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DESCRIPTION OF A NEW SPECIES OF *PHORTICELLA*  
*ZAPRIONUS* (DROSOPHILIDAE) FROM INDIA

*by*  
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DESCRIPTION OF A NEW SPECIES OF *PHORTICELLA*  
*ZAPRIONUS* (DROSOPHILIDAE) FROM INDIA

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This paper describes a new species of the subgenus *Phorticella* of *Zaprionus*. Two species of *Leucophenga* and one species of *Cacoxenus* are also recorded here for the first time from India. Additional taxonomic details for one species of *Scaptomyza* are also recorded.

INTRODUCTION

The records of Drosophilid fauna exclusive of the genus *Drosophila* from our country have been poor, involving only three species, *Gitonides perspicax*, *Scaptomyza pallida* and *Scaptomyza graminum*. The first named species was recorded by Malloch (1924) from Coimbatore and the other two by Parshad and Duggal (1965) from Kashmir.

The present account is a report of a new species of *Phorticella* and new records of two species of *Leucophenga* and one of *Cacoxenus*, along with additional details of an already known species of *Scaptomyza*.

*Scaptomyza* (<sup>para</sup>*Scaptomyza*) *pallida* (Zetterstedt), 1847 = *himalayana* <sup>h</sup>Takada, 1970

*Drosophila pallida* Zetterstedt, 1847. *Dipt. Scandinaviae*, 6, 2571 (type in Stockholm).

*External characters of imago*

*Male*: Front including ocellar triangle dark brown, anteriorly yellowish-brown; front over about  $\frac{1}{2}$  as broad as width of head. Anterior reclinate orbital about  $\frac{1}{2}$  the other two, just inserted outside and closer to proclinate. The distance from anterior dorsocentral to posterior dorsocentral about 0.77 the distance between two anterior dorsocentrals. C-index about 3.14, 4V-index about 1.7, 4C-index about 0.76, 5X-index about 1.35. Other details as described by Wheeler and Takada (1964).

*Periphalllic organs* (Fig. 1A): Genital arch brownish-yellow, with about 2 bristles at toe, posterior margin pubescent, with one bristle and a long process below; under-margin concave. Anal plate pubescent, bent at middle, the upper portion normal with about 20 bristles; lower portion in the form of secondary clasper, bent, protruded, bearing 3 teeth at tip, middle one largest, upper portion with two large and one small bristle; lower portion with

about 4-5 hairs. Clasper long and arched, bow-shaped, with a row of about 25 long bristle-like teeth along the lower margin of clasper, and also with a group of long bristles at the tip of clasper, 4-5 of them pointed upward.

*Phallic organs* (Fig. 1 B): Aedeagus pale yellow, compact, slightly swollen basally and apically bifid, connected with a transverse membrane, pubescent subapically. Anterior paramere small, dark brown, with about 3 apical sensilla. Posterior paramere large, dorsobasally dilated and apically with a peg-like structure. Novasternum with hemispherically curved lateral processes. Ventral phragma slightly longer than broad, anteriorly with lateral projections.

Three male specimens from Naini Tal, Uttar Pradesh, were examined in July 1966. This species has a world-wide distribution. ✓  
collected!

~~Phort.~~  
*Zaprionus (Zaprionus) indiana* sp. nov.

*External characters of imago*

*Male*: Arista with about 3-4 dorsal and 2 ventral branches in addition to the terminal fork. Antennae pale yellow; 3rd segment grey. Front including ocellar triangle reddish-yellow, orbits with black lining along eye margin; front over about  $\frac{1}{2}$  as broad as width of head. Proclinate orbital approximately of the same length as the posterior reclinate, anterior reclinate orbital about  $\frac{2}{3}$  the proclinate, situated at equidistance and on the line between these 2 bristles. Carina pale yellow, slightly broad and exceedingly swollen. Face and cheek pale yellow, the greatest width of cheek from the base of oral to eye border about  $\frac{1}{2}$  the greatest diameter of eye. Clypeus slightly reddish-yellow. One strong vibrissa, second oral not differentiated. Palpi yellow, with one large apical bristle and several other prominent setae.

Acrostichal hairs regular, in 6 rows, prescutellars well differentiated. Anterior scutellars divergent. The distance from anterior dorsocentral to posterior dorsocentral about  $\frac{1}{2}$  the distance between 2 anterior dorsocentrals. Mesonotum and scutellum unicolorous, pale yellow, with 2 white parallel lines demarcated by black border lines on dorsocentral lines extending up to the end of scutellum, mesonotum with one more pair of similar lines arranged laterally (Fig. 1 C). Humerals two, unequal. Thoracic pleura slightly dark. Sterno-index about 0.5. Legs yellow, pre-apicals on all 3 tibiae; apicals on 1st and 2nd tibiae. Metatarsal joint of male prothoracic leg (Fig. 1 D) with about 5 oblique rows having 6-9 yellow bristles on its proximal end while its distal end with a tuft of heavy hairs. Forefemur without fresh-  
mistaken with a few tubercles  
apicaling tubercle, conforms the subgeneric character.

Wings clear (Fig. 1 E). C-index about 2.6, 4V-index about 1.3, 4C-index about 0.84, 5X-index about 1.15. One bristle at the apex of the 1st costal section; heavy bristles on basal about  $\frac{1}{4}$  the 3rd costal section. Halteres

light yellow. Abdomen uniformly yellow, each tergite with fine narrow, uninterrupted light band on caudal margin, posterior bristles of tergites large and prominent. Length of the body: 2.6 mm, wing: 2.34 mm.

*Periphallie organs* (Fig. 1 F): Genital arch pale yellow, broad, partly pubescent; posterior margin with about 4 bristles on the upper portion; anterior margin strongly convex; heel observable, being on obtuse angle; toe roundish,

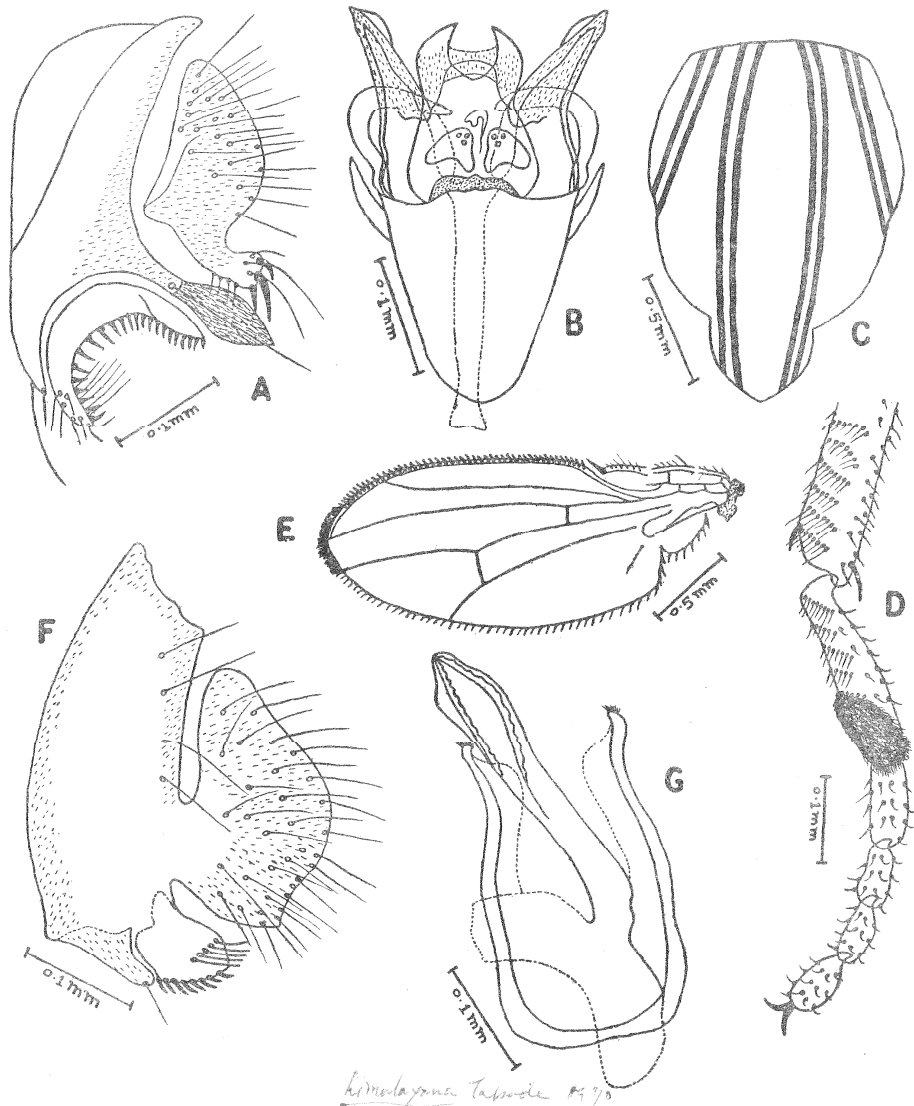


FIG. 1. A and B, *Scaptomyza pallida*. A, periphallie organs (left half); B, phallic organs. C-G, *Zaprionus indiana*. C, male thorax (dorsal view); D, male prothoracic leg; E, wing (male); F, periphallie organs (left half); G, phallic organs.

low and with about one bristle. Anal plate pubescent, broad below, fused at lower  $\frac{1}{3}$  with genital arch, with about 34 large bristles. Clasper one, with about 5-6 bristle-like teeth arranged in a straight row, and also with about 8 large teeth on lower margin.

*Phallic organs* (Fig. 1 G): Aedeagus pale yellow, large and finely serrated anteriorly. Anterior parameres obscure, probably confluent with novasternum, and without sensilla. Posterior parameres seem to be absent. Ventral phragma slightly longer than broad.

*Holotype* ♂, Allahpura, Badaun District of U.P., Coll. Gupta, August 1966. Mounted on slides and deposited at the Department of Zoology, Banaras Hindu University, Varanasi. *Paratype* 1 ♂, in the collection of Prof. T. Okada, Tokyo Metropolitan University, Tokyo, Japan.

It resembles *Z. (P.) bakeri* Sturtevant from the Philippines, but is distinguished by the larger anterior reclinate orbital ( $\frac{1}{4}$  proclinate in *bakeri*).

*Leucophenga (Leucophenga) albicinota* de Meijere, 1908

*Leucophenga albicinota* de Meijere, 1908. *Tijd. Ent.*, 15, 156.

= *albifasciata*  
Caracua?

#### *External characters of imagines*

*Male and female*: Arista with about 5-6 dorsal and 3 ventral branches in addition to the terminal fork. Antennae yellow; 3rd segment yellowish-white. Front yellowish-brown, ocellar triangle dark brown. Anterior reclinate orbital about  $\frac{7}{8}$  the proclinate,  $\frac{3}{4}$  the posterior reclinate; inserted just outside the proclinate. Carina yellow, very low. Only one large oral bristle and several other small bristles. Palpi yellow, with several prominent setae. Face and cheek pale yellow, the greatest width of cheek from the base of oral to eye border about  $\frac{1}{2}$  the greatest diameter of eye. Eyes bright red.

Acrostichal hairs slightly irregular, in about 10-12 rows, prescutellars well differentiated. Anterior scutellars divergent, posterior scutellars arising from white spots. The distance from anterior dorsocentral to posterior dorsocentral about  $\frac{1}{3}$  the distance between two anterior dorsocentrals. Mesonotum yellowish-brown, scutellum slightly darker with pale apex. Thoracic pleura pale yellow, with a narrow dark longitudinal stripe below wing. Sterno-index about 0.76. Legs yellowish-white, knee joint of hind leg black, pre-apicals on all 3 tibiae; apicals on 1st and 2nd tibiae.

Wings clear (Fig. 2 A). C-index about 2.2 to 2.55, 4V-index about 2.0, 4C-index about 1.12, 5X-index about 1.27. One stout bristle at the apex of 1st costal section; heavy bristles on basal about  $\frac{5}{8}$  the 3rd costal section. Halteres white, lower surface of knob dark brown.

Abdomen in male whitish-yellow, 3rd tergite and anterior part of adjoining tergite completely milky white and bare; 4th and 5th tergite bands with lateral, sublateral and median projections reaching anterior margin.

Abdomen in female (Fig. 2 B) light yellow, 1st tergite yellow; 2nd tergite with only lateral dark brown spots; 3rd, 4th, 5th and 6th tergite bands with lateral, sublateral and median forward projections, several rows of fine bristles on each tergite prominent. Length of male: 2.9 mm, wing: 2.5 mm; length of female: 2.86 mm, wing: 2.4 mm.

*Periphallial organs* (Fig. 2 C): Genital arch broad, hairy, anterior margin strongly convex, with about 9 bristles running from the top of posterior

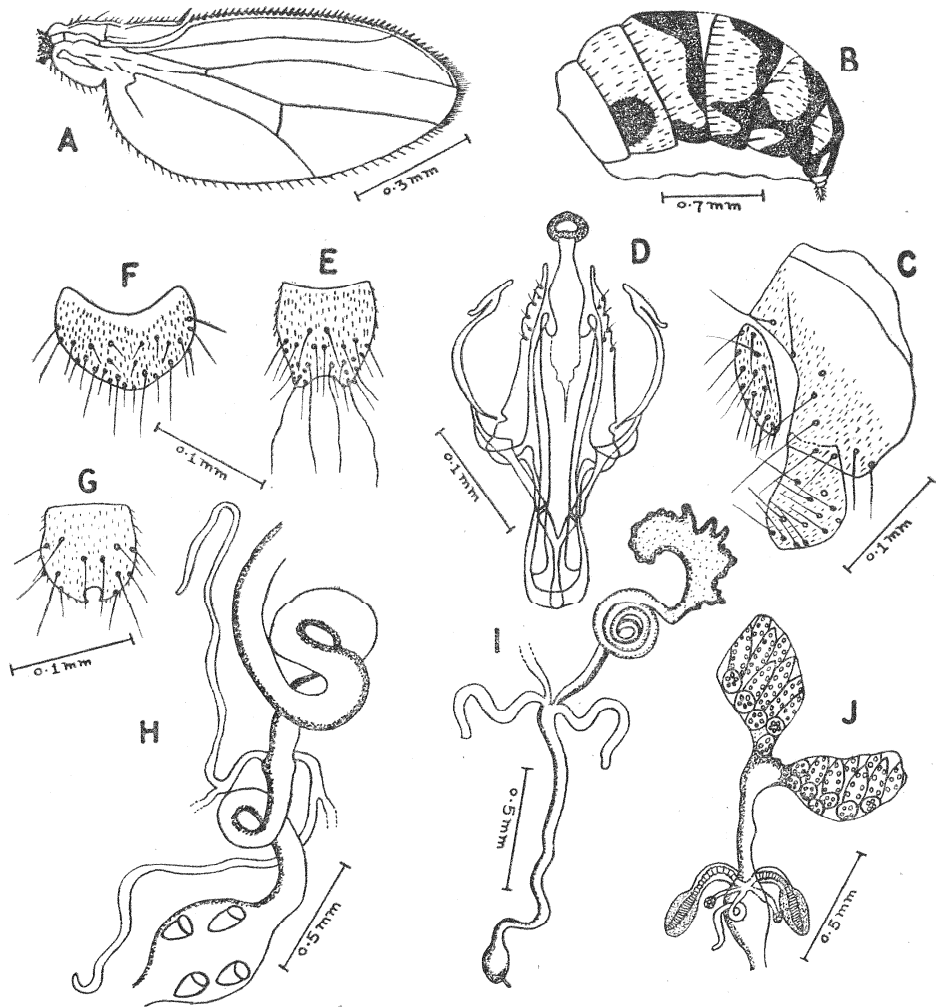


FIG. 2. *Leucophenga albicincta*. A, wing (male); B, female abdomen (lateral view); C, periphallial organs (right half); D, phallic organs; E, dorsal lobes of anal plate; F, ventral lobes of anal plate; G, egg-guides; H, proximal intestine; I, male reproductive organs; J, female reproductive organs.

margin along that margin downward; heel observable. Anal plate oblong, separated from genital arch, and with about 15 bristles. Clasper one, oval and little longer than broad, surface covered with fine hairs and with about 13-16 sparse bristles, no teeth.

*Phallic organs* (Fig. 2 D): Aedeagus pale yellow, slightly broadened sub-apically, narrowing apically with a swollen tip. Anterior parameres large, pointed, with about 6 sensilla. Posterior parameres elongate and fused with each other. Ventral phragma narrow. Novasternum large and in the form of a thin arch.

#### *Female external genitalia*

Dorsal lobes of anal plate (Fig. 2 E) are broad, narrowing towards free end. Whole surface hairy, with a number of long and small setae. Ventral lobes of anal plate (Fig. 2 F) almost semi-lunar, whole surface setigerous with numerous setae. Egg-guides (Fig. 2 G): Lobe yellow, hemispherical and with several long bristles, the whole surface setigerous.

#### *Internal structures of imagines*

Proximal intestine (Fig. 2 H):  $C = 2.0$ . Rectal papillae:  $R = 1.6$ . Malpighian tubules with their common stalks rather short. Testis (Fig. 2 I) milky-white, its terminal end broad and expanded with about 3 outer and 1 inner coils. Paragonia thin and small. Ventral receptacle slightly long and with about one fold. Spermatheca elongate and with the stalks of moderate length. Parovaria hyaline and small (Fig. 2 J).

*Specimens examined*: 7 ♂♂ and 5 ♀♀, Chandraprabha: Chakia forest, Varanasi district, Uttar Pradesh, December 1965 to February 1966; 2 ♂♂ and 2 ♀♀, Sirsi, Mirzapur District, Uttar Pradesh, September 1966. Distribution: Africa, Java, New Guinea and India.

#### *Leucophenga (Leucophenga) guttiventris* de Meijere, 1911

*Drosophila guttiventris* de Meijere, 1911. *Tijd. Ent.*, 54, 414; de Meijere, 1918. *Tijd. Ent.*, 60, 542.

#### *External characters of imagines*

*Male and female*: Arista with about 4-5 dorsal and 2 ventral branches in addition to the terminal fork. Anterior reclinate orbital very small and thin, about  $\frac{1}{4}$  the proclinate and about  $\frac{1}{4}$  the posterior reclinate. Acrostichal hairs slightly irregular, in 8-10 rows, prescutellars well differentiated. Anterior scutellars divergent. The distance from anterior dorsocentral to posterior dorsocentral about  $\frac{1}{4}$  the distance between 2 anterior dorsocentrals.

Abdomen pale yellow, with black patches, two sublateral and two median on 2T; one median on 3T; two lateral and two sublateral on 4T; two lateral,

two sublateral and one median on 5T; two large lateral on 6T. Posterior bristles of tergites large and prominent. Other details as described and figured by Okada (1956).

*Specimens examined*: 1 ♂ and 2 ♀♀, Chandraprabha: Chakia forest, Varanasi district, Uttar Pradesh, October and November 1965. Distribution: Fiji, Japan, Formosa, Nepal, Java, Sumatra, French Indo-China, Africa and India.

Very few specimens could be collected at Chandraprabha (Chakia forest). The present form differs somewhat from that of Okada's in abdominal ornamentation as well as in number of arista branches.

\* *Epitriptus purpuriceps*

*Cacoxenus (Cacoxenus) punctatus* Duda, 1924

*Cacoxenus punctatus* Duda, 1924. *Arch. Naturg.*, 90, A (3), 225.

#### *External characters of imagines*

*Male and female*: Arista pubescent. Antennae pale yellow; 3rd segment large and slightly brownish. Front whitish-brown, broad; front over  $\frac{2}{3}$  as broad as width of head. Ocellar triangle black. Carina whitish-yellow, narrow and flat below. Face and cheek whitish and the greatest width of cheek from the base of oral to eye border about  $\frac{1}{4}$  the greatest diameter of eye. Anterior reclinate orbital as long as posterior reclinate, proclinate orbital slightly larger than anterior reclinate. One stout oral bristle present. Eyes bright red, with one equatorial dark stripe.

Acrostichal hairs irregular, in about 12 rows, prescutellars well differentiated. Anterior scutellars divergent, posterior scutellars cross each other, all these scutellars arising from dark spots. The distance from anterior dorso-central to posterior dorso-central about  $\frac{1}{4}$  the distance between 2 anterior dorsocentrals. Mesonotum and scutellum yellowish-white, with scattered brown spots, covered with dense silvery pollinosity. Pleura yellowish-white, with 3 narrow longitudinal stripes. Sterno-index about 0.8, middle sternopleural bristle not developed. Legs whitish, apicals and pre-apicals on all 3 tibiae.

Wings hyaline (Fig. 3 A). C-index about 2.59, 4V-index about 1.87, 4C-index about 1.0, 5X-index about 0.89. One bristle at the apex of 1st costal section; heavy bristles on basal about  $\frac{1}{4}$  of 3rd costal section. Halteres whitish. Abdomen shining yellowish-white, abdominal tergites with dark brown, broad, medially interrupted bands; 2-5 tergite bands projected laterally to reach anterior margin; 1-2 tergites yellowish at middle.

Length of male: 3.23 mm, wing: 2.4 mm; length of female: 2.87 mm, wing: 2.3 mm.

*Periphalliallic organs* (Fig. 3 B): Genital arch broad and roundish below, pubescent and hairy, with about 13-15 bristles running from the top of posterior margin along that margin downward; heel with a horn-like process; toe absent



and under-margin strongly convex. Anal plate oblong, pubescent and hairy, a little more setigerous at lower tip. Clasper almost triangular, free and with about 15-20 scattered black discal teeth, 3-4 long bristles along outer margin and a number of recurrent bristles on under surface. Decasternum (Fig. 3 C): Anteriorly forked, posterior margin with divergent lateral process. *Phallic organs* (Fig. 3 D): Aedeagus pale yellow, broad, stout and pointed at tip. Anterior paramere long, narrowly pointed at tip and with about 7

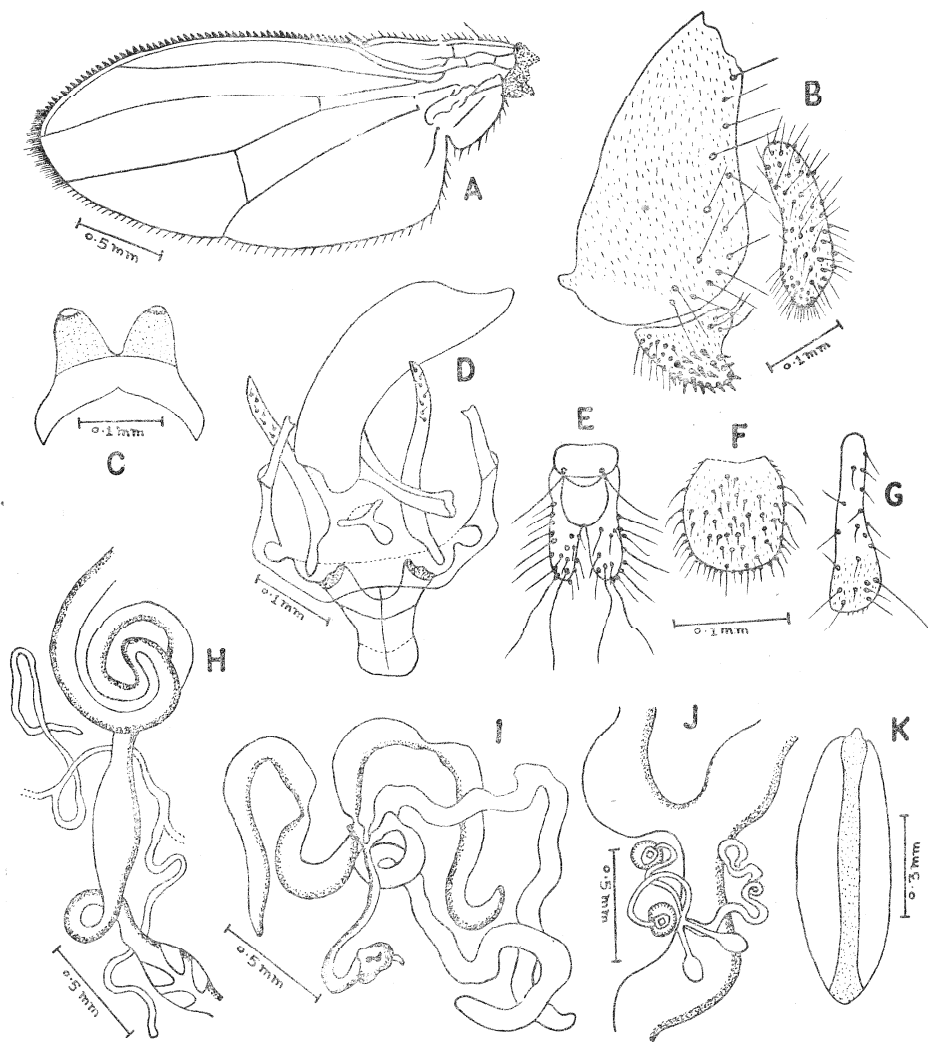


FIG. 3. *Cacoxenus punctatus*. A, wing; B, periphallial organs (left half); C, decasternum; D, phallic organs; E, dorsal lobe of anal plate; F, ventral lobe of anal plate; G, egg-guide; H, proximal intestine; I, male reproductive organs; J, female reproductive organs; K, egg.

subapical sensilla. Posterior paramere seems to be absent. Novasternum with highly elongated lateral process. Ventral phragma almost quadrate.

*Female external genitalia*

The 2 dorsal lobes of the anal plate (Fig. 3 E) are slightly elongated and fused at the base by a distinct plate, hairy and with a few long bristles. The ventral lobes of the anal plate (Fig. 3 F) are almost oval, and setigerous. Egg-guides (Fig. 3 G) are pale yellow, slender, slightly broadened and hairy at distal end, with several long setae.

*Internal structures of imagines*

Proximal intestine (Fig. 3 H):  $C = 2.5$ . Rectal papillae:  $R = 1.5$ . Malpighian tubules light yellow, their common stalks about  $\frac{1}{2}$  the total length. Testis (Fig. 3 I) orange-coloured, uncoiled and large, constricted proximally slightly far from the middle, thus forming two distinct asymmetrical lobes. Paragonia very large, confluent at base with each other. Ventral receptacle with about 4-5 loose coils. Spermatheca large and with long stalk (Fig. 3 J). Eggs (Fig. 3 K) with no filament. Specimens examined: 24 ♂♂ and 20 ♀♀, Chandraprabha: Chakia forest, Varanasi District, Uttar Pradesh, August 1965 to December 1965. Distribution: Formosa and India.

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