

DEVONIAN CORAL ENDEMISM IN EASTERN NORTH AMERICA AND ITS BEARING ON PALEOGEOGRAPHY

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ABSTRACT. Analysis of the world distribution of rugose coral genera that occur in the eastern half of North America in rocks of latest Silurian and Devonian age helps to delineate palaeobiological provinces of this time and to outline their history. For this purpose, eastern North America (ENA) endemic genera are defined as those known only from ENA, northern South America, north-western Africa, and Spain(?).

TABLE 1 shows the percentage of endemic genera in ENA stages. Endemism increased from Pridoli to Emsian time. To an unknown extent, this paralleled the development of the Old Red Continent between what is now the Appalachian belt and Europe, while western and eastern North America were separated by the Transcontinental Arch. Decrease in endemism in Givetian time is at least partly due to the movement of Old World rugosan genera from the western Williston basin in the Dakotas and Saskatchewan, across the Arch into the ENA Michigan basin. The decrease culminated in the Frasnian with the joining of the eastern and western seaways across the Arch in several areas.

TABLE 1. Degree of ENA endemism as indicated by genera of rugose corals.
(* Siegenian rugose corals are few and mostly unstudied.)

			No. of genera		%
			Total	Endemic	Endemic
Devonian	Upper	Frasnian	10+	0	0
	Middle	Givetian	33	15	45
		Eifelian	21	13	62
	Lower	Emsian	20	18	90
		Siegenian*
		Gedinnian	14	8	57
Silurian		Pridoli	13	2-3	15-23

The distribution of ENA genera in the Middle Devonian is shown on text-fig. 1. The pattern shown and the inferred provincial history support a Devonian geographic model similar to the best-fit reassembly of the circum-Atlantic continents by Bullard *et al.* (1965) and is compatible with the Bird and Dewey (1970) plate model of the Appalachian Orogen.

This note is an invited addition to this symposium and is based on a paper submitted to the First International Symposium on Fossil Corals, held in Novosibirsk, August 1971.

REFERENCES

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