

MOSQUITO STUDIES (Diptera, Culicidae)

XIV. REDESCRIPTION OF TOXORHYNCHITES (T.) GIGANTULUS
FROM THE PHILIPPINES

By

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T. gigantulus has been known only by the holotype ♂ from Limay, Bataan Province, and another ♂ from San Andales, Rizal Province, both collected by R.C. McGregor (USNM). In August 1965 I reared individually 3 larvae and 3 pupae of this species from material brought to our laboratory from the Philippines by Col. Kremmers of the 5th Epidemiological Flight (PACAF), U.S. Air Force. It is now possible to describe all the stages of *gigantulus*. The terminology used in general follows Belkin (1962).

Toxorhynchites (Toxorhynchites) gigantulus (Dyar & Shannon)

Figs.1,2

1925. *Megarhinus gigantulus* Dyar and Shannon, 1925:67-68. TYPE: Holotype ♂, Limay, Bataan Province, Luzon, Philippines, Nov 1924, R.C. McGregor [USNM, 28096].

Toxorhynchites (T.) gigantulus of Stone, Knight and Starcke (1959:63).

Megarhinus gigantulus of Edwards (1932:61); Barraud (1934:22); Bohart (1945:23-24); Stone and Knight (1957:200).

FEMALE. Wing: 4.0 mm. Proboscis: 5.0 mm. Forefemur: 3.1 mm. Abdomen: about 4.0 mm. Moderate in size. *Head*: Integument uniformly dark. Scaling on vertex metallic to bluish green, appearing whitish along orbital line. Orbital (2 pairs) and interorbital (1 pair) bristles on dorsal side moderately long. Clypeus dark, with a fine, whitish pubescence. Labial scales purplish. Palpus apparently 4-segmented, about 0.2 of proboscis length; scales as on proboscis. Antenna about 0.5 of proboscis length; torus dark, with a fine, whitish pubescence; flagellar segment 1 with a few dark scales dorsally; flagellar whorls with 6 moderately long bristles, progressively smaller distally. *Thorax*: Integument uniformly black. Mesonotum covered with metallic green scales. Acrostichal, dorsocentral and prescutellar bristles absent; bristles

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on *apn*, anterior promontory, antealar and supraalar areas, *ppl*, upper *pra*, *stp* and upper *mep* distinct. Scales on *apn* bluish green; scales on *ppn* as on mesonotum; *ssp*, *psp* and paratergite bare; *ppl* with silvery scales; *pra*, *stp* and most of *mep* with silvery scales. Scutellum with a continuous row of dark marginal bristles; scales as on mesonotum. *Legs*: Forefemur predominantly dark anteriorly except for basal creamy scales, posterior surface mostly creamy with a few dark scales distally; most of midfemur creamy; hindfemur predominantly creamy on both sides except for dorsal distal dark patch. Tibiae and tarsi of all legs completely dark. *Wing*: Vein scales dark. *Haltere*: Stem pale, knob with creamy scales. *Abdomen*: Laterotergite with median metallic green and lateral creamy scales. Scales on tergites metallic green, to purplish depending on angle of incidence of light. Sternites I-VI completely creamy; distal sternites with basal creamy and apical dark scales. Distinct lateral tufts of long bristlelike scales on segments VI-VIII; apicolateral tuft on VI completely tawny; lateral tuft on VII tawny basally and dark distally; tuft of segment VIII dark.

MALE. *Wing*: 4.0 mm. *Proboscis*: 5.0 mm. *Forefemur*: 3.1 mm. *Abdomen* (including genitalia): about 5.0 mm. Generally similar to female in size and coloration. *Palpus* subequal to proboscis length; 5-segmented, segments 4 and 5 upturned; scaling predominantly purplish except for creamy ventral scales on distal 0.5 of segments 2,3 and proximal 0.5 of 4. *Antenna* about 0.5 of proboscis length; flagellar whorls with 8-10 moderately long bristles, progressively smaller distad. *Legs*: Claws of foreleg and midleg enlarged, unequal; larger claw with a submedian tooth; hindclaws as in female. *Abdomen*: Narrower than in female. Apicolateral tuft on segment VI tawny; lateral tuft on segment VII predominantly tawny with a few dark distal scales; tuft of segment VIII entirely dark.

MALE GENITALIA (fig.1). Ninth tergite lobe shieldlike, with a shallow emargination apically and with about 10 to 12 small to moderately long apicolateral bristles; basal part constricted. Sidepiece about 3.5 as long as its greatest width, with scales ventrally and laterally and bristles on all sides. Clasper (without spiniform) subequal in length to sidepiece; with a small, distinct apical hair, and 2 rows of small setae in distal 0.6; spiniform 0.25 of clasper. Basal mesal lobe with a strong apically curved bristle extending beyond middle of sidepiece and a few smaller subapical bristles of varied length. Aedeagus long, swollen at base and produced distally as a narrow process ending in a recurved tooth; without a narrow submedian dorsal bridge. Paraproct long, slender and strongly sclerotized; cercal setae 3 in number.

PUPA (fig.1). *Abdomen*: 4.6 mm. *Trumpet*: 0.7 mm. *Index* about 3.4-3.7. *Paddle*: 1.35 mm. Chaetotaxy as figured, hairs moderately to darkly pigmented. All normal hairs present. *Cephalothorax*: Moderately pigmented. Middorsal ridge moderate. Hair 1-C strongly developed, single; hairs 2,3-C close together; hairs 6,7-C far forward of 4,5-C; hairs 8,9-C close together and distinctly caudad of trumpet base. *Trumpet*: *Index* about 3.4-3.7; strongly pigmented; pinna moderate. *Metanotum*: Moderately pigmented. Hairs 10,11-C removed from 12-C, moderately close together; an accessory hair caudad of hair 12-C. *Abdomen*: Integument strongly pigmented, progressively lighter on distal segments. Dorsal sensillum on III and IV only. Hair 1-I dendritic; hair 1-III,VII single to triple, short, usually not reaching apex of its tergite; hair 5-III-VI strongly developed, single, extending beyond apex of succeeding segment; hair 6-V,VI strongly developed, single, extending beyond apex of succeeding segment; hair 6 on other segments short to moderately long, barely reaching apex of its tergite; hair 8-VI,VII dorsal, cephalad of 6; hair 9-VIII at caudolateral angle, short to moderately long, single. *Terminal Segments*: Hair 1-IX small, indistinct; hair 1-X distinct and usually 3 branched (1-5). *Paddle*: Relatively broad;

external buttress more or less distinct; margin with distinct hairlike spicules; apex slightly emarginate at level of midrib. Male genital lobe extending to 0.6 and female bare to 0.2 of paddle.

LARVA (fig.2). Head: 1.15 mm. Siphon: 0.6 mm. Anal Saddle: 0.4 mm. Chaetotaxy as figured, hairs moderately to darkly pigmented. In life larvae appear purplish. All normal hairs present. *Head*: Width roughly subequal to length. Mental plate short and very broad, teeth irregular and strongly developed. Hair 4-C mesad of 1; hairs 5-8-C in a row; hairs 11-13-C in lateral cephalic groups; hairs 14,15-C, single, removed cephalad. *Antenna*: Length about 0.25 of head; cylindrical and without spicules; hair 1-A inserted beyond 0.75 from base, branched; hairs 2,3-A basad of 1. *Thorax*: Hairs 1,2-M on a circular tubercle; hairs 3,4-M on an irregular tubercle, separate from hair 6; hairs 5,6,7-M on a larger sclerotized plate. *Abdomen*: Dorsal sensilla distinct only on segments III,IV, absent on V. Hairs 1,3-5-I-VII on a common plate; hair 2-I-VI mesad of 1, on a distinct circular tubercle on segments II-IV; hairs 1,7,11-VII single, spikelike. *Segment VIII*: Hairs 2-5-VIII arising from a large sclerotized plate; hairs 4,5-VIII single, spikelike. *Siphon*: Short, without acus. Integument moderately pigmented, smooth. Hair 1-S single, spikelike and within basal 0.3. Trachea well developed. *Anal Segment*: Saddle complete, broader than long. Acus absent. Caudal margin with short to moderately long spicules. Hair 1-X on saddle margin, single and spikelike; hairs of dorsal brush (2,3-X) branched; ventral brush with 7 pairs of single, strongly fringed hairs on a boss. Gills short, globose.

SYSTEMATICS. *T. gigantulus* is distinguished from other known Philippine *Toxorhynchites* by the following features: (1) in the adults, by the tawny lateral tufts on abdominal segments VI and VII, (2) in the pupa, by the presence of an accessory hair on the metanotum caudad of 12-C; hair 3-I long and single; hair 6-VII short and double and not reaching the apex of its tergite, (3) in the larva, by the single, spike-like siphonal hair 1-S. As pointed out by Barraud (1934:22), the closest relative of *gigantulus* appears to be *minimus* Theobald, 1905 of Ceylon, India and Sumatra. The latter differs in the adults in the mainly black tuft of abdominal segment VII and in the larva in the double or triple hair 1-S.

BIONOMICS. No data are available as to the source of the collections from which the rearings of this species were made. The breeding sites could have been treeholes, bamboo or leaf axils.

DISTRIBUTION. Apparently endemic to the Philippines, where it has been collected only in Central Luzon. Material examined: 15 specimens; 4 ♂, 2 ♀, 6 pupae, 3 larvae; 6 individual rearings (3 larval, 3 pupal).

PHILIPPINES. *Luzon*: Laguna Province, unspecified locality, 12 Aug 1965, F.E. Baisas et al (UCLA 249), 2 lp♂ (249-22,37), 1 lp♀ (249-44), 2 p♂ (249-103,104), 1 p♀ (249-101) [UCLA, USNM]. Limay, Bataan Province, Nov 1924, R.C. McGregor, ♂ holotype (Dyar and Shannon 1925: 67, USNM). San Andales, Rizal Province, Dec 1926, R.C. McGregor, 1 ♂ (Bohart 1945:24, USNM).

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FIGURES

Fig.1. *Toxorhynchites (T.) gigantulus*; male genitalia and pupa.

Fig.2. *Toxorhynchites (T.) gigantulus*; larva.

TOXORHYNCHITES

Fig. I

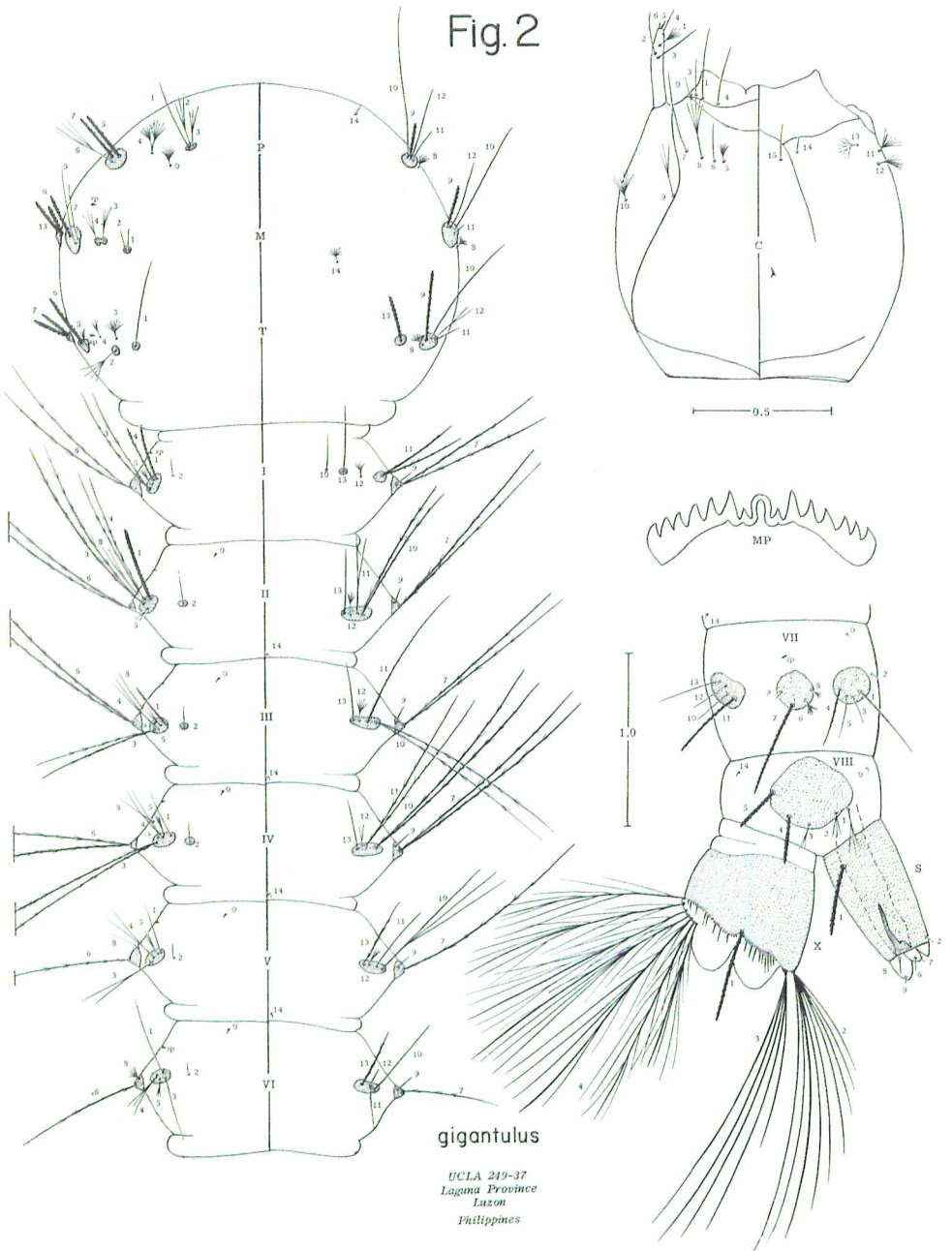


gigantulus

UCLA 249-103
Laguna Province
Luzon
Philippines

TOXORHYNCHITES

Fig. 2



gigantulus

UCLA 249-37
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