

**A NEW SPECIES OF *SPHEGIGASTER* SPINOLA
FROM THE INDIAN SUBCONTINENT
(HYMENOPTERA: CHALCIDOIDEA: PTEROMALIDAE)**

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Abstract

The species of *Sphegigaster* Spinola from the Indian Subcontinent is reviewed. A new species, *Sphegigaster indica* sp. nov. is described and a key to the species of *Sphegigaster* from the Indian Subcontinent provided.

Keywords

Hymenoptera, Pteromalidae, Sphegigaster, new species, Indian Subcontinent

Abbreviations

BMNH - The Natural History Museum, London

MV - Marginal vein

PMV - Postmarginal vein

SMV - Submarginal vein

TI-T3 - Gastral tergites 1 to 3

ZSIC - Zoological Survey of India, Kozhikode (Calicut)

F1 - Funicular segment 1

NM - Entomologicke Oddeleni, Narodni Museum, Praha, CSSR

POL - Postocellar distance

STV - Stigmal vein

USNM - US National Museum of Natural History, Washington D.C.

Introduction

The species of *Sphegigaster* Spinola are widely distributed in all parts of the world. They are parasites of Diptera mainly of Agromyzidae mining in the leaves and other soft parts of various plants. Sureshan and Narendran (1997) reviewed the Indian species of *Sphegigaster*. In this paper a new species of *Sphegigaster* is described from India. *Sphegigaster brunneicornis* (Ferriere) is redescribed based on the study of the lectotype in BMNH. The species of *Sphegigaster* from the Indian subcontinent are also keyed out.

Sphegigaster indica sp. nov.

(Figs. 1, 2)

Material examined

Holotype: Female, 19.iii. 1996, Orukomban, Parambikulam Wildlife Sanctuary, Kerala, India, Coll. P.M. Sureshan (ZSIC).

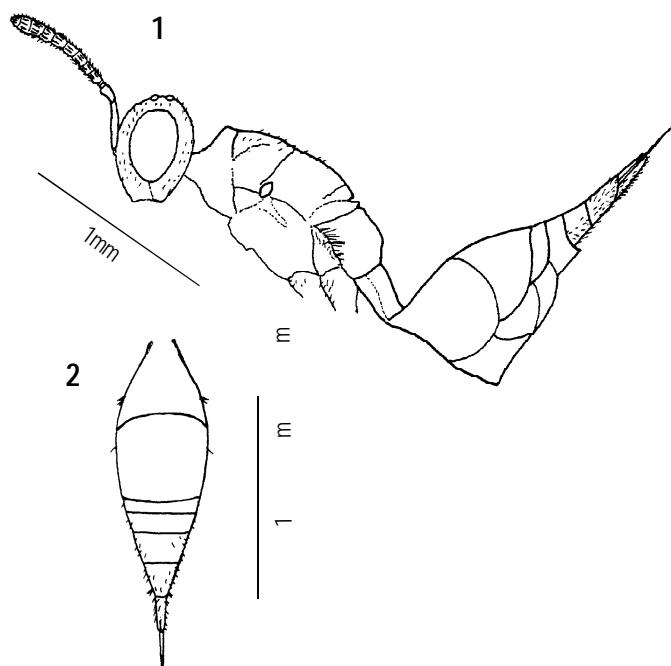
Etymology

The species is named after India, the country where it was found.

Diagnostic features

Female: Length 2.4mm. Head, mesosoma and petiole metallic blue; gaster blackish-brown. Legs except coxae testaceous; coxae concolorous with mesosoma. Antennae testaceous. Tegulae and veins brown; wings hyaline.

Head: Moderately reticulate, 1.1x as wide as mesosoma; in dorsal view width 1.7x length; in front view width 1.2x height; temple length 0.6x eye length, POL 1.3x OOL; malar space length 0.4x eye height; eyes separated by 1.2x their height; clypeus with two small sharp teeth. Antennae (Fig. 1) inserted little below middle of face, scape hardly reaching median ocellus, length 0.73x eye height; combined length of pedicel plus flagellum little longer than head width, F1 shorter than pedicel, funicular segments gradually decreasing in length; clava as long as 2.5



Figs. 1-2. *Sphegigaster indica* sp. nov. (female)
1 - Body profile; 2 - Gaster dorsal view

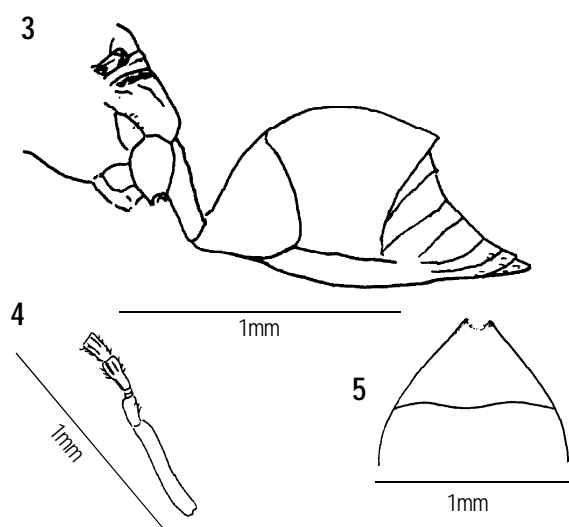
preceding segments combined.

Mesosoma: Reticulate punctate with sparse white hairs; anterior margin of pronotal collar ridged, posterior smooth strip broad. Mesoscutum width 2x length; notauli appears complete. Scutellum medially as long as mesoscutum, frenum clearly marked off. Propodeum with median area strongly raised on median line; median carina strongly indicated anteriorly; basal foveae deep, spiracles small, round. Forewing length 2.4x width, basal part almost bare, basal hairline not indicated; marginal fringe distinct. Relative lengths: SMV 27.5, MV 16, PMV 9.5, STV 5.

Gaster: (Fig. 2) Elongate, slender; petiole short, length 1.9x width, moderately reticulate, 0.2x as long as rest of gaster; T2 only 0.3x as long as body of gaster.

Remarks

In general morphology and colouration, the new species resembles *S. reticulata* Sureshan and Narendran but differs from it in having a short petiole, long gastral body, propodeum with median area distinctly raised and scutellum with frenum clearly separated.



Figs. 3-5. *Sphegigaster brunneicornis* (Ferriere) (female)
3 - Part of mesosoma and gaster profile; 4 - antenna basal part;
5 - basal part of gaster dorsal view

Sphegigaster brunneicornis (Ferriere) (Figs. 3-5)

Trigonogastra brunneicornis Ferriere, 1930: 356-357. Female: Sri Lanka: Peradeniya, Lectotype (BMNH) examined. Syn. by Boucek *et al.*, 1979.

Material examined

Lectotype: Female, 31.i.1925, Peradeniya, Ceylon, Coll. J. Hutson, ex. Pupa of *Agromyza* on *Hibiscus esculentus* (Det. Boucek, 1964) B.M. Type. Hym. 5.866.

Distribution

India: Kerala; Sri Lanka.

The species is redescribed based on the study of the lectotype.

Redescription

Lectotype: Female. Length 2.3 mm. Body dark blue, almost black; gaster brown. Antenna with scape, pedicel and anelli clear yellow, remainder brownish-yellow. Legs clear yellow except coxae concolrous with mesosoma, mid coxae dark brown.

Head: Finely reticulate; in dorsal view width 2.2x length and in front view width 1.3x height; temple length 0.9x eye length; POL: OOL = 6.5: 5.5; eye height 1.7x width (in profile); malar space length 0.4x eye height. Antennae (Fig. 4) inserted slightly below middle of face, scape reaching upper margin of median ocellus length 0.83x eye height; Fl longer than pedicel, narrowed basally,

funicular segments gradually becoming shorter; clava slightly longer than two preceding segments combined.

Mesosoma: Anterior margin of pronotal collar sharp, not ridged. Mesoscutum and scutellum reticulate punctate and with scattered long hairs. Mesoscutum width 1.9x length. Scutellum medially as long as mesoscutum. Propodeum with median area little raised along median line, spiracles small, oval. Forewing length 2.24x width, veins very pale. Relative lengths: SMV 24.5, MV 14.5, PMV 11.5, STV 6.

Gaster: (Fig. 3) Petiole 0.31x as long as rest of gaster, finely reticulate; hind margin of TI slightly projecting; T2 large, half as long as body of gaster.

Remarks

All the Indian specimens of *S. brunneicornis* reported by Sureshan and Narendran, 1997 have bright body colour, forewing venation not very pale and gaster slender. This may be a case of population variation within the species.

***Sphegigaster stepicola* Boucek**
(Fig. 6)

Sphegigaster stepicola Boucek, 1965: 12-14. Male, female, CSSR: Bohemia (NM). Not examined.

Acroclisis melanagromyzae Mani, 1971: 591. Female, India: Agra (USNM). Syn. by Boucek *et al.*, 1979. Not examined.

Material examined

Four females, 11.v.2000, Bangalore, Karnataka, India, Coll. N.G. Kumar, ex. *Melanagromyza soyae* (Soyabean stem fly).

Distribution

India: Kerala, Karnataka, Delhi, Bihar, Uttar Pradesh; Austria; Czechoslovakia; Moldavian SSR; Algeria. Species commonly occurs in Kerala (Sureshan & Narendran, 1997).

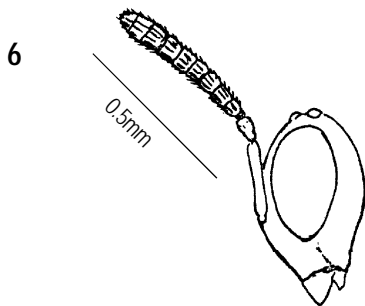
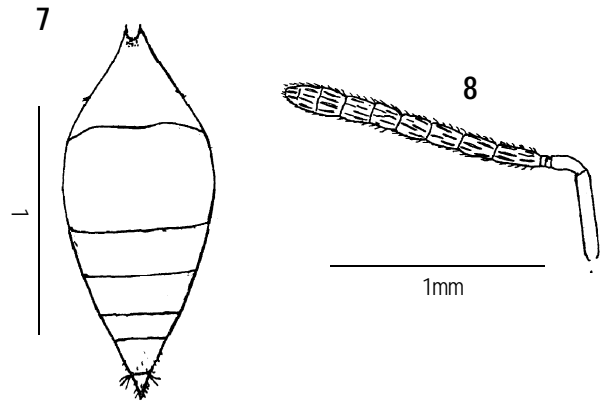


Figure 6. *Sphegigaster stepicola* Boucek (female)
6 - head profile



Figures 7-8. *Sphegigaster anamudiensis* Sureshan and Narendran (female)
7 - Gaster dorsal view; 8 - Antenna

***Sphegigaster anamudiensis* Sureshan and Narendran**
(Figs. 7, 8)

Sphegigaster anamudiensis Sureshan and Narendran, 1997: 194-195. Female: India: Kerala (ZSIC).

Distribution

India: Kerala. A rare species reported from Anamudi, Kerala, an high altitude habitat of southern Western Ghats, Kerala.

***Sphegigaster reticulata* Sureshan and Narendran**
(Fig. 9)

Sphegigaster reticulata Sureshan and Narendran, 1997: 195-196. Female, India: Kerala (ZSIC).

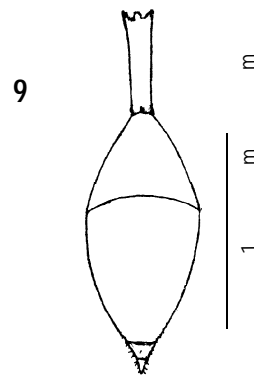


Figure 9. *Sphegigaster reticulata* Sureshan and Narendran (female) 9 - Gaster dorsal view

Distribution

India: Kerala. A rare species known only from Parambikulam, a locality well known for its rich forests and wildlife in southern Western Ghats.

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References

Boucek, Z.(1965). A review of the Chalcidoid fauna of the Moldavian SSR with descriptions of new species (Hymenoptera). *Acta Fauna Entomologica Musei Nationalis Pragae* 11: 5-37.
Boucek, Z., S.B.R. Rao and S.I. Farooqi (1979). A preliminary review of Pteromalidae (Hymenoptera) of India and adjacent countries. *Oriental Insects* 12: 431-467.
Ferriere,C. (1930). Notes on Asiatic Chalcidoidea. *Bulletin of Entomological Research*. 21: 353-360.
Mani, M.S. (1971). Some Chalcidoid parasites (Hymenoptera) of leaf mining Agromyzidae (Diptera). *Journal of the Natural History* 591-598.
Sureshan, P.M. and T.C. Narendran (1997). Studies on *Sphegigaster Spinola* (Hymenoptera: Chalcidoidea: Pteromalidae) from India. *Entomon* 22(3 & 4): 193-198.

Key to the *Sphegigaster* species from the Indian subcontinent

(Modified from Sureshan and Narendran, 1997)

- 1. Antennae short, all funicular segments transverse (Fig. 6), scape metallic brownish black or black
 *stepicola* Boucek
- 1A. Antennae long, slender, funicular segments longer than broad, scape yellow or testaceous 2
- 2. Gaster with posterior margin of T1 medially produced (Figs. 5, 7) 3
- 2A. Posterior margin of T1 not produced, straight (Figs. 2, 9) 4
- 3. Antennae (Fig. 8) with pedicel length 2x width, F1 distinctly longer than pedicel, not narrowed basally; forewing with basal hairline indicated; gaster (Fig. 7) (without petiole) distinctly longer than mesosoma *anamudiensis* Sureshan and Narendran
- 3A. Pedicel length 1.5x width; F1 little longer than pedicel (4:3), narrowed basally (Fig. 4); forewing with basal hairline not indicated; gaster not longer than mesosoma (Fig. 3) *brunneicornis* (Ferriere)
- 4. Gaster (Figs. 1, 2) slender, elongate; petiole short and stout (length 2x width); T2 small, only 0.3x as long as body of gaster; scutellum with frenalium clearly marked off, propodeum medially raised, median carina indicated anteriorly *indica* sp. nov.
- 4A. Gaster (Fig. 9) not slender and elongate as above, petiole long and slender (length 3-3.8x width), T2 large, 0.6x as long as body of gaster; scutellum with frenalium marked only on sides
 *reticulata* Sureshan and Narendran