

in the country in which it occurs, even though it cannot be properly packed into European compartments.

My statement that "too much attention has been paid in the past to the palæontological evidence" is, when removed from its surroundings, obviously absurd. The point I wished to emphasise is merely that correlation based upon homotaxis can be pushed too far, and that it is unscientific to break up a uniform series of rocks that occurs in New Zealand into sharply separated divisions on the basis of the occurrence of fossils that in Europe are found at different horizons. It is in this sense only that I suggest that too much emphasis has been laid on the palæontological evidence in the past in New Zealand, especially as all the collections of fossils are still far from complete. I may add that for twenty years, owing to the influence of my old and revered teacher, the late Capt. Hutton, F.R.S., I endeavoured to apply his divisions of the younger rocks of New Zealand to the districts where I was at work. As difficulties finally became insuperable, I visited his typical localities in the expectation of getting information that would solve them. It was to my intense disappointment that I was forced to the conclusion that his divisions of the "system" were based upon what I considered to be incorrect observation of the field evidence.

P. MARSHALL.

Otago University, Dunedin, New Zealand.

PROF. MARSHALL's clear statement of the palæontological difficulties in this case should stimulate the search for further fossiliferous horizons. The Ordovician and Gotlandian beds of the British Isles were laid down in many places "during the continuance of uniform physical conditions and in direct continuous succession"; none the less, two systems have been conveniently maintained. The unwieldy "Karoo system" of South Africa would no doubt be split up were marine representatives of its strata available close at hand.

G. A. J. C.

Dana's Proof of Darwin's Theory of Coral Reefs.

I THINK Mr. Crossland, in his letter to NATURE of April 3, is ~~in~~ ⁱⁿ assigning a fault origin to the narrow "khors" which form the harbours along the Red Sea coast. I visited a number of these during a land journey from Halaib to Port Sudan in 1908, and although I had not much time for detailed investigation, I saw nothing which pointed to any other origin than erosion and subsidence. The steep-sided character of the shallow valleys, which Mr. Crossland takes as indicative of a fault origin, is, I think, merely a consequence of the toughness of the coral-rock and the smallness of the rainfall in these regions. It is a character common to many inland "wadis" where there is no suspicion of rift action.

The occurrence of coral-reef coverings on the coast-hills is, of course, a proof of elevation of the land; but on what does Mr. Crossland base his conclusion that the elevation has been *continuous*? Has any systematic slickensiding or brecciation of the rocks, such as usually accompanies a fault, been observed along the sides of the valleys? Or has it been proved that the floors of the valleys consist of the same beds as occur at higher levels on either side?

Like Mr. Crossland, I write from the wilderness, and cannot now refer to the papers which he cites. But as an admirer of the devotion and skill with which Mr. Crossland has pursued his important biological researches on that desolate shore, I read his two last papers very carefully at the time of their

publication. If my memory is correct, the papers contain no real evidence as to a fault-origin for the "khors." Rather does Mr. Crossland seem to take faulting for granted, and then to adopt it as the explanation for all the topographical features of the coast, even going so far as to regard Ras Raweiyah as a piece torn from the mainland and shifted several miles out to sea—a view in which I imagine few geologists will agree.

Unless further facts can be adduced, I think the "khors" of the Red Sea coast are most reasonably explained as valleys which were eroded by streams when the land was at a greater elevation than it is now, and have since been submerged by subsidence.

JOHN BALL.

Wadi Baba, Sinai, April 20.

Sub-Red Crag Flint Implements and the Ipswich Skeleton.

I NOTICE that NATURE of May 8 contains an account of a paper read by Mr. W. H. Sutcliffe before the Manchester Literary and Philosophical Society, in which he refers to the sub-Red Crag flint implements and the pre-Chalky Boulder Clay human skeleton I have discovered.

Mr. Sutcliffe argues that because the rostro-carinate flints are found below the Red Crag, and (as he asserts) in the Palæolithic gravel of Hackney Downs, they cannot be of human origin, because it is "inconceivable that a human production should have retained exactly the same form throughout this immense period."

Apart from the fact that the rostro-carinate specimens have *not* retained exactly the same form during the periods in which they were used, it appears to have escaped Mr. Sutcliffe's notice that a river-gravel is composed of material of the most varied ages, and that therefore the examples of this type found in the Hackney Downs deposit need not necessarily be of Palæolithic age.

But even if they do belong to this period that has no bearing upon their "humanity"—the ordinary round-ended scraper was made in the most remote times, and is still used by the present-day Eskimo. Mr. Sutcliffe has also apparently "found" that the rostro-carinate flints are "not adapted to any likely use," and cannot therefore be held to afford good evidence of Pliocene man.

This is a very shaky and unsound objection, as it is open to anyone to "find" that the ordinary Palæolithic implement is practically useless, and therefore non-human.

Mr. Sutcliffe has evidently not carefully read the published accounts of the evidence in favour of the high antiquity of the Ipswich man. It has never been suggested that the skeleton was lying on a land surface of loose sand, and exposed to the direct action of moving ice, but that the bones had probably either been buried in that surface or covered by blown sand to a considerable depth.

If Mr. Sutcliffe had examined the evidence I have mentioned with an open and unbiassed mind, he would have recognised that the actual provenance of the Ipswich bones is as well established as any prehistoric skeleton yet unearthed.

J. REID MOIR.

Openings Required for Laboratory Assistants.

You have in the past been kind enough to insert a letter of mine with regard to the London County Council laboratory monitors, whose services the council is unable to retain after the age of seventeen, and whom it has requested this association to place in

work. Thanks to the publicity which was given by NATURE to the needs of these young men, I was able to place a certain number of them in good commercial laboratories, and it is satisfactory to know that in nearly all cases they have justified my opinion of them and are doing well. More than thirty have been placed during the past three years, and are under my supervision still.

The council has recently referred to me a large number of these lads who are shortly leaving its service, and I should be glad to be permitted to make this fact known among readers of NATURE, as I am confident that should any employers desire promising assistants for their laboratories they would be able to obtain satisfactory applicants through this source. Applications should be made to the hon. secretary, Apprenticeship and Skilled Employment Association, 51 Denison House, 296 Vauxhall Bridge Road, S.W.

May 14.

G. E. REISS,
Hon. Secretary.

The Use of Spectacles with Optical Instruments.

WITH reference to the inquiry in NATURE of May 1 (p. 215), the general rule in cases where a person using spectacles wishes to use an optical instrument is, that for telescopes and instruments used for distant objects, use the distance correction; for microscopes and instruments for near work, the near correction should be worn. Care should always be taken to use the centre of the spectacle lens. If no astigmatism is present there is generally sufficient focussing room to enable the observer to dispense with the spectacles. The most comfortable method is to have a cap made for the eyepiece of the instrument with a lens equivalent to that in the spectacle. This should be set as close to the eye-lens as possible, and in cases of astigmatism they should be marked so that the axis may be correctly set. Any good optician will do this at small expense.

HERBERT S. RYLAND

9 Alwyne Square, Canonbury Park, N., May 14.

NATURAL HISTORY AND SPORT.¹

(1) IT is now six years since the publication of Captain Shelley's great monograph of the birds of Africa was suspended by the illness that overtook and ultimately proved fatal to the author. Fears, however, that the work might remain unfinished were happily allayed by the announcement that Mr. W. L. Sclater had undertaken to carry it on to completion. Several years elapsed before the final arrangement could be made, and it was not until 1912 that Mr. Sclater was able to bring out the volume under notice, which deals with the Laniid or drongos and shrikes, and is the second part of the fifth volume. This part is in every way up to the standard of its predecessor, and shows that Captain Shelley could not have committed the task to more competent hands than those of Mr. Sclater, who has a genius for sys-

tematic ornithology. The book would certainly have been improved and its cost not greatly increased by the addition of a few outline figures in the text to illustrate some of the structural characters of the birds; but the eight coloured plates drawn by that competent draughtsman and greatly improved bird-artist Mr. A. Grönvold are excellent. Apart from the systematic descriptions and the useful analytical identification keys, a full account of the known distribution of every species is given, and its habits, where observed, have been duly recorded.

(2) As director of the museum at Port Elizabeth, Mr. F. W. Fitzsimons has had exceptional opportunities of studying the snakes of South Africa, and his volume is the outcome of observations, extending over many years, upon these reptiles both in their native haunts and in captivity; and, thanks to his freedom from the restrictions imposed in some other countries, he has been able to make a long series of experiments upon the venom of the poisonous species. These experiments have shown, amongst other things, that none of the snake-killing mammals and birds of South Africa, like the mongooses, zorillas, hedgehogs, and secretary birds, is immune against snake venom, as has been stated and is often believed, but that one and all owe their ability to escape from and overcome even such redoubtable antagonists as the puff-adder and yellow cobra either to their extreme quickness in warding off or avoiding the stroke or to their protective armature. The experiments have also convinced Mr. Fitzsimons that the antivenene recommended by Dr. Martin and Major Lamb "by no means possesses the high standard of venom-killing power some people claim for it." These are only samples of the interesting matter contained in the volume, which is a medley of varied information, anecdotes relating to habits and field experiences being sandwiched between technical diagnoses of genera and species, often taken verbatim from the British Museum catalogue, the whole subject-matter being presented in such a manner as to make a volume both useful to the specialist and readable to the ordinary layman.

(3) The tale of Mr. Sutherland's ten years' adventures as an elephant-hunter in Portuguese and German East Africa is told with a simple charm and ease of style which give his volume a foremost place amongst books of African sport; and the interest of his experiences, some of them unique and most of them exciting, is heightened by the knowledge that he met them single-handed, with only one or two trusted natives to act as trackers and carriers. So vividly are the scenes depicted that on regretfully turning the last page one cannot but echo the sentiment of the author when he writes: "After so many years of a wild, free life, I find it difficult to accommodate myself to the stuffiness and constraint of a modern city; I prefer the forest to the imprisonment of streets, the twinkling stars to lamps, the sigh of the primitive forest to the tramp of thousands of human feet."

¹ (1) "The Birds of Africa." Comprising all the Species which occur in the Ethiopian Region. By P. E. Shelley. Vol. v., part ii., completed and edited by W. L. Sclater. Pp. viii + 165-502. (London: H. Sotheran and Co., 1912.) Price 31s. 6d. net.

(2) "The Snakes of South Africa." Their Venom and the Treatment of Snake Bite. By F. W. Fitzsimons. New edition. Pp. xvi + 547. (Cape Town and Pretoria: T. Maskew Miller; London: Longmans, Green and Co., 1912.) Price 12s. 6d.

(3) "The Adventures of an Elephant Hunter." By J. Sutherland. Pp. xix + 324. (London: Macmillan and Co., Ltd., 1912.) Price 7s. 6d. net.

(4) "Baby Birds at Home." By R. Kearton. Pp. xv + 128. (London: Cassell and Co., Ltd., 1912.) Price 6s.