

# Papéis Avulsos de Zoologia

## † RHAGIONEMESTRIUS USSATCHOV (DIPTERA, BRACHYCERA), NOT A NEMESTRINID

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### ABSTRACT

*The genus †Rhagionemestrius Ussatchov, from the Jurassic of Karatau (Kazakhstan), is removed from the family Nemestrinidae. It is suggested that it may be ascribed to some other family.*

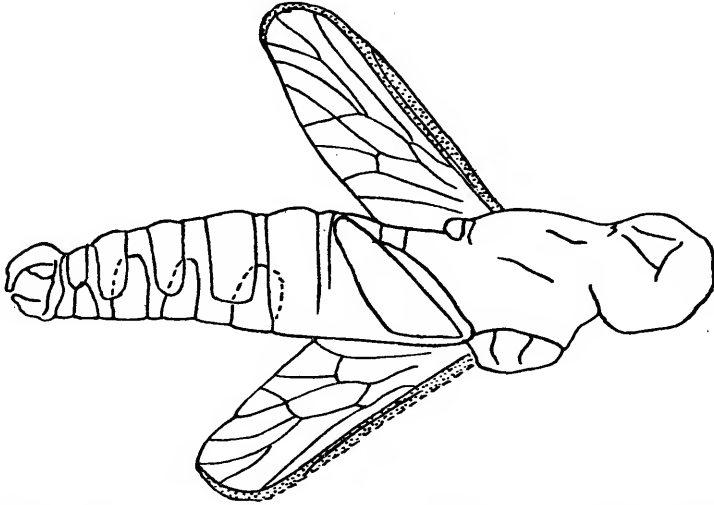
Jurassic flies from Karatau (Kazakhstan) are yielding a great amount of important information concerning classification and phylogenetic relationships of the order. Russian authors have published a series of important papers on these fossils. In the course of preparation of a paper on the world genera of Nemestrinidae (Bernardi, in press), I had to study these papers. In the first, Rohdendorf (1968) described six new species and three new genera, of which five species and two genera formed the new subfamily †Archinemestriinae Rohdendorf. These insects are real nemestrinids and are extremely important for the understanding of the phylogeny of the family. In the second paper, Ussatchov (1968) described a monobasic genus, †*Rhagionemestrius* (type-species, †*R. rapidus* Ussatchov), considered as the type of a new subfamily of Nemestrinidae. However, it is undoubtedly not a nemestrinid.

The subfamily †Rhagionemestriinae and the genus †*Rhagionemestrius*, according to Ussatchov, are defined as follows (see figure):

†Rhagionemestriinae. Thorax relatively long, not wider than abdomen. Scutellum normal. Wings very short, narrow, with expanded apex. R1 almost reaching R5, but fusing with C; therefore, it is possible to consider that veins R2 (Ussatchov's R2+3) and R4 do not end in C, but in R1. r-m absent. R4+5 fused for a long distance with M1+2. Diagonal vein not zig-zag shaped. M with four free branches. R5, M1 and M2 directed towards hind margin of wing. Fourth posterior cell open. m-cu present. Anal cell widely open. Abdomen narrow, long, with seven distinct segments. Male genitalia very large.

†*Rhagionemestrius*. Axillary cell (anal lobe, in Ussatchov's nomenclature) moderately developed. Costal margin almost concave. Sc very long, ending approximately at level of branching of R4+5. The starting point of R2 divides the main stem of Rs, before the discal cell, in two equal parts. Main stem of M greatly developed. m-m cross-vein absent. The free portions of M2 and M3 leave the discal cell from a single point.

The above mentioned characters are not sufficient to include † *Rhagionemestrius* among the Nemestrinidae. They rather show that the genus probably belongs to a very distinct group, which might be better considered a different family. It is not even more closely related to the Nemestrinidae than to other families.



Holotype of † *Rhagionemestrius rapidus* Ussatchov (from Ussatchov, 1968: fig. 4).

Let us first consider the diagonal vein, which is the most conspicuous character of the nemestrinid wing venation. In † *Rhagionemestrius* the following points are remarkable: (a) M3 is not in line with the remainder of the diagonal vein, but strongly displaced towards the wing base; (b) the same happens with the first section of M2; (c) M4 is normally directed to the hind margin, not to the diagonal vein, as in all nemestrinids, and there is not the slightest indication of a tendency to meet M3; (d) The fourth posterior cell is widely open, while in all other nemestrinids it is closed. All these characters indicate a very primitive condition in relation to the nemestrinid pattern, and nothing permits to conclude that they might specialize in the direction of the nemestrinid venation, in the lack of a connecting series. If † *Rhagionemestrius* is considered to be near the ancestral stock of the Nemestrinidae, it might as well be considered a putative ancestor for other families widely separated from the Nemestrinidae. Based on the elongate R1, for instance, why not consider † *Rhagionemestrius* a primitive Pelecorhynchidae?

The most interesting feature of the venation of † *Rhagionemestrius* is the course taken by R1. This vein runs besides C along the whole wing apex to approximately the level of R5, where it fuses with C, so that R2 and R4 end in R1 and not in C. To my

knowledge, cases of a similar course of R1 occur only in some *Pelecorhynchus*, although in this genus R1 is not so strongly directed backwards.

Besides wing venation, no other character permits an assessment of the position of † *Rhagionemestrius*.

Summing up, in my opinion, there is no reason to consider † *Rhagionemestrius* a nemestrinid, and, until conclusive evidence is available, I think it better to ascribe it to some other family.

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