

LOWER CRETACEOUS FOSSILS FROM THE SOURCES OF  
THE BARCOO, WARD AND NIVE RIVERS SOUTH  
CENTRAL QUEENSLAND.

PART II.<sup>1</sup>—CEPHALOPODA.

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(Plates xxx.-xlix., and Fig. 8.)

I.—INTRODUCTION.

The "Ammonites" proper contained in Mr. H. W. Blomfield's collection are few in number, and will be noticed in a later part of this Memoir. The following descriptions of the "Crioceri" are offered with a considerable amount of diffidence, and to arrive at these results I found it imperative to undertake a general review of our Cretaceous forms hitherto associated with the names *Crioceras* and *Ancyloceras*; the outcome of this work, extending over many months, is to my mind, I regret to say, anything but satisfactory. This arises from two primary causes, the fragmentary state in which the fossils are frequently found, and the difficulty experienced in grouping such portions, from many and widely separated localities, in well defined species. A secondary cause is due to the fact that many of the hitherto described forms are based on portions of shells only, and in two instances at least the descriptions are so inadequate that recognition of the species is practically reduced to guess work. In no instance is this more apparent than in that of *Crioceras australe*, Moore, the Australian type of the group.

To render my investigations as complete as possible, I assembled all the specimens of the above two genera within my reach, and drew upon the following collections, as well as our own:—The Mining and Geological, and Macleay Museums, Sydney; National Museum, Melbourne; Geological Survey, and Queensland Museums, Brisbane; Geological Survey Collection, Adelaide; and the Sweet Collection, Melbourne. For the loan of specimens from

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<sup>1</sup> Part i.—See Austr. Mus. Rec vi., 5, 1907, p. 317.

these collections, my thanks are due, respectively, to Mr. E. F. Pittman, Prof. T. W. E. David, Prof. W. Baldwin Spencer, Mr. H. Y. L. Brown, Mr. B. Dunstan, Mr. C. J. Wild, and Mr. G. Sweet, all of whom responded in the most cordial manner to my applications.<sup>2</sup>

With the intention of ascertaining all that could be learnt of the Australian type, *C. australe*, Moore, I enlisted the sympathy and help of my friend, Dr. A. Smith Woodward, who endeavoured to obtain for me a reproduction of Moore's figured specimen, believed to be in the Bath Museum, where the remainder of Moore's collection of Australian Mesozoic fossils is deposited. Most unfortunately, however, this particular fossil appears to be non-extant, either lost or mislaid, and so this avenue of information is closed to me.

This investigation has necessitated an entire reconsideration of all the facts hitherto published regarding our Crioceri and Ancyloceri, and the modification of a good deal of pre-existing work, including my own.

If *Crioceras australe*, Moore, is to remain on our list, then a goodly proportion of the following results is open to suspicion; but if it be permissible to absolutely reject this name, on the ground of insufficient description and loss of type, then I believe the suggested determinations following are as near to the truth as the materials now gathered together will permit of.

## II.—AS TO CRIOCERAS AUSTRALE, Moore.

It is not my intention to recognize *C. australe* as a species, and it is as well, once for all, to give my reasons for so doing. The only characters worthy of note, and they are not of much value, given by Moore are the following:—(1) large size; (2) volutions closely fitting; (3) earlier costæ regular, rounded and slightly curved; (4) later costæ widely separated and acute, with two "depressed bosses on either side" (of the median line of the venter it is presumed?); (5) younger sulci (intercostal valleys) rounded; (6) older sulci regularly concave; (7) mouth seven and a half inches by seven; (8) siphuncle small and immediately ventrad; (9) venter broad, three and a half inches.

Only one of these characters is of sufficient importance to be specific, the occurrence of the two "depressed bosses" on either

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<sup>2</sup> The present paper will therefore contain descriptions of fossils from localities other than those comprised within the geographical boundaries given in the title.