

My reason for suggesting such an origin for the migration is that it takes place every three or four years from the same plateaux. It is very evident, therefore, that—abiogenesis being now out of court—some lemmings must be left there to continue the species. Now, it is not likely that the weakest are left behind, otherwise their survival year after year would be quite problematical. Do not the facts point unquestionably to the strongest being left to continue the race?

To the criticism that there is no evidence of fighting having taken place amongst the migrants, my reply would be that no one, so far as I can learn, has seen a migration start, or seen one immediately after it has started—the only time, that is, when the effects of such fighting would be apparent, for after a few days those seriously injured would have died and have been left behind, while those only slightly injured would have recovered sufficiently to be indistinguishable from the remainder.

Churchfield, Edgbaston. F. HOWARD COLLINS.

#### The New Railway from Upminster to Romford, Essex.

ON the above railway, now being constructed, there is a section of unusual interest a few yards north-east of the church at Hornchurch, showing the Chalky Boulder Clay (15 feet seen) under sand and gravel belonging to the highest terrace of the Thames Valley, and resting on London Clay. Hitherto, Boulder Clay has not been seen in this district in connection with Thames Valley deposits, its most southerly exposures lying about three miles northward, on London Clay or Bagshot Beds.

I have been carefully watching this cutting for some time, with a view of sending an account of it to the Geological Society when it shall have been completely excavated. But, though much has still to be done, the half of it finished has already been sloped, and the arrangement of the beds—clear a month ago—greatly obscured. It has therefore been suggested to me that a few lines on the subject in NATURE may be the means of enabling geologists interested to visit this section while the Boulder Clay is still clearly visible in some portion of the cutting.

It may be useful to add that the distance from Hornchurch Station is about a mile, and that the visitor, after leaving the church on his right hand, should take the first road on his left.

T. V. HOLMES.

28 Croom's Hill, Greenwich Park, S.E.,  
December 7.

#### Peculiar Eyes.

THE inability of keeping one eye shut and the other open at the same time, is a fact well known to drill-sergeants. I well remember, when a conscript some sixteen years ago, how a great number of recruits were unable, even after repeated efforts, to do so; but I had no difficulty about it. At that time, too, my eyes were about equal in power; but at present while the right eye is of normal power, the left eye presents a much less distinct image. I can only ascribe this to the habit of working at the microscope with the right eye without closing the left. It is especially at this work that the defective sight in the latter is noticeable. I do not think my ten months of rifle practice has anything to do with it, except, perhaps, in emphasizing the tendency to use the right eye, the image of which is now so predominant, that in covering a bull's eye, for instance, it is immaterial whether the left eye be closed or not.

G. K. GUDE.

5 Giesbach Road, Upper Holloway, December 7.

#### Grafted Plants.

REFERRING to Prof. Henslow's paper on "A Theory of Heredity based on Forces" (November 26, p. 93), the behaviour of grafted plants seems to require, for its explanation, the possession by both stock and graft of something analogous to a distinct individuality, call it what we may. It is difficult enough to understand, especially in the case of nearly-related forms, why the stock generally has no, or so little, influence on the graft; but, assuming the absence of individuality, the difficulty is largely increased. The graft takes its nourishment through the stock, and yet retains its characteristics unimpaired. I argue from this that not only does the graft possess an individuality of its own, but that this is so marked that it can take its nourishment direct from the stock, while at the same time straining out,

as it were, whatever it is that constitutes the individuality of the stock. The phenomena presented by parasitic plants seem to bear out this view.

W. H. BEEBY.

#### Intelligence in Birds.

A FEW weeks ago I received a specimen of *Podoces panderi*, the typical desert bird of Central Asia, which had been kept for some months in captivity at Perowsk. The first thing the creature began to do, when located by me in a spacious *volière*, was to pick some food (cooked rice with baked eggs), and to bury it in the very thick sand layer with which the floor of the cage was provided. This was the incessant occupation of the bird on the first day of its instalment. But the task was almost completely abandoned from the next day; the bird, evidently remembering the conditions of its former life in captivity, found it useless to make provision for the future when a fresh supply of food daily appeared.

The fact referred to seems to indicate, first, that the birds in question are in the habit of making provision in the wild state, the powerful and slightly curved bill being admirably adapted for the purpose of making holes, even in a hard ground. It shows, also, how abruptly the habits of animals can be modified when the conditions of their environment are changed.

Now, a question naturally arises, How must we regard this habit of burying food—as the result of a long inheritance, or as an effect of constant imitation of older birds by younger ones?

A. WILKINS.

Tashkend, Central Asia, November 8/20.

#### SIR ANDREW CROMBIE RAMSAY.

THOUGH this illustrious geologist has been laid aside by growing infirmity for the last ten years, the news of his death will carry regret into the hearts of many men of science, not in this country only but all over the world. Born in Glasgow, and intended for a mercantile profession there, he spent some few years in business; but, partly on account of delicate health, betook himself for rest and open-air exercise to the island of Arran. One of the friends of his early years, Prof. Nichol, of Glasgow University, the well-known writer on astronomical subjects, had much influence in directing his studies into a scientific channel, so that the marvellous geological lessons to be learnt from the rocks of Arran soon arrested Ramsay's attention. Throwing himself with all the ardour of an enthusiastic naturalist to the pursuit which he not took up, he was led to climb the mountains and traverse the glens throughout the length and breadth of Arran. In this way, face to face with the facts of Nature, and amid some of the most charming scenery of his native country, he taught himself the rudiments of geology, and acquired that clearness of insight for geological structure, that love of mountain-forms, and that freshness and originality of interpretation, which marked him out from his associates in later years. But above all, by actually mapping the grouping of the rocks, he gained that precision in field-work which was to bear such notable fruit in his connection with the Geological Survey. He constructed a geological model of Arran on the scale of two inches to a mile, and made copious notes of the geological structure of all parts of the island.

The meeting of the British Association in Glasgow in the year 1840 proved to be the turning-point in his career. The model and map of Arran which he had made were exhibited at the Geological Section, and he gave a brief account of them and of the geology of the island. Among the geologists who listened to him was Murchison, who, struck with his ability and his devotion to the science, offered to take him on an expedition which the author of the "Silurian System" had then projected to America. Ramsay accordingly went up to London, but found that the voyage across the Atlantic had been abandoned for a journey into Russia, and that he was not to take part in it. Murchison, however, spoke so warmly in favour of his