

## LETTER OF TRANSMITTAL.

Department of Mines,  
Geological Survey Branch,  
4 February, 1891.

Sir,

I have the honor to transmit the accompanying Memoir, No. 5, of the *Palæontological Series* of the Geological Survey of New South Wales, on the *Carboniferous and Permo-Carboniferous Invertebrata of New South Wales: Part I, Cœlenterata*, by Mr. Robert Etheridge, Junr., Palæontologist.

The Palæontology of the coal-bearing formations of New South Wales is a subject of much importance, not only from a purely scientific aspect, but also as bearing upon the economic development of the greatest of the mineral resources of the Colony—Coal. It is with this object in view that the attention of the Palæontologist has been primarily devoted to the subject.

Previous palæontological researches in this direction were largely based upon the fossils collected by the late Rev. W. B. Clarke, M.A., F.R.S. The descriptions given in this Memoir are chiefly of specimens in the collections recently made by the Officers of the Geological Survey, and now in the Mining and Geological Museum. These Departmental Collections are of special value for reference, not only because the Clarke Collections have been lost in the Garden Palace fire, but also as illustrating the life-history of the coal formations in the Hunter River District, the survey of which Mr. T. W. E. David, B.A., F.G.S., Geological Surveyor, is at present engaged upon.

It is interesting to note that the Class Actinozoa herein described by Mr. Etheridge shows a remarkable diminution in the Carboniferous and Permo-Carboniferous times, as compared with its high state of development in the Siluro-Devonian Period. This may be due to the physical changes which took place at the close of the latter period in this portion of the globe, and of which we have evidence in the deposition of a considerable thickness of arenaceous beds upon the massive Siluro-Devonian coralline limestones of