



The wing-to-wing coupling mechanism of Scutelleridae (Hemiptera: Heteroptera)

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Abstract

The wing-to-wing coupling mechanism of 19 species representing 19 genera of Afrotropical Scutelleridae is studied and three types were recognized. A phylogenetic significance of the morphological modifications of these structures in Scutelleridae was briefly discussed.

Key words: Hemiptera, Heteroptera, Scutelleridae, wing-to-wing coupling mechanism, morphology, Afrotropical Region

Introduction

In Heteroptera forewings (hemelytra) and hindwings are connected in flight (functional diptery). The clamp-like holding structure is located on the undersurface of the posterior part of hemelytron and consists of two overlapping, wave-shaped outgrowths: costal side wave (CSW) and anal side wave (ASW) (Gorb & Goodwyn, 2003). Both outgrowths are covered by microtrichia. Microtrichia of ASW are modified, flattened, and lobated. CSW bears spine-like, elongated microtrichia.

Morphology and functions of wing-to-wing coupling mechanism were studied in several groups of Heteroptera (Schneider & Bohne, 1977; Bohne & Schneider, 1979; Gorb & Perez Goodwyn, 2003; Gorb & Perez Goodwyn, 2004). Fischer (2001) gave a general description of wing-to-wing coupling mechanism in Scutelleridae. No one has studied these structures in Afrotropical Scutelleridae.

The aim of this study is to present morphological diversification of the structures observed in Afrotropical Scutelleridae.

Material and methods

Representatives of 19 genera of Afrotropical Scutelleridae (of a total of 23 genera so far discovered in the Afrotropical Region) have been studied. Internal classification within the family follows Fischer (2001), Göllner-Scheiding (2006), and Carapezza (2008). A list of the examined Afrotropical species is presented below.

Subfamily: Elvisurinae Stål, 1872

Elvisura irrorata Spinola, 1837 [Namibia, Kaokaveld, TMSA];

Solenosthedium liligerum (Thunberg, 1783) [Democratic Republic of Congo, Eala, MRAC].

Subfamily: Eurygastrinae Amyot & Serville, 1843

Xerobia sculpturata (Stål, 1858) [South Africa, Namaqua, NHRS].

Subfamily: Hoteinae Carapezza, 2008

Deroplax nigropunctata (Stål, 1864) [Democratic Republic of Congo, Kioko-Niumba, ISNB];

Hotea acuta Stål, 1864 [Gabon, Lambarene, MNHN]