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Spiral growth in *Nephrolepidina*. Prodrome of Golden Selection

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Nephrolepidina is a radial larger foraminifer with a biconvex hyaline test composed of a distinct equatorial layers and lateral chamberlets.

The megalospheric test consists of a bilocular embryo followed by nepionic chamberlets, and finally by equatorial chamberlets. These chamberlets can be arcuate, rhombic, ogival, subhexagonal or spatulate (Eames et al., 1962), changing their morphology philogenetically and/or ontogenetically. Arcuate chambers appear clearly to be arranged in a series of intersecting curves (i.e., “engine-turned”).

The Mediterranean lineage of *Nephrolepidina* is subdivided into three chronospecies by combining two biometrical parameters: the Grade of Enclosure of the deuteroconch on the protoconch (Ai) and the number of adauxiliary chamberlets (C) on the deuteroconch (De Mulder 1975). The typological and biometrical study of neanic apparatus was attempted (e.g., Schiavinotto 2004), and used for taxonomical and biostratigraphical interpretation, but it was focused on the shape of the chamberlets.

This shape is stricly linked to the presence of a stolon system of communication among contiguous chamberlets consisting in proximal annular stolons, connecting chamberlets of the same annulus, and in radial and/or oblique stolons, connecting adjacent chamberlets of successive cycle.

The study of neanic apparatuses of known *N. praemarginata*, *N. morgani* and *N. tournoueri* populations proves that the equatorial chamberlets are arranged in spirals, along the direction of connection of the oblique stolons, giving the optical effect of intersecting curves. In *N. praemarginata*commonly 34 left and right oriented primary spirals occurr from the first annulus to the periphery, 21 secondary spirals from the 3rd to 5th annulus, 13 ternary spirals from the 5th to 8th annulus, following a Fibonacci sequence.

The number of spirals increases in more embracing morphotype, and especially in trybliolepidine specimens; secondary and ternary spirals, from the investigated *N. praemarginata* to *N. tournoueri* populations, tend to start from more distal annuli. Moreover, considering the biometric data collected for published populations belonging to the Mediterranean lineage, along the phylogenesis, the ratio dII/dI tends to the golden number phi, suggesting a new evolutive trend, i.e. Golden Selection.

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