

## REDESCRIPTION OF THE MYROCHEINE SPECIES *HUMRIA BIMACULICOLLIS* LINNAVUORI (HEMIPTERA: PENTATOMIDAE: PENTATOMINAE) FROM SUDAN WITH SPECIAL REFERENCE TO ITS GENITALIA AND THEIR BEARING ON THE PHYLOGENY

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### ABSTRACT

*Humria bimaculicollis* Linnavuori is presently redescribed with special reference to its male genitalia including pygophore and paramere and other important characters of head, thorax, abdomen and their measurements from Lake Keilak in Kordofan, Sudan in Ethiopian region and in this light the phylogenetic relationships of the genus *Humria* Linnavuori is discussed with its closest allies within its tribe Myrocheini Stål.

**Key-words:** Redescription *Humria bimaculicollis*, Hemiptera, Sudan, phylogeny.

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### INTRODUCTION

Linnavuori (1975) described the genus *Humria* to accommodate his only species *H. bimaculicollis* which became the type species by monotypy, followed by Linnavuori himself (1982) relating it with *Neococalus* Bergroth but its many important characters including those of several important measurements of head, thorax and their appendages and those of male genitalia including many characters of pygophore and parameres remained unknown. The present first author got an opportunity to visit American Museum of Natural History (AMNH) in New York, USA in 2002 by the courtesy of the curator of Entomology Dr. R. Schuh and other authorities of the museum to examine the present species including the holotype in the Linnavuori's collection of that museum. In the light of these characters and those described by Linnavuori (1975 and 1982), the phylogenetic relationships of the genus *Humria* with its type species *H. bimaculicollis* within its tribe Myrocheini are briefly discussed.

### MATERIALS AND METHODS

The male genitalia was dissected after softening it following the techniques of Ahmad (1986) and Ahmad and McPherson (1990 and 1998). After removing the label the pinned dry specimen was plunged into boiling water in a beaker for 3-5 minutes. When the specimen got softened it was slipped off the pin and its pygophore was removed under a binocular microscope. The pygophore was boiled in 10% KOH at 40-45°C for 10 minutes. The pygophore was transferred in a cavity block and was washed thoroughly. After illustrations of pygophore and paramere were made in different views, then the components of the genitalia were transferred into a microvial with a drop of glycerine and pinned with the insect. For the measurements of the parts and description generally the techniques of Ahmad and Afzal (1989) were followed.

### RESULTS

#### Genus *Humria* Linnavuori

*Humria* Linnavuori 1975: 32-33; 1982: 68, 73.

Body small, ovate; pale grayish ochraceous with dense brown punctures; head as broad as long; paraclypei distinctly longer than clypeus and enclosing it in front; antennae with basal segment much shorter than head apex, second segment longer than third; labium reaching to mesocoxae; pronotum with lateral margins narrowly laminate, anterior angles slightly toothed, humeral angles rounded, anterior margin slightly wider than head width; scutellum apically narrow; peritreme of metathoracic scent gland complex long and shallowly curvate, evaporatoria smooth; connexiva much exposed at repose; anterior femora prominent granulated but not distinctly armed.

**Male genitalia:**

Pygophore with ventro posterior margin sinuate, medially notched, lateral lobes sharply prominent and slightly curvate mesad; paramere incrassate.

**Comparative note:**

This genus is most closely related to *Erachtheus* Stål, *Delegorguella* Spinola, *Ennius* Stål, *Munshiana* Ahmad and *Kamaluddin*, *Stysicoris* Ahmad and *Kamaluddin*, *Dorpius* Distant and *Myrochea* Amyot and *Serville* in having paraclypei rounded to subacute at apex and lateral lobe of pygophore not conically developed but it can easily be separated from the same in having basal antennal segment much shorter than head apex, reaching about ½ of paraclypei and paramere T-shaped.

**Distribution**

Ethiopian region.

**Type species:** *Humria bimaculicollis* Linnavuori 1975.

***Humria bimaculicollis* Linnavuori**

(Fig.1)

*Humria bimaculicollis* Linnavuori 1975: 33-34; 1982: 73; 1986: 113

**Colouration and general shape:**

Body pale brown with dark brown punctures; antennae usually yellowish brown, first segment redish brown; pronotum with two rounded black spots; connexiva entirely pale; venter whitish grey; legs ochraceous; body small sized, ovate.

**Head:**

As broad as long, anteocular distance distinctly longer than remainder of head; paraclypei narrowly elongate and enclosing clypeus, posterolateral margins slightly concave, apex of head smoothly rounded; antennae with basal segment distinctly shorter than head apex, second segment longer than third, length of antennal segments, I 0.4mm, II 0.6mm, III 0.5mm, IV 0.8mm, V 0.8mm; labium reaching to mesocoxae; anteocular distance 1.0mm, remainder of head 0.38mm.

**Thorax:**

Pronotum more than 1.5X broader than its length, anterior margins distinctly broader than head width, anterior angles slightly toothed, humeral angles round, lateral margins slightly convex or straight, length of pronotum 4.6mm, width 3.1mm; scutellum longer than broad with narrow sub rounded apical lobe, length of scutellum 3.3mm, width 3.1mm; metathoracic scent gland ostiolar complex with peritreme long and smoothly curvate; distance apex scutellum apex abdomen including membrane 1.2mm.

**Male genitalia:**

Pygophore (Fig. 2) subquadrangular, lateral margins apically bilobed, near mesad convex, slopping proximally, lateral lobes terminating into outwardly curved, thumb-like processes, ventroposterior margins sinuate, curved at sides and concave near middle, medially notched terminating into minute conically bilobed appearance medially; paramere (Fig.3) T-shaped, outer margin sinuate distally, roundly broadly lobed, turned outwardly, distal margin sinuate, outwardly convex, terminating concavely, inwardly projecting into a thumb-like inner process, proximally curved into a finger-like process, and more or less straight distad.

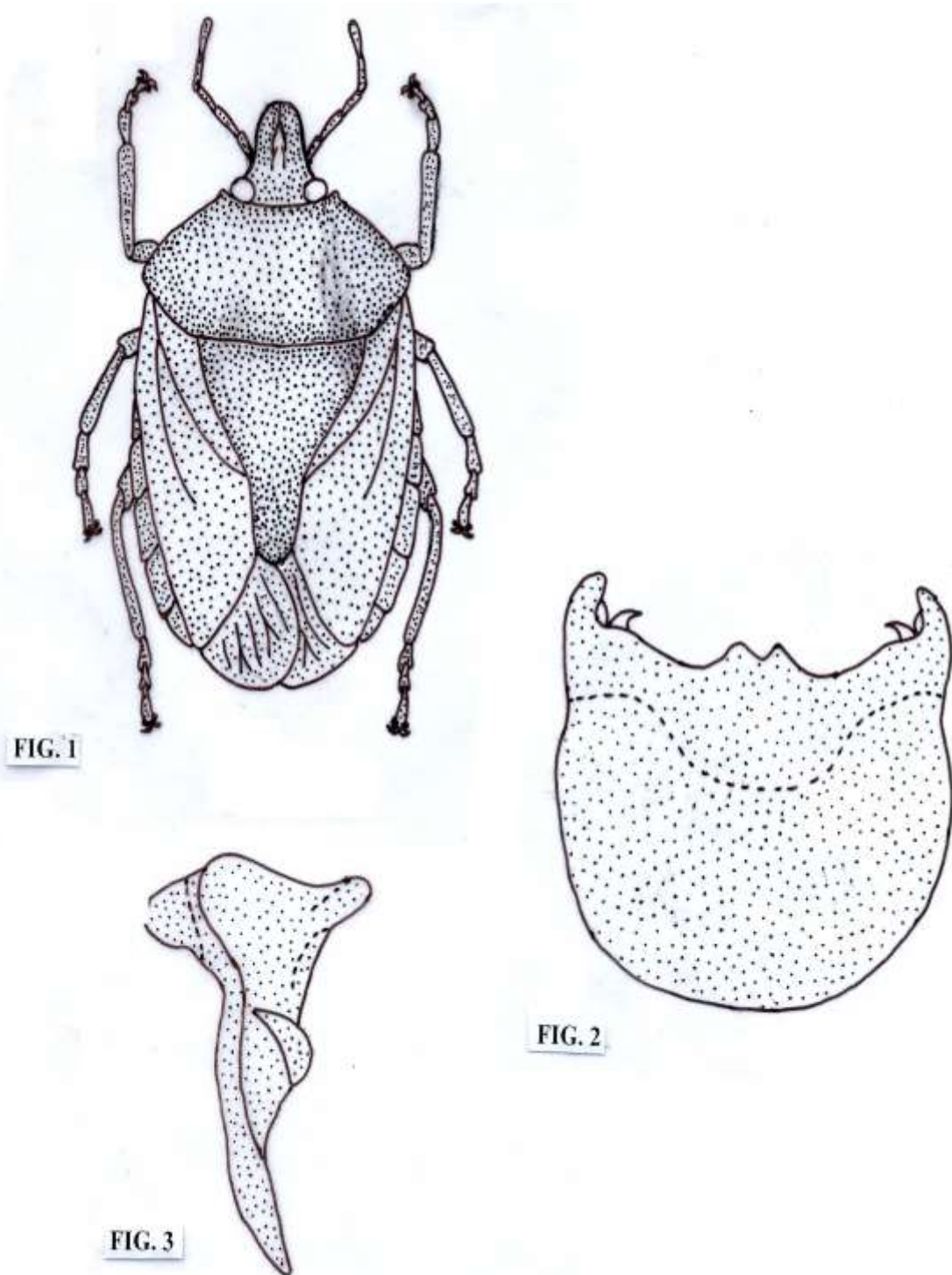
**Material examined:**

Holotype male, Sudan: Kordofan, Lake Keilak, now in AMNH.

**DISCUSSION****Phylogenetic relationship of *Humria* within its tribe Myrocheini.**

Paraclypei rounded to subacute at apex in *Myrocheini* Stål, *Dorpius* Distant, *Stysicoris* Ahmad and *Kamaluudin*, *Munshiana* Ahmad and *Kamaluudin*, *Ennius* Stål, *Delegorguella* Spinola, *Erachtheus* Stål and in *Humria* (present species) probably shows their synapomorphies similar to their convex lateral margins of paraclypei and lateral lobes

of pygophore sharply prominent but not conically produced and slightly curvate mesad. The present taxon however appears entirely isolated playing outgroup relationship with the above genera but in having distinct autapomorphies of basal antennal segment much shorter than head apex reaching about half of paraclypei and paramere T-shaped very different and distinct from the above genera in contrast to basal antennal segment much shorter than head apex, not at all reaching to half of paraclypei and paramere "F" shaped as their synapomorphies and distinct from *Humria*.



Figs. 1-3. *Humria bimaculicollis*:  
Fig. 1. Dorsal view; Fig.2. Pygophore, dorsal view; Fig.3. Paramere, inner view.



Fig. 4. Cladogram showing phylogenetic relationship of *Humria* with related genera.

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