



Rediscovery of the shieldbug *Menedemus vittatus*, with notes on *M. hieroglyphicus* (Heteroptera : Pentatomidae : Pentatominae: Sciocorini), from Pune, Maharashtra, India

Hemant V. Ghate*

Post Graduate Research Centre, Department of Zoology, Modern College,
Shivajinagar, Pune 411 005, India.
E mail:hemantghate@gmail.com

ABSTRACT: The first illustrated record of *Menedemus vittatus* (Dallas, 1851) is given after a span of more than 150 years since the original description and over 100 years since its redescription by Distant (1908). A note on mass mortality of *Menedemus hieroglyphicus* Distant, is added. Both species are perhaps endemic to India. © 2015 Association for Advancement of Entomology

KEYWORDS: Pentatominae, Sciocorini, *Menedemus*

Distant (1899) erected the genus *Menedemus* to accommodate *Sciocoris vittatus* Dallas, 1851 as the type species (locality data 'Hab.?Africa') and in the same paper described *M. hieroglyphicus* as a new species (locality 'Bombay'). Later, Distant (1908: 436-437) recorded *M. vittatus* from 'Bombay, Bor Ghat (Dixon)' and here I record the species from Pune (Maharashtra State, India). These two species (probably endemic to India) are the only two species of the genus as a third species, *M. lewisi* Distant (1899), is now treated as *Sciocoris lewisi* (Distant), in David Rider's website (<http://www.ndsu.nodak.edu/ndsu/rider/Pentatomoidea/>, accessed July 2015).

The purpose of this note is to provide the first digital illustration of *M. vittatus*, record its recent collection in Pune and give brief redescription of the species. Comparative pictures of related species *M. hieroglyphicus* and *Sciocoris indicus* Dallas, 1851, all belonging to the tribe Sciocorini, are also provided. Images of the 'types' of both the species of *Menedemus*, obtained through the courtesy of Natural History Museum (NHM), London and Dr. Mick Webb, Curator of Hemiptera at NHM, are also included.

* Author for correspondence

M. hieroglyphicus has been found in many places and is apparently a common species all over south India. I have myself seen specimens from various parts of Maharashtra, and it is known from Karnataka and other parts of south India (Salini and Viraktamath 2015).

M. vittatus, however, seems to be a rare species. Except for its original description and the subsequent redescription by Distant, no one has reported this species. A recent checklist of Pentatomidae of south India (Salini and Viraktamath 2015) and an earlier survey of the Indian Pentatomidae (Azim 2011), based mainly on specimens at IARI, New Delhi, do not include this species.

Distant (1902) placed both *Sciocoris* Fallen and *Menedemus* in “*Sciocoraria*” (under Pentatomidae) citing Atkinson, with the following general characters, quoted verbatim: “head clypeated, not, or seldom, narrower than the base of the scutellum, foliaceously dilated; ocelli remote from the small eyes; antenniferous tubercles remote from the margins of the head, not distinguishable from above; basal joint of the antennae not reaching the apex of the head; scutellum more or less narrowed from the base; connexivum flattened, laminated”. Now these genera are placed in the Tribe Sciocorini of the subfamily Pentatominae. The genera *Sciocoris* and *Menedemus* were separated only on the basis of the shape of scutellum by Distant (1902): thus in *Sciocoris* the scutellum is rather sharply narrowed while in *Menedemus* it is gradually so. *M. hieroglyphicus* and *M. vittatus* can be easily separated from each other as *M. vittatus* has broad, ochraceous bands on dorsal as well as ventral side whereas in *M. hieroglyphicus* there are only thin, broken ochraceous lines on dorsal side. In fact, while erecting the genus *Menedemus*, with *Sciocoris vittatus* as the type species, Distant (1899) had stated that *Menedemus* is allied to *Sciocoris* “but with the head a little longer and narrower and with the lateral margins distinctly reflexed” and it differs from *Sciocoris* in possessing distinctly “ornamental coloration of generally fasciate character”. The prominent bands seen on dorsal side of *M. vittatus* are thus diagnostic. These facts can be seen in the images of all three species provided here (Figs 1 to 3). Even ventral view of the abdomen of all the three species shows that they can be separated easily on the basis of coloration and punctures on pregenital sternites as well as on the basis of partial view of the pygophore (Figs 4 to 6). Genitalia of male could not be dissected because of insufficient material, especially for *M. vittatus* and *S. indicus* and so comparison cannot be provided now but will be pursued subsequently. *M. vittatus* and *M. hieroglyphicus* are more or less of the same size (about 7 mm), females being slightly larger in *M. hieroglyphicus*; *S. indicus* is a small species (about 5 mm).

Redescription of *Menedemus vittatus* (Dallas, 1851: page 133).

Material Studied: 1 male and 1 female, coll: Shriraj, dead specimens found on the banks of a pond, old fort –Sinharharh, Pune, Maharashtra State, India, in December 2013.

This bug has been briefly but adequately described, for identification purpose, by Dallas and later by Distant (as cited above), but not illustrated by anyone. Besides, these descriptions are quite old and not known to students / researchers working on biodiversity programs. Not



PLATE I: Figures 1 to 3 Dorsal habitus: 1) *M. vittatus* 2) *M. hieroglyphicus* 3) *Sciocoris indicus*
 Figures 4 to 6 Ventral view of abdomen 4) *M. vittatus* 5) *M. hieroglyphicus* 6) *Sciocoris indicus*



PLATE II: Figure 7. Full ventral view, *M. vittatus*. Figure 8. lateral view *M. vittatus*. Figure 9. Ventral view of thorax *M. vittatus*. Figure 10. *M. hieroglyphicus* affected by fungus. Figure 11. *M. hieroglyphicus* as above, entangled in moss. Figure 12. Live *M. hieroglyphicus* on *Strobilanthes*



PLATE III: Figure 13. Type, *M. vittatus*. Figure 14. Type, *M. hieroglyphicus*

only that, as remarked earlier, this bug has not been collected or reported in literature for 150 years from India (except by Distant). For this reason alone the salient features are redescribed and illustrated in this note.

Coloration: Dark brown to almost black bug of medium size (7.5 mm total length) with ochraceous longitudinal stripes on dorsal as well as ventral side. Dorsally three stripes on head that are continued onto pronotum and scutellum; in addition, lateral borders of pronotum and basal margin of corium also with stripes of same color. Red colored elongate patches, some of which are smooth without punctures, are seen on pronotum, scutellum and corium; membrane smoky with parallel veins (see Fig. 1). Ventrally head dark brown; antennae and labium brown; under surface of thorax dark brown, margins ochraceous; a broad, ochraceous band on either side. Abdominal sterna largely ochraceous and with reddish suffusion in median region with some black transverse lines or patches medially on anterior margins of some segments, with broad red band on lateral side which is flanked on outside by brown band beyond which abdominal margin is again narrowly ochraceous; genital capsule (pygophore) dark brown in male (Figs 7, 8).

Head: breadth (inclusive of eyes) more than length; apex rounded, clypeus (= median lobe of head) arrow like, shorter than mandibular plates (= lateral lobes of head), latter meet in front of clypeus; entire surface with dense, coarse punctures (except some parts of ochraceous stripes which are smooth); extreme border slightly reflexed, translucent and smooth. Eyes moderate, touching anterior border of pronotum; ocelli closer to eyes than to each other. Antennae slender, blackish, 5 segmented, first antennomere not reaching apex of head, 4th and 5th antennomeres with many fine black setae. Underside of head dark brown to black, with dense punctures, excepting ochraceous band. Labium just passing metacoxae (Fig. 9).

Thorax: Pronotum transverse, anterior margin sinuate, anterior angles gently rounded, as broad as head at level of eyes, lateral margins straight, slightly reflexed and smooth, humeral angles rounded, posterior margin straight over scutellum; entire surface with dense, coarse punctures except ochraceous bands which possess sparse punctures; calli not prominent, smooth. Sternum with dense, coarse punctures, punctures sparse in ochraceous bands.

Scutellum tongue like, rounded at tip, lateral borders straight, basal corners depressed, slightly convex dorsally, punctures coarse and thick all over except for ochraceous bands, with some areas between ochraceous bands smooth and reddish.

Hemelytra: Corium with coarse punctures, less dense than elsewhere dorsally, with only outer angles extending beyond scutellum; membrane extending beyond abdomen, smoky with four parallel veins.

Abdomen: punctures sparse, not coarse.

***Menedemus hieroglyphicus* Distant, 1899: 430**

This bug was redescribed and illustrated by Distant (1902: 127-8) and is commonly observed hence only digital illustrations are provided here (Figs 2, 5). It is also well known and perhaps more widely distributed species. Several specimens were studied. Many were found dead in drying moss that grows profusely on tree trunks during monsoon (locality and date of observations are the same as for *M. vittatus*). Many bugs were still intact but the other specimens were partially decayed and covered with white fungus (Fig. 10, 11) but were easy to identify as these bugs have characteristic pattern of ochraceous lines on dorsal side. It is surprising why large number of bugs (we counted in excess of 50 at one place on Sinhagarh) were in such condition. I do not know the host plant of this species, in Sinhagarh area, in Pune. On Kas Plateau, in Satara, Siddharth Kulkarni (personal communication, with photographs) observed it in good numbers on a species of *Eriocaulon* as well as *Strobilanthes* (Fig. 12).

It is my pleasure to include here the images of the types of both the species which are very well kept at the Natural History Museum, London. The images of *M. vittatus* (Fig. 13) and *M. hieroglyphicus* (Fig. 14), with label data, support this note by confirming the identity of these two bugs.

Why bugs are attracted to moss and what is the cause of their death is uncertain at present. Similar incidence was observed by my students in Amboli Ghat area, during September 2014, but here at least a few live bugs were still seen in moss. Additional surveys and identity of fungus (entomophagous?) may help to solve this problem of mass mortality of bugs in moss during late monsoon.

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