# A REVIEW OF THE ORIENTAL GENUS RHOPICA, WITH DESCRIPTION OF A NEW SPECIES FROM PAPUA NEW GUINEA (DIPTERA, PHORIDAE)

Goto, Tadao

https://doi.org/10.5109/2473

出版情報：ESAKIA. 23, pp.85-92, 1985-11-30. Entomological Laboratory, Faculty of Agriculture, Kyushu University
バージョン：
権利関係：

ESAKIA, (23): 85-92. 1985



# A REVIEW OF THE ORIENTAL GENUS *RHOPICA*, WITH DESCRIPTION OF A NEW SPECIES FROM PAPUA NEW GUINEA (DIPTERA, PHORIDAE)[1,2)]

TADAO GOTÔ

Entomological Laboratory, Faculty of Agriculture,
Kyushu University, Fukuoka, 812 Japan

Abstract

The genus *Rhopica* Schmitz is revised. *Rhopica hirashimai* is described as newto science from Papua New Guinea. The redescription of ***Rh. cornigera*** Schmitz is also presented.

The monotypic genus *Rhopica* was erected by Schmitz (1927) to receive a new species ***Rh.*** *cornigera* from the Bismarck-Archipelago. The genus and the species were rather poorly described probably because of inadequate material for original description (the slide-mounted, only one male and female). No further study has been made on *Rhopica,* unfortunately.

During the field works in Papua New Guinea in 1982 and 1984, Prof. Y. Hirashima and his colleagues collected many species of phorid flies, in which a unique second species of *Rhopica* was included. In addition, they also collected some specimens of *Rhopica cornigera,* the type-species of the genus.

The present paper provides a review of the genus *Rhopica* on this material, together with the description of a new species and redescription of ***Rh. cornigera.***

*Rhopica* belongs to the tribe Beckerini of the subfamily Metopininae. It is distinguished from the members of the tribe by a combination of the following characters : 3rd antenna1 segment of male retort-shaped, frontal setae 2-2-4-4, scutellum with 4 setae and tibiae without cilia and hair-seam.

Before going further I wish to express my cordial thanks to Prof. Y. Hirashima of the Entomological Laboratory, Kyushu University for his kind guidance. The specimens studied in this paper were collected by the following entomologists to whom I am much indebted : Prof. Y. Hirashima, Assoc. Prof. M. T. Chûjô and Dr. 0. Tadauchi (Kyushu Univ.) and Assoc. Prof. T. Shinonaga (Tokyo Medical and Dental University).

---

[1)] Contribution from the Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka (Ser. 3, No. 187).

[2)] Supported by Grant-in-Aid for Overseas Scientific Survey from the Japan Ministry of Education, Science and Culture, No. 57041039 (1982) and No. 59041048 (1984) (Principal investigator : Prof. Y. Hirashima).

## Genus **Rhopica** Schmitz

*Rhopica* Schmitz, 1927, *Natuurh. Maandbl.*, ***16*** **: *77.*** Type-species : *Rhopica cornigera* Schmitz, 1927 (by monotypy).

**Male.** Compound eye minutely haired. Frons somewhat produced, markedly wider than long, without median furrow. Chaetotaxy : Anterolateral seta absent ; preocellar setae widely distant from one another by more than distance from eye margin ; a pair of supra-antenna1 setae present, porrect. Gena with several hairs. Upper and lower postocullar setae differentiated. Third antenna1 segment retort-shaped, entirely clothed with longish hairs ; arista apical, pubescent, swollen on proximal portion of its 3rd segment. Epistoma weakly produced, gradually shortened toward median portion. Palpus ellipsoidal, with several bristly hairs. Proboscis of ordinary phorid type.

Postpronotum with one seta; scutum densely setulose, bearing 2 pairs of notopleural setae, each one pair of supra-alar, postalar and dorsocentral setae ; scutellum with 2 pairs of long setae, discal scutellar seta slightly shorter and slenderer than basal one ; mesoanepisternum divided, bare.

Wing hyaline, with membrane entirely trichose ; vein $R_2$ folked ; vein Rs without any hair at subbasal portion.

Legs slender ; fore and hind tibiae without cilia and hair-seam, mid tibia with a dorsal row of sparse setulae ; mid and hind tibiae with a ventrodistal end-bristle ; fore tarsus somewhat wider than mid and hind ones.

Abdomen slender, nearly parallel-sided in dorsal view ; all terga strongly arched, wider than long; 1st tergum transversely narrow, 2nd largest, 3rd to 6th terga almost same in size.

Male genitalia small, entirely covered with minute hairs. Epandrium with posterior margin produced to form a distinct process, bearing sparse short bristles. Hypandrium completely fused with epandrium on proximal 1/2, composed of two (right and left) lobes ; right hypandrial lobe markedly reduced into a small plate lying on right posterolateral portion of genitalia ; left hypandrial lobe enlarged, occupying ventral portion of genitalia. Aedeagus complex in structure, supported by 3 arms, one of which is sustentacular plate ("Tragplatte"), the other 2 arms arised from left and right lateral margins of hypandrium, respectively. Anal tube long, compressed laterally ; cercus gradually tapered posteriorly, covered with sparse short bristly hairs ; hypoproct narrow, without pennate end hairs.

**Female.** Differing from male as follows : Gena produced ventrally. Third antennal segment globose, with subapical arista. Proboscis remarkably larger, with clypeus and labrum very robust ; epipharynx entirely bearing transverse rows of longish hairs which are oriented dorsally, produced at each distal corner into a small process curved inwardly, distally articulated with a small rectangular plate, which is bifid at apex (see Fig. 1D). Discal scutellar seta very weakened, short hair-like. Abdomen gradually narrowed posteriorly in dorsal view ; 1st to 6th abdominal terga present, reduced in size in order. Terminalia fleshy ; cercus of moderate size.

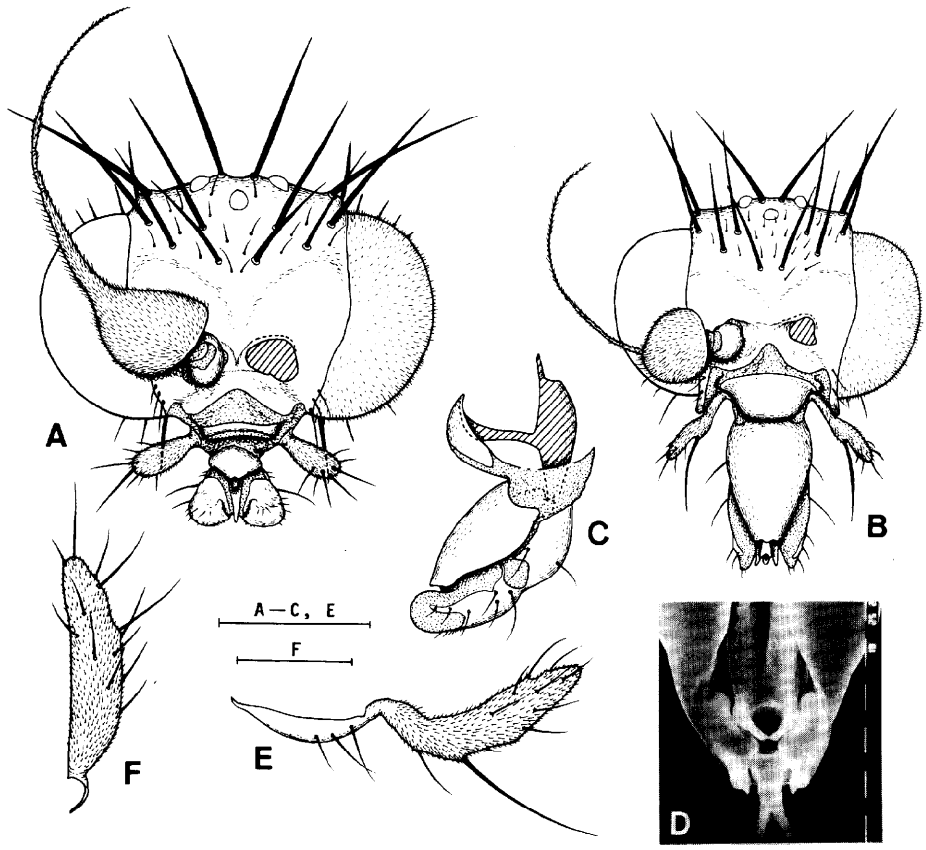


**Fig. 1.** *Rhopica hirashimai* sp. nov. ♂ (A & F) and ***Rh.*** *cornigera* Schmitz ♀ (B-E). A, Head in frontal view ; B, ditto ; C, proboscis in lateral view ; D, distal portion of labrum in ventral view (SEM) ; E, palpus in lateral view ; F, ditto in dorsal view. Scales : A-C, 0.2 mm ; D, 0.01 mm ; E, F, 0.1 mm.

DISTRIBUTION : Bismarck-Archipelago, Papua New Guinea, Borneo.

REMARKS. In the tribe Beckerini, this genus resembles the South Chilean genus *Corynusa* Schmitz, 1931 in having the male 3rd antenna1 segment retort-shaped and losing the anterolateral seta on the frons, but the latter is provided with the short male anal tube, the different frontal chaetotaxy (2-4-4 setae) and 6 strong scutellar setae.

So far as I know, there is no metopine genus having such male genitalia structured as those of *Rhopica*, which are characterized by the extreme reduction of the right hypandrial lobe and the fusion of hypandrium and epandrium.

## KEY TO SPECIES OF *Rhopica*

1. Third antenna1 segment brownish yellow in ♂, brown in ♀ ; palpus yellow in ♂, yellowish brown in ♀ ; legs yellow in ♂, somewhat darkened in ♀ ; wing faintly brownish in ♂, rather distinctly brownish in ♀ ..... *cornigera* Schmitz

♂ : Third antenna1 segment brown to dark brown ; palpus brown ; legs pale brown ; wing rather distinctly tinged with brown ..... ..... ... *hirashimai* sp. nov.

## *Rhopica hirashimai* sp. nov.

**Male.** Frons brown to dark brown, thinly grayish brown pollinose, 0.58 of head width, 2.8X as wide as long. Chaetotaxy : Frontal setae strong ; preocellar seta slightly ventral to mediolateral, 0.8 of mediolateral in length, closer to antial than to mediolateral; mediolateral, posterolateral and ocellar setae subequal in length to each other ; supra-antenna1 seta 0.8 of preocellar in length, as long as antial; frontal setulae sparse. Antenna brown to dark brown ; 3rd antenna1 segment 0.9 *x* as long as head height, with elongate portion as long as basal rounded portion ; arista 1.2 × as long as 3rd antenna1 segment. Palpus brown to dark brown, long, 3.3 *X* as long as wide, with 5-6 short bristles and several longish hairs. Proboscis with yellowish labellum.

Thorax light brown, more yellowish on pleura, other features as described under generic character.

Wing hyaline, entirely tinged with grayish brown, all veins brown. Costa moderately long, costal index 0.52 ; 1st costal sector somewhat thickened, as long as combined length of 2nd and 3rd ; 3rd costal sector 0.32 of 2nd in length ; vein $M_1$ strongly curved anteriorly, recurved at extreme tip ; vein $M_2$ weakly bisinuate ; vein $M_{3+4}$ distinctly bisinuate ; vein $A_1$ weakly bisinuate, disappearing near wing margin. Costa1 cilia 4.0-4.7 *x* as long as width of 2nd costal sector ; axillary margin with 2 hairs. Halter brown. Wing length 1.76 mm, width 0.86 mm.

Legs pale brown ; fore tarsomeres with same width, their relative lengths approximately 18 : 8 : 8 : 7 : 6 ; mid tibia1 end-bristle 2.2 *x* as long as tibia1 diameter, hind tibia1 one slightly longer than the same.

Abdominal terga black, thinly grayish brown pollinose, with sparse short bristly hairs on posterior submarginal portion ; abdominal membrane blackish brown.

Male genitalia yellowish brown to brown, grayish pollinose. Epandrium sparsely bristled, with right posteroventral corner posteriorly produced to form a rectangular process, which bears a small projection on inner posterior margin as shown in Fig. $2D_1$, with left posterior margin produced to form a triangular process which bears a few longish hairs on its dorsal margin. Right hypandrial lobe narrowed distally, with left lateral margin curved dorsally and inwardly, bearing a flat laminate process on its inner side. Aedeagus composed of proximal ring-like sclerite, subproximal right lateral one which is large, flat and arched and 6 small ones, spinulose on left ventrolateral membraneous portion ; right lateral plate with right distal portion produced to form a large flat process.

Body length : 1.2 mm.

**Female.** Unknown.

Holotype : ♂ (Type No. 2538, Kyushu Univ.), Myola (2000 m), Papua New Guinea, 1-5. xi. 1984, Y. Hirashima leg.

Paratype : 1♂, same data as holotype. The paratype will be deposited in the

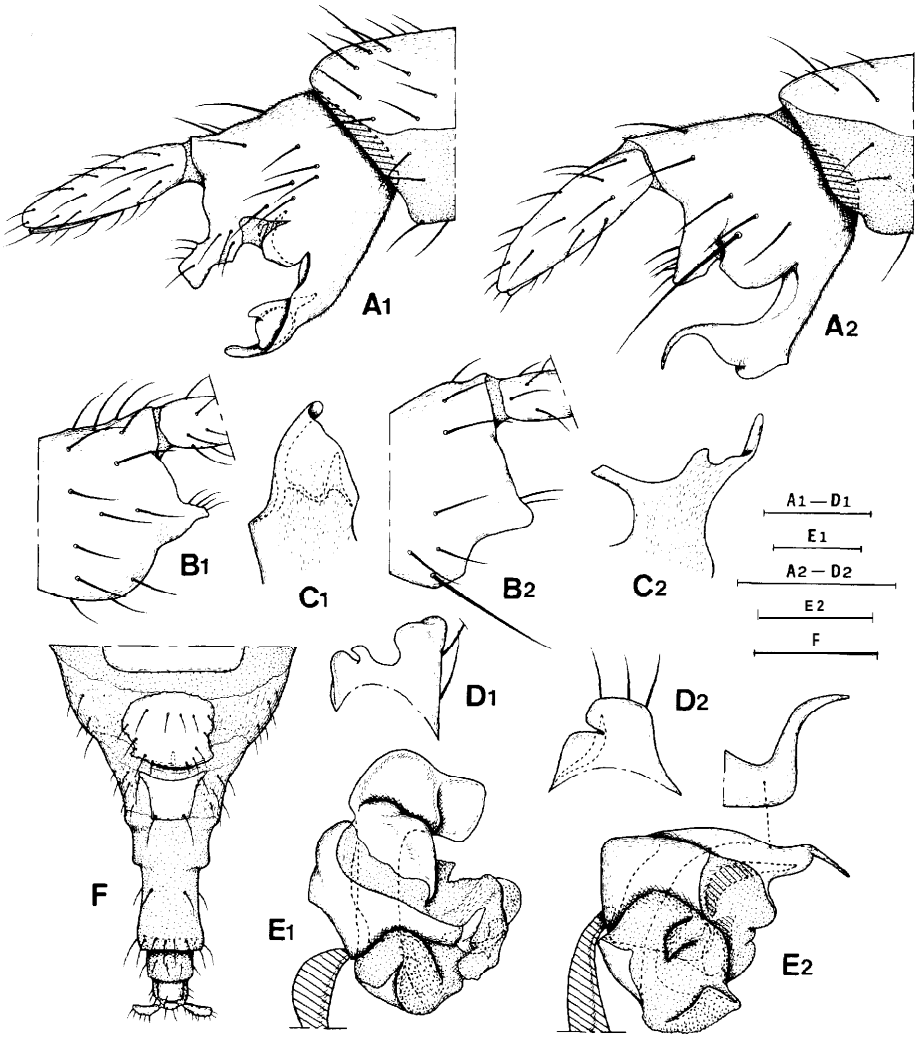


Fig. 2. Genitalia of *Rhopica* spp. 1, *hirashimai* sp. nov.; 2 & F, *cornigera*. A, Male genitalia in right lateral view ; B, distal portion of epandrium in left lateral view ; C, left hypandrial lobe in ventral view ; D, right process of epandrium in ventral view ; E, aedeagus in lateral view ; F, female terminalia in dorsal view. Scales : A-C, 0.1 mm ; D, E, 0.05 mm ; F, 0.2 mm.

British Museum (Natural History), London.

Other specimen examined : 1♂, same data as holotype.

DISTRIBUTION : Papua New Guinea.

REMARKS. The male of this new species is easily distinguished from that of ***Rh.*** *cornigera* Schmitz by the brown 3rd antenna1 segments, the brown palpi, the pale brown legs, the rather brownish wings, the male genitalia and the larger body size.

The specific name is dedicated to Prof. Y. Hirashima, who has been extensively contributing to the study of Papua New Guinean insect fauna.

## **Rhopica cornigera** Schmitz

*Rhopica cornigera* Schmitz, 1927, *Natuurh.* ***Maandbl. 16*** : ***77*** ; 1929, Rev. d. Phoriden, p. 125. —Beyer, 1966, ***Pacific*** Ins. ***8: 173.***

Compared with the preceding species, it is considerably smaller and more yellowish in male. Significant differences from *Rh.* ***hirashimai*** are as follows :

**Male.** Frons brown, subshining, 0.53 of head width, 3.2 x as wide as long. Frontal setulae weaker, 0.07 -0.10 mm long, arranged as in ***hirashimai.*** Third antenna1 segment brownish yellow, darkened distally. Palpus yellow.

Thorax with dorsal portion light brown, pleuron yellow.

Wing hyaline, faintly tinged with brown ; veins pale brown. Costa shorter, costal index 0.47-0.48 ; 1st costal sector 1.16 — 1.21 x as long as combined length of 2nd and 3rd ; 3rd costal sector 0.30-0.31 of 2nd in length ; vein $R_1$ narrowed on distal portion ; vein $R_2$ forming a nearly right angle with costa ; vein $M_1$ more gently curved. Costa1 cilia 3 x as long as width of 2nd costal sector. Halter yellow on stem, brown on knob. Wing length 1.01 — 1.07 mm, width 0.52 — 0.57 mm.

Legs yellow, slightly darkened ; mid tibia1 end-bristle 1.3 X **as** long as tibia1 diameter, hind tibia1 one shorter than the same.

Abdominal terga dark brown in ground color, entirely grayish brown pollinose.

Male genitalia light brown. Epandrium with right posteroventral corner posteriorly produced to form a triangular process, which is shaped as shown in Fig. $2D_2$ in ventral view, produced posteriorly on left posterior margin to form a triangular process with rounded tip, bearing one long stiff bristle and several short bristles on either posterolateral side. Right hypandrial lobe with right distal corner strongly produced to form a slender, pointed process, which extends dorsally, then curved inwardly and posteriorly, the process somewhat varying in size by individuals, otherwise the lobe with left distal corner produced to form a slender process, which somewhat varies in form of its tip (truncate in one specimen and pointed in another), with inner surface smooth. Aedeagus composed of proximal ring-like sclerite, subproximal large right lateral one and 3 small ones ; right lateral sclerite with right distal portion to form a slender sharply pointed (not pointed in one specimen) process, which extends inwardly, then gradually curved posteriorly as shown in Fig. $2E_2$.

Body length : 0.9-1.1 mm.

**Female.** Differing from male as follows : Frons brownish yellow, 0.55 of head width ; frontal setae longer and stronger. Antenna brown, globose ; arista subapical. Palpus yellowish brown, gradually curved dorsally, with a conspicuous long bristle on ventral margin and several bristly hairs. Proboscis brownish yellow, structured as described under generic character.

Thorax entirely brownish yellow, with setae weakened ; discal scutellar seta hair-like,

Wing more distinctly tinged with brown than in male ; costal index 0.57 ; 1st costal sector 0.88 x as long as combined length of 2nd and 3rd ; 3rd costal sector 0.33

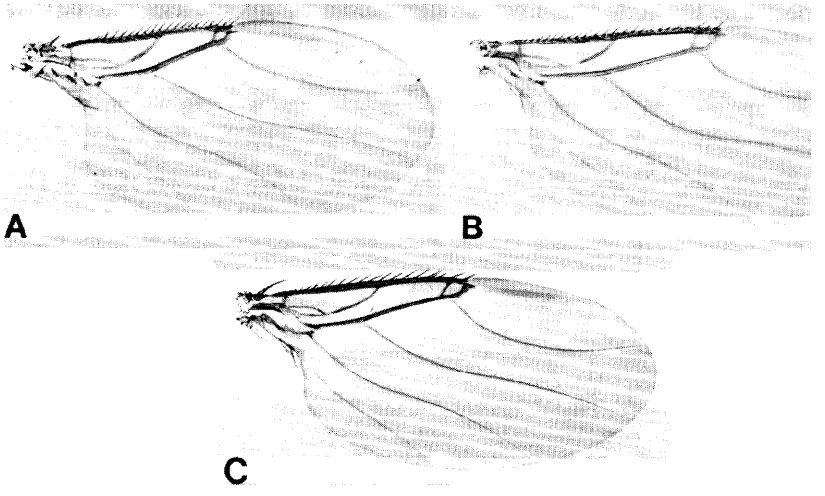


**Fig. 3.** Wings of *Rhopica cornigera* Schmitz (A & B) and ***Rh. hirashimai*** sp. nov. (C). A & C, Male ; B, female.

of 2nd ; vein $M_2$ more distinctly bisinuate. Wing length 1.26 mm, width 0.64 mm.

Legs yellow in ground color, fore and mid tibiae darkened on dorsal portion, hind femur and tibia dark yellow.

Abdomen with 1st to 6th terga pale brown and 9+ 10th terga yellow, dark brown on ventral membrane ; abdomen posterior to 6th abdominal segment yellowish. First tergum transversely narrow ; 2nd tergurn largest, 2.3 ×as wide as long ; 3rd and 4th terga somewhat membraneous, so that appearing partially whitish yellow, with lateral margins rounded ; 5th abdominal segment carrying an orifice of internal gland just behind posterior margin of its tergum which is quadrate with rounded corners ; 6th tergum small trapezoidal ; 7th abdominal segment not sclerotized on tergal portion, with narrow sternum ; 8th abdominal segment not sclerotized on tergal portion, with roughly quadrate sternum which is rounded on distal margin ;9+10th abdominal segments possessing a quadrate tergum and a triangular sternum with anterior margin roundly emarginate. Cercus pale yellow, small, oblong. Internal reproductive organs : A pair of long slender spermathecal ducts present, their distal portions and accessory gland not examined because of damage ; vagina subproximally with a ring-like sclerite.

Body length : 1.0 − 1.3 mm.

SPECIMENS EXAMINED. [Papua New Guinea] 1♀, Baiyer River, *4.* viii. 1982 (Y. Hirashima) ;1♂, same locality, 5. viii. 1982 (S. Shinonaga) ;1♂, Nami Creek, 19. vii. 1982 (S. Shinonaga) ;1♀, same locality, 23. vii. 1982 (0. Tadauchi) ;1♂, Myola, 5. xi. 1984 (M. T. Chûjô).

DISTRIBUTION : Bismarck-Archipelago, Papua New Guinea, Borneo.

REMARKS. The male of this species is sharply distinguishable from that of the

preceding species by the body size much smaller (about 1 mm), the legs and the thoracic pleura yellowish and the wing faintly grayish brown. Its genitalia somewhat varies in forms of some parts as described above, so that they should be carefully consulted for identification. The female is considerably different from male in the body size, the wing venation (costal index etc.) and the coloration, in addition to the sexual differences given under the generic description, but the vein $R_2$ forms a nearly right angle with costa as in the male.

## References

Beyer, E. M., 1966. Neue und wenig bekannte Phoriden, zumeist aus dem Bishop Museum, Honolulu. ***Pacific Ins.*** 8(1) : 165-217.

Schmitz, H., 1927. Revision der Phoridengattungen, mit Beschreibung neuer Gattungen und Arten. *Natuurh. Maandbl.* ***16*** : 72-79.

———, 1929. Revision der Phoriden. Berlin und Bonn, F. Duemmler, 211 pp.