



EXAMINATION OF MACROFOSSILS FROM THE PIONEER BEDS FROM
NEAR QUEENSTOWN, TASMANIA.

by

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Examination of macrofossils from the Pioneer Beds from near Queenstown, Tasmania.

Sample Locality

Several large samples totalling about 20kg of friable, clay-cemented, iron-stained, quartz sandstone containing large numbers of brachiopod and gastropod fossils were transmitted to the author by Mr C. Calver of Tasmania Development and Resources. These samples were collected from 100m thick sequence of quartz sandstone referred to the Pioneer Beds, near Harris Reward Prospect, on Mt Jukes Road (379800m E, 5330800m N) near Queenstown, Tasmania.

Sample Preparation

The gastropods are numerous and poorly preserved as moulds and are of little use biostratigraphically. The brachiopods are the predominant element of the fauna and are unusual in that they are mostly silicified. The silicification varies in style from specimen to specimen, with some shells being completely silicified while others only have a coating of the interior of the shell silicified. One articulated whole specimen had an internal probably sparry filling replaced by boxwork silica. Almost all of the silicification (except the latter) is fragile, making extraction very difficult. Because of the fragile nature of the preservation, chemical method of disaggregation were attempted first. Neither the shellite method, nor hydrochloric acid digestion succeeded in even partly disaggregating the rock. Consequently mechanical excavation using a compressed air powered vibrotool was undertaken.

Mechanical excavation of the proximal interiors of the brachiopods allowed enough material to be obtained such that an approximate age of the sample could be obtained.

Interpretation

The brachiopods are rhynchonellids belonging to the Family Rhynchotrematidae, a group which first appeared in the fossil record during the earliest Caradoc. The oldest Rhynchotrematidae in Tasmania are known from the upper part of the Cashions Creek Limestone (Laurie, 1991a, b). The specimens from the Pioneer Beds are similar in size, convexity, angular nature of the costae and robustness of the dorsal cardinalia to *Rhynchotrema crossi* Laurie, 1991 and may be conspecific although it is difficult to be confident of such an assignment given the preservation. *Rhynchotrema crossi* is found in the *Tasmanorthis costata* Assemblage of Laurie (1991a, b), which is known from the middle Lower Limestone Member of the Benjamin Limestone in the Florentine Valley and in the middle Dogs Head Formation at Mole Creek.

References

Laurie, J.R., 1991a. Ordovician brachiopod biostratigraphy of Tasmania. 303-310, In MacKinnon, D.I., Lee, D.E. & Campbell, J.D. (eds), *Brachiopods through Time, Proceedings of the 2nd International Brachiopod Congress, University of Otago, Dunedin, New Zealand, 5-9 February, 1990*. A.A. Balkema, Rotterdam.

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