

## REDESCRIPTION OF A LITTLE KNOWN AELIINE GENUS *GULIELMUS* DISTANT (HEMIPTERA: PENTATOMIDAE: PENTATOMINAE) WITH SPECIAL REFERENCE TO MALE AND FEMALE GENITALIA

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A little known genus *Gulielmus* distant is redescribed along with its two known Distant's species *G. laterarius* and *G. marmoratus* from India with special reference to their metathoracic scent gland complex, male and female genitalia. The above species are keyed and the relationships of the included taxa in this light are also briefly discussed.

**Key words:** Redescription, *Gulielmus*, Genitalia.

### INTRODUCTION

Distant [1] described *Gulielmus* to accommodate his species *G. laterarius* and *G. marmoratus* from west India. Distant [2] redescribed these species and gave the dorsal view, diagram metathoracic scent gland complex and venter of abdomen of the former species but the genitalia of both remained unknown to date. Presently therefore the genus *Gulielmus* along with its two above species are redescribed with special reference to their metathoracic scent gland complex, male and female genitalia. For the inflation of aedeagus the technique of Ahmad [3] was followed.

For the dissection of female spermatheca and for measurements, descriptions and diagrams the methods of Ahmad *et al.* [4] were generally followed. All measurements are given in millimetres and all the diagrams are to the given scales. For British Museum Natural History, London (BMNH) is used throughout the text.

### *Gulielmus* Distant 1901

*Gulielmus* Distant (1):347; (2):136; Kirkaldy (5):74.

Type species *Gulielmus laterarius* Distant. **Head:** Almost as long as or broader than long; paraclypeus longer than clypeus and enclosing it in front; margins entire, antecular distance distinctly longer than remainder of head; antenniferous tubercles not visible from above; 1st antennal shortest, shorter than head length; labium passing beyond middle coxae.

**Thorax.** Length of pronotum shorter than its width, anterior angles without denticles, anterior margin concave, posterior margin slightly convex, lateral margins entire; scutellum longer than broad, apical lobe distinct; metathoracic scent gland complex with elongated ostiole, peritreme and evaporatoria poorly developed; membrane of hemelytra longer than abdomen.

**Abdomen.** Longer than broad; posterior margin of 7th female abdominal sternum concave; connexiva usually exposed at repose.

**Male genitalia.** Pygophore with ventroposterior margin substraight, lateral lobes round or subround; paramere F-shaped; inflated aedeagus with lateral thecal appendages and one or two pairs of membranous conjunctival appendages.

**Female genitalia.** First gonocoxae broad not meeting each other; 2nd gonocoxae elongate or as long as broad; 9th paratergites elongate or hump-shaped, not or just reaching to fused posterior margins of 8th paratergites; spermatheca with proximal spermathecal duct longer than distal duct.

**Comparative note.** *Gulielmus* is closely related to *Aelia* Stal in general body shape and size but can easily be separated from the same by its short labium passing beyond middle coxae but usually not or just reaching to hind coxae and metathoracic scent gland complex poorly developed in contrast to long labium reaching to or passing beyond hind coxae and metathoracic scent gland complex well developed in the species of *Aelia*.

Key to the species of the genus *Gulielmus* Distant

- (1) Head broader than long, labium with 1st segment longest, 3rd shortest, pygophore longer than broad *marmoratus* Distant.
- (2) Head almost as long as broad, labium with 2nd segment longest, 4th shortest; pygophore broader than long . . . . . *laterarius* Distant.

*Gulielmus laterarius* distant (Figs. 1-8)

*Gulielmus laterarius* distant (1):347; (2):137; Kirkaldy (5):74.

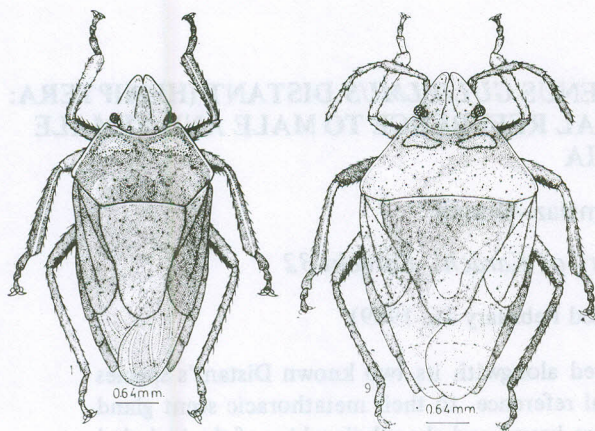


Fig. 1. *Gulielmus laterarius* Distant (dorsal view).

Fig. 9. *Gulielmus marmoratus* Distant (dorsal view).

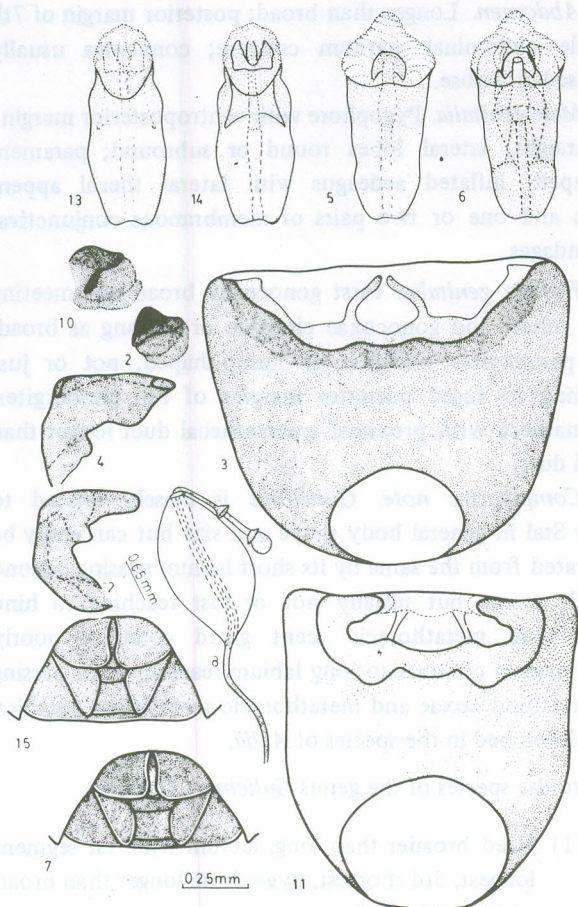


Fig. 2. Scent gland (ventral view); Fig. 3. Pygophore. (dorsal view); Fig. 4. Paramere (inner view); Fig. 5. Aedeagus (dorsal view);

Fig. 6. Aedeagus (ventral view); Fig. 7. Female terminalia (ventral view); Fig. 8. Spermatheca (dorsal view); fig. 10. Scent gland (ventral view); Fig. 11. Pygophore (dorsal view); 12. Paramere (inner view); Fig. 13. Aedeagus (dorsal view); Fig. 14. Aedeagus (ventral view); Fig. 15. Female terminalia (ventral view).

**Colouration.** Body ochraceous except lateral margins of pronotum, lateral margins of scutellum yellowish blue; spots on each basal angle of scutellum black; corium reddish.

**Head.** Almost as long as broad; antennae mutilated; labium passing beyond middle coxae but not reaching to hind coxae, 3rd segment more than 3x shorter than 2nd; length of labial segments I 0.09-1.1, II 1.5-1.55, III 0.5 IV 0.40-0.45, labial formula  $4 < 3 < 1 < 2$ ; anteocular distance 1.1; length remainder of head 0.7-0.8; width 1.9-1.95; interocular distance 1.4-1.5; interocellar distance 0.7-0.8.

**Thorax.** Width of pronotum almost 2x wider than its length, humeral angles subround, length of pronotum 1.8-2.0, width 3.8-3.9; scutellum distinctly longer than its width, distinctly more than 1.5x longer than head length, apex of apical lobe broadly round; length scutellum 3.2-3.5, width 2.5; metathoracic scent gland ostiole (Fig. 2) small, elongate, membrane of hemelytra distinctly longer than abdomen; base cutellum-apex clavus 1.8-2.0; apex clavus-apex corium 1.5; apex corium-apex abdomen including membrane 1.8-2.0; apex scutellum-apex abdomen including membrane 1.6-0.8.

**Abdomen.** Slightly longer than broad; connexiva slightly exposed at repose; total body length male 8.4; female 9.2.

**Male genitalia.** Pygophore (Fig. 3) distinctly broader than long, dorsoposterior margin sinuate; lateral lobes subround; paramere (Fig. 4) F-shaped, apex of blade acute, outer margin sinuate; inflated aedeagus (Figs. 5,6) with pair of elongate lateral thecal appendages; a tomb-like ventral membranous conjunctival appendage, vesica short not reaching to ventral membranous conjunctival appendage.

**Female genitalia (Fig. 7).** First gonocoxae broad, with posterior margin substraight; 2nd gonocoxae quadrangular; 8th paratergites triangular; 9th paratergites elongate, reaching to fused posterior margins of 8th paratergites; spermatheca (Fig. 8) with proximal spermathecal duct distinctly more than 2.5x longer than distal duct, pump region slightly shorter than distal spermathecal duct, spermathecal bulb round.

**Material examined.** Holotype female West India: Bombay, Bor Ghat, leg Dixon, in BMNH. Other materials: 1 male and 1 female, India, leg Distant, 1912, in the above museum.

**Comparative note.** This species is closely related to *marmoratus* in general body shape but can easily be separated from the same by head as long as broad, 2nd labial longest, 4th shortest and pygophore broader than long in

contrast to head broader than long, 1st labial longest, 3rd shortest and pygophore longer than broad in *marmoratus*.

*Gulielmus marmoratus* Distant (Figs. 9-15)

*Gulielmus marmoratus* Distant (1):347; (2):138; Kirkaldy (5):74.

**Colouration.** Body ochraceous except spots on clypeus; pronotum brown; lateral margins and scutellum densely punctate.

**Head.** Broader than long; 2nd antennal more than 2x longer than 3rd, length of antennals I 0.3, II 1.05, III 0.45, IV 0.4, V 0.75; antennal formula  $1 < 4 < 3 < 5 < 2$ ; labium just reaching to hind coxae; 3rd segment more than 2x shorter than 2nd; length of labials I 1.2-1.3, II 1.1-1.2, III 0.50-0.55, IV 0.60-0.65, labial formula  $3 < 4 < 2 < 1$ ; antedocular distance 1.1; length remainder of head 0.8; width 2.1-2.3; interocular distance 1.4-1.5; interocellar distance 0.7-0.8.

**Thorax.** Width of pronotum 2x wider than its length, humeral angles acute, length of pronotum 1.7-1.8, width 3.4-3.6; scutellum distinctly longer than broad, more than 1.5x longer than head length, apex of apical lobe subround, length of scutellum 3.0, width 2.3-2.4; metathoracic scent gland ostiole (Fig. 10) long, broad; base scutellum-apex clavus 1.6-1.7; apex clavus-apex corium 1.3; apex corium-apex abdomen including membrane 1.6-1.75; apex scutellum-apex abdomen including membrane 1.2-1.25.

**Abdomen.** Longer than broad; 7th female abdominal sternum concave; connexiva exposed at repose; total body length male 7.8; female 7.95.

**Male genitalia.** Pygophore (Fig. 11) longer than broad, dorsoposterior margin sinuate, lateral lobes round, paramere (Fig. 12) somewhat F-shaped, apex of blade broad, outer margin curved, inner margin sinuate; inflated aedeagus (Figs. 13,14) with pair of ventral membranous conjunctival appendages, a tomb-like dorsal membranous conjunctival appendage; vesica distinctly short, not reaching to posterior margin of ventral membranous conjunctival appendage.

**Female genitalia (Fig. 15).** First gonocoxae broad with posterior margin round; 2nd gonocoxae elongate; 8th

paratergites triangular; 9th paratergites elongate, not reaching to fused posterior margins of 8th paratergites; spermatheca mutilated.

**Material examined.** Holotype West India: Bombay; Bor Ghat leg Dixon, in BMNH. Other materials: 1 male, 1 female India: Bor Ghat, 1911, leg distant in the above museum.

**Comparative note.** This species can be separated from *laterarius* by the characters given under the comparative note of the species.

**Relationships of the included Taxa.** Species of *Aelia*, *Bonacialis* and *Gulielmus* appear to form a group sharing the apomorphic character of remarkably long paraclypei enclosing the clypeus in front. The poorly developed metathoracic scent gland complex and inner margin of paramere sinuate also appear to be rare conditions among Pentatominae and are only found in those of *Gulielmus* spp. and therefore are considered here their synapomorphies. *G. laterarius* is considered here more advanced in having head as long as broad, pygophore broader than long and 9th paratergites reaching to the margins of fused 8th paratergites. These characters are considered here its autapomorphy. Dorsoposterior margin of pygophore remarkably sinuate is a rare condition in the tribe *Aeliini* Stal and is only found in *G. marmoratus* and is therefore considered here its autapomorphy.

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