I should have known exactly what he meant, and made bold to differ from him.

I feel sure, however, that those geologists who have endeavoured to revise the almost forgotten teaching of Hutton as to the important part played by subaërial denuding forces in forming the present surface of the ground, are by no means forgetful of the obligations they are under to upheaval for furnishing them with materials to be shaped; and in cases of great mountain chains they have always admitted that the superior elevation of the ground is mainly due to internal action, though they hold that all the sculpturing of the upheaved mass into gorge and peak is due to atmospheric agency.

A. H. GREEN

79, Dodworth Road, Barnsley, Sept. 3

Geology of Devonshire

A RAILWAY of eight or ten miles is now in course of construction between Totnes and Ashburton in Devonshire. To a geologist the cuttings near the latter town are most interesting. I am not a geologist, although the science is deeply interesting to me. I returned from Ashburton ten days ago. The rocks there at one part of the line were evidently volcanic. They appear exactly as if they had been melted, and in boiling up a scum or froth had risen on the surface, and in cooling had left air-bubbles, now nearly filled with sometimes yellowish crystals. The rock is very hard, and has a stratum of what was once slate, ten or twelve feet thick, and as the workmen work it out it bears the colour which great fire would give it. As blocks of the other rock are torn out by powder, they are found to contain or enclose fragments several inches square of the superincumbent slate rock, too hard to be melted. This rock is not stratified, but breaks into any form. A few hundred yards off they are working through ironstone as hard as iron itself. The heavy sledge hammer rings on the blocks as on an anvil. At the east end of the town are two pits worked forumber, indeed there are several fields of which the soil a few inches below the surface consists wholly ofumber. I do not expect there is any one in the neighbourhood who feels an interest in geology. I saw a letter in NATURE on a geological subject from Mr. Pengelly, of Torquay and I wrote him on the above subject. I have no doubt the line is very interesting in the other parts, as the rocks greatly vary thereabouts.

A learned geologist would have made what I have attempted to describe more interesting. He would find much to employ him in that neighbourhood.

W. LUSCOMBE

Hereditary Deformities

IN the lessons in Ethnology in "Cassell's Popular Educator," it is stated, on the authority of Dr. Theodor Waitz, and the Secretary of the Anthropological Society, that "an officer, whose little finger had accidentally been cut across, and had, in consequence, become crooked, transmitted the same defect to his offspring. Another officer wounded at the battle of Eylau, had his scar reproduced on the foreheads of his children." And again, "In Carolina, a dog which had accidentally lost its tail transmitted the defect to its descendants for three or four generations." Do these stories rest on a good foundation? We know that congenial peculiarities of form and disposition are transmitted from parent to offspring, but that an accidental deformity should be so transmitted is a very different affair, and if substantiated would introduce *Accidental Distortion* as a co-worker with natural selection in the modification of species.

Faversham, Kent, Aug. 27

WM. FIELD

Poisoning by *Ænanthe crocata*

PERMIT me to send you the following notes with regard to the case of poisoning by *Ænanthe crocata* which appeared in your issues of 18th August and 1st September.

I. As to the poisonous properties of *Ænanthe*, Prof. Christison found that plants gathered in certain localities were harmless, while others from different places were highly poisonous.

II. As to the mode of death. This seems materially to differ from that observed and recorded with regard to poisoning with hemlock (*Conium maculatum*). In the case of poisoning with hemlock which took place in Edinburgh in 1845 (recorded in the *Edin. Med. and Surg. Journal*, No. 104, and also Prof. Bennett's "Principles and Practices of Medicine") the mind remained clear till the end, and death resulted from asphyxia produced by slow

paralysis of the muscles of respiration. The muscular paralysis commenced in the feet.

In the recent case of poisoning by *Ænanthe* there seems to have been coma and convulsion for half an hour previous to death; no paralysis seems to have occurred over the body. From the account of the hemlock case to which I have referred, that plant also seems not to have any particularly acrid taste. The part that seems strange to me is the difference in the mode of death with plants so nearly allied to each other as the *Ænanthe* and the *Conium*.

J. W. E., EDIN.

NOTE ON SOME INSTANCES OF PROTECTIVE ADAPTATION IN MARINE ANIMALS

THE various phenomena of mimicry and protective adaptation have recently received much attention, notably from Messrs. Darwin, Bates, and Wallace, and some very interesting facts and reasonings on the subject are contained in the recently published "Contributions to the Theory of Natural Selection" by the last-named author. It can scarcely be needful to explain at much length the nature of the phenomena in question. Well-marked instances of mimicry are not very common; some of the most surprising are those of the leaf and stick insects of the Tropics, which it is almost absolutely impossible, when at rest, to distinguish from dead leaves and twigs. The importance of these resemblances, in conferring protection from attack, will be at once evident. Commoner instances of adaptation, which may indeed be noticed wherever we turn our eyes upon the animal creation, are those of more or less complete resemblance of colour between the animal and its surroundings. The most remarkable instance of this kind which has come under my own observation is perhaps that of the caterpillar of the Emperor moth (*Saturnia pavonia minor*), which, with its green ground and brilliant pink spots, is almost undistinguishable from the heather upon which it frequently feeds.

Numerous instances of this kind amongst terrestrial animals might be brought forward, but less attention has been paid to similar points in the less highly-organised of marine animals. They are, for the most part, much less easily observed in their natural haunts, and their habits and the dangers to which they are exposed are of necessity imperfectly understood. We may note, however, that fishes very commonly assume the colours of surrounding objects; the flounder is almost exactly of the colour of the sand on which it lies, and fishes which bask amongst groves of seaweeds are often of brilliant and variegated colours corresponding very much with the vegetation around them.

The two instances which form the subject of this notice came under my observation while dredging in June last in the Frith of Clyde. In one spot the dredges brought up many plants of *Laminaria* with their roots, which consist of a conical mass of contorted and intertwined fibres about a line or two in diameter; amongst these were imbedded quantities of nullipores—a calcareous seaweed of the genus *Melobesia*—(*M. calcarea*). The larger weed had, in fact, grown in a bed of the nullipore, which came up abundantly in the dredge, and indeed now forms on a closely adjacent part of the coast a raised beach of several feet in thickness. Amongst the nullipore which matted together the laminaria roots were living numerous small starfishes (*Ophiocoma bellis*), which, except when their writhing movements betrayed them, were quite undistinguishable from the calcareous branches of the Alga; their rigid, angularly-twisted rays had all the appearance of the coralline, and exactly assimilated to its deep purple colour, so that though I held in my hand a root in which were half a dozen of the starfishes, I was really unable to detect them until revealed by their movements.