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REDESCRIPTION OF MYROCHEINE GENUS *ERACHTHEUS* STÅL 1861 (HEMIPTERA: PENTATOMIDAE: PENTATOMINAE) AND ITS PHYLOGENETIC RELATIONSHIPS

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ABSTRACT

The myrocheine stink bug genus *Erachtheus* Stål is redescribed with reference to a brief description of both the sub genera i. e., *E. Erachtheus s. str.* and *E. Alomaella* with their type species or closely related species *E. (E.) boris* (Dallas) and *E. (A.) tibialis* (Dallas) with special reference to their general features, metathoracic scent auricle and male and female genitalia and in this light the phylogenetic relationship of *Erachtheus* is also briefly discussed within its tribe Myrocheini Stål.

Key-words: Myrcheine, *Erachtheus,* phylogenetic relationship, stink bug.

INTRODUCTION

Stål (1861) keyed the genus *Erachtheus* and later (1876) keyed it again with emendation. Kirkaldy (1909) designated Stål's (1853) species *Paramecocoris lutulentus* subsequently as the type species. It was followed by Lethierry and Severin (1893), Kirkaldy (1909), Villiers (1952) and Gross (1975), but Linnavuori (1982) established a new subgenus *Alomaella* under the genus *Erachtheus* and designated *Sciocoris tibialis* as its type species. Linnavuori (1982) gave a short differenting chart of both the sub genera i. e., *Erachtheus (Erachtheus) s. str.*, the nominal subgenus with *Paramecocoris lutulentus* as the type species and *E. (Alomaella)* sub genus novum with *E. (A) tibialis* (Dallas). Presently the two subgenera of *Erachtheus* with *E. (A.) tibialis* (Dallas) the type species and *E. (E.) boris* (Dallas) placed by Stål (1861) under *Erachtheus* are briefly described with special reference to their apomorphic characters from their general features metathoracic scent auricle and male and female genitalia and in this light the phylogenetic relationship of *Erachtheus* within its tribe Myrocheini Stål is also briefly discussed.

MATERIAL AND METHODS

The type species of the sub genus *Alomaella* of the genus *Erachtheus* i. e., *E. (A.) tibialis* (Dallas) and several specimens of *E. (E.) boris* (Dallas) including its type specimens and also those seen by Stål (1862 and 1865) and by Linnavuori were examined by the courtesy of Mr. Mick Webb Incharge Hemiptera Section and authorities of Natural History Museum, London (BMNH) and those of Natural History Museum, Stockholm, Sweden by the first author of the present paper in 2005 and earlier. The conventional techniques for the measurements of the specimens using micro millimeter slide and for illustrations using ocular grid were followed by those of Ahmad and Zahid (2010) and for the recognition of apomorphic characters the out group of *Erachtheus* Stål i. e., *Humria bimaculicollis* Linnavuori (Ahmad and Zahid 2010) was studied and the cladogram was constructed following the principle of parsimony and the phylogenetic relationships of *Erachtheus* within its tribe Myrocheini Stål is highlighted.

RESULT

Genus *Erachtheus* Stål

Erachtheus Stål 1861: 199; 1876: 52, 53; Lethierry and Severin, 1893: 110; Kirkaldy, 1909: XXXIII, 206; Gross, 1975: 220; Linnavuori, 1982: 68, 73.
Erachtheus (*Erachtheus*) Linnavuori, 1982: 163: 73-74.

Body small (8.0-8.5 mm), elongated; generally dull ochraceous head longer than broad; antennae with second, third and fourth segment subequal in length or third shorter, fifth longest; labium reaching the mesocoxae; metathoracic scent gland auricular complex small but peritreme finger like, of median size.

Genitalia:

Pygophore somewhat quadrangular, lateral lobes prominent, dorsomedian surface deeply concave, ventroposterior margin medially knobbed.

Comparative note:

This is most closely related to *Delegorguella* Spinola in having antennae with second and third segment subequal in length but it can easily be separated from the same in having antennae with second and third unequal segments fourth segment equal to third, paramere with apex of blade bifurcated, inner lobe longer than outer lobe.

Distribution: Ethiopian region.

Type species:
Paramecocoris lututentus Stål.

Key to the sub genera *Erachtheus*

1. Body smaller, narrower, metathoracic scent gland auricle elongated, pygophore broadly ovate, blade of paramere small and rounded……..…….*E. (Erachtheus)*
2. Body broadly ovate, metathoracic scent gland auricle short, pygphore as long as broad, blade of paramere not as above…….……*E. (Alomaella)*

Sub Genus *Erachtheus s. str.* Linnavuori

Vertex with brown shade, obsoletely punctate; scutellum with pale callose apex; under surface with large impunctate pale patches on pro and mesothorax; venter with differentiated color pattern and punctures; two longitudinal callose bands on venter whitish yellow, impunctate or very obsoletely punctate; sublateral bands metallic black and densely punctate; large spots on paratergites; a dark boat-like densely punctate sclerotization on pygophore; body smaller and narrower;head very short and broad about 0.7 X as long as broad; metathoracic scent gland peritreme elongated; pygophore with ventral surface having shallow lateral depression a dark boat like sclerotization for receiving parameral stem on either side of genital opening; paramere T-shaped both blade and distal lobe of stem selender and produced; body shorter and narrower; head very short and broad about 0.7 X as long as broad.

Type species: *Paramecocoris lutulentus* Stål.

***E. (E.) boris* (Dallas)**
(Figs. 1A-1B)

Body short (8.0-8.5 mm) variable in size, coloration, shape of head, length of antennal segments, lateral margins of pronotum and shape of paramere; metathoracic scent gland auricle (Fig. 1A) with elongated oval peritreme, peritreme uniform in width; pygophore (Fig. 1B) as long as broad, dorsomedian surface deeply concave, ventroposterior margin medially notched, lateral lobes rounded, lateral margins sinuate, proctiger rectangular; paramere, T-shaped, both blade and distal lobe of stem selender and produced.

Sub Genus *Erachtheus (Alomaella)* Linnavuori

Entire under surface unicolored and densely punctuate; apex of scutellum not differentiated; body robust, broadly ovate; head parabolic, 0.8-0.9 X as long as broad; metathoracic scent gland auricle short; ventral surface of pygophore deeply concave and broad cavity with no sclerotization for receiving parameral stem; paramere with short blade and large rounded setose sensory lobe.

Type species:
Sciocoris tibialis Dallas

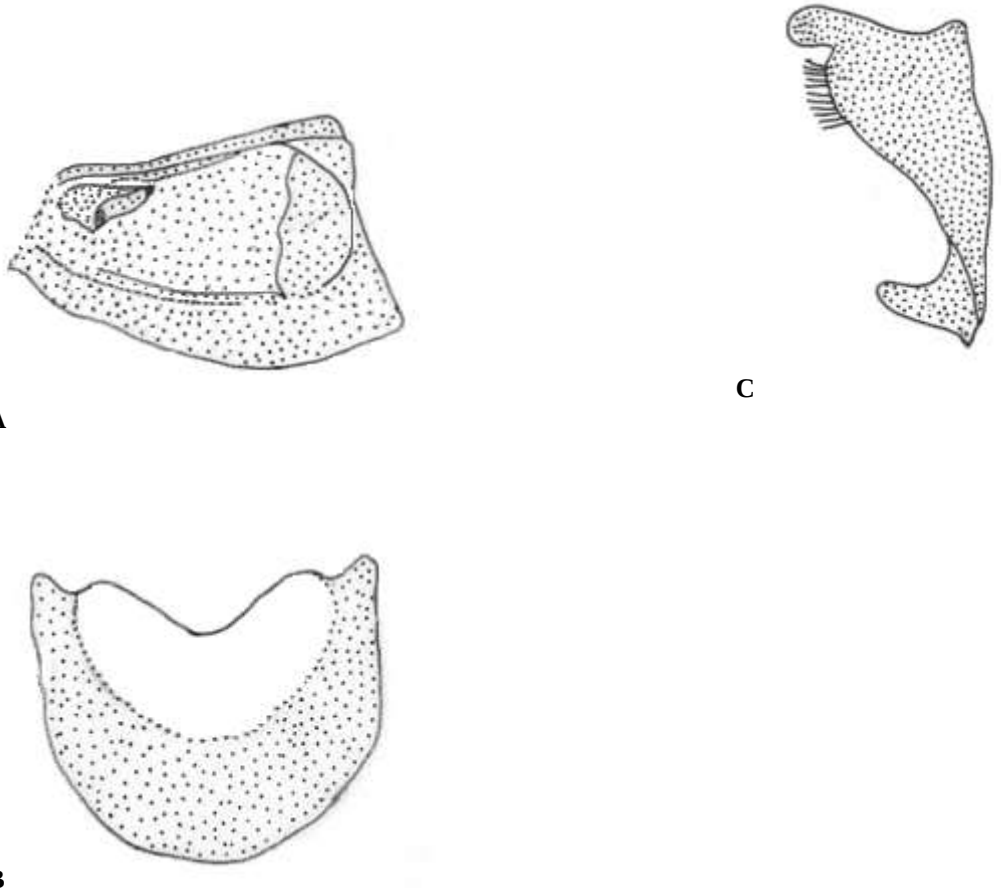
***E. (Alomaella) tibialis* (Dallas)**
(Figs. 2A-2C)

Body variable in size, coloration puncturation, shape of head and length of antennal segments; metathoracic scent gland auricle (Fig. 2A) short opening with short finger like peritreme; pygophore (Fig. 2B) broadly ovate,

dorsomedian surface broadly deeply concave, ventroposterior margins medially deeply concave, lateral lobes some what produced, lateral margins some what straight; paramere (Fig. 2C) with short finger like blade, inner surface distinctly convex, outer surface outwardly knobbed.

A **B**

Fig. 1. *E. (E.) boris* (Dallas). A. metathracic scent auricle; B. pygophore ventral view.



A **C**

B

Fig. 2. *E. (Alomaella) tibialis* (Dallas). A. metathracic scent auricle; B. pygophore ventral view; C. Paramere.

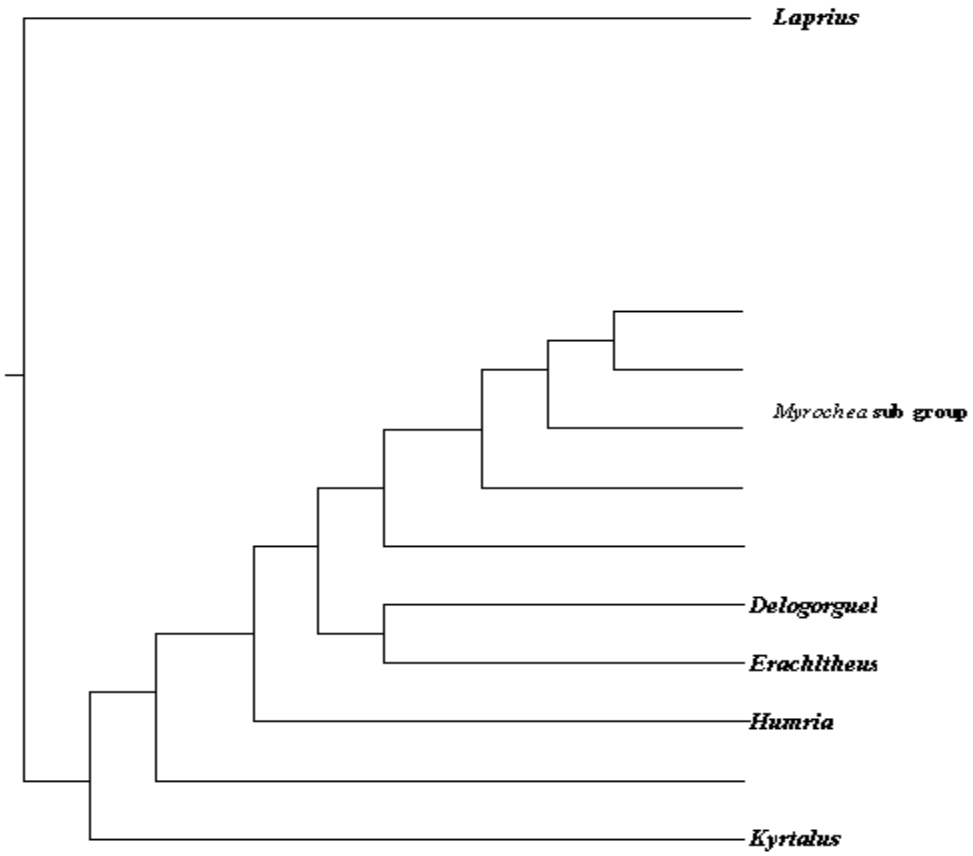


Fig. 3. Cladogram showing phylogenetic relationship of *Erachtheus* with related genera.

DISCUSSION

The present genus *Erachtheus* Stål appears to belongs to *Myrochea* Amyot and Serville clade (Fig. 3) which appears to play out group and sister group relationship with another *Laprius* Stål Clade. This group consist of mostly Ethiopian genera with only *Kyrtalus* which is Oriental and some species of *Dorpius* Distant which are Oriental in distribution. The genus *Humria* Linnavuori appears to form out group relationship with the sister group subclade *Erachtheus* and *Delegorguella* Spinola which play sister group and out group relationship with each i.e., other. These three closely related genera exhibit synapomorphic characters paraclypei rounded to sub-acute, laterl margins of paraclypei convex and lateral lobe of pygophore not conically produced. *Humria* is distinct and is separated from the presently described genus *Erachtheus* and *Delegorguella* on the basis of basal antennal segment much shorter than head apex, reaching about ½ of paraclypei and paramere T-shaped which appear lacking in *Erachtheus* and *Delegorguella*. *Erachtheus* and *Delegorguella* exhibit synapomorphic traits anetennae with second segment some what reduced in length. However these two sister group genera could easily be separated from each other on the basis of their autapomorphies i. e., antennae with fourth segment equal to third segment in length in *Erachtheus* and antennae with fourth segment longer than third segment in *Delegorguella*. The two sub genera of *Erachtheus* could easily be distinguished on the basis of their autapomorphies i. e., very short metathoracic scent auricle in the sub genus *Erachtheus (Alomaella)* and pygophore as long as broad with dorsomedian surface deeply concave and ventroposterior margin medially notched in *Erachtheus s. str*.

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