

Descriptions of *Topomyia auriceps* Brug, 1939 and *Topomyia pseudoauriceps*, n. sp. from Sarawak, Malaysia (Diptera: Culicidae)

Ichiro MIYAGI^{1), 2)} and Takako TOMA²⁾

¹⁾ *Laboratory of Mosquito Systematics of Southeast Asia and Pacific, c/o Ocean Health Corporation,
4-21-11, Iso, Urasoe, Okinawa, 901-2132 Japan*

²⁾ *Laboratory of Medical Zoology, School of Health Sciences, Faculty of Medicine,
University of the Ryukyus, Nishihara, Okinawa, 903-0215 Japan*

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Abstract: A redescription of adults and previously undescribed pupae and larvae of *Topomyia auriceps* Brug, 1939 are made, and a closely related new species *Topomyia pseudoauriceps* is described from Sarawak Malaysia. The male genital organs of the two species are illustrated and compared. These larvae are predacious with well developed maxillae and they breed in the leaf axils of various kinds of wild plants such as taro and wild banana.

Key words: *Topomyia pseudoauriceps*, new species, *Topomyia auriceps*, Culicidae, Malaysia, Indonesia

INTRODUCTION

The genus *Topomyia* Leicester is known only from the Oriental Region, mainly Malaysia, Indonesia, Philippines, Thailand, Laos, Cambodia, Vietnam and South China with one or a few species from Japan, Taiwan and Papua New Guinea. The genus is divided into two subgenera, *Topomyia* Leicester and *Suaymyia* Thurman, based mainly on differences in the male genitalia (Thurman, 1959). *Topomyia* is still poorly known but many new species have been described from Malaysia (Miyagi and Toma, 2005, 2007, 2008). As far as we know, there are 57 currently recognized species, of which 38 are in the subgenus *Topomyia* and 19 in the subgenus *Suaymyia*. Definitions of the subgenera are somewhat unsatisfactory (Thurman, 1959, Miyagi et al., 2006). Very recently, Miyagi et al. (2007) redescribed *Topomyia* (*Suaymyia*) *decorabilis* Leicester, 1908 and proposed the *decorabilis* species-group is composed of 5 closely related species, *To. decorabilis*, *Topomyia imitatus* Baisas, 1946, *Topomyia miyagii* Toma and Mogi, 2003, *Topomyia nemorosa* Gong, 1996 and *Topomyia suchariti* Miyagi and Toma, 1989, all of which are included in the subgenus *Suaymyia*. At the same time, a new genus *Kimia* Vu Duc Houng and Harbach was described and diagnosed based on shared morphological features observed in all stages of these five species (Harbach et al., 2007).

Adults of the genus *Topomyia* are non-blood sucking mosquitoes (Mogi and Miyagi, 1989) and hence not significant from the point of view of disease transmission. However, they are biologically and morphologically an interesting group, occurring in secondary rain forests in the immediate vicinity of jungle streams in Malaysia. The breeding places of the *Topomyia* are inclusively phytotelmata, the leaf axils of various plants such as wild bananas, taro plants, screw pines, bromeliads and wild-ginger inflorescences. *Nepenthes*

pitcher plants (Miyagi and Toma, 2007) and bamboo internodes are also well known as mosquito habitats, cryptic mosquito habitats usually overlooked. The majority of species of the subgenus *Suaymyia* are browsers and predators, usually occurring singly in small holes of green bamboo internodes or green bamboo stumps, and several species are found in leaf axils of many plants. Most species of the subgenus *Topomyia* are not predators and are found breeding among many larvae of the same or different species of mosquitoes in the leaf axils of plants. Frequently there is a definite association between species of *Topomyia* and host plants.

In the course of our study on the mosquito fauna of Malaysia and Indonesia, we were able to examine many specimens of the genus *Topomyia* collected from Sulawesi, Indonesia in 1989 and 1992, Gombak, Selangor, Malaysia in 2004 and Sarawak, Malaysia in 1986 and 2007. Most of the larvae and pupae collected from the leaf axils of different plants were reared individually in the field laboratory for confirmation of correlations between the immature stages and adults, and between the two sexes of adults. After careful examination of the specimens, we recognized two interesting species, one identified as *Topomyia (Suaymyia) auriceps* Brug, 1939 and the other as a new species, *To. (Sua.) pseudoauriceps*. As the original description of *To. auriceps* included only adult males and females, pupae and larvae are also redescribed and illustrated. Adult males and females as well as pupa and larva of a new species *To. (Sua.) pseudoauriceps* are also described and illustrated in this paper.

The terminology used for the adults and immature stages follows mainly Harbach and Knight (1980, 1981), partly Belkin (1962), and Harbach and Peyton (1993).

***Topomyia (Suaymyia) auriceps* Brug**

(Figs. 1–3 and Tables 1, 2)

Brug, 1939, Tijdschr. Ent. 82: 96(♂). Type-loc. Kalawara, Sulawesi, Indonesia.

Male.

Head. Black with somewhat purple reflections in dorsal aspect; vertex covered closely with broad flat dark scales; apical part of vertex with a large transverse silver scale patch, the patch clear, as large as that on postpronotal area in dorsal aspect (Fig. 1J); a line of white scales along ocular suture; erect scales and narrow decumbent scales absent on occiput; a pair of blackish interocular and several black ocular setae present; postgena covered with a small silver scale patch. Clypeus small, dark brown. Maxillary palpus black, short, about 0.11 length of proboscis covered with dark scales. Proboscis slender, 2.00 mm, shorter than antenna, slightly swollen at the distal end and covered with dark scales dorsally and with a ventral line of white scales extending from base to about 4/5 length of proboscis. Pedicel covered closely with dark scales.

Thorax. Scutum densely covered with velvety black scales and with a median silvery line from anterior promontory to prescutellar area; the line consists of double rows of overlapping flat silvery scales, the line slightly broad near prescutella area. Prescutellar light brown with reflection; 2 or 3 prescutellar, many antealar and supraalar setae present. Thoracic pleura covered with silvery spatulate scales on upper and lower postpronotal, antepronotal, upper proepisternal, postspiracular, subspiracular, prealar, upper and lower mesokatepisternal, upper mesepimeral and metepisternal areas. Conspicuous black setae absent on the pleuron, except about 10 antepronotal, 2 or 3 well developed postpronotal. Scutellum with a patch of flat silvery scales and 1 or 2 well developed setae on median lobe; 2 or 3 setae with black spatulate scales on each lateral lobe.

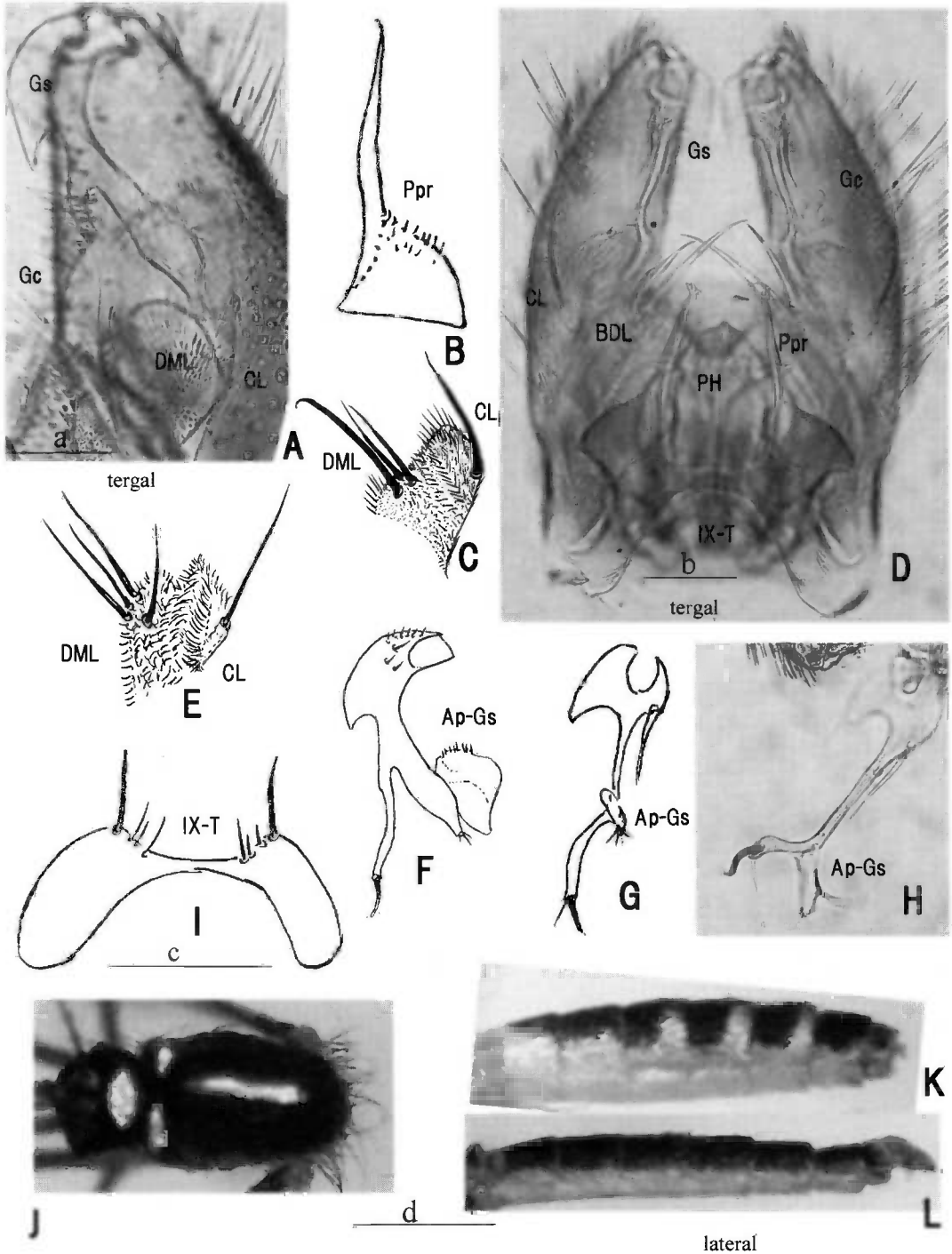


Fig. 1. Male genitalia (A, E, F, I) of *Topomyia (Suaymyia) pseudoauriceps*, n. sp. Male genitalia (B, C, D, G, H), female (K) and male (L) abdomen and silver patches on male head, postpronotal areas and scutum (J) of *Topomyia (Suaymyia) auriceps*. Aspects as indicated. Ap-Gs, apical part of gonostylus; CL, claspette; BDL, basal dorsomesal lobe; Gc, gonocoxite; Gs, gonostylus; PH, phallosome; Ppr, paraproct; IX-T, tergum IX. Scale: a=0.1 mm (A), b=0.1 mm (D), c=0.1 mm (B, C, E, F, G, H, I), d=1 mm (J, K, L). Male genitalia of *To. pseudoauriceps*, A, E and F, was based on the holotype (G185) from Arur Dalan, Bario, Sarawak; I on paratype (G152) from Sibran Sarawak. Male genitalia of *To. auriceps*, G and H was based on specimens (G147 and G163) from Borneo highland.

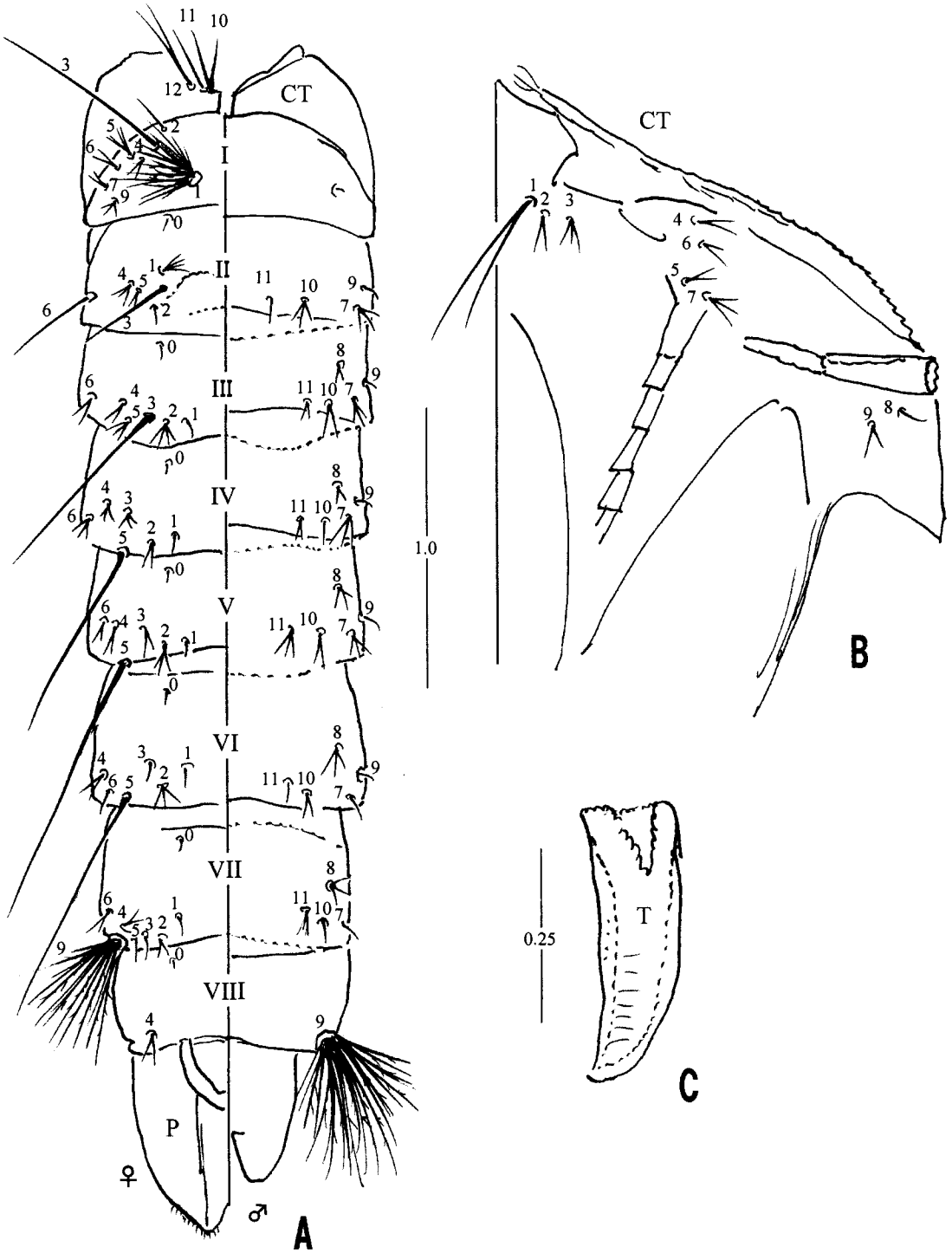


Fig. 2. Pupa of *Topomyia (Suaymyia) auriceps* (A, B, C). CT, cephalothorax; P, paddle; T, trumpet. Scale in mm.

Table 1. Chaetotaxy of the pupae of *Topomyia (Suaymyia) auriceps*

Seta no.	Cephalo- thorax	Abdominal segments							
		I	II	III	IV	V	VI	VII	VIII
0	—	—	1	1	1	1	1	1	1
1	2	m*	5-7	1	1	1	1	1	—
2	2, 3	1	1	4-6	2-4	2-6	3-6	1-3	—
3	2-5	1	1	1	3-5	2, 3	1, 2	1	—
4	1-3	1-4	3-5	2-5	3-5	2-4	1-3	2	2, 3
5	1-3	1-8	2, 3	3-5	1	1, 2	1	1, 2	—
6	2-4	1, 2	1	2, 3	3-6	2-4	1, 2	1-3	—
7	1-3	2, 3	3, 4	3, 4	3-5	4, 5	1	1	—
8	1	—	—	2, 3	2-4	3-5	2, 3	1-4	—
9	2	1-3	1	1	2-4	1	1	15-23**	17-26**
10	1-3	—	2-4	2-4	1	2, 3	1-3	1, 2	—
11	1	—	1	2-4	1-4	1-3	2-4	2, 3	—
12	2, 3	—	—	—	—	—	—	—	—

* Fanlike setae with 6-15 main branches.

** Aciculated.

Obscure and missing setae are shown with a hyphen (—).

Specimens examined: 2 pupal exuviae from Mulu and Bario, Sarawak.

Wing. Length 3.0 mm: Cell R_2 about 2.10 of stem R_{2+3} ; alula without scale on margin; upper calypter with 10-14 setae. Halter: Scabellum pale, pedicel and capitellum with dark scales.

Legs. Coxae yellowish brown, with silvery-white scales, trochanters with some dark scales dorsally at apex; femora, tibiae and tarsi of all segments dark scaled dorsally and white scaled ventrally, the apical two segments of tibiae with white reflections in some aspects. Forefemur 2.75 mm, as long as or a little shorter than midfemur and both apparently longer than hindfemur; first tarsal segment of fore legs longer than tibia; that of mid leg as long as tibia and that of hind leg apparently longer than tibia. Foreungues longer than mid and hindungues, each unguis equal in size, without a lateral tooth.

Abdomen. Terga dark-scaled dorsally, without white dorsal and lateral patches on all segments. All sterna with white spatulate scales.

Genitalia (Fig. 1B, D, E, G, H). Lobes of tergum IX (IX-TL) widely separated by narrow bridge, each lobe with stout blade-like apical seta and 2 or 3 small setae closely spaced on inner basal margin of each lobe. Gonocoxite. Length about 2.3 times breadth at middle. Basal dorsomesal lobe (BDL) with 3-5 well developed lanceolate setae and with fine setae (Fig. 1E). Claspette (CL) short stem with a long seta. Gonostylus (Fig. 1G, H) has a long seta on basal lobe and bifurcated apically, the longer one with gonostylar claw and the other finger like, with a basal foliform flap and with 1-3 minute terminal setae (Ap-Gs). Abdominal ornamentation as shown in Fig. 1L.

Female.

Wing about 3.29 mm. Proboscis 2.10 mm. Forefemur 2.60 mm. Abdomen 2.30 mm; resembles male except abdominal white spots: terga covered with dark purple-brown scales dorsally; segments III with a lateral patch of white scales; IV-VI with latero-apical patch which extends dorsally; VII without lateral white patch. All unguis small equal in size, without lateral tooth.

Pupa (Fig. 2, Table 1).

Chaetotaxy as figured and given in Table 1. Metanotum and cephalothorax (Fig. 2A, B). Trumpet 0.75 mm, index (length/width) 3.0 (Fig. 2C) long, yellowish brown in color, with fine sculpturing, not strongly broadened towards pinna. Seta 1-CT long, usually bifid. Abdomen (from segments I to VIII) 3.25 mm long, with microtrichia on all segments uniformly; abdominal setae 3-I-III long, single. Setae 5-IV-VI large, usually single; seta 9-VII, large, with 15-23 branches, 9-VIII large with 17-26 branches and aciculated. Paddle 0.75 mm, index (length/width) 2.13 long with distinct midrib, with uniform microtrichia, ending in a blunt point with minute spicules along apical margin. Male genital lobe extending to about 0.78 length of paddle, median caudal lobe extending to about 0.37 length of paddle.

Fourth-instar Larva (Fig. 3, Table 2).

Head (Fig. 3B). Length 0.75-0.85 mm, width 1.05-1.12 mm. Siphon 0.65-0.75 mm. Chaetotaxy in Table 2 and as figured. Mental plate with median tooth and 6-8 smaller teeth on either side. Mouth parts modified for predation. Mouth brushes pectinate. Mandible black with a large apical tooth and 3 ventral teeth. Maxilla (Fig. 3C) developed. Maxillary bundle (MxBn) shorter than length of maxillary body (MxBo), index (MxBn/MxBo) 0.42; apical tooth (AT) small process; seta 1 minute, seta 2 small single, setae 3, 4 obsolete on MxBo. *Antenna* (Fig. 3D) 0.3 mm length, about 0.28 of head. Seta 1-A weak, single, arising 0.71 from base, extending over tip of antenna. Seta 1-C stout, simple; setae 5 and 11 well developed, single. Chaetotaxy of thorax and abdominal segments I-VI (Fig. 3A). Abdominal setae pigmented. Stellate setae with aciculate branches present in seta 1 on segments III-VI. Setae 6-I, II 5-9 branched; 6-III, VI and VII usually single; 6-IV, V 3-7 branched. All these setae long with aciculate branches. *Siphon* (Fig. 3H) variable in length, broad at base, tapering, lightly pigmented, index (length/width) 4.7-5.7. Many fine pecten teeth (Fig. 3F) placed and scattered from base to apical part. Ventral setae (1 a-S) of siphon usually 4, unpaired, each with 2-4 branches. Dorsal seta (2a-S) usually 2 pairs with 2-4 branches; 1-S long, usually 5 branches. Comb scales 17-25 in an irregular row; individual scales (Fig. 3G) usually pointed and with fine fringes towards base. Saddle incomplete, with fine spines on posterior margin. Segment X (Fig. 3E), 1-X 3 branched, 2-X 2-4 branched, 3-X 2-4; 4-X 4, 5 branched; all these setae long with aciculate branches. Gill elongate, tapering.

Specimens Examined. Sulawesi, Indonesia: 1♂ (890816-1) on pin with genitalia on a slide (G90), 5♀♀ (890816-1), collected in Manado, Sulawesi, Aug. 16, 1989; 1♂ (920810-8) with (G44), Lindu, Central Sulawesi, Aug. 10, 1992; 1♂ (920809-7) with (G43), Aug. 9, 1992; 1♂ (920811-1) with (G46); 1♂ (920811-2) with (G46), Gimpu, Central Sulawesi, Aug. 11, 1992. *Kuching areas, Sarawak, Malaysia:* 4♀♀ (860819-1) with P (pupal exuviae) and L (larva exuviae) (205), (207), (485), and (490), Mulu, Aug. 19, 1986; 1♀ (860903-2) with P and L (375), Siburan, Sept. 3, 1989; 1♂ (860913-6) with P, L and (449 & G199), Siburan, Sept. 13, 1989; 1♀ (861010-1) with L (644), Siburan, Oct. 10, 1989; 3♀♀ (861010-2) with P and L (689), (695) and (651), 1♂ (861002) with P and L (642), 2♂♂ (861002) with (G198) and (G106), Oct. 2, 1986. Siburan; 1♂ (050915-12) with (G42), 1♂ (050924-28) with (G40), Sampadi, Sept. 15, 2005; 1♂ (050922-1) with (G18), Kubah Nat. Park, Sept. 22, 2005; 2♂♂ (060923-1) with P, L and (70 & G58), Padawan, Borneo High, Sept. 23, 2006.

Bario highland, Sarawak (Pa-Umur, Pa-Ukat, Pa-Lungan and Arur Dalun, about 1,000 m elevation): 3♂♂ (060914-9) with P, L and (366 & G42), (417 & G53) and (508 & G65), Sept. 14, 2006; 1♂ (060913-4) with (G76), Sept. 13, 2006; 5♂♂ (070901-6) with P, L and (321 & G186), (171 & G178), (488 & G163), (668 & G164) and (678 & G170), Sept. 1, 2007; 3♀♀

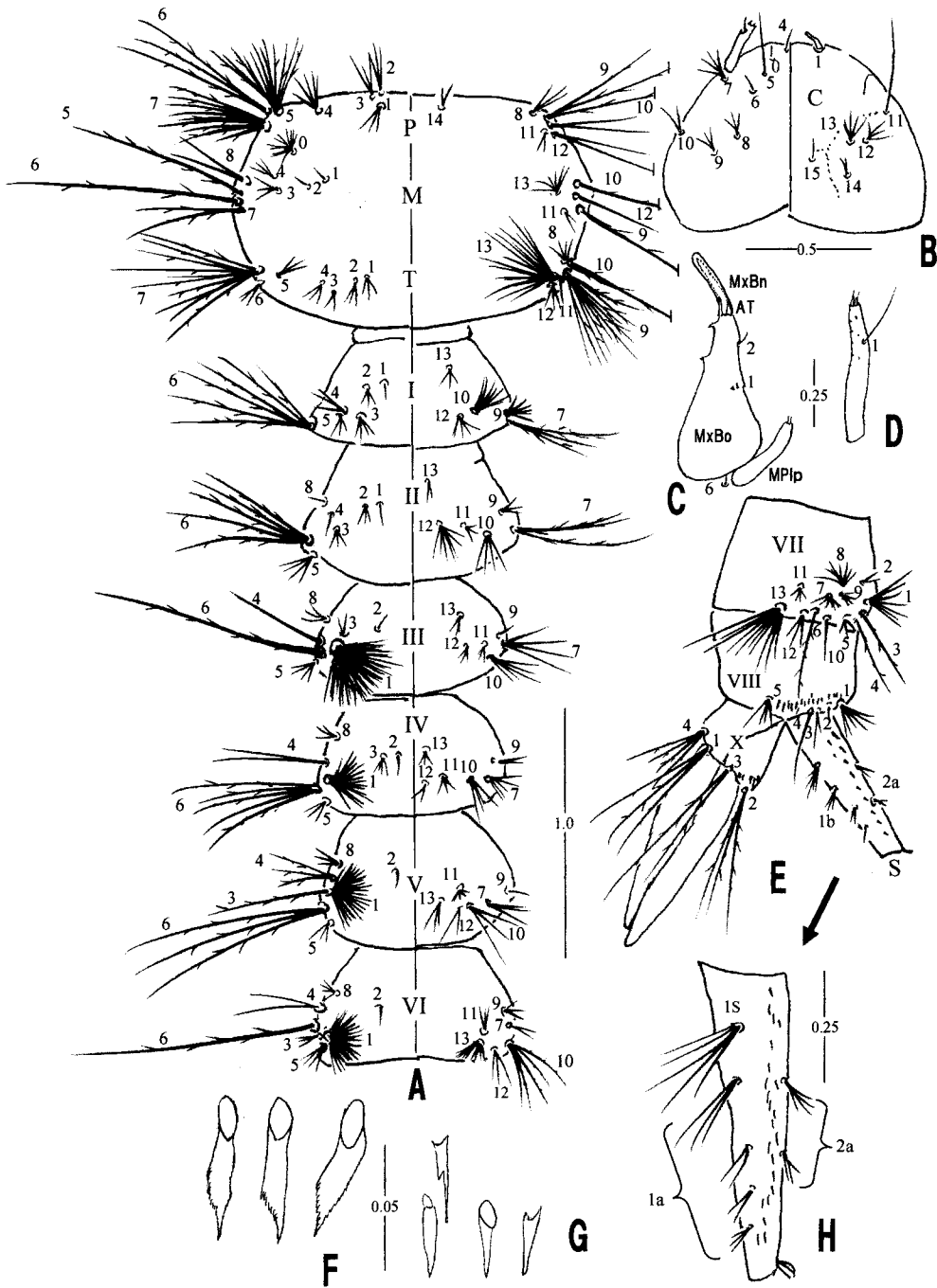


Fig. 3. Larva of *Topomyia (Suaymyia) auriceps*. A. thorax and abdominal segments I-VI; B, head; C, maxilla; D, antenna; E, abdominal segments VII-X; F, pecten G, comb teeth; H, siphon. Scales in mm.

(070901-1) with P and L (130), (161) and (170), Sept. 1, 2007; 1♂ (070904-2) with P, L and (177 & G181), Sept. 4, 2007; 3♀ (070904-2) with P and L (302), (303) and (442), Sept. 4, 2007; 1♀ (070907-28) with P and L (311), Sept. 7, 2007; 2♂♂ (070907-31) with P, L and (166 & G176) and (141 & G174), Sept. 7, 2007; 1♂ (070908-8) with P, L and (458 & G148),

Table 2. Chaetotaxy of the larvae of *Topomyia (Suamyia) auriceps*

Seta no.	Head	Thorax								Abdominal segments								
		P	M	T	I	II	III	IV	V	VI	VII	VIII						
0	1	11-20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	1	3-7	1-3	1-5	1, 2	1	42-49**	11-15**	28-35**	25-38**	—	—	—	—	—	—	—	—
2	—	2-7	2-4	3-6	3-7	3-6	1	1	1	1	1	1	1	1	1	1	1	1
3	—	3-5	2, 3	2-6	3-5	3-6	2, 3	2, 3	1*	2, 3	2, 3	2, 3	1*	2, 3	1*	1*	1*	1*
4	1	6-10	2-7	3-9	2-7	1-3	1	2, 3	3-5*	2-4	2-4	1*	3-5*	2-4	1*	1*	1*	1*
5	1	12-20*	1*	1-9	2-4	4, 5	4-8	5, 6	3-7	4-6	4-6	1*	3-7	4-6	1*	1*	1*	1*
6	1, 2	2-4*	1*	2-6	5-8*	5-9*	1*	5-7*	3-6*	1*	1*	1*	3-6*	1*	1*	1, 2*	1, 2*	1, 2*
7	2-7	9-12*	2, 3*	10-13*	2-5*	3-5*	4-7	6	3, 4	2	2	2	3, 4	2	2	7-9	7-10	7-10
8	3-7	2, 3	2-6*	3-6	—	1, 2	2-4	2-5	3, 4	5-8	5-8	5-8	3, 4	5-8	5-8	7-10	7-10	7-10
9	3-8	3-5*	1*	10-16*	4-8	2-6	1-4	2, 3	1, 2	2-5	2-5	2-5	1, 2	2-5	2-5	4, 5	4, 5	4, 5
10	1-4	1-4	1*	1*	5-11	4, 5	3-6	3-6	3-5	3-5*	3-5*	3-5*	3-5	3-5*	3-5*	1	1	1
11	1	1-4	2, 3	2-4	—	3-6	3-6	3-7	3, 4	3-5	3-5	3-5	3, 4	3-5	3-5	4, 5	4, 5	4, 5
12	3-9	2-4	1*	1, 2	5-8	7-12	3, 4	2-4	3, 4	3-5	3-5	3-5	3, 4	3-5	3-5	3-5	3-5	3-5
13	1-7	—	10-14	15-26	2-5	1, 2	2-4	2-4	3-5	10-12	10-12	10-12	3-5	10-12	10-12	9-11	9-11	9-11
14	1-3	1, 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15	2-4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Aciculated. ** Stellate.

Obsolete and missing setae are shown with a hyphen (—).

Specimens examined: 2 fourth-stage larvae and 3 larval exuviae from Mulu and Bario Sarawak.

Sept. 8, 2007; 1♂ (070908-12) with P, L and (459 and G147), Sept. 8, 2007; 1♀ (070909-17) with P and L (479), Sept. 9, 2007; 1♀ (070909-18) with P and L (328), Sept. 9, 2007.

Gombak, Selangor Malaysia: 4♂♂ (040914-4) with P, L and G (67 & G82), (275 & G58), (241 & G100) and (G77), Sept. 14, 2004; 8♂♂ (040924-1) with P, L and G (131 & G90), (244 & G101), (243 & G108), (117 & G87), (G96), (G87), (G56) and (G96), Sept. 24, 2004; 2 whole larva (040924-1), Sept. 24, 2004. All specimens were collected around Ulu Gombak.

Most of the specimens examined from Sarawak are deposited in the Sarawak Museum, Kuching, Malaysia.

Taxonomic Discussion. In 1939, Brug originally described *Topomyia auriceps* from Sulawesi on the basis of male and female specimens. The specimens of *To. auriceps* collected from Sarawak and Selangor, Malaysia and Sulawesi, Indonesia (near type locality of this species) are identical to the original of description of this species. This species is distinctive because of the structure of the male gonostylus and the larval mouth parts modified for predation. Thurman (1959) proposed a new subgenus, *Suaymyia*, and *To. auriceps* was placed in this subgenus in which the male genitalia possess the following characters: the claspette composed of the usual setaceous ventral lobe without an elongated dorsal lobe, the ninth tergite with the lobes widely separated, jointed by a narrow bridge, each lobe produced into a narrow latero-apical projection bearing a single spine. *Topomyia auriceps* was recorded from Palawan, Philippines (Tsukamoto et al., 1985) and from Kota Kinabalu, Sabah, E. Malaysia as *To. aviceps* which is misspelling of *To. auriceps* (Kurihara, 1984). This species is closely related to the next species, *To. pseudoauriceps*, n. sp. The variabilities of larval and pupal chaetotaxies in the two species often resulted in some degree of overlap and difficulty to distinguish the species. The only distinctive characteristic is the shape of the gonostylus in the male genitalia shown in the taxonomic discussion of *To. pseudoauriceps*.

Bionomics. The immature stages of *To. auriceps* were commonly collected from leaf axils of many plants, such as taro, wild banana, *Pandanus* spp., *Curcuma* sp., *Cordyline* sp. and *Heliconia* spp. in Gombak and Sarawak secondary forests. The larvae are predacious, found usually singly in the habitat. Nothing is known of the adult bionomics, the females do not attack humans.

Distribution. Karawara, North Sulawesi (Indonesia), Gombak, Selangor, (Peninsular Malaysia), Kuching and Bario, Sarawak, Kota Kinabalu, Sabah (East Malaysia), Palawan Is. (Philippines).

***Topomyia (Suaymyia) pseudoauriceps* Miyagi and Toma, n. sp.**

(Fig. 1)

Male.

Proboscis slender, 2.24 mm. *Wing* Length 3.50 mm: Cell R₂ about 2.60 of stem R₂₊₃; alula without scale on margin: upper calypter with 10–14 setae. Forefemur 3.0 mm.

Essentially as in *To. auriceps*, differing in the following male genital structures:

Genitalia (Fig. 1A, C, I, F). Lobes of tergum IX (IX-TL) widely separated by a narrow bridge, each lobe with stout blade-like apical seta and 2 or 3 small setae closely spaced on inner basal margin of each lobe (Fig. 1I). Gonocoxite. Length about 2.3 times breadth at middle. Basal dorsomesal lobe (BDL) with 3–5 well developed lanceolate setae and with fine setae (Fig. 1C). Claspette (CL) short stem with a long seta. Gonostylus (Fig. 1F) has no conspicuous seta on basal lobe and bifurcated apically, one is slender with gonostylar

claw and the other is stout, thumb-like with 1 or 2 fine terminal setae and with flap which is delicate, deformed easily, usually round with several minute cilium marginally (Ap-Gs). Paraproct long, curved apically.

Female.

Wing about 3.40 mm. Proboscis 2.25 mm. Forefemur 2.50 mm. Abdomen 2.30 mm; resembles to male except abdominal white spots: terga covered with dark purple-brown scales dorsally; segments III with a lateral patch of white scales; IV–VI with latero-apical patch which extends dorsally; VII without lateral white patch. All unguis small equal in size, without lateral tooth.

Pupa.

Trumpet 0.78 mm, index 3.60 long, yellowish brown in color, with fine sculpturing, not strongly broadened towards pinna. Abdomen (from segments I to VIII) 3.42 mm long, with microtrichia on all segments uniformly; abdominal setae 3-II, III long, single. Setae 5-IV–VI large, usually single; seta 9-VII, large, with 10–15 branches, 9-VIII large with more than 15 branches. Paddle 0.62 mm, index 2.0, long. Male genital lobe extending to about 0.75 length of paddle, female to 0.33.

Fourth-instar Larva.

Head. Length 0.70–0.75 mm, width 1.01–1.19 mm. Siphon 0.59–0.62 mm. Maxilla developed. Maxillary bundle (MxBn) shorter than length of maxillary body (MxB), index (MxBn/MxB) 0.42; a row of 3–7 short MxB (Maxillary brush); apical tooth (AT) small process; a row of 3–5 well developed laciniarstrum (LR), seta 1 minute, setae 2, 4 small single on MxB. *Siphon* variable in length, broad at base, tapering, lightly pigmented, index 3.0–5.7. Many small fine pecten teeth placed scatteringly. Comb scales about 10–25 in an irregular row; individual scales usually pointed and with fine fringes towards base.

Type specimens. Holotype male (070908-16) on pin with L and P exuviae mounted on a slide (323) and genitalia (G) on another slide (G185) with the following collection data: Arur Dalan (elevation 1,200 m above sea level), Bario, Sarawak, Malaysia, collected as larva from leaf axils of wild taro plants on Sept. 8, 2007 and reared to adult in the laboratory by I. Miyagi and T. Toma. Paratypes. 1♂ (070908-16), L and P exuviae on slide (322) and genitalia on slide (G187); 2♀ (070908-16), L and P exuviae on slides (56 & 708), collection data same as holotype. 1♂ (860903-2), L and P exuviae on slides (380) and genitalia on slide (G196), 1♂ (860903-2) with (G110), 2♂♂ (860913-6) genitalia on slides (G 22 & G24), 4♂♂ (861010-2), L and P exuviae, and genitalia on slides (662 & G202), (694 & G100), (760 & G152), (782 & G151) and (637 & G197) collected from wild taro leaf axils, Siburan, Sarawak, Malaysia. One whole larva (070908-6), same as holotype. Holotype and some paratypes are deposited in U.S. National Museum, Washington DC, U.S.A. and other paratypes are deposited in the Sarawak Museum, Kuching, Malaysia.

Taxonomic Discussion. *Topomyia pseudoauriceps* is very similar in all stages to *To. auriceps* from Sulawesi, Indonesia. Although no specific differences have been found in the larvae and pupae, the two species differ markedly in male genitalia. In *To. pseudoauriceps*, the claspette has no conspicuous seta on the basal lobe and is bifurcated apically, one is slender with gonostylar claw and the other is stout, thumb-like with usually 2 terminal fine setae and with a flap which is delicate, deformed easily, usually round with several minute cilium marginally. Whereas in *To. auriceps*, the gonostylus

has a long seta on the basal lobe and is bifurcated apically, the longer one with gonostylar claw and the other finger like, with a basal foliform flap and with 1–3 minute terminal setae.

Biological Notes. The immature stages of *To. pseudoauriceps* are rarely found in the leaf axils of various taro plants and wild bananas (not cultivated bananas) in the secondary forests of Sarawak. The larva is predacious, usually found singly in the axils.

Etymology. The species name *pseudoauriceps* refers to the similarity of *To. auriceps*.

Distribution. Known only from Kuching and Bario, Sarawak, Malaysia.

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