectinata* Hippa, 2006 was found in both South and North Sulawesi (HIPPA & ŠEVČÍK 2010, 2013).

We have had a chance to study a small collection of *Manota* from North Sulawesi (Sulawesi Utara) and South Sulawesi (Sulawesi Selatan). The study of 27 specimens resulted in discovery of nine species, four of which are being described as new to science. We use the opportunity to give a new record of *M. hamulata* Colless, 1966 from Bacan Island, Maluku Utara, Indonesia.

Material and methods

The majority of the material was collected in Dumoga Bone National Park (currently Bogani Nani Wartabone National Park), with Malaise traps in 1985 during the project Wallace. This national park, one of the largest protected areas in Sulawesi, is located in North Sulawesi (Sulawesi Utara). It is mainly covered by a lowland rain forest. The



park is floristically the most diverse in Sulawesi providing habitats for a large number of endemics (see also WAKHID et al. 2014, KONERI 2015). In addition, two specimens were collected by collaborators of the Wallace project in MNHN from South Sulawesi (Sulawesi Selantan) and one specimen from the Island of Bacan, southwest of Halmahera, Maluku Utara.

All the specimens were initially glued to triangular card points but were removed from these and slide mounted in "Euparal" (see also KURINA & HIPPA 2014, 2015). For detailed study, the hypopygium was detached from the specimen and macerated in warm concentrated potassium hydroxide (KOH). After washing in water and dehydrating in stages of increasing concentrations of alcohol, the hypopygium was mounted in "Euparal" between two pieces of coverslip, which allows the specimen to be studied from both sides under a compound microscope. This preparation is now attached to a normal microscope slide by strips of adhesive tape along their edges and is easily detached when needed. The remainder of the specimen was not macerated, but after dehydration was mounted in "Euparal" under a coverslip on the same slide bearing the hypopygium. The morphological terminology follows mainly SØLI et al. (2000), while the term "parasegment" is used in accordance with JASCHHOF & HIPPA (2005). The terminology of the hypopygium follows HIPPA & PAPP (2007) except for the tegmen, which is here called the aedeagus. The latter terminology is also explained in Fig. 1. The mid and hind tibial organs are areas of tightly placed setae on the tibiae basoventrally and apicoventrally, respectively (JASCHHOF & JASCHHOF 2010, JASCHHOF et al. 2011). Wing length was measured from wing base to wing tip. Description of colour was made from specimens on slides under a stereomicroscope Leica S8APO. Illustrations were made with the aid of a drawing tube attached to a Leitz Diaplan compound microscope.

The exact label data are referred to for each specimen in the material sections, while separate labels of the specimen are discriminated by double slashes (/). Sulawesi Island is considered to belong to the Oriental Region according to GROOTAERT (2009).

The material is deposited in the following collections: National Museum of Wales, Cardiff, United Kingdom (NMWC), Muséum National d'Histoire Naturelle, Paris, France (MNHN) and the Institute of Agricultural and Environmental Sciences, Estonian University of Life Sciences (formerly Institute of Zoology and Botany), Tartu, Estonia (IZBE).

Species descriptions

Manota ashleyi sp. nov.

(Figs 1A–D)

Type material. HOLOTYPE: ♂, INDONESIA: Sulawesi Utara, Dumoga-Bone NP, Toraut 0°34'N 123°54'E, 214m., 21–23.vii.1985, A.H. Kirk-Spriggs leg. // NMW Indonesia Expedition 1985 (Project Wallace) NMW.Z.1985.078 // Malaise trap sample, forest edge, Sungai Tumpah [on slide, NMWC]. PARATYPES: 1 ♂, same as holotype except 232m, 1–3.ix.1985 // Malaise trap sample forest, 'Rintice 3' [on slide, NMWC]; 1 ♂, same as previous except 3–16.ix.1985 [on slide, NMWC]; 3 ♂♂, same as holotype except, 21–23.vii.1985 [on slides, NMWC, IZBE]; 1 ♂, same as holotype except 10–13.vii.1985 [on slide, NMWC]; 5 ♂♂, same as

holotype except, 23.vii–3.viii.1985 [on slides, NMWC, IZBE]; 1 ♂, same as holotype except 6–10.viii.1985 // Malaise trap sample, forest edge, Sungai Tumpah [on slide, NMWC].

Description. **Male.** **Colour.** Head light brown, face paler. Antenna light brown, scape and pedicel somewhat paler. Clypeus and mouthparts pale yellowish. Thorax yellowish. Legs yellowish, hind coxa slightly infuscated basally. Wing with light brownish tinge because of microtrichia; halter yellow with blackish knob. Abdomen brown, tergites laterally and sternites lighter. All vestiture pale, yellowish or brownish, thicker setae and trichia seeming darker than finer ones. **Head.** Antennal flagellomere 4 ca. 1.3–1.4 times as long as wide. Palpomere 3 of maxillary palpus with apicomeral thumb-like extension, number of apically curved sensilla 4–5; palpomere 4 with weak parasegment; palpomere 5 ca. 1.5 times longer than palpomere 4. Number of strong postocular setae 10–11. **Thorax.** Anepisternum with 39–47 setae; anterior basallare non-setose, laterotergite with 11–15 setae, preepisternum 2 with 12–15 setae, metepisternum with 11–17 setae. **Legs.** Mid and hind tibial organs absent. **Wing.** R₁ meeting C within basal half of costal margin; sclerotized part of M₂ not extending to level of tip of R₁; wing length, 1.6–1.7 mm. **Hypopygium** (Figs 1A–D). Sternite 9 laterally free from gonocoxa, rounded, the posterior margin straight, extending to the middle between the base of gonocoxa and gonostylus, anterior margin deeply v-shaped incised medially, setose with setae similar to those on ventral side of gonocoxa. Ventral medial margin of gonocoxa simple. Gonocoxa not drawn into a posterolateral lobe. Parastylar lobe crescent-shaped with one medially directed seta on anterior part. Paraapodemal lobe discernible, apically tapering. The dorsal side of gonocoxa with setae similar to those on the ventral side. Dorsal medial margin of gonocoxa simple, posteriorly with setose flat lobe at more ventral level covered partly by medial and posterior margins. Two juxtagonostylar setae present, both are simple sigmoid megasetae, arising from a common finger-like basal body that is about half of the length of megasetae. Gonostylus elongated, about 4 times as long as wide basally, apically slightly widening with 4–5 medially directed somewhat stronger setae apicomediaally. Aedeagus shortly subtriangular, with lateral shoulders, the apex curved ventrad. Hypoproct not extending over the posterior margin of gonocoxa, the number of ventral setae (sternite 10) ca. 15 on each half. Cerci medially separate, setose.

Female. Unknown.

Etymology. The species is named after Dr. Ashley Kirk-Spriggs, who collected the type material of all the new species described in this paper.

Discussion. According to the key to Oriental species by HIPPA (2011), *Manota ashleyi* sp. nov. runs to couplet 29 and groups together with *M. ovata* Hippha, 2006, *M. angustata* Hippha, 2006 and *M. biunculata* Hippha & Papp, 2007. It also resembles *M. abscissa* Hippha & Ševčík, 2013, described from South Sulawesi. All five species have setose anepisternum, preepisternum 2 and laterotergite, simple subtriangular aedeagus, medially separate cerci, and oval or elongated gonostylus without any megasetae. *Manota ashleyi* has the gonostylus apically slightly widening with

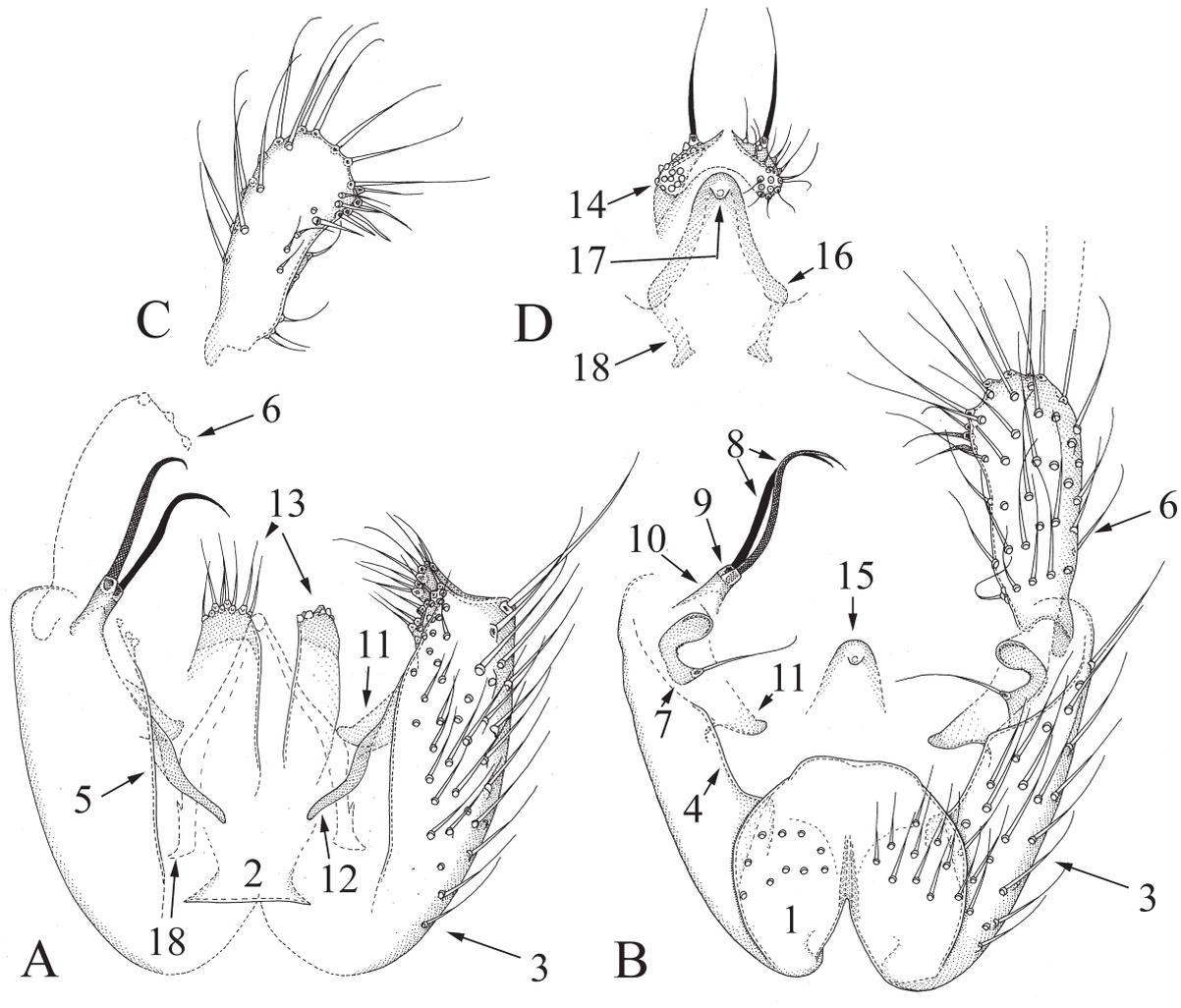


Fig. 1. *Manota ashleyi* sp. nov. (A, D – paratypes, B, C – holotype). A – hypopygium, dorsal view; B – hypopygium, ventral view; C – gonostylus, dorsal view; D – hypoproct and aedeagus, ventral view. Scale 0.10 mm. 1 = sternite 9, 2 = tergite 9, 3 = gonocoxa, 4 = ventral medial margin of gonocoxa, 5 = dorsal medial margin of gonocoxa, 6 = gonostylus, 7 = parastylar lobe, 8 = juxtagonostylar megaseta, 9 = sockets of juxtagonostylar setae, 10 = basal body of juxtagonostylar setae, 11 = paraapodemal lobe, 12 = gonocoxal apodeme, 13 = cercus, 14 = ventral part of hypoproct (sternite 10), 15 = aedeagus, 16 = lateral shoulder of aedeagus, 17 = ventrad curved apex of aedeagus, 18 = aedeagal apodeme.

4–5 medially directed somewhat stronger setae apicomediaally, while the gonostylus is: (1) ovate, with a conspicuous fringe of long setae along the whole medial margin in *M. ovata*, (2) elongated, with very long setae along the apical half of the medial margin in *M. abscissa*, (3) with subapical process on the medial side in *M. angustata*, and (4) medially concave in *M. biunculata*. The aedeagus of *M. ashleyi* is rather short with weak lateral shoulders like in *M. ovata*, *M. angustata* and *M. abscissa*, while it is considerably larger in *M. biunculata*. The crescent-shaped parastylar lobe has one antero-mesial seta in *M. angustata* and *M. ashleyi* while it has a couple of setae in *M. ovata* and *M. abscissa*. *Manota biunculata* has the parastylar lobe differently outlined with one seta arising from a small lobe on its anterior part (cf. HIPPA 2007: fig. 1B).

Manota axillata sp. nov.

(Figs 2A–D)

Type material. HOLOTYPE: ♂, INDONESIA: Sulawesi Utara, Dumoga-Bone NP, Toraut 0°34'N 123°54'E, 232m., 3–16.ix.1985, A.H. Kirk-Spriggs leg. // NMW Indonesia Expedition 1985 (Project Wallace)

NMW.Z.1985.078 // Malaise trap sample forest, 'Rintice 3' [on slide, NMWC]. PARATYPE: 1 ♂, same as holotype [on slide, NMWC].

Description. Male. Colour. Head brown, face paler. Antenna light brown, scape and pedicel paler. Clypeus and mouthparts pale yellowish. Thorax yellow. Legs yellowish. Wing with light brownish tinge because of microtrichia; halter yellow with brownish knob. Abdomen brown, tergites laterally and sternites lighter. All vestiture pale, yellowish or brownish, thicker setae and trichia seeming darker than finer ones. **Head.** Antennal flagellomere 4 ca. 1.3–1.5 times as long as wide. Palpomere 3 of maxillary palpus with apicomesimal thumb-like extension, number of apically curved sensilla 5, palpomere 4 with weak parasegment; palpomere 5 ca. 1.6 times longer than palpomere 4. Number of strong postocular setae 9–10. **Thorax.** Anepisternum with 56–63 setae; anterior basalare and laterotergite non-setose, preepisternum 2 with 19 setae, metepisternum with 12–13 setae. **Legs.** Mid and hind tibial organs absent. **Wing.** R_1 meeting C within basal half of costal margin; sclerotized part of M_2 not extending to level of tip of R_1 ;

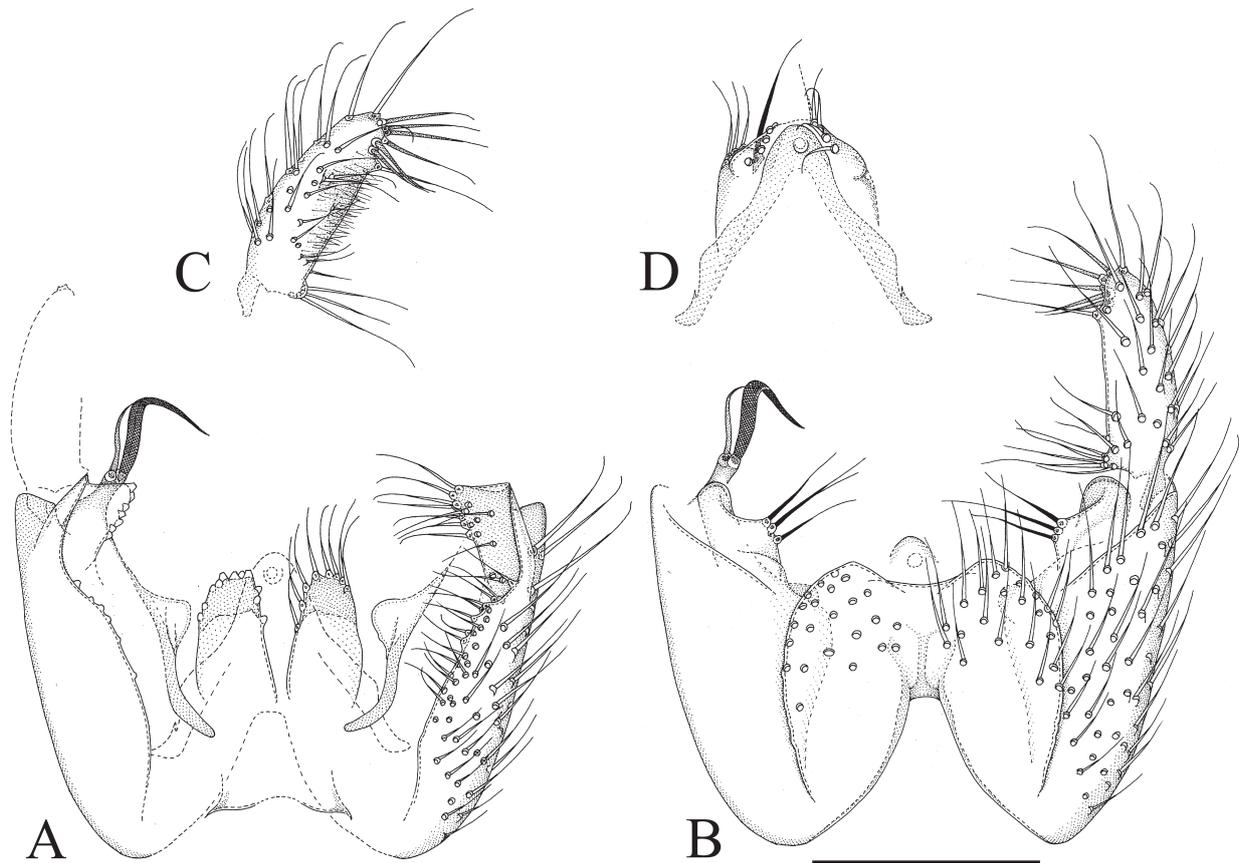


Fig. 2. *Manota axillata* sp. nov. (holotype). A – hypopygium, dorsal view; B – hypopygium, ventral view; C – gonostylus, dorsal view; D – hypoproct and aedeagus, ventral view. Scale 0.10 mm.

wing length, 1.8–2.0 mm. **Hypopygium** (Figs 2 A–D). Sternite 9 laterally free from gonocoxa, the posterior margin concave, extending well over the middle between the base of gonocoxa and gonostylus, anterior margin deeply u-shaped incised medially, setose with setae similar to those on ventral side of gonocoxa. Ventral medial margin of gonocoxa simple. Gonocoxa not drawn into a posterolateral lobe. Parastylar lobe large, with medial lobe bearing 3–4 setae. Paraapodemal lobe not exposed in ventral view, well visible in dorsal view (Fig. 2A). The dorsal side of gonocoxa with setae similar to those on the ventral side. Dorsal medial margin of gonocoxa with aggregation of medially directed fine setae. Dorsal posterior margin of gonocoxa drawn into a turbinate sub-rectangular lobe with 10–12 setae on its dorsal surface and at medial margin. Two juxtagonostylar setae present, the ventral one is a flattened, curved and simple megaseta, the dorsal one is a considerably smaller acute seta, both arising from a common finger-like basal body that is about half of the length of the ventral megaseta. Gonostylus elongate oval, about 3 times as long as wide, dorsal and ventral sides setose, dorsal side with a small subapical ridge bearing 5–6 stronger medially directed setae, basomedial angle pronounced as a small lobe with 4–5 medially directed setae, microtrichia mediodorsally prominent. Aedeagus shortly subtriangular, with weakly expressed lateral shoulders, the apex curved ventrad. Hypoproct not extending over the posterior margin of gonocoxa, the number of ventral setae (sternite 10) ca.

5 in one row on each half. Cerci medially separate, setose.

Female. Unknown.

Etymology. The name is Latin adjective, *axillata*, with a little heel, referring to the heel-like lobe basomedially on the gonostylus.

Discussion. Following the key by HIPPA (2011), this species runs to couplet 90 including *M. acutangula* Hippa, 2006 and *M. pectinata* Hippa, 2006. *Manota axillata* sp. nov. is distinguished from both by having a basomedial heel-like lobe on the gonostylus and by lacking a long posterolateral lobe on the gonocoxa. The heel-like lobe situated basomedially on an elongated gonostylus in *M. axillata* is somewhat reminiscent of *M. angustata* Hippa, 2006, but the latter also has the gonostylus with a subapical process.

Manota loriculata sp. nov.

(Figs 3A–D)

Type material. HOLOTYPE: ♂, INDONESIA: Sulawesi Utara, Dumoga-Bone NP, Toraut 0°34'N 123°54'E, 214m., 23.vii–3.viii.1985, A.H. Kirk-Spriggs leg. // NMW Indonesia Expedition 1985 (Project Wallace) NMW.Z.1985.078 // Malaise trap sample, forest edge, Sungai Tumpah [on slide, NMWC]. PARATYPES: 1 ♂, same as holotype [on slide, NMWC]; 1 ♂, same as holotype except 232m, 3–16.ix.1985 // Malaise trap sample forest, "Rintice 3" [on slide, NMWC]; 1 ♂, same as previous except 16–19.ix.1985 [on slide, IZBE].

Description. Male. Colour. Head light brown, face somewhat paler. Antenna light brown, scape and pedicel

somewhat paler. Clypeus and mouthparts pale yellowish. Thorax yellowish to light brown. Legs yellowish, hind coxa infuscated basally. Wing with brownish tinge because of microtrichia; halter yellow with blackish knob. Abdomen brown, tergites laterally and sternites lighter. All vestiture pale, yellowish or brownish, thicker setae and trichia seeming darker than finer ones. **Head.** Antennal flagellomere 4 ca. 1.3–1.4 times as long as wide. Palpomere 3 of maxillary palpus with apicomésial thumb-like extension, number of apically curved sensilla 4; palpomere 4 with weak parasegment; palpomere 5 ca. 1.5 times longer than palpomere 4. Number of strong postocular setae 10–12. **Thorax.** Anepisternum with 41–45 setae; anterior basalare with 9–10 setae, laterotergite with 20–25 setae, preepisternum 2 with 5–8 setae, metepisternum with 10–15 setae. **Legs.** Mid and hind tibial organs absent. **Wing.** R_1 meeting C within basal half of costal margin; sclerotized part of M_2 almost extending to level of tip of R_1 ; wing length, 1.5–1.6 mm. **Hypopygium** (Figs 3A–D). Sternite 9 laterally fused with gonocoxa, the posterior margin concave with small medial convexity, posteriorly extending over the middle between the base of gonocoxa and gonostylus, anterior margin shallowly v-shaped incised medially, setose with setae similar to those on ventral side of gonocoxa. On the dorsal side at posterior margin of sternite 9 a subtriangular

sclerotized lobe. Ventral medial margin of gonocoxa simple, almost confluent with the posterior margin of sternite 9. Gonocoxa drawn into a short and narrow posterolateral setose lobe with 2–3 subapical setae on medial side that deviating from other ventral setosity of gonocoxa. Parastylar lobe subtriangular, weakly bilobed (even if poorly visible in Fig. 3B), with 2 setae at medial corner. No parapodemal lobe identifiable. The dorsal side of gonocoxa with setae similar to those on the ventral side, 6–7 setae at dorsal posterior margin of gonocoxa stronger, apically curved. Posterior third of dorsal medial margin of gonocoxa bulging medially. Medioventrally from the dorsal medial margin there is a plate-like lobe with 4–5 long and apically slightly hooked megasetae. One juxtagonostylar setae present, it is a curved acute megaseta arising from finger-like basal body that is about half of the length of the seta. Gonostylus small oval, ventral side setose, with a very strong long apical seta, slightly weaker subapical medial seta and 5–6 short but somewhat stronger setae along lateral margin, dorsal side non-setose. Aedeagus elongate subtriangular, without distinct lateral shoulders, the apex curved ventrad. Hypoproct extending over the apices of gonostyli, the number of ventral setae (sternite 10) ca. 30 on each half. Cerci medially separate, posteriorly widening, setose.

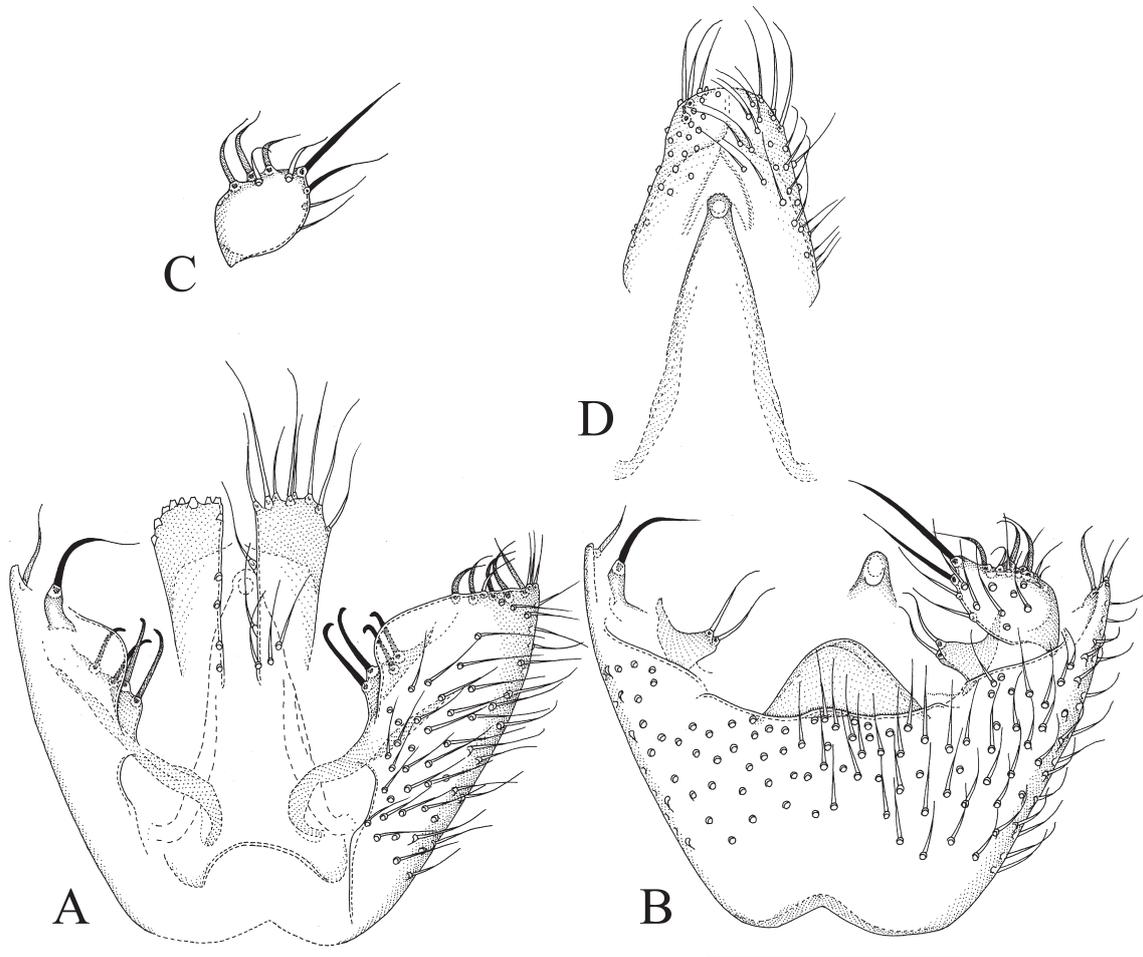


Fig. 3. *Manota lorculata* sp. nov. (A, D – paratype; B, C – holotype). A – hypopygium, dorsal view; B – hypopygium, ventral view; C – gonostylus, dorsal view; D – hypoproct and aedeagus, ventral view. Scale 0.10 mm.

Female. Unknown.

Etymology. The name is Latin adjective, *loriculata*, with a little leather cuirass, referring to the sclerite between sternite 9 and the aedeagus.

Discussion. Following the key by HIPPA (2011), this species runs to couplet 10 because of the setose anepisternum. However, having 5–8 setae on preepisternum 2, it does not match either of the two options included. By thoracic vestiture and the male hypopygium *Manota lorikulata* sp. nov. is similar to *M. loricata* Hippa & Ševčík, 2013 described from South Sulawesi and to *M. spathigera* described below. All the three of these species differ from other similar *Manota* by having an unusual plate-like lobe between sternite 9 and the aedeagus. *Manota lorikulata* differs from the other two species by having: 1) 4–5 long, blunt and apically slightly hooked megasetae on a plate like lobe ventrally from the dorsal medial margin of the gonocoxa (4–5 short and blunt megasetae in *M. loricata*, an aggregation of 6–7 short and apically curved acute megasetae in *M. spathigera*), 2) posterior third of the dorsal medial margin of the gonocoxa bulging and lobe-like medially (straight in *M. loricata*, slightly convex in *M. spathigera*), 3) gonocoxa drawn into a short and narrow posterolateral setose lobe (not drawn into a lobe in other species), 4) posterior margin of sternite 9 concave with a small medial convexity (convex in *M.*

loricata, concave without a small medial convexity in *M. spathigera*), and 5) sclerotized lobe dorsally from the sternite 9 and ventrally from the aedeagus subtriangular (semicircular in *M. loricata*, spatulate in *M. spathigera*). Furthermore, all three species have a bilobed parastylar lobe that may be difficult to observe in some mounts; the number of parastylar setae is two in *M. loricata* and *M. spathigera*, 3–4 in *M. loricata*.

***Manota spathigera* sp. nov.**

(Figs 4 A–C)

Type material. HOLOTYPE: ♂, INDONESIA: Sulawesi Utara, Dumoga-Bone NP, Toraut 0°34'N 123°54'E, 214m., 21–23.vii.1985, A.H. Kirk-Spriggs leg. // NMW Indonesia Expedition 1985 (Project Wallace) NMW.Z.1985.078 // Malaise trap sample, forest edge, Sungai Tumpah [on slide, NMWC]. PARATYPES: 1 ♂, same as holotype [on slide, NMWC]; 1 ♂, same as holotype except 13–21.viii.1985 [on slide, IZBE].

Description. Male. Colour. Head light brown, face somewhat paler. Antenna yellowish to light brown. Clypeus and mouthparts pale yellowish. Thorax yellowish to light brown. Legs yellowish, hind coxa infuscated basally. Wing with brownish tinge because of microtrichia; halter yellow with blackish knob. Abdomen brown, tergites laterally and sternites lighter. All vestiture pale, yellowish or brownish, thicker setae and trichia seeming darker than finer ones.

Head. Antennal flagellomere 4 ca. 1.3 times as long as

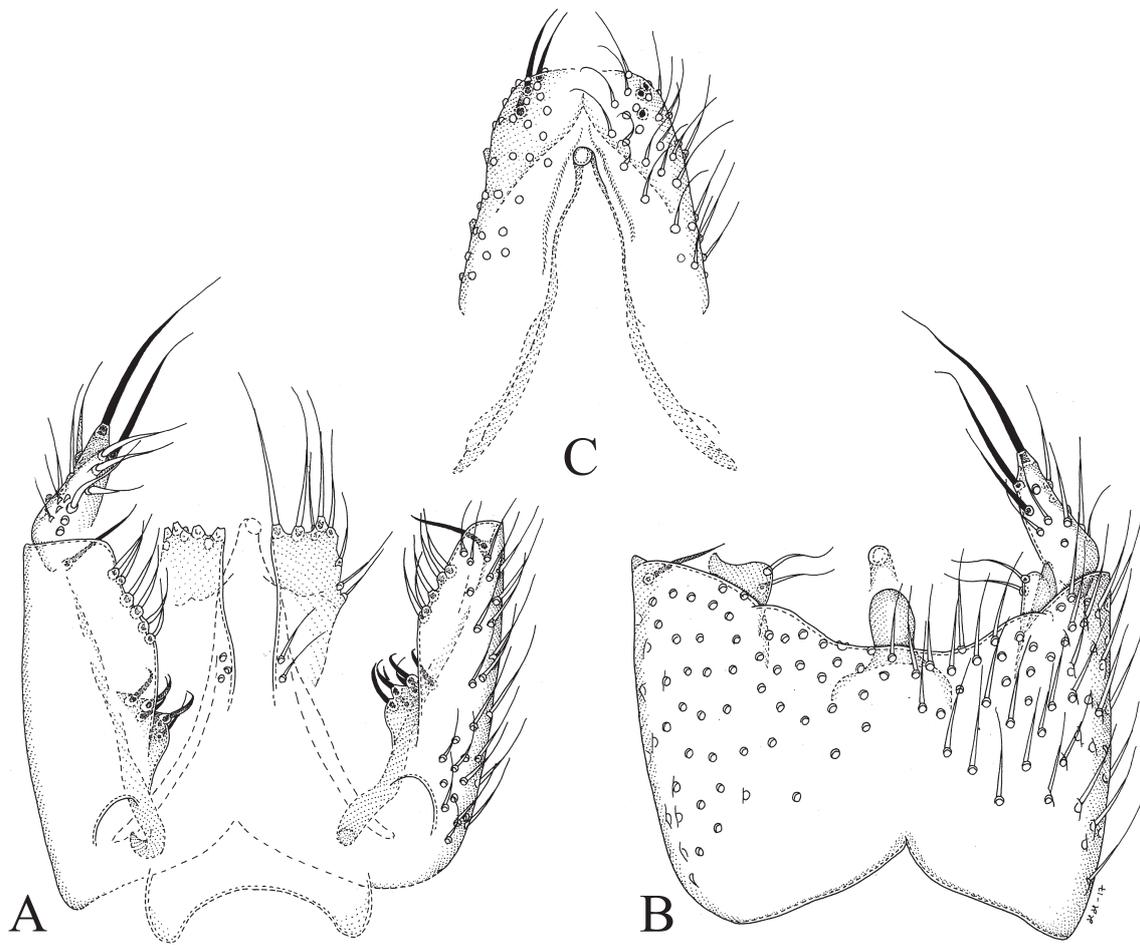


Fig. 4. *Manota spathigera* sp. nov. (holotype). A – hypopygium, dorsal view; B – hypopygium, ventral view; C – hypoproct and aedeagus, ventral view. Scale 0.10 mm.

wide. Palpomere 3 of maxillary palpus with apicomeres thumb-like extension, number of apically curved sensilla 4; palpomere 4 with weak parasegment; palpomere 5 ca. 1.4 times longer than palpomere 4. Number of strong postocular setae 10–11. **Thorax.** Anepisternum with 30–45 setae; anterior basalare with 10–11 setae, laterotergite with 23–28 setae, preepisternum 2 with 5–8 setae, metepisternum with 8–10 setae. **Legs.** Mid and hind tibial organs absent. **Wing.** R_1 meeting C within basal half of costal margin; sclerotized part of M_2 almost extending to level of tip of R_1 ; wing length, 1.5–1.6 mm. **Hypopygium** (Figs 4A–C). Sternite 9 laterally fused with gonocoxa, the posterior margin concave, extending over the middle between the base of gonocoxa and gonostylus, anterior margin shallowly v-shaped incised medially, setose with setae similar to these on ventral side of gonocoxa. Between the posterior part of sternite 9 and the aedeagus a spathulate sclerotized lobe. Ventral medial margin of gonocoxa simple, almost confluent with the posterior margin of sternite 9. Gonocoxa not drawn into a posterolateral lobe. Parastylar lobe bilobed, the ventral larger part subtriangular, with 2 setae at medial margin. No paraapodemal lobe identifiable. The dorsal side of gonocoxa with setae similar to those on the ventral side. Dorsal medial margin of gonocoxa simple, near the middle slightly convex, posterior third oblique, with 6–7 slightly stronger marginal setae. Medioventrally from the dorsal medial margin there is a plate-like lobe with 6–7 short, apically pointed and

curved otherwise simple megasetae. One juxtagonostylar seta present, it is an acute and weakly expressed megaseta without basal body, only with the usual socket. Gonostylus small, elongated oval, about 2 times as long as wide, with a very strong long apical seta and two slightly weaker subapical setae at medial margin; ventral side setose, dorsal side non-setose. Aedeagus elongate subtriangular, without distinct lateral shoulders, the apex curved ventrad. Hypoproct extending over the apices of gonostyli, the number of ventral setae (sternite 10) ca. 30 on each half. Cerci medially separate, posteriorly widening, setose.

Female. Unknown.

Etymology. The name is Latin adjective, *spathigera*, bearing a small spoon-like tool, referring to the sclerite between sternite 9 and the aedeagus.

Discussion. *Manota spathigera* sp. nov. is similar to *M. loriculata* and *M. loricata*. For distinguishing characters, see discussion under *M. loriculata*.

New records

Manota dolichothrix Hippa & Ševčík, 2010

Material examined. 1 ♂, INDONESIA: South Sulawesi, Wawondula, 350 m, 20.–24.ix.1991, Ph. Bouchet leg. (on slide, MNHN).

Remarks. The species was described from Sabah, Borneo (HIPPA & ŠEVČÍK 2010) and not recorded since.

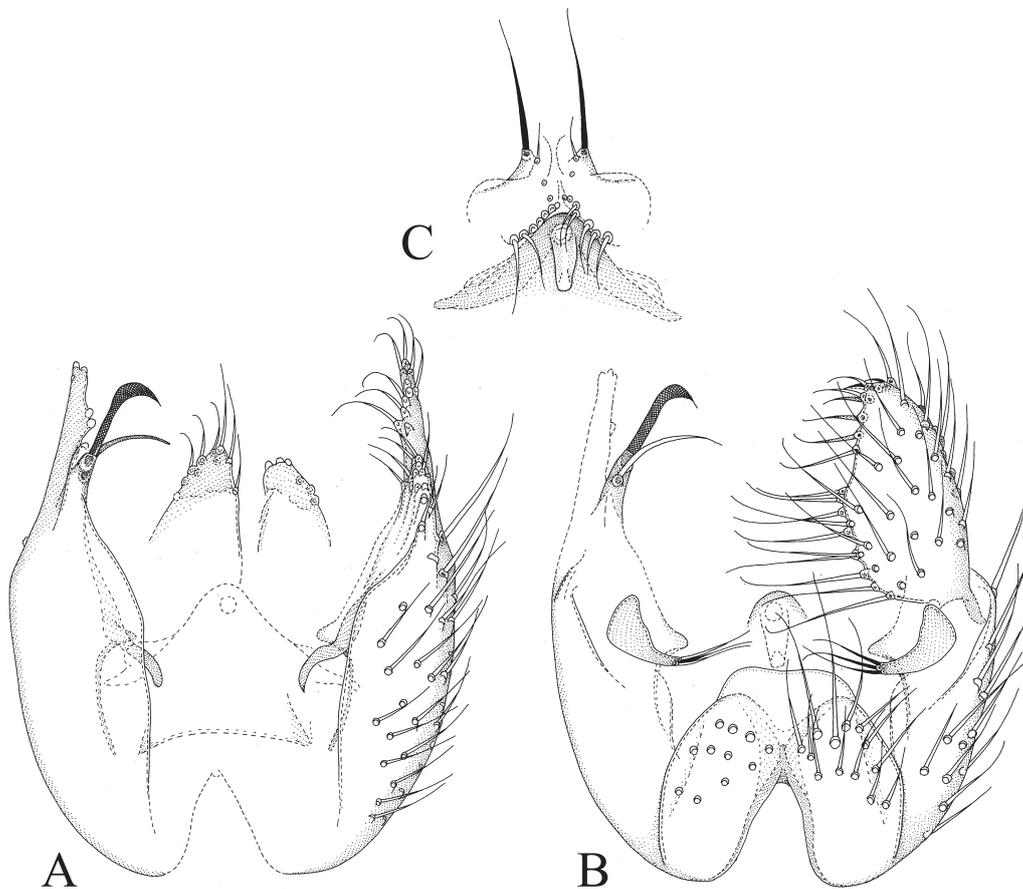


Fig. 5. *Manota paulula* Hippa & Ševčík, 2013 (North Sulawesi). A – hypopygium, dorsal view; B – hypopygium, ventral view; C – hypoproct and aedeagus, ventral view. Scale 0.10 mm.

***Manota hamulata* Colless, 1966**

Material examined. 1 ♂, INDONESIA: Maluku Utara, Bacan, Makian, 1.5 km E of Labuha, 23–26.ix.1985, A.H. Kirk-Spriggs leg. // NMW Indonesia Expedition 1985 (Project Wallace) NMW.Z.1985.078 // Malaise trap sample, forest trail, secondary area [on slide, NMWC].

Remarks. Described from Palau Island (COLLESS 1966) and subsequently recorded from New Guinea (HIPPA 2007, KURINA & HIPPA 2015)

***Manota horrida* Hippa, 2006**

Material examined. 1 ♂, INDONESIA: Sulawesi Utara, Dumoga-Bone NP, Toraut 0°34'N 123°54'E, 214m., 21–23.vii.1985, A.H. Kirk-Spriggs leg. // NMW Indonesia Expedition 1985 (Project Wallace) NMW.Z.1985.078 // Malaise trap sample, forest edge, Sungai Tumpah [on slide, NMWC].

Remarks. Having been described from Selangor, Peninsular Malaysia (HIPPA 2006), the species was subsequently recorded from Thailand (HIPPA 2011) and Sabah, Borneo (HIPPA & ŠEVČÍK 2010).

***Manota ovata* Hippa, 2006**

Material examined. 1 ♂, INDONESIA: Sulawesi Utara, Dumoga-Bone NP, Toraut 0°34'N 123°54'E, 214m., 10–13.vii.1985, A.H. Kirk-Spriggs leg. // NMW Indonesia Expedition 1985 (Project Wallace) NMW.Z.1985.078 // Malaise trap sample, forest edge, Sungai Tumpah [on slide, NMWC].

Remarks. Having been described from Selangor, Malaysia (HIPPA 2006), the species is subsequently recorded from Thailand (HIPPA 2008, 2009, 2011; HIPPA & PAPP 2007).

***Manota paulula* Hippa & Ševčík, 2013**

(Figs 5A–C)

Material examined. 1 ♂, INDONESIA: Sulawesi Utara, Dumoga Irrigation Project, Toraut, 10–19.viii.1985, A.H. Kirk-Spriggs leg. // NMW Indonesia Expedition 1985 (Project Wallace) NMW.Z.1985.078 // Malaise trap irrigated rice vars. Aceh & Citandui [on slide, NMWC].

Remarks. The species is only known on the basis of the holotype from South Sulawesi (HIPPA & ŠEVČÍK 2013). The present specimen differs slightly from the holotype e.g. in the hypopygial setosity and the shape of the parastylar lobe (cf. Fig. 5A–C, HIPPA & ŠEVČÍK 2013: Fig. 5).

***Manota pectinata* Hippa, 2006**

Material examined. 1 ♂, INDONESIA: South Sulawesi, Wawondula, 350m, 20–24.ix.1991, Ph. Bouchet leg. (on slide, MNHN).

Remarks. Having been described from Selangor, Peninsular Malaysia (HIPPA 2006), the species is subsequently quite widely recorded from the Oriental Region: Thailand (HIPPA 2008, 2009, 2011; HIPPA & PAPP 2007), Sabah, Borneo and Sulawesi (HIPPA & ŠEVČÍK 2010).

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