

(1991) in their revision of the Enicocephalomorpha of the New World applied in generic key and also species classification for the first time foretibial and foretarsal armatures of spiniform setae, shape and length of foreclaws, presence and number of apicitibial combs on mid- and hindlegs, and forewing venation. In our studies of Eastern Hemisphere taxa we found the number, shape, and placement of spiniform setae in foretibial and foretarsal armatures as reliable generic diagnostic characters, usage in species classification is supplementary.

Complexes of the following characters have to be applied for classification of the most specious genera: a) measurements (body length – generally stable, and 25 – 32 others); b) many ratios concerning head (including preocular parts of anterior lobe, dorsal and ventral ocular index, etc.), pronotum, foretibia, forefemur, antennae, labium; c) length, density, nature and colour of vestiture as well as distribution of setigerous tubercles; d) length and shape of foretarsal claws and bristle comb on foretibia; e) genitalia – shape of subgenital plate in females, shape of pygophore and „guide” in males; f) median impressions on posterior lobe of head and pronotum, impressions on middle lobe of pronotum; g) special features – sensilla, tubercles, grooves, cuticular processes, shape of foretrochanters; h) colour patterns (fore “knees” are particularly significant) and others. Unification of terminology of important diagnostic characters will be provided in forthcoming papers.

Molecular markers provide new tools for the identification of *Hyalesthes* and *Reptalus* species (Hemiptera: Auchenorrhyncha: Cixiidae)

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Within the family Cixiidae, several species are involved in transmission of plant pathogens. *Hyalesthes* and *Reptalus* species are responsible for economically relevant damage because of their role as vectors of phytoplasmas belonging to the stolbur group (*Candidatus* Phytoplasma solani, 16SrXII-A group). *Hyalesthes obsoletus* (Signoret) is vector of Bois Noir (BN), a serious grapevine yellow that has of late become increasingly important. *Reptalus panzeri* (Löw) is known to transmit stolbur to maize with high efficiency and is suspected, along with *Reptalus quinquecostatus* (Dufour), to be an alternative vector of BN.

The increasing attention focused on the cixiid vectors requires reliable tools for their identification. To date, cixiid species recognition is based on morphological characters and is restricted to few specialist entomologists. Even for experts, the morphological distinction of closely related species still remains difficult; furthermore, the main taxonomic characters concern male genitalia, thus hampering the identification of juveniles and adult females. DNA-based approaches can offer valuable support to the traditional taxonomic methods. Our work reports the efficacy of both ribosomal and mitochondrial DNA regions for the identification of *Hyalesthes* and *Reptalus* species.

PCR-RFLP assays carried out on the mitochondrial cytochrome oxidase I gene (COI) with *AluI* provided species-specific profiles for four *Reptalus* species: *R. quinquecostatus*, *R. cuspidatus* (Fieber), *R. panzeri*, and *R. melanochaetus* (Fieber). The amplification of a ribosomal internal transcribed spacer region (ITS2) also provided specific fragments for *R. quinquecostatus* and *R. melanochaetus*, and digesting the PCR products with *TaqI* allowed the discrimination of *R. cuspidatus* and *R. panzeri*. Similarly, ITS2 amplicon length as well as *TaqI*-RFLP assays performed after COI amplification allowed the unambiguous identification of three *Hyalesthes* species: *H. obsoletus*, *H. scotti* (Ferrari), and *H. luteipes* (Fieber).

These molecular identification assays have been validated on a large number of individuals collected on different host-plants at multiple sites in Italy and eastern Europe. The repeatability of the results confirms the specificity and reliability of these markers among the species within the focal cixiid genera. These diagnostic tools can also be applied to the identification of nymphs and females, which cannot be accomplished by morphological observation.

Afrotropical Peiratinae (Hemiptera: Heteroptera: Reduviidae): morphology, biodiversity, and taxonomy

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Assassin bugs (Hemiptera: Heteroptera: Reduviidae) belonging to the subfamily Peiratinae are distributed worldwide. Among Peiratinae, 32 genera and almost 400 species have been described so far, however, only a few taxa have been studied in detail.

The subfamily name Peiratinae was first used by Amyot and Serville (1843), who established it from the genus *Peirates* described by Serville (1831). Since that time, the taxonomy of this subfamily has changed several times: new species were discovered and described, while several of the already known species were synonymized. There are only a few revisional papers on a few genera in this subfamily, and only a small fragment of these concerns the Afrotropical fauna. Very little attention has been paid especially to two of the largest genera in this subfamily, *Ectomocoris* Mayr and *Lestomerus* Amyot & Serville. There are no detailed descriptions (redescriptions) concerning their morphology, distribution, intraspecific variability and biology, which are important for the systematical study. Moreover there are no keys helping the identification of all species of Peiratinae from Africa and Madagascar. The present work is a part of a project concerning a complete revision of the Afrotropical Peiratinae, which will be the basis for further taxonomic study of this group of assassin bugs.

Morphology, arrangement, and classification of the labial sensilla of Peiratinae (Hemiptera: Heteroptera: Reduviidae)

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Peiratinae is a medium-sized subfamily of Reduviidae (Hemiptera: Heteroptera) distributed in almost all zoogeographical regions. So far 32 genera and almost 400 species have been described, but still no information were published about the morphology, arrangement, and classification of labial sensory structures in representatives of this subfamily. Moreover, there are only a few papers about the types and distribution of sensilla in different subfamilies of Reduviidae – mostly on antennae. The labial sensillar structures in Reduviidae have been studied only in the subfamily Triatominae so far.

Hemiptera are sucking insects and only cibarial sensilla come directly into contact with the food, the labium does not enter into the tissues of the host. Labial sensilla of