

Hope, and St. Helena. But even if the latter were the case, to give convincing proof of the correctness of his theory, he would at the same time have to reproduce the observations at points widely distant from these stations. We would like to ask Wilde to turn out the Ascension declinations and inclinations, say, from 1700-1834.

L. A. BAUER.

Friedenau, bei Berlin, July 21.

#### Time-Gauge of Niagara.

IN the summer of 1890, I had the opportunity of spending some months in Canada, where I devoted what time I had to spare to the later geology of the country.

The time-gauge of the Niagara Falls struck me, and naturally led to further investigation.

We are fairly justified in the assumption, from historical sources in Egypt and elsewhere, that no distinguishable change of climate has occurred for, say, four thousand years. Our first knowledge of Britain, nearly two thousand years ago, would indicate that the climate of the south coast was then, at least in summer, a few degrees higher than now. Restore the conditions, reforest the country lying north, and we should probably find this state of affairs restored. Four thousand years is a good stretch in the mind to seven thousand, so we may safely assume the "Glacial Epoch" must be put back an indefinite time beyond that.

Now we find, looking at the superficial geology of the lakes, that Erie must be dissociated from the other four. There is every reason to believe it was a river basin draining by the Wabash and Manmee valleys into the Mississippi. Ontario again in pre-glacial times drained by Syracuse into the Atlantic. During the Ice Age these drainage valleys were blocked, as was possibly the present discharge by the St. Lawrence past Montreal. In post-glacial times, on the retiring of the ice, Ontario stood at a much higher level, and probably discharged over the Niagara ridge into Erie.

It is well known that an old river channel exists, passing from above Niagara and tending west of Queenstown to Ontario. It has been assumed that flowing out of Erie the channel divided, one branch flowing west, the other east of Queenstown, and that owing to erosion at the extremity, one (the western) became closed, while the other survived as the Niagara.

If this were the case, there must have been, for a time, two falls over the escarpment near Queenstown, but there is absolutely no evidence of there having been a fall at the extremity of the western branch.

What seems to have happened was that for an indefinite time Ontario discharged westward into Erie, which again drained into the Upper Mississippi. A slight change of level may have occurred, or a local flood have carried away some of the debris closing the Lower St. Lawrence, and Ontario found a way of escape to the east. A rapid erosion of the old valley must have occurred with the result of lowering Erie sufficiently to reverse its outfall, when the river took the lowest channel, and first flowed, as now, over the escarpment.

The time-gauge represents then, not the close of the glaciated period, but the epoch when Ontario returned to its pre-glacial discharge. The intermediate period, when it flowed into Erie, has apparently left only the old western channel as evidence of what may well have been a protracted period.

Shanghai, June 22.

THOS. W. KINGSMILL.

#### Late Appearance of the Cuckoo.

ON Friday last, July 27, as I was walking along the Sion Vista in Kew Gardens, towards the river, I heard, far off to my left, the cry of a cuckoo. There was but one cry, and that had not the duplication of the first sound which usually marks his later utterances with us. Clearly though I had heard it, I might almost have doubted the testimony of my ears if I had not, on turning suddenly to the direction from which the sound had come, *seen* the bird rise quickly and fly across the river.

August 1.

E. HUBBARD.

#### Height of Barometer.

CAN any of your readers refer me to the maximum and minimum *authenticated* heights of the barometer, which have been hitherto recorded (1) in England, (2) in any part of the

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world? It would, of course, be necessary to know the height of the place of observation above sea-level in the case of the minimum, at least.

KARL PEARSON.

University College, London, August 5.

#### Magnetisation of Rock Pinnacles.

MR. HILL will be glad to find that systematic observations on the magnetism of rock masses have been taken for the very district he mentions in his letter of July 28.

In vol. x., part 2, of the *Journal* of the Royal Institution of Cornwall, there appears a short paper on "The Magnetism of the Lizard Rocks," by Mr. Thomas Clark. In this he gives not only the results obtained, but his method of procedure. A subsequent paper (printed in vol. xi., part 2, of the *Journal*), on "The Magnetic Rocks of Cornwall," gives the results of his experiments, and is accompanied by a map of the county showing the position of its magnetic rocks. I understand that Mr. Clark is continuing his research in this direction.

If similar observations were taken throughout the whole of the county, especially in the neighbourhood of the coast, doubtless they would yield results of great value to commerce as well as to science.

M. M. S.

If Mr. Hill will refer to *Alpine Journal*, vol. xiii. p. 439, he will find mention of a magnetic peak in the Black Coolins: the mountain bears the name Bidein Druim nau Ramh.

Eccles, August 5.

JAMES HEELIS.

#### THE BRITISH ASSOCIATION.

OXFORD, AUGUST 8.

THE sixty-fourth meeting of the British Association, and the fourth which has been held at Oxford, may now be fairly said to have begun. The reception-room was opened at 2 p.m. on Monday last, and at the moment of the opening of the doors there was an unexampled rush to obtain places in the Sheldonian Theatre for the President's address and the evening lectures. The places in the theatre have been filled with extraordinary quickness, and it is to be feared that late-comers, who have not availed themselves of the offer of the Local Secretaries to engage seats beforehand by letter, will be disappointed in the places which they obtain. This is an unusual occurrence, and demands some explanation. The Sheldonian Theatre is the largest building now standing in Oxford. The old Corn Exchange was larger, and could have comfortably accommodated the audience which assembled to hear Lord Salisbury on Wednesday night. But unfortunately it is no longer existent. It has been pulled down, with the other civic buildings, to make room for larger successors, which are only half completed, and the Local Committee must regret, without being able to remedy, the circumstance that the only available place of meeting is insufficient for the needs of the Association.

Lord Salisbury's address is fully reported in another part of this issue. Many of those who know Lord Salisbury only as a politician and as Minister for Foreign Affairs, will be surprised at the wide range of thought and reading displayed in this address, and more still at the keen critical faculty displayed in his handling of the diverse topics which he passes under review. Possibly the whole of his audience will not entirely agree with his views on current scientific problems, and his concluding remarks on the present position of the Darwinian theory offer almost a repetition of the controversy which made