

On the genotype of *Cribrospiroolina* Haman, 1972 (Foraminiferida)

S. K. AL-ABDUL RAZZAQ & S. N. BHALLA
Department of Geology, Kuwait University, P.O. Box 5969, Kuwait.

ABSTRACT – *Cribrospiroolina distinctiva* Haman, 1972, the type species of *Cribrospiroolina* Haman, is considered to be a junior synonym of *Nautilus (Lituus) arietinus* Batsch, 1791. The genotype should therefore be *Cribrospiroolina arietina* (Batsch).

While working on the Recent microfauna of Al-Khairan area, facing the Arabian Gulf in southern Kuwait, the authors recovered a prolific assemblage of members belonging to foraminiferal family Soritidae Ehrenberg, 1839, from a small lagoon – Khor Al-Nhaim. It includes species of the peneroplid genus *Cribrospiroolina* erected by Haman (1972) with *C. distinctiva* Haman, 1972 as the genotype, from the Recent sediments of the Arabian Gulf.

Haman (1972) made a strong case for generic separation within the subfamily Peneroplinae Schultze, 1854, on the basis of the nature of aperture. We entirely agree with him that apertural characteristic is an important criterion in making distinction between different genera of not only Peneroplinae but other groups of foraminifera as well and this fact is well established in the literature.

The genus *Cribrospiroolina* displays almost all the morphological features of the genus *Spirolina* Lamarck, 1804, and the main argument of Haman (*op. cit.*) for separating *Cribrospiroolina* from *Spirolina* was that the former genus, as the name itself indicates, bears a cribrate aperture. Not only the cribrate nature of the aperture but the disposition of cribrations was also emphasised by him and he made a case history of different species of *Spirolina* exhibiting cribrate apertures in order to justify this split. Haman (1972) noted the aperture in *Cribrospiroolina* as “terminal, cribrate in central portion of apertural face, consisting of a circular to subcircular grouping of distinct pores” and the aperture of the type-species – *C. distinctiva* – was described by him as “terminal, cribrate, consisting of a clusture of distinct openings”. His figures of the species clearly illustrate this feature.

The type-species of the genus *Spirolina* was designated by Cushman (1927) as *Spirolina cylindrica* (Lamarck) who described the aperture of the genus as “rounded terminal”. It was, however, subsequently emended by Loeblich & Tappan (1964) who treated the aperture in *Spirolina* as “terminal, rounded with numerous tooth-like projections extending into open-

ing”, thus widening the scope for the nature of aperture of this genus. All these accounts surely indicate a single, terminal aperture for *Spirolina* and Haman (1972) was justified in separating *Cribrospiroolina* from *Spirolina* on the basis of apertural characteristic.

A species exactly the same as *C. distinctiva* was found in great abundance in our material from the Al-Khairan area and this provided us with an opportunity to study it in detail. A survey of the literature, however, revealed that a species identical to *C. distinctiva* was described as *Peneroplis arietinus* (Batsch) [= *Nautilus (Lituus) arietinus* Batsch, 1791; originally described from the Recent sand of Italy] by Parker, Jones & Brady (1865); as *Spirolina arietina* (Batsch) by Cushman (1930), Said (1949), among others from the different parts of the world. It was also listed by Murray (1965, 1966a, b, 1970) under the same name from nearshore waters of the Trucial Coast, Arabian Gulf. *S. arietina* shows a cribrate nature of the aperture as *C. distinctiva* and both the species look alike in other morphological features.

Haman (1972) did compare *C. distinctiva* with *S. arietina* (Batsch) and observed that in *C. distinctiva* “the adult portion of the test remains of a relatively uniform size, the chambers of that portion only gradually and regularly increasing in size, and not exhibiting the rapid increase in size of *S. arietina*”. This means *inter alia* that the apertural characteristics of both the species are the same – a feature which prompted him to separate *Cribrospiroolina* from *Spirolina*. However, a close comparison of illustrations of *C. distinctiva* by Haman (1972) with those of *S. arietina* given by different authors reveals that the increase in size of the chambers in both species is the same, i.e. the chambers increase regularly and the adult portion of the test remains of uniform size. One also has to bear in mind that this species is generally found in littoral, ecologically stressed, areas with wide fluctuations in environmental conditions under which the foraminiferal species tend to grow rather rapidly in order to complete their life-cycle, resulting sometimes in even

irregularly produced tests as has been found in our material. As such, certain ecotypic variations which are not of taxonomic significance, are inevitable.

In view of the foregoing discussion, we consider that *Cribrospiroolina* Haman, 1972 is a valid genus but its genotype should be *Cribrospiroolina arietina* (Batsch) [= *Nautilus (Lituus) arietinus* Batsch, 1791] instead of *Cribrospiroolina distinctiva* Haman, 1972, which should be suppressed as a junior synonym.

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