

MUSEUM NATIONAL D'HISTOIRE NATURELLE Sorbonne Universités

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To whom it concerns:

Review of the referat of Doctoral Dissertation by V.M. Gnezdilov "Planthoppers of the family Issidae (Hemiptera, Fulgoroidea) of Western Palaearctic

I know Dr Vladimir Gnezdilov since more than 15 years since his supervisor Prof. Alexandr Emeljanov introduced him to me in June 2000. At this time he was still a post-graduate student with already several publications on the systematics and fauna of Cicadina of Northwestern Caucasus. In particular, two papers were dealing with description of a new species of genus *Mycterodus* s. str. and notes on *Scorlupella montana* Becker (a parthenogenetic species). We probably met for the first time later in 2001, during the 2nd European Hemiptera Congress in Slovenia where we discussed morphology of female genitalia in planthoppers and particularly in Issidae. Beside Pr Emeljanov, it seems that I've have also been enough convincing on the importance to take into account these structures to better understand the evolution of Issidae as in 2002 this was the base of Gnezdilov's very important review of the ovipositor structures in Issidae and related major planthopper lineages.

The Issidae family is currently the 5th group in importance in planthoppers, but in 2000, the family concept was much wider and less precise, and the difficulties of this very large and difficult family slowed down most taxonomists to undertake major revisions. Before Dr Gnezdilov's publications, Issidae were divided in 3 subfamilies (Hemisphaerinae, Bladininae and Issinae), the latter grouping 4 tribes (Issini, Hysteropterini, Thioniini and Adenissini) according to the latest classification of Emeljanov (1999). Four major revisions of the family classification were published by Gnezdilov (2002, 2007, 2013 and 2016) to reach the current one with a much more restricted concept of the Issidae family (Issidae *sensu stricto*) now divided in 3 tribes (Issini with Issina and Thioniina, Hemisphaeriini and Parahiraciini).

During this period the most important and noticeable results are the definitive separation of Acanaloniidae and Caliscelidae from Issidae and the transfer of several suprageneric lineages from Issidae to other planthoppers families: Elicini (=

Gaetuliina) and Trienopini to Tropiduchidae, Adenissini to Caliscelidae, and Tongini to Nogodinidae. These results lead to the current and fully accepted taxonomic concepts for all these different taxa. Together with the description of many new taxa (73 genera and subgenera, 111 species) and taxonomic revisions (80 synonyms and 167 new combinations) all these results were moreover synthetized in 2 important papers in 2013, summarizing the current taxonomic and distribution knowledge about the Caliscelidae and Issidae families placed into what he called a "modern classification system".

Several other innovative hypotheses have been proposed by Dr Gnezdilov. Some are still debatable such as the "Issidisation phenomenon" linked with dry and semi-arid areas that need to be formally further tested (as other scenarios might be proposed) or the recent origin of the Issidae he places in Eocene (even if the method is fully questionable a molecular clock approach dates Issidae of at least 72MA in late Cretaceous - unpublished data). Others are fully supported and much interesting such as the monophyly of the Palaearctic Issidae (the lineage in which he has worked the more), the Eastern Mediterranean Region recognized as the origin for Mediterranean taxa diversification, the discovery and description of the Caliscelidae fauna of Madagascar and the absence of an endemic issid fauna...

Dr Vladimir Gnezdilov has spent several months in several times as invited scientist in Paris Museum working with me. During these visits he always went to be perfectly integrated in my team showing greatest capacity for work and publishing our results. All members of our team are unanimous on its professionalism and I can speak without faltering of his great personal quality.

It is therefore my greatest pleasure to strongly support Dr Gnezdilov in his doctoral dissertation for his habilitation and to provide a very positive evaluation for his achievements. He has fully demonstrated his genuine scientific qualities. I believe that Dr Vladimir Gnezdilov is an outstanding researcher whose work will continue to substantially benefit the area of taxonomy and phylogeny that will help to better document and understand the world's biodiversity.

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