

Case 2356***Alveolina* d'Orbigny, 1826 (Foraminiferida): proposed designation of *Oryzaria boscii* Defrance in Bronn, 1825 as type species**

Alfred R. Loeblich, Jr. and Helen Tappan

Department of Earth and Space Sciences, University of California, Los Angeles, CA 90024, U.S.A.

Abstract. The purpose of this application is to stabilise the important foraminiferan generic name *Alveolina* in accord with majority usage, rejecting its treatment as a junior synonym of *Borelis* Montfort, 1808.

1. For more than 150 years *Alveolina* d'Orbigny, 1826, has been among the most widely recognised and stratigraphically useful genera of the Foraminiferida. It is the type genus of the family ALVEOLINIDAE Ehrenberg, 1839 (table opposite p. 20, as 'Alveolinea').

2. In describing the genus, d'Orbigny (1826, p. 306) listed seven species, three being then denoted by *nomina nuda* that were made available in later publications: *A. bulloides* (later the type species of *Bullalveolina* Reichel, 1936); *A. elongata*; and *A. ovoidea* (later the type species of *Ovalveolina* Reichel, 1936). Another new species, *A. Quoii*, was based on accompanying figures (the spelling of this name, dedicated to J. R. C. Quoy, was emended by H. Douvillé (1907, p. 585) to *A. quoyi* when he made the species the type of *Alveolinella* Douvillé, 1907).

3. The remaining species listed by d'Orbigny were *A. melo* (= *Nautilus melo* Fichtel & Moll, 1798, p. 118), *A. boscii* (= *Oryzaria boscii* Defrance in Bronn, 1825, p. 44), and the new species *A. oblonga*. None was designated as the type species of *Alveolina*. In discussing these species, d'Orbigny said that *Alveolina melo* had also been described as *Clausulus indicator* Montfort, 1808, *Borelis melonoides* Montfort, 1808, *Melonina sphaerica* de Blainville, 1824, and *Melonites sphaeroidea* Lamarck, 1816. *Nautilus melo* Fichtel & Moll is now regarded as the type species of *Borelis* Montfort, 1808, and a neotype has been designated (Rögl & Hansen, 1984, p. 71).

4. In the synonymy of *Alveolina oblonga* d'Orbigny included *Fasciolites* Parkinson, 1811 (p. 158), a genus based on figures and a description, but to which no species were assigned. Galloway (1933, p. 150) stated that d'Orbigny's citation of the figures of *Fasciolites* in the synonymy of *A. oblonga* fixed that species as the type of *Fasciolites* by subsequent monotypy. This interpretation was followed by Reichel (in Loeblich & Tappan, 1964), but was not then and is not now correct. *Fasciolites elliptica* Sowerby, 1840, the first species to be included in *Fasciolites*, became the type by subsequent monotypy. This species was later placed in *Alveolina*. Yabe & Hanzawa (1929, p. 180) transferred *Fasciolites* to subgeneric status, and designated *Alveolina schwageri* Checchia-Rispoli, 1905 (p. 162) as the type of *Borelis* (*Fasciolites*). Thus 3 different species have been cited as the type species of *Fasciolites*, and its continued use can only result in further confusion.

5. In the synonymy of *Alveolina boscii* d'Orbigny noted 'Alvéolite grain de festuque' [sic] Bosc, *Miliolites subulatus* [sic; recte *sabulosus*] Montfort, and *Orizaria* [sic; recte *Oryzaria*] *boscii* DeFrance. *Oryzaria* is discussed below. *Miliolites sabulosus* Montfort, 1808 (p. 175; not a *nomen nudum* as stated by Hottinger, 1960b, p. 231) was said by Parker & Jones (1860b, p. 342) to be represented by 'a very bad figure of a fusiform *Alveolina*.' Later (1863, p. 431) they commented that *Alveolina boscii* DeFrance (as represented by d'Orbigny's model no. 50) had previously been named *Miliolites sabulosus* by Montfort, and in 1865 (p. 26) Parker, Jones and Brady again observed that *A. sabulosa* had priority over *A. boscii*. Nevertheless, *A. sabulosa* has not been used since that date, whereas *A. boscii* has been widely reported in all the literature referring to the alveolines. Furthermore, despite these early statements of synonymy, the status and identity of *M. sabulosus* are not certainly established. The original figure could equally well represent the milioline *Fabularia*, and Montfort (1808, p. 175) merely stated that a broken specimen showed the interior of his miliolite to have many chamberlets as in the tinopores and the nummulites (the latter are hyaline calcareous perforate foraminifers unrelated to either the miliolines or the alveolines). He added that it was very common at Grignon in the Paris basin, which is also the type locality of *Fabularia discolites* DeFrance in Bronn, 1825 (p. 43; the type species, by monotypy, of *Fabularia*), and of its senior synonym, *Nummulites ovatus* de Roissy, 1805. Thus, in the absence of a type specimen, *Miliolites sabulosus* is unrecognisable and we propose the suppression of the name. Even d'Orbigny's (1826) inclusion of *Miliolites 'subulatus* Montfort' [sic] in the synonymy of *Alveolina boscii* does not fix the nature of Montfort's taxon in the absence of any supporting evidence as to its true nature.

6. In proposing his new genus *Alveolina* d'Orbigny noted that some of the included species had been named earlier. Later (1839, pp. 69–70) he elaborated on the nomenclature of the taxon, observing that the oldest-named species had been referred by Fichtel & Moll to *Nautilus*, following the system of Linné and Gmelin. Bosc (1802, 1803, 1816) had observed the many chamberlets and complicated internal structure of his fossils and referred them to the coral genus *Alveolites* Lamarck, 1801. Bosc did not then erect a new genus but clearly stated that he was referring to Lamarck's and that the description should be extended to include species that were fusiform ('grain de festuque') or ovoid ('grain de millet') as well as globose or hemispherical forms.

7. In 1816 DeFrance (p. 136) proposed *Alveolites* for a new genus distinct from Lamarck's coral genus (the name of which was spelled by de Blainville as '*Alveolitis*' in the following article). This genus included Bosc's 'Alvéolite grain de festuque' and 'Alvéolite grain de millet' and a new species, *Alveolites larva*, which, as the only included species with an available name, is the type species of *Alveolites* DeFrance, by monotypy, even though this was not DeFrance's intention. Although not a *nomen nudum* (as had been stated by Hottinger, 1960b, p. 230), *A. larva* is unrecognisable. No other foraminiferans have been referred to *Alveolites*. In 1820 (p. 103) DeFrance said that the 'Alvéolite grain de millet' was his *Fabularia* 'discolithe'. Parker & Jones (1861, p. 162) synonymised that species with *Nummulites ovatus* de Roissy, 1805, and the latter specific name is the valid name for the type species of the miliolid genus *Fabularia*. The 'Alvéolite grain de festuque' was stated by DeFrance (1816) to be the 'discolithe ovoïde' of Fortis and in 1820 he named it in the vernacular as 'Oryzaire-Bosc'. This was later latinised by DeFrance in Bronn (1825, p. 31) as *Oryzaria boscii*.

8. D'Orbigny (1826) regarded the various names proposed by Montfort, de

Blainville and Lamarck as unnecessary new names for species described by earlier authors, and thus as invalid. He stated (1839, p. 69): 'Nous avons reconnu ce chaos et nous avons cherché à le débrouiller; alors, tout en recourant au premier nom d'*Alveolites*, auquel nous substituâmes celui d'*Alveolina*, ayant découvert une espèce vivante, nous fîmes justice de tous ces genres inutiles et les indiquâmes seulement comme synonymes dans notre tableau méthodique. . . '.

9. He thus regarded *Alveolina* as a reverse name modification of *Alveolites* (proposed for a fossil coral), since fossil representatives of living genera were often in those days given names formed by substituting *-ites* for the termination of the original name (but see Article 20 of the Code). Nevertheless, d'Orbigny clearly shows that he was proposing *Alveolina* as a replacement name for *Alveolites* Defrance, 1816 (a junior homonym of *Alveolites* Lamarck, 1801). The two genera must therefore have the same type species, *A. larva* Defrance, but to accept this would be to treat *Alveolina* as a *nomen dubium* and this would be absurd. H. Douvillé (1907, p. 585) said 'on peut considérer comme type [of *Alveolina*] *Alv. Boscii* du Calcaire Grossier'. This was followed by Cushman (1917, p. 97 and later) and others, and *Alveolina boscii* (Defrance) has been regarded as the type species of the genus for most of this century.

10. However, an earlier type-species designation for *Alveolina* had been overlooked. Parker & Jones (1860a, p. 182), in discussing the species described by Fichtel & Moll, had stated: 'The oldest specific name on record for *Alveolina* is *A. melo*, which may well pass as the type'. This was accepted as the type designation by Reichel in Loeblich & Tappan, 1964 (see note by R. C. Moore, p. C506 therein), and *Alveolina* was accordingly regarded as a junior objective synonym of *Borelis* Montfort, 1808. The species formerly referred to *Alveolina* were transferred to *Fasciolites* Parkinson (see paragraph 4 above).

11. Few specialists on the alveolinids have agreed with this, which contradicts wide prior usage (e.g. Cushman, 1917, p. 97; Yabe & Hanzawa, 1929, p. 181; Reichel, 1936, 1937; Hottinger, 1960a, 1960b) and is discussed by Reichel in Loeblich & Tappan, 1964, p. C508 (note on *Fasciolites*). Some have continued to use *Alveolina* as a *nomen conservandum*, in the sense of *A. boscii*, even stating that a proposal for conservation would be prepared (e.g. Hottinger, 1973, p. 444; Drobne, 1977, p. 11) although none has been submitted.

12. In contrast, a few authors have accepted the Treatise usage and have not only recognised *Fasciolites* but in one instance (Gaemers, 1978, p. 106) proposed an additional subgenus, *Fasciolites (Microfasciolites)*, with *Alveolina boscii* as type species.

13. Unfortunately, each attempt to stabilise alveolinid nomenclature (those of d'Orbigny, 1826, 1839, of Galloway, 1933, and of Reichel in Loeblich & Tappan, 1964) has only resulted in greater confusion. Action by the Commission using its plenary powers seems necessary to stabilise the nomenclature.

14. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary powers:

(a) to set aside all previous designations of type species for *Alveolina* d'Orbigny, 1826, and to designate *Oryzaria boscii* Defrance in Bronn, 1825 as type species;

(b) to suppress the generic names *Fasciolites* Parkinson, 1811 and *Oryzaria*

Defrance in Bronn, 1825 for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;

- (c) to suppress the specific name *sabulosus* Montfort, 1808, as published in the binomen *Miliolites sabulosus*, for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (2) to place on the Official List of Generic Names in Zoology the name *Alveolina* d'Orbigny, 1826 (gender: feminine), type species, by designation under the plenary powers in (1) (a) above, *Oryzaria boscii* Defrance in Bronn, 1825;
- (3) to place on the Official List of Specific Names in Zoology the name *boscii* Defrance in Bronn, 1825, as published in the binomen *Oryzaria boscii* (specific name of the type species of *Alveolina* d'Orbigny, 1826);
- (4) to place on the Official List of Family-group Names in Zoology the name ALVEOLINIDAE Ehrenberg, 1839 (type genus *Alveolina* d'Orbigny, 1826);
- (5) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the names (a) *Fasciolites* Parkinson, 1811, (b) *Oryzaria* Defrance in Bronn, 1825, as suppressed under the plenary powers in (1) (a) above, and (c) *Microfasciolites* Gaemers, 1978, as a junior objective synonym of *Alveolina* d'Orbigny, 1826;
- (6) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *sabulosus* Montfort, 1808, as published in the binomen *Miliolites sabulosus*, and as suppressed under the plenary powers in (1) (c) above.

References

- Bosc, L. A. G. 1802. Sur deux nouvelles Alvéolites. *Bulletin des Sciences, par la Société Philomat(h)ique de Paris*, 3 (61): 99, pl. 5.
- Bosc, L. A. G. 1803. Alvéolite. *Alveolites. Nouveau Dictionnaire d'Histoire Naturelle*, vol. 1, p. 281. Deterville, Paris.
- Bosc, L. A. G. 1816. Alvéolite. *Alveolites. Nouveau Dictionnaire d'Histoire Naturelle*, ed. 2, vol. 1, p. 397. Deterville, Paris.
- Bronn, H. G. 1825. *System der urweltlichen Pflanzenthier*. iv + 47 pp. J. C. B. Mohr, Heidelberg.
- Checchia-Rispoli, G. 1905. Sopra alcune Alveoline eoceniche della Sicilia. *Palaeontographia Italica*, 11: 147–167.
- Cushman, J. A. 1917. *A monograph of the Foraminifera of the North Pacific Ocean*. Pt. 6, Miliolidae, 1–108, pls. 1–39, figs. 1–52.
- Defrance, J. L. M. 1816. *Dictionnaire des Sciences Naturelles*, vol. 1, suppl., p. 136. Hachette, Paris.
- Defrance, J. L. M. 1820. Fabulaire. *Fabularia. Dictionnaire des Sciences Naturelles*, vol. 16, pp. 103–104. Le Normant, Paris.
- Douvillé, H. 1907. Les calcaires à fusulines de l'Indo-Chine. *Bulletin de la Société Géologique de France*, ser. 4, 6 (1906): 576–587.
- Drobne, K. 1977. Alvéolines paléogènes de la Slovénie et de l'Istrie. *Schweizerische Paläontologische Abhandlungen*, 99: 1–175, pls. 1–21.
- Ehrenberg, C. G. 1839 [1840]. Über die Bildung der Kreidefelsen und des Kreidemergels durch unsichtbare Organismen. *Physikalische Mathematische Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin*, 1838: 59–147 [separate 1839].
- Fichtel, L. von & Moll, J. P. C. von, 1798. *Testacea microscopica, aliaque minuta ex generibus Argonauta et Nautilus, ad naturam picta et descripta (Microscopische und andere Klein Schalthiere aus den Geschlechtern Argonaute und Schiffer)*, vii + 123 pp. + 24 pls. Camesina, Wien.
- Gaemers, P. A. M. 1978. Systematics of the alveolinids of the Tremp Basin, south-central Pyrenees, Spain. *Leidse Geologische Mededelingen*, 51: 103–129.

- Galloway, J. J. 1933. *A manual of Foraminifera*. 483 pp + 42 pls. Principia Press, Bloomington, Indiana.
- Hottinger, L. 1960a. Ueber paleocaene und oecaene Alveolinen. *Eclogae Geologicae Helvetiae*, 53: 265–283, pls. 1–21.
- Hottinger, L. 1960b. Recherches sur les alvéolines du Paléocène et de l'Eocène. *Schweizerische Paläontologische Abhandlungen*, 75–76: 1–243.
- Hottinger, L. 1973. Selected Paleogene Larger Foraminifera, pp. 443–452, in Hallam, A. (ed.), *Atlas of Palaeobiogeography*. Elsevier, Amsterdam, London, New York.
- Loeblich, A. R., Jr., & Tappan, H. 1964. In Moore, R. C. (ed.), *Treatise on Invertebrate Paleontology*, Part C, Protista 2, vol. 1, pp. 511–900. Geological Society of America, University of Kansas Press, Lawrence, Kansas.
- Montfort, Denys de, 1808. *Conchyliologie systématique et classification méthodique des coquilles*, vol. 1, lxxxvii + 409 pp. Paris.
- Orbigny, A. D. d', 1826. Tableau méthodique de la classe des Céphalopodes. *Annales des Sciences Naturelles*, ser. 1, 7: 245–314; atlas: pls. 10–17.
- Orbigny, A. D. d', 1839. Foraminifères, in Sagra, Ramon de la, *Histoire physique, politique et naturelle de l'île de Cuba*, xlviii + 224 pp., atlas, 12 pls. Arthus Bertrand, Paris.
- Parker, W. K. & Jones, T. R. 1860a. On the nomenclature of the Foraminifera, Part III. The species enumerated by von Fichtel and von Moll. *Annals and Magazine of Natural History*, ser. 3, 5: 98–116, 174–183.
- Parker, W. K. & Jones, T. R. 1860b. The Foraminifera enumerated by Denys de Montfort. *Annals and Magazine of Natural History*, ser. 3, 6: 337–347.
- Parker, W. K. & Jones, T. A. 1861. On the nomenclature of the Foraminifera, Part VI. *Alveolina*. *Annals and Magazine of Natural History*, ser. 3, 8: 161–168.
- Parker, W. K. & Jones, T. A. 1863. On the nomenclature of the Foraminifera, Part X. The species enumerated by D'Orbigny in the 'Annales des Sciences Naturelles', vol. vii, 1826. *Annals and Magazine of Natural History*, ser. 3, 12: 429–441.
- Parker, W. K., Jones, T. R. & Brady, H. B. 1865. On the nomenclature of the Foraminifera. Part X [XII]. The species enumerated by D'Orbigny in the 'Annales des Sciences Naturelles', vol. vii, 1826. III. The species illustrated by models. *Annals and Magazine of Natural History*, ser. 3, 16: 15–41.
- Parkinson, J. 1811. *Organic remains of a former world*. vol. 3, 455 pp. Sherwood, Neely & Jones, London.
- Reichel, M. 1936. Etude sur les alvéolines. I. *Schweizerische Paläontologische Abhandlungen*, 57: 1–93.
- Reichel, M. 1937. Etude sur les alvéolines. II. *Schweizerische Paläontologische Abhandlungen*, 59: 95–147.
- Rögl, F. & Hansen, H. J. 1984. Foraminifera described by Fichtel & Moll in 1798. A revision of Testacea Microscopica. *Neue Denkschriften des Naturhistorischen Museums in Wien*, Band 3. F. Berger & Söhne, Wien.
- Sowerby, J. de C. 1840. Systematic list of organic remains. (Appendix to Grant, C. W., *Memoir to illustrate a geological map of Cutch*). *Transactions of the Geological Society*, London, ser. 2, 5: 327–329, pl. 24.
- Yabe, H. & Hanzawa, S. 1929. Tertiary foraminiferous rocks of the Philippines: *Tohoku Imperial University Scientific Reports*, ser. 2 (Geology), 11 (3) (1927–1929): 137–190.



Loeblich, Alfred R. and Tappan, Helen Niña. 1987. "Alveolina d'Orbigny, 1826 (Foraminiferida): proposed designation of *Oryzaria boscii* Defrance in Bronn, 1825 as type species." *The Bulletin of zoological nomenclature* 44, 36–40.
<https://doi.org/10.5962/bhl.part.259>.

View This Item Online: <https://www.biodiversitylibrary.org/item/44485>

DOI: <https://doi.org/10.5962/bhl.part.259>

Permalink: <https://www.biodiversitylibrary.org/partpdf/259>

Holding Institution

Natural History Museum Library, London

Sponsored by

Natural History Museum Library, London

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: International Commission on Zoological Nomenclature

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.