

history not less varied and extended than that of the entire Palæozoic era—and which he believes are in all cases of Pre-Cambrian date.

Dr. Hunt was the principal organizer and first Secretary of the International Committee for a Geological Congress; the first meeting of which was held at Paris in 1878, and the second at Bologna in 1881, at both of which he took an active part as one of the Vice-Presidents, and by his cordiality and good fellowship, backed by ability and knowledge, contributed much to the maintenance of a good understanding among the representatives of all the English-speaking nations gathered at Bologna. His work did not end at Bologna, and on his way home he, first at Paris (*Compte-rendu sommaire Soc. Géol. France*, Nov. 7, 1881), and afterwards in London (*Abst. Proc. Geol. Soc.* Nov. 16, 1881), gave an account of his recent examination of the metamorphic rocks of Italy and Germany, and his views as to their correlation with the older crystalline rocks of America and Britain. He also brought before the Philosophical Society of Cambridge his matured views with regard to the distribution of extremely attenuated matter through interstellar space (*Proc. Camb. Phil. Soc.* Nov. 28, 1881), pointing out that practically the same idea had been suggested by Newton in his earlier work, and had taken more definite shape in later editions. The University of Cambridge conferred on him the Honorary Degree of LL.D., and we hope that this new tie may unite our spirited scientific ally more closely to us, and insure a not too long deferred return to our shore.—CANTAB.

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#### THE TORRIDON SANDSTONE.

SIR,—I shall be obliged if you will allow me to correct an important misprint which occurs in the abstract of the debate on my paper on the Torridon Sandstone at the Geological Society, Dec. 21st. In my reply, I am represented as saying that north-east of Queenaig the sandstone passes “unconformably” under the quartzite. This contradicts my main conclusion. For “unconformably” read “conformably.”

WELLINGTON, SALOP, Dec. 31, 1881.

C. CALLAWAY.

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#### RATE OF DENUDATION OF THE LAND BY RIVERS.

SIR,—Mr. Tylor seems to have made a slip in his calculations. 3<sup>s</sup> is not 729 but 243. This makes Mr. Tylor's results three times too much. The 3000 years, of Mr. Tylor's sixth paragraph, will thus become 9000; the mean denudation not nine but three inches a year; and the annual rise of the sea-level one inch only.

In paragraph five—“the supposed period of 729 years” is probably a printer's error.

I am unable to follow Mr. Tylor's reasoning, and shall be glad of some information on the subject. For instance:

1. Where can I find Mr. Tylor's “formula of the increase of velocity of water at the same slope”?
2. Where some account of the “Pluvial Period”?

3. Where Hopkins's results on the power of water to move materials?

4. How does Mr. Tylor arrive at a velocity of *three times excess* of present velocity in paragraph four? MCJAMES.

INDIA.

#### FOSSILS ON CLEAVAGE PLANES.

SIR,—Until I read Mr. Carruthers' article in the January Number of the *GEOL. MAG.* I had never realized how completely fossil plant remains might be simulated by annelid trails. To me, moreover, there was a special interest in the concluding sentence, which recalled to my mind an inquiry which I had been pursuing some two years ago. I was not then aware that the subject had been touched upon by Dr. Sterry Hunt, nor have I seen the paper by him to which Mr. Carruthers refers. I feel however disposed to call attention once more to the subject as it then presented itself to me. I must not reproduce remarks which have occupied more than two pages, nor do I see how I can well abridge them. But I will ask leave to refer Mr. Carruthers and the readers of his interesting article to a letter by me in the September (1880) Number of your *MAGAZINE*, pp. 430-2. It was there pointed out that not only "fucoids" (which might very probably have been annelid borings), but that *Graptolites* also had been found upon cleavage planes.

KENTISBEARE, COLLUMPTON.

W. DOWNES.

#### DR. HECTOR'S "NEW ZEALAND GEOLOGY."

SIR,—I see in the January Number of this *MAGAZINE* a notice of the above Memoir, in which Dr. Hector classifies the Coal-producing strata of New South Wales as Permian. There has long been a dispute amongst Australian geologists as to the age of these deposits, many supposing them to be Triassic, or even Oolitic, presumably upon the presence of *Glossopteris*; but it would be of interest to know Dr. Hector's reason for placing them amongst the Permian. In the many conversations which I have had with the late Rev. W. B. Clarke, F.R.S., upon the subject, he has invariably upheld their true Carboniferous age, and, as a field geologist who has had much experience amongst the Coal Fields of South Wales, Somersetshire, and New South Wales, I certainly cannot see much doubt on the subject. The Wianamatta Shales, noticeably in the Parramatta District, bear a close lithographical resemblance to the shales, clods, and cliffs of the Gilfach-fargoed, and Mynyddslwyn, Upper Carboniferous deposits of Glamorgan and Monmouthshire, and also contain obscure impressions, which certainly look like Stigmarian rootlets. The Hawkesbury Sandstone, which underlies the Wianamatta Shales, contains numerous cavities, especially at St. Leonard's, Sydney, which look very much as if they had been filled by Carpoliths, like the *Trigonocurpum* of the Pennant of South Wales and Somersetshire, and indeed bears a lithographical resemblance to that deposit. The Upper Marine Beds and Upper Coal-Measures of the Newcastle (N.S.W.) and Bulli Districts contain, besides *Glossopteris*, undoubted Sigillarian and