

one would not be surprised to learn that Zoology and Palæontology in the Natural History Museum had been recombined together as representing Animal Biology; in fact, the late Director, Sir William Flower, and the present Director, Professor Ray Lankester, have both strenuously aimed at bringing the recent and extinct forms of animal life together into one series. It is remarkable that notwithstanding the various attempts to change the existing order of things (as e.g. that of the Kew authorities to absorb the Botanical Department into the Kew Herbarium, and the plan suggested by Professor Maskelyne, many years ago, to transfer the Mineral Collections to the Royal College of Chemistry, or to the Royal School of Mines), they all failed, and these departments still remain firmly united to the Natural History Museum, and the Geological Department still enjoys a separate and distinct existence.

It would be impossible in a brief notice like the present to give an adequate notion of the amount of labour bestowed in working up the historical records of the Museum in the past 150 years, presented to us in this interesting volume, bringing out as it does, in an orderly and succinct form, the story of the three great Departments and of the Libraries attached to them; but to any person interested in the progress of Natural History in this country this book will afford the greatest pleasure, not only to read, but to possess, as a most valuable work of reference for all time.

---

## CORRESPONDENCE.

---

### ICE-ACTION ON WINDERMERE.

SIR,—As one of the party that visited the cliffs in the neighbourhood of Cromer in connection with the recent meeting of the British Association, I was greatly interested, as we all were, with what we saw and with the able exposition given by Mr. Clement Reid; and it occurred to me that what I have observed of ice-action on a small scale when Windermere, in 1895, was completely frozen over might be of some interest to students of ice-action on a far grander scale in past ages, of which we see traces in the present day. I was encouraged in this view by some of the members of Section C to whom I mentioned what I had seen. I will simply state the facts without attempting to found any theory upon them.

During the Winter in question Windermere was frozen throughout its entire extent, the ice attaining a thickness in many places of seven to eight inches or more. Wherever there was a considerable expanse of water, as for instance between Thompson Holme and the northern shore of Miller Ground Bay, a distance of about two miles, the expansion which takes place in freezing forced the ice up on the shore wherever the slope was sufficiently gentle to permit of this. The striation produced by this glaciation was clearly to be seen below the ice where the bottom was chiefly composed of clay. Where the shore was composed of loose shingle the ice in its progress ploughed its way through it, raising a bank of from one

to two feet in height. Where the shore presented miniature cliffs of clay capped by turf, the soil was turned over by the ice as by a ploughshare. Along the greater part of the shore-line, but especially where the shore was steep or rocky, the pressure forced the ice up into hummocky fragments. Great cracks, the edges of which were similarly thrown into hummocks, extended right across the lake at two points between Bowness and Ambleside. When the thaw set in and the ice contracted, the position of these two loci of compression was marked by wide lanes of open water, while the ice on either side was still strong enough to bear the weight of a man. Other more local evidences of compression were seen in funnel-like depressions in the ice, in some cases with a dangerous hole in the centre, though the ice surrounding the hole was so strong that a man was able without risk to reach the hat of a skater who had fallen through. Evidences of the motion of the ice in the direction of the greatest pressure was also to be seen in bent and broken piles and landing-stages. These phenomena were not to be seen where from any cause the ice did not attain to any great thickness, as, for instance, at the mouth of Troutbeck, where the flow of the river checked the formation of the ice.

Scarcely less remarkable than the effects of the ice-action themselves was the short time that it took for denudation to remove all traces of them.

These are the facts that I observed; and I think they may be worth putting on record, especially because the opportunities of observing them are so rare, Windermere being seldom frozen over more than three or four times in a century. GEO. CREWDSON.

ST. MARY'S VICARAGE, WINDERMERE.

September 1st, 1904.

---

#### THE DISCOVERY OF MARSUPITES IN THE CHALK OF THE CROYDON AREA.

SIR,—Some few weeks ago I received a letter from Messrs. Wright & Polkinghorne (of the Battersea Field Club and Geologists' Association) to the effect that while cycling from Purley to Beddington they observed some chalk that had been thrown out while laying the sewer in one of the new roads at the top of Russell Hill.

Upon examining the chalk they were rewarded by finding plates of Marsupites. The following Thursday evening I accompanied Mr. Wright to the spot, when we found that the chalk had been put back; however, after a diligent search among the blocks on the surface, we succeeded in obtaining five or six plates, two of which were embedded in flint nodules.

The nipple-headed form of *Bourgueticrinus* and the pyramided form of *Echinocorys vulgaris*, both characteristic fossils of the Marsupite zone, were also obtained.

The chalk is of a very soft nature, quite different to that of the other zones in the district. I spent four hours the following Saturday at excavations at a lower horizon in the hope of finding *Uintacrinus*, but without success. I am bound to admit that the appearance of