

**Two new species of the genus *Suillia* ROBINEAU-DESVOIDY, 1830
from Oriental Region (Diptera: Heleomyzidae: Suilliinae)**

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ABSTRACT. Two new species, *Suillia beigeri* and *Suillia quadrimaculata* are described from India. A key to all known species of the genus *Suillia* recorded from India is given.

KEY WORDS: Diptera, Heleomyzidae, Suilliinae, *Suillia*, taxonomy, new species, Oriental Region, India.

INTRODUCTION

The genus *Suillia* Robineau-Desvoidy, 1830 of the tribe Suilliini BEZZI, 1911, including 127 species is widely distributed in almost all zoogeographic regions (Woźnica 2006), especially in the Old World. The Oriental Region is the least known comprising 17 species (Czerny 1924, Deeming 1966, Okadome 1985 & 1991, Woźnica 2004). recent studies of the Old World Heleomyzidae suggest that all examined species of the genus prefer cold habitats and live exclusively in mountains or forested highlands, where more temperate condition prevail, than in tropical lowlands. Comparing to the neighbouring areas, the Indian fauna of the genus *Suillia* is poorly known including only five species recorded here so far.

Acknowledgments

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METHODS

Terminology used for the description of external structures and abbreviations of measurements follow WOŹNICA (2003, 2006). Details of male and female terminalia were drawn using light microscope and computer graphic techniques. The genitalia were preserved in glycerin microvials.

TAXONOMY

Suillia beigeri sp. n.

(Figs 1-3)

Diagnosis

S. beigeri is similar to *S. mirabilis* Woźnica, 2004, and differs from the latter species by having a big brown spot in the anterior corner of anepisternum and a distinct brownish dot in the middle of the face (not found in *S. mirabilis*).

Description

Measurements. Body length (without antennae) 5.8 mm.

Head. Eye big and little elliptical. Head ratio about 1.1. Flag-cheek ratio about 1.0. Cheek to eye ratio about 0.22. Orbital plate parallel to eye margin, anterior part of frons mostly yellowish-orange, posterior part, behind orbital bristle orange-brownish. One strong black orbital bristle. Ocellar triangle between ocelli blackish. Hind part of head shiny orange. Face yellowish-orange and slightly protuberant. with a medium sized brownish spot in the middle area. Genae pale yellow with one black vibrissa and a second additional bristle (c. ½ of the upper one). Palpi at base yellowish, in the one-third apical part blackish-brown. Proboscis yellowish-orange. Supracervical setulae black.

Antenna. Scape and pedicel orange. First flagellomere oval orange-brownish. Arista long plumose. Upper microtrichia longer than the lower row.

Thorax. Prosternum yellow. Mesonotum and scutellum orange-brownish and shiny, pleural parts and postscutellum yellowish-orange. Dorsal part yellowish-red with 5 pairs of dorsocentrals, not arising from spots. Postpronotum on the margin with brown oval stripe.

Pleurae with very thin light brownish stripe from lateral margin of postpronotum to base of wing. Anterior corner of anepisternum above the coxa with dark brown dot. Proepisternum with two brown setulae. Katepisternum with 1 strong black bristle and some small hairs, anepisternum, anepimeron, meron fully bare. Scutellum rounded apically, with several (c. 13-14) black setulae laterally.

Wings. Length c. 6.3 mm, width 2.30 mm. Black costal spines well developed, especially before costal break. Veins light brown. Membrane regularly brown dusted, cross-veins dark brown but anterior cross-vein distinctly stronger. Medial vein ratio c. 1.265. Halteres pale orange, on club setulose.

Legs. Ground colour yellowish orange. Long yellow haired ventral parts of fore and mid femora. Mid and hind femora with anterodorsal rows of bristles. Mid femur with 7 black bristles anteriorly. Hind femur with 6-7 black subapical dorsolateral bristles grouped in two rows. Mid tibia long haired. Fifth tarsomeres of fore and mid tarsi slightly darkened. All tarsi short setulose except fifth tarsomeres.

Abdomen. Basic color of segments orange, first five tergites in the 1/3 hind part brownish-grey with long black marginal bristles. Tergite VI greater than the remaining and yellowish-orange as the epandrium.

Male terminalia. Epandrium sparsely and short setulose, slightly higher than wide, with elongated and very long haired cerci, yellowish-brown in colour. Gonostyli asymmetrical (Figs 1a,b), left gonostylus bilobed and sparsely setulose (Fig. 1a) in the outer surface. Inner part sparsely haired with some thorn-like setulae in lower branch. Right gonostylus (Fig. 1b) with big flattened semiglobular median part, sparsely haired in the outer surface and with thorns and spine-like setulae in the inner surface. Phallapodeme as in Fig. 2. Ejacapodeme root-like. Pregonite covered by few setulae, postgonite setulose (Fig. 3) with with two big setulae in the apical part. Basiphallus and distiphallus of complex structure, and in general as typical as for the genus.

Type Material

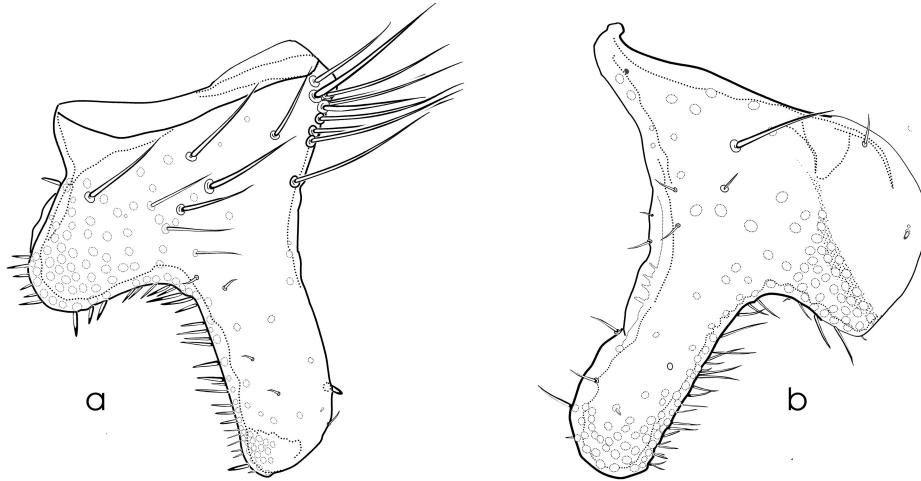
Holotype, ♂, Coonoor, 6000 ft., South India, 22-23-IV-1937 (below: B. M.-C. M. Expedn to South India. 1937.) (BMNH).

Remarks on the type specimen

Missing: left first flagellomere, three apical tarsomeres of the right fore leg and hind right leg. Genitalia prepared and kept in glycerin microvial.

Etymology

The species is named in honour of the late Prof. Dr. Maria BEIGER, in recognition of her important contributions to the study of mining acalyprate flies in Poland.



Figs 1a-b. *Suillia beigeri*: a - left gonostylus in outer surface, b - right gonostylus in outer surface.

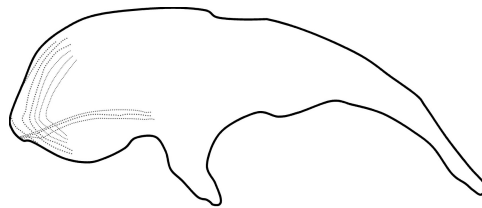


Fig. 2. *Suillia beigeri*: phallapodeme in lateral view.

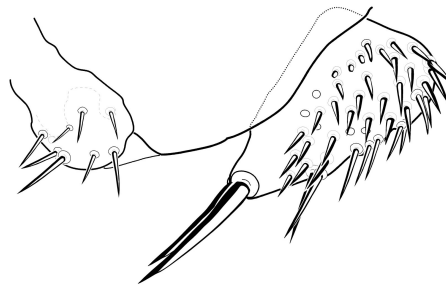


Fig. 3. *Suillia beigeri*: complex of gonites (pregonite and postgonite) in lateral view.

Suillia quadrimaculata sp. n.

(Figs 4-7)

Diagnosis

The species differs from other representatives of Oriental *Suillia* (see the key below), by four brown spots along the second longitudinal vein. The most similar species is *S. laciniata* (SPEISER), known from Afrotropical Region only, which differs from the new species by having two spots along the second longitudinal vein.

Description

Measurements. Body length (without antenna) varies from 4.1 mm (male) to 4.75 (females).

Head. Eye round, cheek to eye ratio c. 0.17-0.24. Head ratio c. 1.2. Flag-cheek ratio c. 1.1. One big vibrissa and a second smaller additional bristle near it (c. 0.4x of the bigger one). The area between eye corner and base of vibrissa dark brown spotted. Face totally yellow and slightly protuberant in the middle part. Anterior part of orbital plate yellowish, posterior part brownish, ocellar triangle greyish dusted. One strong orbital bristle present. Supracervical setulae blackish. Genal setulae arranged in two to three irregular rows. Palpus thin, and wholly yellowish. Proboscis yellow in colour.

Antenna. Scape and pedicel orange. First flagellomere elongated and pubescent, distinctly narrowed to apex, externally brown except thin basal part, internally yellowish and in the basal one-half and distinctly brown apically. Flag (first flagellomere) ratio less than 2.0. Arista long plumose, with greater microtrichia in upper row. Base of arista brown, remaining part brownish-black.

Thorax. Prosternum yellowish, with 4 pairs of minute, thin pale brown and golden shiny hairs in the upper part. Mesonotum pale orange. Notopleural area around anterior notopleural bristle haired only. Postpronotum pale grey dusted, distinctly distinguished from surrounding poale range part. Dorsocentral bristles (1+4 pairs) arising from minute brown dots. Between the dorsocentrals a wide brownish and greyish dusted band not extending onto scutellum. The anterior one-half part thinner than the posterior second part (behind the area of third dorsocentrals). Anepisternum brownish and distinctly darker in colour than other pleural parts. One big katepisternal bristle, with a small greyish dusted area before it. Anepimeron with 5-7 blackish hairs, remaining part of pleurae bare. Scutellum orange in colour, but apically pale brown with numerous setulae on disc margins and with a rather wide and bare area in the basal part. Lateral parts of scutellum yellowish. Lower part of scutellum bare. Postscutellum yellowish-orange.

Legs. Basic colour of all legs yellowish. Praepical bristles well developed. First and second coxa pale yellow, the third one more orange laterally. In the male fore femur with grey stripe below the area of anterodorsal bristles, second femur with five black bristles anteriorly. Fore femur with long and thin hairs in the lower part. Mid femur with some

small black bristles grouped in two rows on the posterior one-third apical ventral part. Male fore femur with 7 bristles in the anterior part and some hair-like setae. All last three tarsomeres of I and II leg blackish-brown in colour. Female fore femur with 6 black bristles anteriorly and 5-6 posteriorly. In female fore femur longer haired. The longest setula is not longer than the width of femur. Mid femur with 4 and 3 black bristles anteriorly, grouped in two rows. Hind femur with three black and long dorsolateral bristles. Hind femur with dark brown spot apically. Male hind femur with 4 small and 3 big black dorsolateral bristles. Female with hind femur with 3 to 4 anterodorsal bristles only. Three distal tarsomeres of all legs dark brown in both sexes. Knee area of hind leg brown.

Wings. Membrane pale brown tinged. Veins yellowish-brown in colour. Costal spines black and short, but longer than the width of costa. Both cross-veins distinctly brown clouded. Clouded veins area dark brown. A big brown egg-shaped spot in the apical part of first longitudinal vein (as in *S. lineitergum* PANDELLÉ). Second longitudinal veins with four distinct brown spots which are situated not in the same interspaces. Third longitudinal vein indistinguishably clouded in the apical half part. Vein cu (last longitudinal) totally brown in colour. Medial vein ratio 1.390-1.450. Halteres yellowish-orange with more brownish and minutely setulose knob.) Wing length: 4.1-4.8 mm., width: 1.7-2.0 mm.

Abdomen. In male yellowish brown in colour with dark brown margins. Sternite VI with thick dark brown, brush-like setulae. Epandrium brownish in colour. Cerci small but elongated and long haired. In female abdomen yellowish-brown, with first two segments distinctly darkened laterally. Abdomen sparsely setulose, in the middle part more brownish. Remaining segments with dark brown stripes on the margins. Marginal bristles black and relatively thin. Postabdomen not flattened, sternites pale orange.

Male terminalia. Epandrium sparsely setulose, small and slightly higher than wide, with elongated and long haired cerci, yellowish-brown in colour. Gonostylus symmetrical (Figs 4a,b), bilobed and sparsely setulose (Fig. 4a) in the outer surface. Inner part sparsely haired with some thorn-like setulae in lower branch (Fig. 4b). Phallapodeme as in Fig. 5. Ejacapodeme small and spoon-like. Pregonite rudimentary covered by few setulae, postgonite setulose with two big setulae in the apical part (Fig. 6). Basiphallus and distiphallus of complex structure, but generally as typical as for the genus.

Female terminalia. Postabdomen short, segments short setulose only. Sternite VI and VII similar in length. Sternite VI rectangular and wider than long, sternite VII trapezoidal-like and wider than long. Cerci elongated, pale brown and separated, short hairy. Three rather round and well sclerotized brown spermathecae (Fig. 7), covered by small protuberances and small appendices occasionally.

Type Material

Holotype: ♀, India, Kashmir, Gulmarg, 27.6.2979, 2700 m a.s.l., T. SÄVELAND (LUZ).

Paratypes: 1♂, India, Kashmir, Gulmarg, 27.6.2979, 2700 m a.s.l., T. SÄVELAND (LUZ); 1♀, India (Kashmir), Gulmarg c. 2600-3000m a.s.l., 17. 08.-5.09. 1978, Copenhagen Zool. Mus. Exp (ZMUC).

Etymology

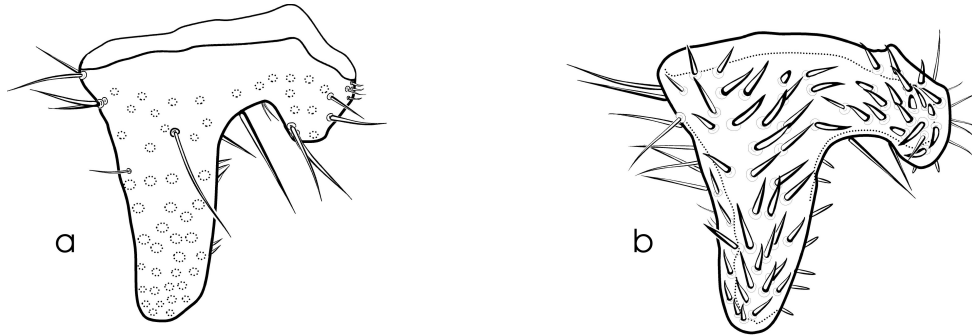
The name *quadrimaculata* (=four spotted) refers to the second longitudinal vein clouding.

Remarks on the type-specimens

In the female paratype the left wing and both mid leg are missing. Male in bad condition. Genitalia of both sexes prepared and kept in glycerin microvial.

Key to determination of the Indian species of the genus *Suillia* R.-D.

1. Arista pubescent, wings with cross-veins dusted or clouded only **2.**
- Arista plumose, wings markedly clouded in different areas **3.**
2. Abdomen yellowish-brown, tergites with thin dark brown marginal stripes only, anterior cross-vein slightly dusted, the posterior distinctly clouded, and clearly separated from third longitudinal vein *S. punctifrons* GORODKOV
- Abdomen black and greyish dusted, both cross-veins distinctly clouded
..... *S. nigripes* CZERNY
3. Anepisternum bare **4.**
- Anepisternum haired *S. mirabilis* WOŹNICA
4. Wings with second longitudinal vein bearing 4 brown spots before anterior cross-vein, mesonotum with brown stripe between dorsocentals, anepimeron haired
..... *S. quadrimaculata* sp. n.
- Wings clouded on apices of longitudinal veins, but without spots on second longitudinal vein, mesonotum without stripes **5.**
5. Scutellum bare, abdomen almost totally blackish, dirty yellow on basis of I-III segments
..... *S. himalayensis* DEEMING
- Scutellum haired, abdomen rather brown or orange-brownish **6.**
6. Big brown spot in the anterior corner of anepisternum above the coxa present, scutellum rounded apically, covered by several setulae *S. beigeri* sp. n.
- Anepisternum without spot as in former species, scutellum pointed apically, covered by few setulae only *S. kashmirensis* OKADOME



Figs 4a-b. *Suillia quadrimaculata*: a - gonostylus in outer surface; b - gonostylus in inner surface.

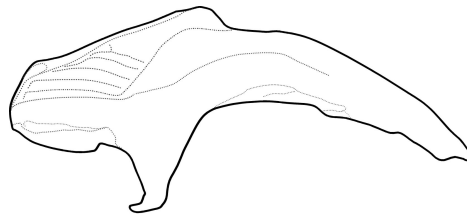


Fig. 5. *Suillia quadrimaculata*: phallapodeme in lateral view.

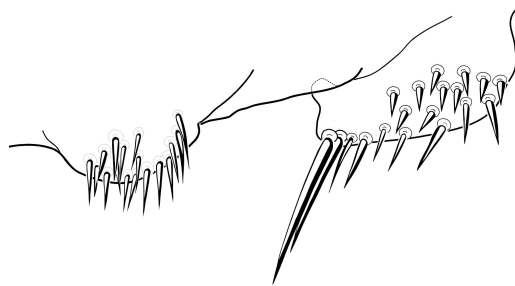


Fig. 6. *Suillia quadrimaculata*: complex of gonites (pregonite and postgonite) in lateral view.

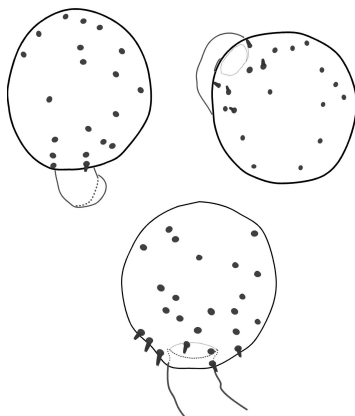


Fig. 7. *Suillia quadrimaculata*: spermathecae.

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