A New Species of Caystrus Stål (Hemiptera: Pentatomidae) from New Guinea with Reference to Phylogenetic Relationships*

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**Abstract.** A new species of the genus Caystrus Stål from New Guinea with special reference to its metathoracic scent auricle and male genitalia including inflated aedeagus is described in detail and in this light its phylogenetic relationships within its genus is also briefly discussed.

Key words: Pentatomidae, Caystrus bergmani, new species, Hemiptera from New Guinea.

INTRODUCTION

D during a revision of the genus Caystrus Stål at world level, the present authors borrowed a large number of determined and undetermined specimens from Rijks Museum Stockholm, Sweden with an aberrant male specimen from Sorong, New Guinea which looked isolated in its genus with paraclypei widely separated but not enclosing clypeus infront and apically remarkably rounded. With Asiatic stock this remarkable specimen shares paraclypei infront of eyes making a lobe and lateral margins of pronotum atleast slightly bilobed. The male genitalia specially inflated aedeagus is remarkably different and appears isolated among all the species of the genus Caystrus. It is, therefore, described as a new species here with reference to metathoracic scent auricle and male genitalia including inflated aedeagus and its phylogenetic relationships within its genus is also briefly discussed.

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and the vesica was pulled out gently. This was done very carefully because the distal tip of vesica is very delicate and breaks off quickly. The measurements are given in millimetre and the illustrations are to the given scale.

RESULTS

_Caystrus bergmani_, new species (Fig. 1)

**Colouration**

Body ochraceous brown with dense black punctures, antennae and legs without punctures; eyes brownish black; ocelli pinkish; membrane hyaline.

**Head**

Distinctly broader than long, anteocular distance shorter than remainder of head; paraclypeal longer than clypeus but not enclosing the later, lateral margins slightly sinuate; clypeal lobe in front of eyes with subrounded angle, apex of head smoothly rounded; antennae with basal segment about equal to head apex, second segment slightly shorter than third, fifth longest, length of antennal segments I 0.5, II 0.8, III 0.9, IV 1.15 and V 1.4, antennal formula 1<2<3<4<5; labium passing beyond mesocoxae, second segment longest, fourth shortest, length of segments I 0.7, II 1.0, III 0.90 IV 0.65, labial formula 4<1<3<2; anteocular distance 0.8, remainder of head 1.0, width of head 2.4; interocular distance 1.35; interocellar distance 0.85.

**Thorax**

Pronotum more than 2.25x broader than its length, anterior margin broader than head width across eyes, anterior angles laterally toothed, humeral angles sub-acutely produced, lateral margins distinctly sinuate, length of pronotum 2.1, width 5.0; scutellum with three longitudinal fasciae and rounded apex, length of scutellum 3.9, width 3.0; metathoracic scent ostioler complex (Fig. 1B) with peritreme elongate, thumb like, apex subacute, reaching more than ½ of evaporatoria, anterior margin of peritreme concave and posterior margin largely concave, ostiole slit like; distance base scutellum-apex clavus 2.9; apex clavus-apex corium 1.8; apex corium-apex abdomen including membrane 1.3; apex scutellum-apex abdomen including membrane 2.3.

**Abdomen**

Convex beneath, connexiva exposed at repose, shorter than membrane of hemelytra; total length 10.1.
Male genitalia

Pygophore (Fig. 1C) longer than broad, somewhat rectangular, dorsomedian surface concave, dorso inner process broad, plate like, lateral lobe broad with convex posterior margin, ventroposterior margin deeply concave; paramere (Fig. 1D) F-shaped with blade short and apex broadly truncate, outer margin convex, inner margin slightly sinuate; aedeagus (Fig. 1E, F) without thecal appendages, inflated aedeagus with pair of ventrolateral membranous conjunctival appendages, vesica longer than penial plates.

Material examined

Holotype male, NYA GUINEA, Sorong, 28.6.1949, Stem Bergman; in NHMS.

Comparative note

This species is most closely related to C. pallipes Stål in having paraclypei apically round in front and third antennal segment much reduced but it can easily be separated from the same in having dorsomedian line prominent and longitudinal fasciae basally on either side on scutellum present.

DISCUSSION

Zahid (2006) revised the world species of Caystrus on the basis of male and female genitalia. The members of Caystrus appear to fall into two groups. One group appears to represent Asiatic stock defined by the synapomorphic characters i.e., paraclypei in front of eyes making a lobe and lateral margins of pronotum at least slightly bilobed. This Asiatic clade represented by pallipes, Stål bergmani sp.n., orientalis Zhang and Linn and obscurus Distant appear neatly held together by the synapomorphic character i.e., paraclypei only slightly longer and never enclosing clypeus. This clade (Fig. 2) appears to fall into two sister groups, i.e. the first represented by pallipes and bergmani appears held together by the synapomorphic characters i.e., paraclypei apically rounded infront. This sister group plays out group relationship with the other sister group of this subclade represented by orientalis and obscurus which appears neatly held together by the synapomorphic trait i.e., paraclypei apically angulate infront. In its sister group of subclade, C. bergmani appears entirely isolated on the basis of autapomorphic characters i.e., longitudinal fasciae present basally on either side of scutellum and median dorsal line prominent.

The presently described new species bergmani also appears entirely isolated in its Asiatic stock on the basis of ventromedian surface of pygophore (v-shaped) deeply concave, paramere with blade short and apex knob-like and inflated.

Fig. 2. Cladogram showing phylogenetic relationship of bergmani with related species.
aedeagus without thecal appendages and with pair of ventrolateral membranous conjunctival appendages and vesica longer than penial lobes. Its entirely isolated position among the species of *Caystrus* necessitate its designation as a new taxon.

**REFERENCES**


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