

and will, by means of the reproduction of photographs, illustrate some of the more important physiographic features of Central Australia.

BALDWIN SPENCER.

Palæontology at the Royal School of Mines.

IN reading the excellent review of the biography of Sir R. Owen, which appeared in last week's *NATURE*, I observe an error which, though small, requires correction. It is stated that when Owen surrendered his appointments at the College of Surgeons he was "enabled to accept the lectureship on Palæontology at the Royal School of Mines, in 1857." The records of that Institution will show that Owen never held a lectureship there, nor was he in any way connected with the School.

The large theatre of the Museum of Practical Geology was frequently employed for other purposes than those of the School, by permission of the Director-General; and it was in virtue of such permission from Sir Roderick Murchison that Prof. Owen used the theatre for the delivery of his lectures on Palæontology to the public, in 1857 and subsequently.

T. H. HUXLEY.

Eastbourne, December 27, 1894.

Eocene Fossils at Murren.

I HAVE read with surprise the extracts from the letter which you have received from Dr. Fellenberg on this subject. Of course it has long been known that there are Eocene strata at Murren. But below them lie calcareous rocks coloured on the Swiss map as Malm. These are so described on p. 211 of the "Livret Guide," published by the International Geological Congress which met this autumn at Zürich. During the subsequent excursion, under the able guidance of Prof. Renevier, Prof. Gollier, and M. Lugeon, we were taken to Murren and shown these rocks, and Prof. Gollier gave us the reasons which had led some geologists to regard them as Trias rather than Malm. It was in these calcareous beds that the layer containing nummulites was met with. The train was just starting, and we had to leave, but the find excited so much interest that M. Lugeon returned to Murren the next day, with some of the party, and verified the exact locality.

JOHN LUBBOCK.

High Elms, Farnborough.

The Use of the Globe in Crystallography.

IN your issue of December 20, Mr. Buchanan revives a graphic method of crystallographic calculation which seems to have been used in the early part of the century (*vide* "Zur physischen Krystallonomie, &c.," Grassmann, 1829, p. 37), and claims that by use of the globe and *microsphere* "every problem in the geometry of crystals can be solved with ease and accuracy."

Crystallographic angular measurements are said to be accurate if subject to a probable error of less than two or three minutes, and descriptions of inorganic substances are nowadays habitually published in which the probable errors are of this order. Although no details of Mr. Buchanan's method are given, it seems inconceivable that any graphic process of crystallographic calculation, involving triangulation on a sphere, could be accurately performed without the use of numberless tedious precautions and large and cumbrous apparatus.

It is usually more easy to grasp a good plane diagram of any solid figure than to understand and follow up explanations on the solid figure itself; the use of the latter is liable to lead to inaccuracy of expression and confusion of thought. Thus, when the sphere is used, the real meaning of the points which Mr. Buchanan describes as cataloguing the edges occurring on crystals, is not at once seen; using the plane projection, it is immediately apparent that these points are characteristic, not merely of the edges, but in a much wider sense, of the zones: they are merely the poles of the zone circles.

Further, the positions of the points representing the corners are dependent on the *sizes* of the faces concerned, which, as we teachers of crystallography are at infinite pains to impress on our students, have no crystallographic signification; these points, then, are not *characteristic* of the corners.

Similarly, the rather complicated piece of reasoning respecting "reciprocal inversion forms" simply yields the well-known result that in the cubic system, the octahedron truncates the corners of the cube.

WILLIAM J. POPE.

Central Technical College, South Kensington.

NO. 1314. VOL. 51]

"The Zoological Record."

IT has long been a matter of regret that the *Zoological Record* is not sold in separate parts; a specialist requiring any one part being required to pay for all the others, though they may be of no more use to him than so much waste-paper.

In order to remedy, to some extent, this unfortunate state of things, I am proposing (if sufficient support is forthcoming) to purchase the *Zoological Record* as published, and to issue the separated parts to subscribers. With this view, I would ask all those desiring any part (of the volume just issued, or of past volumes) of the *Zoological Record*, to communicate with me as soon as possible, stating which part they would be willing to subscribe for.

Although it is, of course, not intended to make a profit out of this scheme, it will nevertheless be necessary to charge slightly more for the separated parts than their proportionate value, as some parts are almost certain to remain unsold.

I am confident that this scheme will not in any way injure the Zoological Society; in fact, although they maintain the contrary, I am sure it would be to their advantage to issue the parts separately, if necessary at a slightly higher rate. At present subscribers are, I believe, mostly libraries and societies, requiring the whole volume. These would, of course, continue to subscribe for all parts, even if they were obtainable separately; while, on the other hand, all specialists who do not subscribe under the present arrangements would be practically certain to purchase those parts dealing with their own subjects, if obtainable at a moderate cost. If the proposed scheme meets with support, it will go a long way towards proving the justice of the foregoing contention, and in that case it will probably be possible to induce the Zoological Society to grant the concession for which many zoologists have for long been agitating.

Royal College of Science, London.

S. PACE.

Gravitation.

IN answer to Dr. Lodge's letter, I may state that Newton in his "Opticks" (Query 21) asks if an increase of density of the ether outwards from bodies will not account for gravitation, every body endeavouring to go from the denser parts of the medium towards the rarer; and if such increase of density may not, even at great distances, be effective, provided the elastic force of the medium be sufficiently great.

I do not think a tensile ether is contemplated in this theory of gravitation. Prof. Worthington's effect manifests itself only in a tensile liquid, and this constitutes its suggestiveness in connection with the hypothesis of a tensile ether. I have no such definite ideas to advance as are put forward in the "Opticks."

J. JOLY.

Trinity College, Dublin.

The Feigning of Death.

THE curious condition of apparent death, assumed by the English grass snake, which Mr. G. E. Hadow describes (*NATURE*, December 6, p. 127), is one that I have frequently observed, but have always been puzzled to account for. I hardly think that it has anything to do with simulation, or that it is voluntary, since I have seen snakes so affected when quite undisturbed in their cases. I have also observed precisely the same state in the common Italian snake. In my experience the condition only occurs in fairly hot weather, and when the snake has not fed for some time. This seems to point to a species of fainting fit, and I imagine that it is immediately induced by a disturbance of the cerebral circulation.

R. HARRY VINCENT.

Leytonstone, December 30, 1894.

Peculiarities of Psychological Research.

IN reply to Prof. Pearson: (1) His remark about "scientific acumen" was not made *à propos* of M. Richet's experiments, but of those of the S.P.R.; and hardly any stress is laid on M. Richet's results, either by Mr. Gurney or Mr. Podmore. Mr. Gurney, on the contrary, expressly says: "Clearly no definite conclusion could be based on such figures." But if Prof. Pearson has made experiments which are equally striking in the opposite sense, I wish he would publish them, or communicate them to the S.P.R. (2) There was nothing in my letter to indicate that I under-estimated the importance of "abnormal distributions"; but I asked Prof. Pearson to say whether he