All dull colours, such as browns, olives, plums, &c., mean that vibrations of every wave-length in the white sunlight are absorbed almost entirely, a very small proportion being reflected. A deep red colour means that there is a less proportion of the longest waves absorbed; a deep violet, that there is a less proportion of the shortest waves absorbed; and a full green, that the absorption is less in the intermediate wave-lengths. These are the primary hues; but in objects which reflect the brilliant secondary hues—scarlets, yellows, blues, and pinks—the chief absorption is confined to a small area in the spectrum, a large proportion of the light being reflected.

There are, then, three distinct stages of coloration, viz. (1) that in which all wave-lengths are absorbed; (2) that in which absorption ceases in respect to about one-third of the spectrum; (3) that in which absorption ceases in respect to about two-thirds of the spectrum.

These three stages are progressive, and in the direction of progress from chaos to unity; from a condition of the protoplasm in which molecular elements of very diverse vibrating capacity are mixed up together, to a condition in which the capacities of these elements have become greatly simplified.

When we speak of an organism arriving at maturity, we imply that it began its career in a state of immaturity, and that it gradually progresses to the condition of maturity. In what that condition consists, or what fundamental changes have taken place, it may not be easy to say; but it is surely true, as a rule, that organisms in an early and immature state are comparatively dull in colour, and do not put on their brightest hues until the period of maturity, indicating that one of the characteristics of maturity is the simplification of the vibrating capacity of the molecules. If this be really a law of Nature, it is a far-reaching one, and will account for much. F. T. MOTT.

Leicester.

On the Soaring of Birds.

I HAVE thought that this habit can be explained as follows; at least as regards rooks, which I have often noticed soaring in flocks, especially in the spring, and I think usually in warm cloudy weather.

An upward convection current of warm air is established over some area. The birds stretch out their wings, and if the upward velocity of the current should happen to be just equal to the velocity with which a bird with outstretched wings would sink through still air (the "terminal velocity"), the bird would be supported; but if it were somewhat greater, the bird would be raised upwards. In that case he inclines his wings so that the resolved part of the pressure on the under side of the wings carries him forward at a uniform level. But this movement, being rectilinear, would take him outside the warm column which he is enjoying. A centripetal force is therefore needed to maintain the circular movement, and this is obtained by tipping the wings, so that the wing which points outwards is raised, and that which points inwards towards the warm column is depressed, as noticed by your correspondent. If the upward velocity of the current is not sufficient to support the bird, an occasional flap with both wings, and the subsequent sinking, supplies the deficiency of upward pressure.

O. FISHER.

IN your issue of August 21 (p. 397) Mr. Magnus Blix gives a very ingenious explanation of the soaring of birds. It appears, however, to me that this explanation rests upon a false basis.

In his illustration, Mr. Blix supposes a bird to be moving in a direction, relative to the wind, at right angles to that of the wind, its absolute velocity, therefore, being greater than that of the wind. He then supposes the bird, by movement of wing-plane, to change its direction to one opposite to that of the wind, and assumes that its absolute velocity, in the new direction, will be equal to the absolute velocity in the old.

Now it is probably true that a bird can change its direction without sensible loss of *velocity relative to the air*, but any velocity it may have, in virtue of the motion of the air, must remain as a component of the new velocity in the same direction as before, however the bird may change the direction of its wing-plane.

Now the supposed bird, in changing its direction at *c*, would still have the component of velocity due to the wind acting in direction *ef* as before. Its velocity relative to the wind, therefore, from *c* to *d* would be the original velocity at *a* (diminished in its passage from *a* to *c*); its absolute velocity the difference of the two velocities.

If this objection hold good, Mr. Blix's theory seems to be no longer an explanation. C. O. BARTRUM.

19 Well Walk, Hampstead, August 26.

Occurrence of a Crocodile on Cocos Islands.

DURING a recent visit to Cocos Islands Mr. Ross showed me the skull of a crocodile of small size which had appeared about a year previously on the islands. It was first seen by a native Cocosian, who reported that he had seen something between a lizard and a log of wood in the sea. It then reappeared upon another island and destroyed a number of ducks, and was eventually shot by Mr. Ross. The distance from Java, the nearest land, is fully 700 miles. It is remarkable that this animal should have swum so far, and managed eventually to strike this small patch of land in the middle of the ocean. I do not know another record of a big reptile travelling so far. Mr. Ross tells me that bamboo-rafts sometimes drift to Cocos, and perhaps it managed to help itself along on one of these.

The whole seas here, but especially the Straits of Sunda and Malacca Straits, are full of drift-fruits, seeds, sticks, stems of Nipa and Pandanus; and between the Straits of Sunda and Cocos, large patches of pumice rolled lumps and dust can be seen, the relics of the destruction of Krakatão.

H. N. RIDLEY.

Botanic Gardens, Singapore, August 6.

Helix nemoralis and hortensis.

I SHOULD be very pleased if some of the various conchological readers of NATURE would kindly furnish me with their records of these two shells. The questions I specially want to ask concerning them are as follows:—What varieties (with band-formulæ) have they found? What number of each variety and band-variation have they taken? What is the environmental condition of the localities where they have found them, as regards plant-life and geological formation? And, in addition, I want the records (and this is a special point) from separate and distinct hedges or banks.

J. W. WILLIAMS.

57 Corinne Road, Tufnell Park, N.

Mr. Williams's "British Fossils."

IN my review of Mr. Williams's "British Fossils," published in NATURE of August 28 (p. 412), I notice a slip on my part in regard to eclogite. I should have said that whereas this rock is stated to consist of red garnets and hornblende, it is usually described as being composed of red garnets and one of the pyroxenes, such as omphacite or smaragdite, or both.

Since writing the review I have come to the conclusion that the twice repeated term "dermoid types" is intended for "demoid types"; a term used in the second edition of Phillips's "Manual of Geology." THE REVIEWER.

August 29.

A Remarkable Rainbow.

I HAVE just seen a very remarkable rainbow. It was plus 60° in height, and thin. The sunset was lurid, with a mock sun to the south of the real one. D. MACGILLIVRAY.

Oxford, August 25.

NOTES.

ON Sunday, August 17, M. Janssen ascended to the Grands Mulets, and next day he reached a hut called the Cabane des Bosses, which an Alpinist, M. Vallot, of Paris, has erected at a point about 400 metres below the summit of Mont Blanc. According to the Paris correspondent of the *Times*, the second day's journey was made in a sledge, drawn and pushed by twenty-two guides. Tuesday, Wednesday, and Thursday M. Janssen spent in a part of the hut which M. Vallot has fitted up as a scientific laboratory. On Friday, as the weather was very clear, M. Janssen had his sledge dragged up to the summit of the mountain to complete his observations. At the ridge of the