

researches may indicate fluctuations in the Aralo-Caspian waters, in correspondence with those traceable in the rivers that flowed down from the glaciated areas. Mr. R. W. Pumpelly tried, in the short time at his disposal, to correlate (p. 143) the glacial changes with the successive shorelines traceable in the basin of Kara Kul on the Pamir, and makes the interesting suggestion that this lake rose to a height of 320 feet or more above its present level during the first local glacial epoch, and to a height of 150 feet during the second epoch, the times of greatest precipitation corresponding with the increase in the lacustrine waters. Both here and in the Alai Valley to the north, two well marked series of moraines exist. The older series in the Alai Valley is clearly indicated by being cut into by the narrower valley-troughs, with which the second and fresher series is associated. If we read Mr. Pumpelly aright—for his mode of bringing together his observations leaves something to be desired and explained—the older glacial epoch actually preceded some of the earth-movements which gave the ranges their present relations and elevations (pp. 145 and 155).

Mr. Huntington goes so far as the presentation of five glacial epochs, on the evidence of the large and high-reaching valleys which still contain glaciers in them (p. 199); and, arguing from the very probable

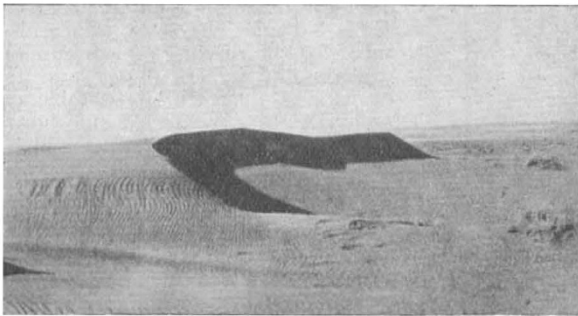


FIG. 2.—A Barkhan near Bakhar'en, looking south. From "Explorations in Turkestan, with an Account of the Basin of Eastern Persia and Sistan."

correlation of his epochs of gravel-deposition and of glacial extension higher up the country, he is inclined to ask for at least six advances and six considerable "interglacial" withdrawals of the ice. In his concluding paper on eastern Persia and Sistan, he describes what he styles "one of the most desolate lands in the world," "a land of gravel and nakedness, of huge desert basins and desolate, interminable slopes, of tantalizing mirages and bare mountains." The average rainfall does not rise above 10 inches, and comes from the south-east; while the summer wind from the north, often as violent as a hurricane, fills the air for four arid months with continental dust. The country is dealt with by Mr. Huntington as by a scientific artist, and his picturesque touch is emphasised by an occasional aphorism, such as "The desert makes men lose every sentiment except the desire to get safely to the other side." Persia is to him a "typical example of an arid country"; and he gives us a fine sketch of its life-history. He then describes in detail five series of recent river-terraces, and connects them, as we are led by this time to expect, with climatic changes, similar to those in Turkestan. The alternations in the lake-deposits of Sistan then come in for corresponding treatment, and the decay of the area in population and in political power in modern times is attributed to the final desiccation.

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We are glad that Mr. Huntington's clearly written papers close the series; for must we not admit that American physical geographers, who are apt to classify old conceptions until they appear to develop into new ones, provide us at times with somewhat difficult reading? On p. 79 we have:—"the penetration of the region improved in the final 40 miles of the road on the sixth day. In the morning some of the broad ridges . . . were from 300 to 500 feet over the intervalles." Mr. Pumpelly can hardly be a cyclist, or he would not speak of "deflated boulders" on p. 131. If, again, we all understand what dating a letter means, how shall we appreciate the phrase (p. 135) "the epochs predating the escarpments"? We make these remarks as much in the interest of the conscientious foreigner as of ourselves; for the directors of the publications of the Carnegie Institution have no right and no desire to remain content with a purely American circulation.

As examples of the numerous effective illustrations, we may mention the photograph of a characteristic crescent-shaped "barkhan" of blown sand on p. 44, and that of the glacial valley and subsequent ravine of the Khoja Ishken on p. 188, both of which are here reproduced; but all throughout are to the purpose, even when merely showing modes of travel in a region of absorbing interest.

GRENVILLE A. J. COLE.

HABITS OF BIRDS.¹

MR. EDMUND SELOUS, the author of this elegant little volume, is one of the most patient and enthusiastic observers of bird-life in the British Islands, and has recorded details in connection with the habits of several species which have been overlooked by other field-naturalists. If the riddle of nature is ever to be solved by observations on living animals, Mr. Selous is one of the men who ought to help to solve it, although we are bound to confess that several of his theories, notably the one with regard to the origin of the nest-making instinct, do not appear to ourselves by any means convincing or sufficient. Nests, indeed, form a very favourite theme of the author; so much so, in fact, that when discussing the building of supernumerary nests by various species on pp. 67 and 199, he practically repeats the same thing, namely, that this results, originally, from a simple love of labour and occupation.

The author is, perhaps, at his best when describing the movements and actions of birds as seen during his inimitably patient watchings, excellent examples of this being shown in his description of herons alighting on their nest, and of long-tailed titmice constructing the domed receptacle in which their eggs are deposited. The latter incident is represented in one of the illustrations, photographed, like the rest, from a sketch by the clever pencil of Mr. Lodge, this exquisite picture being reproduced as a sample of the illustrations generally. As an interesting suggestion, reference may be made to the author's theory that when a woodpecker's nesting hole has been usurped by a starling, the rightful owner may occasionally lay an egg in the nest, and that in this manner the parasitic habit of the cuckoo may have been developed. The fact of starlings excavating large nesting chambers in sand-cliffs is entirely new to us.

In regard to the "get-up" of the book, we may suggest that it would have been an improvement if, instead of repeating the main title as the heading for alternate pages, the name of the species under dis-

¹ "Bird Life Glimpses." By E. Selous. Pp. viii+335; illustrated. (London: G. Allen, 1905.) Price 6s. net.

cussion had been given, for, in consequence of the vague headings on the opposite pages, it is often a matter of some little difficulty to discover to which particular bird the author is referring. Throughout his volume Mr. Selous is fond of interpolating phrases or quotations in foreign languages, inclusive of French, German, Latin, and Greek. Whether such a practice is altogether desirable may be a matter of opinion, but there will be only one opinion as to the desirability of quoting correctly, which is far from

to be delivered at Johannesburg on Wednesday, August 30, will appear in NATURE of the following day.

From a Reuter message we learn that on the conclusion of the address, the Governor, Sir Walter Hely-Hutchinson, in proposing a vote of thanks, bade the association heartily welcome on behalf of Cape Colony. The occasion was one, he said, of no ordinary importance, whether in the history of the development of scientific inquiry or in the history of the relations of the United Kingdom with the British dominions beyond the seas. He hoped it would be found that a great and important step had been taken in drawing closer together the bonds of the brotherhood of science, and, it might be, through the brotherhood of science, in promoting and developing brotherly feeling between His Majesty's subjects in South Africa and the Motherland.

Sir David Gill, K.C.B., chairman of the central organising committee at Cape Town, seconded the motion; and a brief reply by Prof. Darwin brought the proceedings to a close.

The addresses of all the presidents of sections were to be delivered yesterday on the assembling of the sections at Cape Town. The sections are also to meet for the reading and discussion of reports and papers to-day and to-morrow, and they will reassemble on Tuesday, August 29, at Johannesburg, where the concluding meeting will be held on September 1, and the work of the sections will terminate.

INAUGURAL ADDRESS BY PROF. G. H. DARWIN, M.A., LL.D., PH.D., F.R.S., PRESIDENT OF THE ASSOCIATION.

PART I.

BARTHOLOMEU DIAZ, the discoverer of the Cape of Storms, spent sixteen months on his voyage, and the little flotilla of Vasco da Gama, sailing from Lisbon on July 8, 1497, only reached the Cape in the middle of November. These bold men, sailing in their puny fishing smacks to unknown lands, met the perils of the sea and the attacks of savages with equal courage. How great was the danger of such a voyage may be gathered from the fact that less than half the men who sailed with da Gama lived to return to Lisbon. Four hundred and eight years have passed since that voyage, and a ship of 13,000 tons has just brought us here, in safety and luxury, in but little more than a fortnight.

How striking are the contrasts presented by these events! On the one hand compare the courage, the endurance, and the persistence of the early navigators with the little that has been demanded of us; on the other hand consider how much man's power over the forces of nature has been augmented during the past four centuries. The capacity for heroism is probably undiminished, but certainly the occasions are now rarer when it is demanded of us. If we are heroes, at least but few of us ever find it out, and, when we read stories of ancient feats of courage, it is hard to prevent an uneasy thought that, notwithstanding our boasted mechanical inventions, we are perhaps degenerate descendants of our great predecessors.

Yet the thought that to-day is less romantic and less heroic than yesterday has its consolation, for it means



FIG. 1.—Long-tailed Tits and the Nest. From E. Selous's "Bird Life Glimpses."

being the case when a well-known line from the second book of the *Æneid* is introduced on p. 109.

R. L.

THE SOUTH AFRICAN MEETING OF THE BRITISH ASSOCIATION.

THE seventy-fifth meeting of the British Association was inaugurated at Cape Town on Tuesday, when the president, Prof. G. H. Darwin, F.R.S., delivered the first portion of his address to a large gathering in the new City Hall. This part is reprinted below, and the remainder of the address,

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