ACTA PALAEONTOLOGICA POLONICA

Late Ordovician to Early Devonian graptolite sequences in Australia

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Acta Palaeontologica Polonica 24 (1), 1979: 155-163

Late Ordovician graptolites are commonest in the Australian states of Victoria and New South Wales, occurring in sediments which are either folded into complex structures or else interrupted by massive thickness of volcanics and associated with frequent facies changes. Thus it has not been possible to construct a series of zones which have either continuity or an established order of appearance. Present knowledge also suggests that differences occur between coeval faunas from volcanic and no-volcanic strata. Silurian graptolites are most common and best preserved in New South Wales. The full sequence of graptolite zones devised in Britain cannot be recognized in Australia. This can be explained partly on failure of outcrop, and partly upon regional hiatuses. The most continuous Llandovery sequences are in areas with a widespread cover of Cainozoic volcanics and gravels. Nonetheless, the Llandovery zones so far recognized, principally *cyphus-gregarius* and *tutrriculatus-crispus*, are very wide-spread and occur in differing environments, so that non-representation of zones cannot be attributed wholly to collecting failure. These zones are among those most readily recognized throughout the world, which probably results from their being based upon distinct, easily identified species, and their comparatively long duration. The Wenlock zones are those most poorly represented, this being the part of the Silurian in New South Wales and eastern Victoria most affected by orogenic activity. In areas of central Victoria where sedimentation is believed to have been continuous throughout the Wenlock, the sediments have suffered extensive bioturbation and graptolites are absent. In addition, the extreme rarily of *Cyrtograptus* means that it is often very difficult to tie an assemblage with an overall Wenlock aspect to any particular zone. The Late Silurian graptolites are those which are most widely distributed, and it has been possible to recognize most of the zones described from the Ludlow and Pridoli of Europe. Sedimentary sequences which cross the Siluro-Devonian boundary are common, but graptolites In Early Devonian strata are frequently in isolated beds separated by great thickness of non-graptolitic strata.

Key words: Graptolites, stratigraphy, Late Ordovician, Silurian, Early Devonian, Australia.

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