

Papéis Avulsos de Zoologia

PAPÉIS AVULSOS ZOOL., S. PAULO, 26(3): 47-50

29. II. 1972

NOTES ON THE GENUS *EXERETONEURA* MACQUART, AND ITS REMOVAL FROM THE FAMILY NEMESTRINIDAE (DIPTERA, BRACHYCERA)

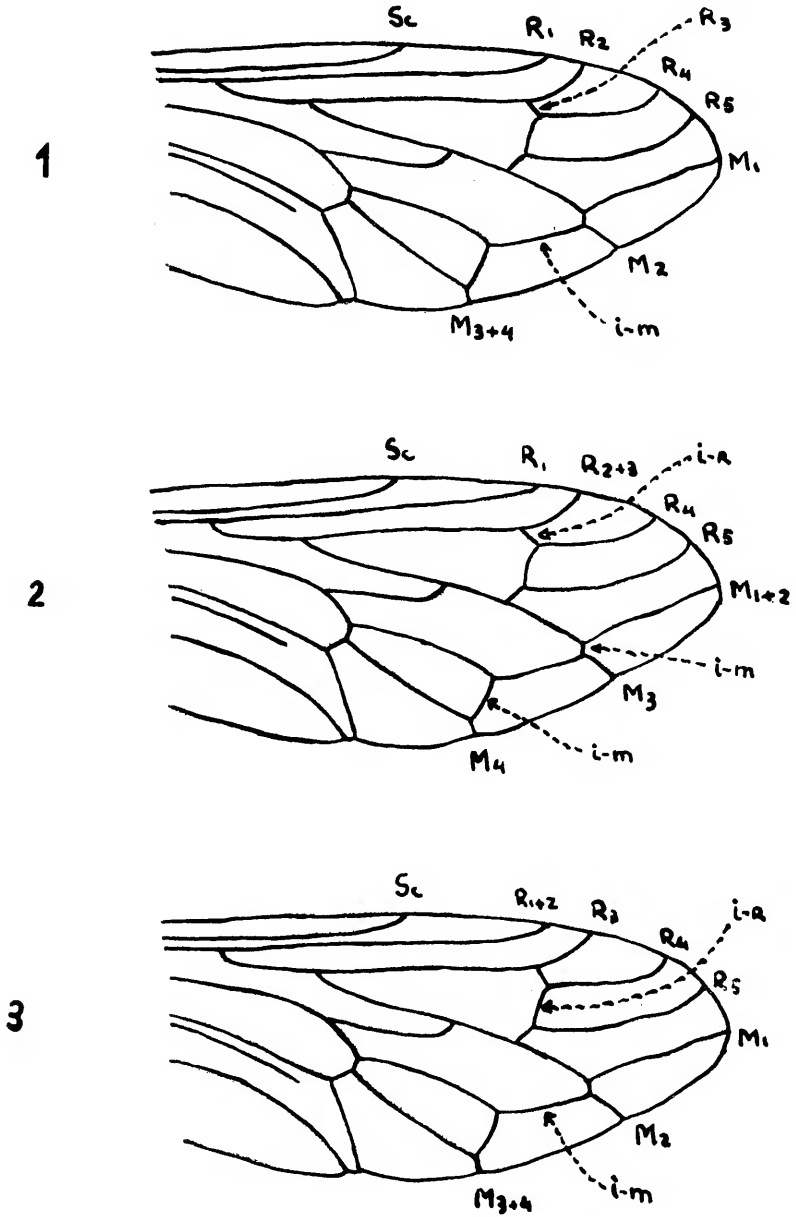
NELSON BERNARDI

ABSTRACT

The genus Exeretoneura Macq. has heretofore been considered a nemestrinid, but it is now removed from the family and left incertae sedis. The author, although taking other characters into consideration, gives special attention to wing venation.

In the course of preparation of a paper dealing with the genera of the family Nemestrinidae, I came to realize that the placement of the Australian genus *Exeretoneura* Macquart in that family was unsatisfactory. The genus has always puzzled dipterists who have given attention to it. Mackerras (1925: 491, 545 ff.) was not able to determine its relationships with the genera of nemestrinids known to him, but kept it in the family. Steyskal (1953: 238 ff.) considered *Exeretoneura* to be a nemestrinid because of wing venation only and Paramonov (1953: 249) considered its position in the family tentative, pointing out the close affinity with *Coenomyia* and allied genera. Bequaert (in Bequaert & Carpenter 1936: 409, reference 2) was the only author to conclude that *Exeretoneura* is not a nemestrinid, suggesting that possibly it might require a family of its own. For a complete systematic treatment of the genus I refer the reader to Hardy (1924), Mackerras (1925) and Paramonov (1953).

Many characters separate *Exeretoneura* from the Nemestrinidae, e.g.: presence of apical spurs on all tibiae, third antennal-segment thick and annulated, without arista, habits like those of certain Rhagionidae, and different wing venation. The last mentioned character has misled previous authors. As a matter of fact, wing venation is the only character which might indicate relationship with the Nemestrinidae because of its superficial resemblance to the venation of that family. The wing venation of *Exeretoneura maculipennis*, the type-species, is shown in Fig. 1 according to my interpretation. Figs. 2 and 3 give the interpretations of Mackerras (1925) and Hardy (1946), respectively. I believe



Figs. 1-3: Wing venation of *Exerctoneura maculipennis* according to the views of present author, Mackerras (1925) and Hardy (1946), respectively.

Mackerras' view on the radial and medial fields and Hardy's on the radial field are inadequate and think my interpretation fits best what is known from other families. In this connection I refer the reader to Hennig (1954).

The most important point in relation to the removal of *Exeretoneura* from the Nemestrinidae is the role played by the branches of media, especially in the formation of the "diagonal vein", which is the most conspicuous character of the nemestrinid venation. In all nemestrinids the end of the "diagonal vein" is formed by M3+4, except where this portion is lost (*Stenopteromyia*, *Fallenia* and some *Neorhynchocephalus*) and does not reach the hind margin of the wing. In these cases, however, there is no problem of interpretation. M3+4 is an important element of the "diagonal" even in the most specialized genera in respect to wing venation, like *Nycterimyyia* and *Nycterimorpha*, and even in the known Jurassic fossils (Rohdendorf 1968). The condition found in *Exeretoneura* is quite different from that found in the Nemestrinidae. That is why I said its resemblance to the nemestrinid pattern is only superficial. This condition, together with other characters, suffice to show that *Exeretoneura* has nothing at all to do with the Nemestrinidae, beyond belonging to the Tabanoidea. I may add that on none of the interpretations of the wing venation (Mackerras', Hardy's or my own) could *Exeretoneura* be placed in the Nemestrinidae.

Where the genus properly belongs is a problem that I cannot solve at present. Mackerras (1925) pointed out many resemblances to the Rhagionidae and Paramonov (1953) to the Coenomyidae. But the classification of the Tabanoidea at the family level is still insufficiently worked out and correct placement of *Exeretoneura* must wait for more thorough comparative research. However, Bequaert's opinion mentioned above is worth consideration.

I gratefully thank Dr. Nelson Papavero, of the Museu de Zoologia da Universidade de São Paulo, for his helpful orientation, and Dr. Eugene Munroe, of the Entomology Research Institute, Ottawa, Canada, for revising the manuscript.

REFERENCES

BEQUAERT, J. & F. M. CARPENTER

1936. The Nemestrinidae of the Miocene of Florissant, Colorado, and their relations to the recent fauna. *J. Paleont.* 10: 395-409, 11 figs.

HARDY, G. H.

1924. Australian Nemestrinidae (Diptera). *Proc. Linn. Soc. N. S. Wales* 49: 447-460, 13 figs.
1946. Miscellaneous notes on Australian Diptera. XI. Evolution of characters in the order: venation of the Nemestrinidae. *Ibidem* 70: 135-146, 2 figs., 1 table.

HENNIG, W.

1954. Flügelgeäder und System der Dipteren unter Berücksichtigung der aus dem Mesozoikum beschriebenen Fossilien. *Beitr. Entom.* 4: 245-388, 272 figs.

MACKERRAS, I. M.

1925. The Nemestrinidae (Diptera) of the Australasian region. *Proc. Linn. Soc. N. S. Wales* 50: 489-561, 17 text-figs., 1 pl.

PARAMONOV, S. J.

1953. A review of Australian Nemestrinidae (Diptera). *Austr. J. Zool.* 1: 242-290, 5 figs., 1 table.

ROHDENDORF, B. B.

1968. Novie mezozoiskie Nemestrinidy (Diptera, Nemestrinidae), in *Akademia Nauk SSSP, Puti i zakonomernosti istoricheskogo razvitiya zhivotnikh i rastitelnykh organismov. Yurskie Nasiekomye Karatau*, pp. 180-189, 6 text-figs., 1 pl., Moscow.

STEYSKAL, G. C.

1953. A suggested classification of the lower brachycerous Diptera. *Ann. ent. Soc. Amer.* 46: 237-242, 1 fig.