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Lithophyllum racemus (Lamarck) Foslie is considered a Mediterranean endemic (Bressan, 1974; Bressan & Babbini Benussi, 1995). As with many other Mediterranean corallines, its description was inadequate, and based mainly on data given by Lemoine (1915) Hamel & Lemoine (1953) and Bressan (1974). As part of a wider study concerning the comparison of fossil and living corallinaceans, I studied several thalli of freshly collected *L. racemus* from the Tyrrhenian Sea corallinaceans from the western and southern coasts of Italy. The collected data clarified the variability of the natural population, providing an actualistic tool for delimiting fossil species and for assessing their response to paleoenvironments by analogy with the present.

Since Lamarck's specimens on which *Millepora racemus* is based must be considered lost (F. Ardré, pers. comm., 1994; 1995), and with the aim of improving nomenclatural stability, *L. racemus* has been neotypified (Basso *et al.*, 1996). Thalli mostly grow unattached, as globular rhodoliths with a long axis ranging from few millimeters to several centimeters. The most common morphology is characterised by several short branches developing from a nucleus; branches are densely spaced and apically swollen. The blunt apices typically fit in the space left by the surrounding branches. This feature is due to adaptation to disturbance from water motion, since abrasion causes broadening of branch tips while leaving the sides unaffected (Steneck, 1986). Actually *L. racemus* typically occurs in coarse sediments, subject to bottom currents (Biocoenosis of "Coarse sands and fine gravels under the influence of bottom currents"; Peres and Picard, 1964).

The improved knowledge of the anatomy of *L. racemus* (asexual and sexual plants) allowed comparison with some tertiary Lithophylloideae which frequently occur together with *L. racemus* which they superficially resemble.

Because the sexual phases of fossil corallines are difficult to recognise, paleontological literature has historically dealt with sexual plants as separate taxa. In particular, *Lithophyllum viennotii* Lemoine (1929) and *Lithophyllum microsporum* Maslov (1962) seemed to be very close to the asexual and sexual plants of *L. racemus*, respectively. The original material of *L. viennotii* is lost (Braga & Aguirre, 1995). *L. viennotii* and *L. microsporum* have recently been subsumed in *L. incrustans*, the type species of *Lithophyllum* (Braga & Aguirre, 1995). The fossil material collected in the Neogene of southern Spain is characterised by the absence or poor definition of lateral cell alignment, a thick, protruberant thallus, and unusual cell length in the central part of protuberances. None of these characters is present in *L. incrustans*, a species which lacks branches (Woelkerling, 1983). I was able to examine the type material of *L. microsporum* Maslov (1962). On the basis of comparing external appearance and vegetative and reproductive anatomical features, *L. viennotii* and *L. microsporum* prove to be conspecific with *L. racemus*. *L. viennotii* and *L. microsporum* therefore become heterotypic synonyms of *L. racemus*, which acquires a stratigraphic range from Aquitanian to Recent.

In addition to fossil taxa, a living species showing very close relationship with *L. racemus* was erected by Woelkerling (1983) on the basis of the original collection of "*Lithothamnium crassum* Philippi". Study of the lectotype specimen, collected in the Mediterranean, resulted in the transfer of "*L. crassum* Philippi" into *Lithophyllum duckeri*. After comparison, *Lithophyllum duckeri* must also be considered an heterotypic synonym of *L. racemus*. *L. duckeri* has been recorded (originally as *L. racemus* f. *crassa*) at Falmouth (Cornwall) (Irvine & Chamberlain, 1994). If this single record is confirmed, *L. racemus* must be regarded as having an Atlantic-Mediterranean distribution.

Summary of taxa involved:

Lithophyllum racemus (Lamarck) Foslie 1901

Basionym: *Millepora racemus* Lamarck 1816; non *Lithophyllum racemus*

Koster 1969 (= *Spongites racemosa* Kutzing 1841)

Nomenclatural synonym: *Pseudolithophyllum racemus* (Lamarck) Mendoza & Cabioch 1984

Heterotypic synonyms: *Lithophyllum viennotii* Lemoine 1929

Lithophyllum microsporum Maslov 1962

Lithophyllum duckeri Woelkerling, 1983

Lithothamnion crassum Philippi 1837

Spongites crassa Kützing 1871

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Coralline News 23:3-4, 1997

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