

***Solitary rugose corals of the Selkirk Member,  
Red River Formation  
(Upper Middle or Upper Ordovician),  
Southern Manitoba***

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Solitary corals of the Selkirk Member often occur in graded lenses and are abraded, suggesting that they were transported in turbulent conditions possibly caused by storms. Most were deposited on their sides with the cardinal-counter plane within 45 degrees of horizontal in transverse sections and the cardinal and counter sides tilted upward with approximately equal frequency.

The corals rarely have areas of attachment, indicating that almost all were free during life. The predominance of algal and annelid borings and epizoic colonial corals and stromatoporoids on the concave counter side suggest that they became associated with living hosts oriented with the convex cardinal side in the sediment and the exposed counter side facing upward. The low fre-

quency of annelid borings in straight corals would be expected if they were oriented vertically in the sediment with only the uppermost portion exposed during life.

The planar cardinal-counter surface of these corals suggests that they remained in a stable position during life. They did not reorient themselves by growing upward after being overturned, and such an event may have killed them. Polyps of some taxa were able to improve their stability during life. Septal dilation in early stages of three species was often greatest on the cardinal side, adding weight to the lower part of the coral. The elongate and angulate cardinal side of *Deiracorallium* and the triangulate to trilobate transverse shapes developed in species of *Grewingkia* would have provided greater stability than the circular form of most solitary Rugosa.

The concept that evolution within the *Grewingkia-Lobocorallium* group involved a progressive change in shape from circular to triangulate to trilobate through time has been

used to recognize lower Red River, upper Red River, and Stony Mountain deposits, respectively. However, the presence of all these shapes in the middle of the Red River Formation and the complete range from circular to triangulate to slightly trilobate corals within two Selkirk Member species of *Grewingkia* suggest that evolution involved selection of trilobate varieties within initially highly variable populations. Large samples identified to the specific level are necessary for accurate biostratigraphic correlations.

Nine species of solitary Rugosa representing *Grewingkia*, *Helicelasma*, *Deiracorallium*, *Bighornia*, and a new genus are recognized in the Selkirk Member. Red River corals of Hudson Bay Lowland, Northwest Territories, and northwestern Greenland are similar, but there are some differences at the specific level from region to region. Correlations with the North American type Ordovician sections in the eastern United States are not possible because the solitary corals belong to different biogeographic provinces.