

## SUBGENERIC NOMENCLATURE IN FORAMINIFERA.

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### ABSTRACT.

The terminology of subgenera is confused by the use of a distinct name for the typical subgenus. Clarity in subgeneric usage demands the application of the principle of priority in deciding which of several subgeneric names within a given genus should be granted generic rank. Application of these two principles to the recent monograph of American orbitoidal Foraminifera by van de Geyn and van der Vlerk, in conjunction with determination of genotypes, has resulted in the following conclusions: *Isorbitoïna* Geyn and Vlerk = *Orbitoïna* Geyn and Vlerk; *Pliorbitoïna* Geyn and Vlerk = *Pliolepidina* H. Douvillé, *sensu stricto*; and *Polyorbitoïna* Geyn and Vlerk is nomenclaturally valid. The subgenera under consideration are referred to the genus *Pliolepidina* H. Douvillé. Zoölogical relationships of the units under consideration are not questioned.

The important paper on orbitoidal Foraminifera by Wilhelmina A. E. van de Geyn and I. M. van der Vlerk<sup>1</sup> deserves more than a short review, not only because of the morphological observations presented in it and the consequent synonymizing of many species, and because it assembles much of the literature on the American species of these chronologically valuable larger foraminifers, but also for the reason that it illustrates, in a clear-cut fashion, the views held by some contemporary European taxonomists on the nomenclature of subgenera. We take this opportunity to present the matter for the reason that we have been preparing notes on taxonomic categories and their evaluation, with a view to the more extensive application of the subgeneric category to the Foraminifera. Furthermore, it would seem from a study of the International Rules of Zoölogical Nomenclature and the opinions rendered by the Commission that there is need for a definite ruling on the nomenclature of the subgenus, *sensu stricto*. We also raise the question whether, in the case of a zoölogical unit of generic rank divided into subgenera of equal rank, the law of priority demands that the earliest proposed name must apply to the genus.

In their classification of the Orbitoididae, van de Geyn and van der Vlerk place great emphasis on the interocular canal system, stressing it in the classification of genera. Four

<sup>1</sup> Geyn, Wilhelmina A. E. van de, and I. M. van der Vlerk: A monograph on the Orbitoididae, occurring in the Tertiary of America compiled in connection with an examination of a collection of larger Foraminifera from Trinidad. Leidsche Geol. Mededeelingen, Deel VII, Afl. 2, Blz. 221-272, 9 pls., 1 fig. in text, 1935.

stolons, for example, characterize *Orbitoides*, whereas six stolons occur in *Lepidocyclina*. Presumably because of the importance attached to the stolons, they proposed the name *Orbitoina* as a new genus, with three new subgenera, *Isorbitoina*, *Pliorbitoina*, and *Polyorbitoina*. No genotypes were designated. However, the genotype of *Polyorbitoina* is *Lepidocyclina proteiformis* T. W. Vaughan<sup>2</sup> by monotypy and the type by monotypy of *Pliorbitoina* is *Pliolepidina tobleri* H. Douvillé. Since *Pliolepidina tobleri* is also the genotype of *Pliolepidina* Douvillé,<sup>3</sup> *Pliorbitoina* becomes a synonym and must be dropped.

We hereby designate, in accordance with Article 30, II, g, of the International Rules of Zoölogical Nomenclature, *Isolepidina trinitatis* H. Douvillé<sup>4</sup> 1924, the genotype of *Orbitoina* Geyn and Vlerk 1935, and we make the same species the genotype of *Isorbitoina* Geyn and Vlerk. Hence, *Isorbitoina* becomes a typonym of *Orbitoina*. We take this action for the reason that we wish to present for discussion the concept embodied in Article 9 of the Rules; namely, that the subgenus, *sensu stricto*, must not be given a special name. Further, if, on zoölogical grounds, "*Isolepidina*" *trinitatis* is truly generically or subgenerically distinct from "*Nummulites*" *mantelli* Morton, the genotype of *Lepidocyclina* (and its typonym *Isolepidina*), then *Orbitoina* would be a valid name. But, obviously, if it is not distinct, then *Orbitoina* must fall as a subjective synonym of *Lepidocyclina*, *sensu stricto*.

Moreover, reference to the Rules and Opinions fails to disclose, as far as we have been able to determine, a precise ruling to cover the following situation: The case deals with the genus *Orbitoina*, composed of three subgenera *Isorbitoina* (= *Orbitoina*, *s. s.*), *Pliorbitoina* (= *Pliolepidina* H. Douvillé), and *Polyorbitoina*. One of these names must be applied to the genus. Although van de Geyn and van der Vlerk proposed a definite generic name, one of their subgenera is a synonym of an earlier name. The question, therefore, is

<sup>2</sup> Vaughan, T. Wayland: American and European Tertiary larger Foraminifera, Geol. Soc. Am. Bull., vol. 35, pp. 810-812, 1924.

<sup>3</sup> Douvillé, Henri: Les orbitoïdes du danien et du tertiaire, C. R. Acad. Sci., t. 161, pp. 727-728, fig. 34, 1915. No species named, but the figure is identical with that of *Pliolepidina tobleri* figured by H. Douvillé, Les orbitoïdes de l'île de la Trinité. C. R. Acad. Sci., t. 164, pp. 843-844, fig. 6, 1917.

<sup>4</sup> Douvillé, Henri: Revision des lépidocyclines. Mém. Soc. Géol. France, n. s., t. I, Mém. 2, p. 34, pl. 1, fig. 1, 1924.

whether the earliest subgeneric name in such a series should be applied to the genus, a practice of systematists in some fields. We feel that clarity would be gained and confusion lessened if priority were followed here as in the case of species.

On the basis of our interpretation of the questions raised, and assuming van de Geyn's and van der Vlerk's zoological conclusions to be accurate and correct, the systematic arrangement of these orbitoids must be as follows:

Genus *Pliolepidina* Douvillé, 1915.

Subgenus *Pliolepidina*, *sensu stricto*.

Subgenus *Orbitoina* Geyn and Vlerk.

Subgenus *Polyorbitoina* Geyn and Vlerk.

In conclusion, we wish to have it understood that we offer no criticism of the morphological observations of van de Geyn and van der Vlerk. We present no opinions concerning the evaluation of the zoological ranking of the various species treated in their monograph. We wish to focus attention only upon the particular phases of nomenclature procedure stated above.

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