

Palaeoenvironmental control on distribution of crinoids in the Bathonian (Middle Jurassic) of England and France

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Bulk sampling of a number of different marine and marginal marine lithofacies in the British Bathonian has allowed us to assess the palaeoenvironmental distribution of crinoids for the first time. Although remains are largely fragmentary, many species have been identified by comparison with articulated specimens from elsewhere, whilst the large and unbiased sample sizes allowed assessment of relative proportions of different taxa. Results indicate that distribution of crinoids well corresponds to particular facies. Ossicles of *Chariocrinus* and *Balanocrinus* dominate in deeper-water and lower-energy facies, with the former extending further into shallower-water facies than the latter. *Isocrinus* dominates in shallower water carbonate facies, accompanied by rarer comatulids, and was also present in the more marine parts of lagoons. *Pentacrinites* remains are abundant in very high-energy oolite shoal lithofacies. The presence of millericrinids within one, partly allochthonous lithofacies suggests the presence of an otherwise unknown hard substrate from which they have been transported. These results are compared to crinoid assemblages from other Mesozoic localities, and it is evident that the same morphological adaptations are present within crinoids from similar lithofacies throughout the Jurassic and Early Cretaceous.

Key words: Echinodermata, Crinoidea, lithofacies, palaeoecology, Jurassic, Bathonian, England, France.

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