

curved ventrally, and sharply ended. Vesica lacks spines and thorns.

In female genitalia bursa copulatrix with very large signum that is forming an irregular, heavily

sclerotized and twisted cuticular plate. The shape of signum and the shape of strongly sclerotized antrum is species specific.

## Notes to the molecular phylogeny of the Geometridae

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Recent pilot research of the phylogeny of geometrids, base on analysis of gene fragments sequence data (Abraham et al. 2001), has revealed discouraging disharmony of molecular phylogeny of the family, compared with that, based on morphological characters. Same disharmony is tracked for other families in Lepidoptera. These results strongly actualize question on interrelationships of morphological and molecular evolution, and induce a need of functional explanation of contradictions between morphological and molecular cladograms. The morphological method of the phylogeny reconstruction allows to interpret the biological meaning of results of the investigation. The explanation is based on understanding of mechanical function, ecological or ethological significance of the morphological characters are involved into analysis. The interpretation is needed for clarification of the causes and trends of morphological transformation and separation of charac-

ters keeping the genealogical information. As to molecular phylogeny, at present, for most genes we do not know the means of transformation of gene information into physiological, morphological and ethological characters. It occludes comprehension the biological meaning of differences between results of molecular and morphological phylogenetic investigations. Both methods of phylogeny reconstruction, morphological and molecular, need to be developed parallel to each other and in close interrelation between them.

### References

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