

CORALS AND CONODONTS FROM THE MOLONG LIMESTONE (LATE SILURIAN), NEW SOUTH WALES, AUSTRALIA

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The Molong Limestone crops out in a meridional belt about 11 km long and up to 2 km in width, passing through the western part of the town of Molong, which lies in the central west of New South Wales, at 148° 52' E and 33° 6' S. No corals have ever been formally described from the Limestone, though it is the type stratum for a number of brachiopods (e.g. *Molongia*) and trilobites.

The Foys Creek section traverses the width of the outcrop about 1 km north of Molong. Here the measured thickness of the limestone is 1050 m. In outcrop the surface of the limestone is weathered, and the search for fossils is generally laborious. About 250 m from the base of the section the limestone is interrupted by a rhyolitic tuff, 10 m thick, the zircons from which have yielded an age of 414 ± 8 Ma. This Lochkovian age is in conflict with the probable pre-*ploeckensis* Zone age indicated by the conodonts.

More than 100 samples taken throughout the section were examined for conodonts. Yields were quite poor, and the only true zonal forms were recovered from near the middle of the limestone. In the lower half of the section the faunas are scant, and there are long barren intervals, particularly between the 200 m and 500 m levels. The limestone is characterised by massive stromatoporoid colonies over much of this barren interval, so the absence of conodonts may be due to a very shallow environment. *Polygnathoides siluricus* occurs between 520 m and 610 m, and in the lowest sample this species is accompanied by *Ancoradella ploeckensis*, indicating upper *ploeckensis* Zone. Thus it is possible to delineate the boundary between the *ploeckensis* and *siluricus* Zones at 530 m. In the higher levels the commonest species is *Ozarkodina inclinata*, but the forms present only broadly suggest a post-*siluricus* age. Age control on the oldest and youngest parts of the section is therefore poor. The oldest beds could be as old as late Sheinwoodian; the youngest are certainly still Silurian, but they may not extend far into the Pridolian.

Halysitids, species of *Quepora* and *Halysites* s.s., occur in the lower 200 m of the limestone, the last fragments (*Quepora* sp.) being observed at 210 m. They are accompanied by *Palaeophyllum oakdalense* McLean, which continues higher to near the 500 m level, that is, probably into the *ploeckensis* Zone.

From about the 500 m level corals become more abundant, and continue until the section is faulted at 750 m. The most varied assemblage occurs at 670 m, and includes *Favosites librata*, *Favosites* spp., *Yacutiopora* sp., *Palaeocorolites* sp. nov., *Planocoenites* sp., *Coenites pinaxoides*, *Propora conferta*, *Heliolites daintreei*, *Syringopora* sp., *Tryplasma* spp., an unidentified rugosan, stromatoporoids and algae. This fauna illustrates the typically small number of rugosans at all levels in the limestone. Above the fault corals are extremely rare, the only one found being a single specimen of *Pseudoplasmopora* cf. *distans* from 1805 m, though stromatoporoids occur just below 900 m.

The conodonts indicate that the most coral-rich part of the limestone corresponds in time to the most richly fossiliferous part of the famous Silurian section in the Yass Syncline (south-central New South Wales), but the Molong Limestone coral assemblages give practically no hint of this. The Yass assemblages from the Silverdale Formation (including the Bowspring and Hume Limestone Members) comprise at least 19 rugosan species, and probably at least as many tabulates. The Foys Creek rugosans number only 9 species in 6 genera, and are represented by generally very few individuals.