

Morphology and phylogeny of the lowest Lepidoptera-Glossata : Recent progress and unforeseen problems*

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Ongoing morphological research on the lowest glossatan lineages is disclosing massive homoplasy, which considerably impedes reconstruction of the basic phylogeny of this clade.

The taxon *Daconypha* as currently delimited, i. e., *Eriocraniidae* + *Acanthopteroctetidae* + *Catapterigidae* + *Lophocoronidae*, is apparently a paraphyletic entity; their shared type of *metafurca* cannot be considered derived. The *Eriocraniidae* may be the sister group of all other Glossata. The recently described *Catapterigidae* are probably correctly considered the closest relatives of the *Acanthopteroctetidae* (ZAGULYAEV & SINEV, 1988), and the two together may be the sister group of the remaining Glossata.

New knowledge of lophocoronid structure has raised unforeseen problems: the adult moths lack mandibular muscles (and hence their still unknown-pupae must be adecticous) *as well as* intrinsic proboscis muscles. This character combination cannot *without ad hoc* hypotheses be reconciled with current views on glossatan phylogeny, according to which the adecticous pupa evolved *after* the proboscis musculature.

Other unforeseen problems are raised by the shared presence of striking thoracic specializations (presence of a prothoracic precoxal bridge, and forward extension of the mesobasisternum which becomes synscleritous with the prospinasternum) in *Neopseustina* and *Heteroneura*, but *not* in *Exoporia*. Yet another problem is raised by the finding, that a previously proposed (BROCK 1971, KRISTENSEN 1984) *exoporian/heteroneuran* synapomorphy in the development of acrotergite I is spurious: A well developed, vertically posed acrotergite (with indirect wing depressors inserting on the surface) is present also in the *Neopseustina* but *not* in the *Nepticuloidea*.

Preliminary quantitatively-cladistic analyses (using the program HENNIG 86) of more than thirty skeletal and 'soft anatomy' characters indicate that two most parsimonious phylogenies, viz., *Neopseustina* + (*Lophocoronidae* + (*Exoporia* + *Heteroneura*)) and *Neopseustina* + ((*Lophocoronidae* + *Exoporia*) + *Heteroneura*) are almost equally well (or badly!) founded, and at least one of the other solutions to this four-taxon problem, viz.,

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Lophocoronidae + (Neopseustina + (Exoporia + Heteroneura)), deserves serious attention as well.

Recognition of the non-monophyly of the Dacnonypha leads to the suggestion that ancestral Glossata had piercing female ovipositors and hence endophytic larvae.

A more detailed review of the phylogeny of the basic glossatan lineages, by E. S. NIELSEN and the author, will be published elsewhere.

References

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