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To the taxonomy of higher Fulgoroidea

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Abstract

Recent changes in the taxonomy of higher Fulgoroidea (Hemiptera) are reviewed. The features of the structure of male and female genitalia are discussed as useful for the correct identification of the relationships between higher taxa.

Key words: Fulgoroidea, taxonomy, genitalia morphology.

Introduction

The taxonomic system of the Fulgoroidea (Hemiptera) is still not stable. It was established 21 families for extant planthoppers (O'Brien and Wilson, 1985; Emeljanov, 1999). Since Fennah's works on Nogodinidae Melichar and Tropiduchidae Stål (Fennah, 1978; 1982; 1984) the composition of the mentioned families and Issidae Spinola is under revision.

Such situation is connected with absence of good apomorphies for these families (Emeljanov, 1990; Gnezdilov and Wilson, 2006). In these latter years the changes in taxonomic position of some groups were based on the features of the structure of male and female genitalia which are more useful for correct identification of relationships between taxa than traditional external morphological features. Emeljanov (1999) upgraded Acanaloniinae Amyot et Serville and Caliscelinae Amyot et Serville to family level from the subfamilies within Issidae. Gnezdilov and Wilson (2006) transferred the tribe Adenissini Dlabola and the genera *Pteriha* Stål and *Coinquenda* Distant from Issidae to Caliscelidae and proposed a tribal system of the family. Gnezdilov (2007) showed polyphyly of Bladinini *sensu* Fennah and Acanaloniidae *sensu* Emeljanov and proposed to transfer Tonginae Kirkaldy to the Nogodinidae and Trienopinae Fennah and Gaetulina Fennah to the Tropiduchidae and treat them as distinct tribes. The last point of view is supported also by molecular data (Urban and Cryan, 2006).

Materials and methods

Morphological terminology follows Gnezdilov (2003).

Results

According to Gnezdilov and Wilson (2006) the family Caliscelidae has no unique autapomorphies, but it can be recognised by the combination of the following features: prevalence of strongly brachypterous form; coryphe with apical callus transformed into a large areolet fused with coryphe and recognizable by a weak suture, often the median keel (or suture) of coryphe bifurcates anteriorly and its arms diverge at obtuse angle; anterior connective lamina of gonapophyse VIII narrow, without comb, bearing 1–9 large teeth; gonoplacs flat, rounded or nearly triangular without teeth. The taxonomic system of the family as follows: Caliscelinae Amyot et Serville (Caliscelini Amyot et Serville), Ommatidiotinae Fieber (Ommatidiotini Fieber), Coinquendini Gnezdilov et Wilson, Augilini Baker, Adenissini Dlabola (Adenissina Dlabola, Bocrina Emeljanov, Pteriliina Gnezdilov et Wilson).

The Tonginae was transfered to the Nogodinidae from the Acanaloniidae according to its massive phallobase with variform processes and style with long and narrow capitulum without teeth. The Acanaloniidae *sensu stricto* is characterized by phallobase bearing a pair of long apical processes directed to its base and style with large plate which has elongate caudo-dorsal part, but short capitulum (Gnezdilov, 2007).

The Gaetulina and the Trienopinae were placed in the Tropiduchidae according to massive aedeagus with hook-shaped or triangular processes, short phallobase, and style with distinctive finger-shaped lateral tooth (Gnezdilov, 2007). The mentioned features may be treated as an autapomorphies of the Tropiduchidae.

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