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NORTH ATLANTIC PLATE TECTONICS AND MICROFOSSILS

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Faunal and floral analysis of samples from wells on the Scotian Shelf, the Grand Banks and the Labrador Shelf, has revealed non-marine to deep marine sediments ranging in age from Early Jurassic to Pleistocene. The depositional environment was predominantly inner neritic in the Jurassic and Early Cretaceous, outer neritic to bathyal in the Late Cretaceous and early Cenozoic, and inner neritic in the Jurassic and Early Cretaceous, outer neritic to bathyal in the Late Cretaceous and early Cenozoic, and inner neritic in the younger Cenozoic. Some or all of the Early Cretaceous is absent over much of the Grand Banks, denoting a major regional unconformity. The affinities of the Scotian Shelf-Grand Banks microfossil assemblages to their European and North American counterparts exhibit significant changes in the Mesozoic-Cenozoic. In the Jurassic and Early Cretaceous foraminifera, ostracods and palynomorphs show closer affinity with the coeval assemblages from Europe than from North America. However, in the Albian some of the faunas of the Scotian Shelf show a marked inversion of affinity, so that post-Albian assemblages of ostracods more closely resemble equivalent ostracod faunas from the Late Cretaceous of the eastern U.S.A. The similarity between eastern Canada and European assemblages in the Jurassic to Early Cretaceous suggests that our margin was then within a "European" province, but later assemblages tend to fit more in a North Atlantic province. The changes of faunal and floral affinity more probably relate to opening of the Atlantic and do not merely reflect changes in environment or circulation.