

Late Silurian and Early Devonian Graptolite, Brachiopod and Coral Faunas from Northwestern and Arctic Canada

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Book Reviews

Late Silurian and Early Devonian Graptolite, Brachiopod and Coral Faunas from Northwestern and Arctic Canada

By D. E. Jackson, A. C. Lenz, and A. E. H. Pedder
The Geological Association of Canada, Special Paper 17, 159 p., 1978.
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The last 15 to 20 years have witnessed an intensive period of research on Late Silurian-Early Devonian biostratigraphy and paleontology in western and Arctic Canada. The authors have been at the forefront of this research and here synthesize current biostratigraphic knowledge of their respective fossil groups in a compact and well-organized presentation. The volume is handsomely illustrated by 30 plates of corals, 10 plates of brachiopods, and four of graptolites. The quality of the photographs of the corals and brachiopods, and the reproduction of the plates by the Allen Press are superb. The graptolites, with several exceptions, are illustrated by line drawings.

The fossil illustrations are arranged biostratigraphically and geographically, rather than taxonomically, emphasizing the focus of the volume. The biostratigraphy of each group is treated separately in the text: the graptolites (Jackson and Lenz) in a series of 12 standard zones, the brachiopods (Lenz)

in seven informal assemblages, and the corals (Pedder) in 11 assemblages. The whole is integrated on a correlation chart (Fig. 6), partly by means of the interfingering of shelly and graptolitic facies at such critical sections as Royal Creek in the northern Yukon. The coral assemblages are keyed to the conodont biostratigraphy; in most cases the coral collections have also yielded diagnostic conodont faunas. The illustrated specimens are well-located both stratigraphically and geographically. A short, taxonomic section on the corals comprises the description of three new genera and four new species.

The stadal framework used for the Lower Devonian is that of the Barrandian (Czechoslovakian) stages. This has become more and more common in recent years in dealing with faunas in western North America, as the strong affinities and ease of correlation lie with the Barrandian, rather than the Rhenish sequence. Evidence for correlation of the Canadian faunas with the Barrandian sequence is itemized.

One correlation is worthy of mention. The occurrence of *Monograptus fanicus*, in the Devon Island Formation on Devon Island (p. 19, Fig. 6) is inferred with question to be Pragian in age. Conodonts from the overlying Sutherland River Formation, however, are judged to be no younger than Lochkovian.

We also note several minor points, which do not, however, detract from the excellent overall quality of the volume. In Figure 6 the *dehiscens* associates are shown as entirely Zlichovian in age, although on p. 13 (point 8) *P. dehiscens* is correctly listed as both upper Pragian and lower Zlichovian. On p. 18, *Linograptus* is suggested as a pre-Lochkovian field guide in mainland Canada, but the genus is well known in the Lochkovian of Nevada (Berry and Murphy, 1975, p. 31, Fig. 16), which is

close by as graptolite distributions go. The reviewers would reserve judgment on the possibility that *Linograptus* does not extend into Lochkovian beds in western Canada. The brachiopod *Cryptatrypa triangularis* is listed (p. 24, 27) as an "index" fossil for the Pridolian in the northern Canadian Cordillera, but in Nevada the species is upper Wenlockian to Ludlovian in age; caution is indicated. Lastly, in spite of the recognition of a coral assemblage between two of the Lochkovian conodont zones, it is probably best to discourage use of the term "middle Lochkovian". Chlupváč (1976) has described only lower and upper parts of the Lochkovian in the Barrandian type area.

Lenz and his students (particularly D. G. Perry and Rolf Ludvigsen) have almost alone made known the Lower Devonian brachiopod biostratigraphy of western and Arctic Canada, during the past 15 years. The ten plates of brachiopods and of a few trilobites, provide excellent illustrations of biostratigraphically significant species. One misidentification warrants correction here. The species in Pl. 9, Figs. 15, 16, 18-21, 26, listed as *Phragmostrophia* sp. (*P. mucronata* in Lenz' earlier monograph), is correctly assigned to *Parapholidostrophia* because of its socket plates being welded to the sides of the cardinal process lobes. *Phragmostrophia* has widely separated, anterolaterally divergent socket plates, situated on the posterior shell margin.

In summary, we highly recommend this excellent volume to all students and specialists of the Silurian and Devonian.

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