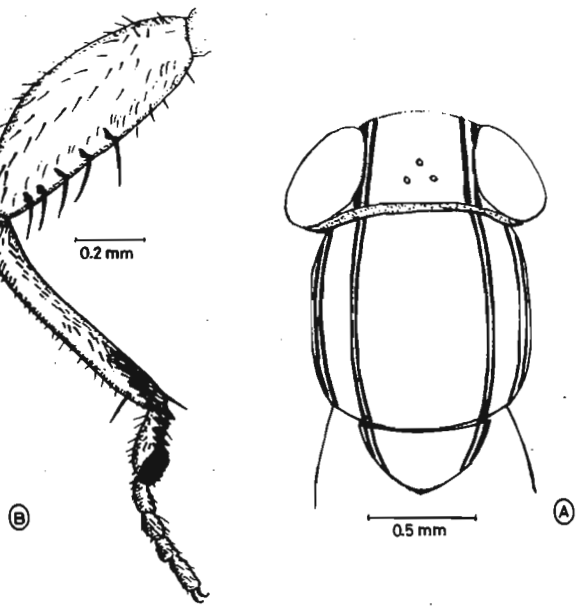
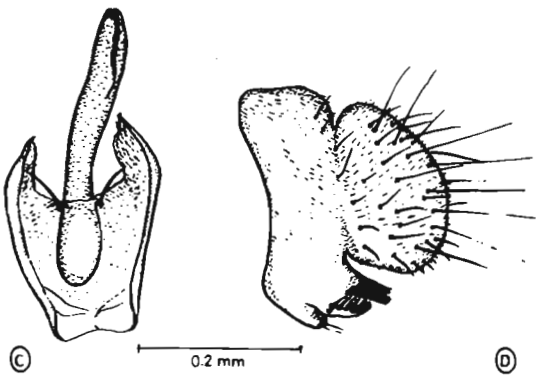
Godbole, N.N. and V.G. Vaidya. University of Poona, India. A new species of Drosophilidae from Poona (India): Zaprionus (Zaprionus) paravittiger sp. nov.

DESCRIPTION OF THE MALE IMAGO: General features and Head: Body about 2.8 mm in length. Eyes red with thick pile. Ocellar triangle small and pale. The three orbitals almost equally distant from the margin of the eye. First orbital (reclinate) slightly smaller than the third (proclinate). Second orbital (reclinate) about 3/4 of the first. Antenna yellowish brown, third segment darker and longer than broad. Arista with about 5 dorsal and 3 ventral rays including the terminal fork. Front dark brown. Carina pale, exceedingly swollen, broad ventrally and touching the oral margin. One prominent oral bristle. Palpus yellowish with a few prominent bristles. Two longitudinal silvery white stripes between orbital bristles and eye margins, reaching anteriorly the outer distal part of the second antennal joint. The stripes lined by black borders.

Thorax: Thorax dark brown. Humerals 2 unequal. Acrostichal hairs in 6 rows. Anterior dorsocentrals nearly parallel to each other and shorter than the posterior convergent ones. Anterior scutellars convergent. Sterno-index about 0.43. Four longitudinal silvery white stripes with black borders on thorax. Dorsal stripes arise just outside the base of the posterior scutellars and the lateral stripes from the bases of the wings.





Zaprionus paravittiger:
A. Dorsal view of head and thorax
B. Foreleg of male
C. Phallic organs
D. Periphallic organs

Legs: Legs yellowish. Apicals on first and second, that on second prominent. Preapicals on first and third. Femur of first leg with about 4-5 tubercles each with 2 stout unequal spines. Metatarsus of first leg distally with a dense tuft of short hairs and proximally with 5 oblique rows of spines. All but the ultimate segments of second and third tarsi with lateral row of small cuneiform bristles.

Wings: Wings clear, about 2.7 mm in length. Costal index about 2.46. 4th vein index about 1.42. 4C-index about 0.9. 5X-index about 0.97. C-1 bristle one. C-3 bristles on about basal 1/2.

Abdomen: Tergites yellowish, unicolourous.

Periphallic organs: Genital arch yellowish and pubescent, with 3-4 bristles on the posterior margin. Heel rounded. Toe low, rounded apically, directed ventrally with about 4 terminal setae. Clasper 1, large, apically truncate, with about 5 strong black teeth and ventrally with about 8 setae. Anal plate fused with the genital arch, pubescent and with many long evenly distributed bristles.

Phallic organs: Phallic organs pale yellow. Aedeagus long, arched dorsally and bearing fine serrations apically. Apodeme of aedeagus paler, laterally compressed. Novasternum roughly triangular, each with a long submedian spine. Anterior and posterior parameres

absent. Ventral fragma oblong. Phallosomal index about 2.2.

DESCRIPTION OF THE FEMALE IMAGO: Similar to male except in the slightly larger size and absence of a dense tuft of short hairs on the metatarsus of first leg.

Egg guide: Lobe yellowish, narrow apically, with about 14 marginal and 3 discal teeth and a long subterminal hair. Basal isthmus narrow.

MATERIAL: Holotype: Male; Poona (India); July 1969 (Vaidya & Godbole). Deposited with the Department of Zoology, University of Poona, Poona 7 (India).

Paratypes: 8 males, 5 females collected together with holotype. 4 males deposited with Prof. T. Okada, Department of Biology, Tokyo Metropolitan University, Tokyo (Japan).

HABITAT: The flies were collected on decomposing leaves in garden by sweeping with net. They appear only in the rainy season and are difficult to rear in the laboratory.

RELATIONSHIP: The cuneiform bristles on the second and the third tarsi confirm the generic position and the femoral tubercles of the foreleg show that it belongs to subgenus Zaprionus. The only other species of genus Zaprionus reported from India is Z. indiana (Gupta, 1970), which however, belongs to subgenus Phorticella.

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Godbole, N.N., R.M. Kothari and V.G. Vaidya. University of Poona, Poona, India. Study of free amino acids in eggs of five species of Drosophila.

Our knowledge of the free amino acids occurring in eggs of Drosophila seems to be limited to species melanogaster only (Chen et al. 1967). It was therefore intended to undertake similar studies on some other species of Drosophila. For this comparative work, the following species were selected: D. ananassae, D. jambulina, D. malerkotliana, D. melanogaster and D. nasuta.

The cultures of the above species were maintained at 22 ± 1°C on the standard agar-cornmeal medium. Paper chromatographic technique was employed for the separation and identification of the free amino acids in the eggs.

For this purpose, freshly laid eggs of a particular species were collected and were washed with glass distilled water. About ten eggs were directly spotted on Whatman No. 1 paper (36 X 5 cm) by crushing them on it with a blunt glass rod. Two such chromatograms were run separately in glacial acetic acid : n-butanol : water (1:4:5) phase and phenol : water (8:2) phase for 4-6 h at 22°C by ascending chromatographic method. The chambers were saturated with respective phases prior to the chromatographic runs. The chromatograms were dried in air after which they were developed by spraying with 0.5% ninhydrin in acetone in order to detect the free amino acids. Rf values for the spots thus developed were calculated. The amino acids were identified by comparison of the obtained Rf values with the standard values for authentic samples. The findings were confirmed by two dimensional paper chromatography using glacial acetic acid : n-butanol : water (1:4:5) and phenol : water (8:2) phases. Similar procedure was adopted for the eggs of all the five species.

The amino acids identified in the five species of Drosophila are presented in Table 1. Methionine sulfone and serine are found to be present exclusively in D. malerkotliana. α-alanine and glutamine are present in all the species studied except D. nasuta, in which these

Table 1. Free amino acids in the eggs of five species of Drosophila.

Amino acid	D. ananassae	D. jambulina	D. malerkotliana	D. melanogaster	D. nasuta
α-alanine	+	+	+	+	-
β-alanine	-	-	-	-	+
Aspartic acid	-	+	+	+	-
Cysteine	+	+	-	+	+
Cysteic acid	+	-	+	+	-
Cystine	+	+	+	-	+
Glutamic acid	-	-	-	-	+
Glutamine	+	+	+	+	-
Methionine sulfone	-	-	+	-	-
Serine	-	-	+	-	-
Taurine	-	-	+	-	+