

## I.—INTRODUCTION.

THE Fossils described in the present Monograph are those from the marine beds of the Carboniferous and Permo-Carboniferous rocks of N. S. Wales, the former lying below and separated by an unconformity from the latter, which are intercalated with the productive Coal-Measures. The distribution and general features of these strata will be described and their relations discussed in a forthcoming Memoir<sup>1</sup> by Mr. T. W. Edgeworth David, B.A.; but, with the view of rendering the stratigraphical value of the fossils in question as apparent as possible, a generalised classification of the above rocks will be found a few pages on. The Invertebrate Palæontology of the beds lying unconformably above the productive Coal-Measures has already been published.<sup>2</sup>

Four systematic descriptions of New South Wales fossils, coming within the scope of the present work, have already appeared, by Messrs. Morris and Lonsdale, M'Coy, Dana, and De Koninck, respectively. To the late Prof. John Morris and William Lonsdale belongs the honour of first systematically describing the Permo-Carboniferous and Coal-Measure fossils of New South Wales—those collected by the veteran explorer of Tasmania and Gippsland, Count Paul E. de Strzelecki, &c., who in 1845 published his "Physical Description of N. S. Wales,"<sup>3</sup> a work which may be described as the stepping-stone to Australian Geology. Prof. M'Coy's Memoir, published in the year 1847,<sup>4</sup> was a description of the earliest collections of the late Rev. W. B. Clarke, M.A., F.R.S., and generally bore out in a marked degree the conclusions arrived at by Morris. The third collection described was that made by the venerable Prof. James Dwight Dana, when acting as Naturalist and Geologist to the United States Exploring Expedition under Commander Charles Wilkes, U.S.N., between the years 1838-1842. The fossils in question are described in the magnificent volume of the expeditionary series devoted to its geological results.<sup>5</sup> The last series of organic remains referred to were described by the late Prof. Guillaume Laurient de Koninck, M.D., &c., in the "Mémoires de l'Académie Royale de Belgique"<sup>6</sup>; and again

<sup>1</sup> Geology of the Maitland District, with special reference to the Coal-Measures, 4to. (in preparation).

<sup>2</sup> "The Invertebrate Fauna of the Hawkesbury-Wianamatta Series, &c.," pp. 21, 2 plates, Mem. Geol. Survey, N. S. Wales, Pal. Series, No. 1, (4to. Sydney, 1888). By R. Etheridge, jun.

<sup>3</sup> Physical Description of New South Wales and Van Diemen's Land, accompanied by a Geological map, sections, and diagrams, and Figures of the Organic Remains, pp. 462, plates, &c. (8vo. London, 1845). By P. E. de Strzelecki.

<sup>4</sup> "On the Fossil Botany and Zoology of the Rocks associated with the Coal of Australia," Ann. Mag. Nat. Hist., 1847, XX, pp. 145-157, 226-236, 298-312, Pls. 9-17.

<sup>5</sup> United States Exploring Expedition during the years 1838, 1839, 1840, 1841, 1842, under the Command of Charles Wilkes, U.S.N., Vol. X, Geology, by J. D. Dana, pp. 756, Atlas, Pls. 21 (4to. and folio, Philadelphia, 1849.)

<sup>6</sup> "Recherches sur les Fossiles paléozoïques de la Nouvelle-Galles du Sud (Australie)," pp. 373 and Atlas. Mém. Acad. R. Belgique (8vo. and 4to., Bruxelles, 1876-77).