



BRYOZOANS AND PALAEOENVIRONMENTAL INTERPRETATION

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ABSTRACT

Bryozoans are locally abundant as fossils in many marine deposits from the Ordovician to the Holocene. The value of bryozoans in palaeoenvironmental interpretation has been widely acknowledged but their application has yet to be adequately developed, mainly because the environmental factors (both biological and physical) controlling the distributions of modern bryozoans are still poorly understood. Simplistic use of bryozoan colony-forms as palaeoenvironmental indicators, as often attempted, suffers from several problems. This essay focuses instead on the potential for using intraspecific variability in palaeoenvironmental studies. Bryozoan species are often plastic in their growth and form, with ecophenotypic variations potentially providing useful information on depositional depth, temperature and other environmental factors. Branch thickness in many erect species, especially bushy cyclostomes, decreases with increasing depth. Zooid size in cheilostomes decreases with increasing temperature. This relationship means that variance in zooid size within a colony can be used as a proxy for seasonality, being greater in more seasonal environments.

Key words: Bryozoans, environmental generalization, ecophenotypic variations, environmental interpretation