

I wish to draw attention to it—all the more since so competent a writer as "D. H. S." seems in a review in NATURE (April 27) to be unaware that the theory of variation by amphimixis¹ has ceased to exist as a 'Difficulty in Weismannism.'

Cork, May 1.

MARCUS HARTOG.

Medical Biology.

G. B. H. HAS, I am glad to see, criticised effectively the syllabus of Elementary Biology put forth by the Conjoint Board (NATURE, vol. xlvii. p. 530). A less fortunate course of study could hardly have been devised. The students who take the course include a number whose previous education, energy and ambition are not sufficient to encourage them to attempt a university course, and the average quality is therefore not very good. They work through a number of unicellular types, which give no training for the hands, though they are no doubt useful in other ways. Then come Hydra and the Leech. Hydra is of course a good subject. The Leech is not instructive to a student who has no knowledge of similar animals, and the untrained man cannot possibly dissect it for himself. The rest of the course consists of parasitic worms and certain generalities. The parasitic worms commonly have the nervous system, heart, and sometimes even the alimentary canal absent or poorly developed, while the reproductive organs are of extraordinary complexity. From these the student has mainly to derive his notions of the plans of structure which are found among animals. Such a course of study looks practical, but it is almost pure waste of time. It does not teach the student to dissect, nor does it introduce him to those problems of Nature which are most accessible to a beginner. In fact, the whole course may be expected to evaporate shortly, leaving behind nothing more valuable than a recollection of the outward appearance of certain parasitic worms.

When the teacher attempts to introduce more instructive subjects, the class, solely bent upon satisfying the Conjoint Board, are too apt to scamp the work, with this excuse, that their prescribed course cannot have aroused any interest in Biology. Educationally, the syllabus of the Conjoint Board is a sin.

L. C. M.

Afterglows in Spain.

I HAVE read Mr. Bickhouse's note in NATURE (vol. xlvii. p. 582) on the afterglows as seen by him in Spain during February last, and the doubts he expresses on the question whether this phenomenon has always occurred when the sun has been near the horizon. I have observed for many years the setting of the sun in Cadiz on the sea horizon with the purest sky, and never remarked the pink tint, but always the rosy tint in the west and the purple, or *Ceausghein*, in the east. After the Krakatoa eruption, in the clear sky of Madrid, the pink colour of the segment was always more or less visible; and it has been more marked in these later afterglows. The phenomenon is of the same character as that of 1883, but much less brilliant. The apex of the segment rises frequently to 40°.

I have also many times observed the *green ray* (rayon vert) in very different conditions of the atmosphere, but nearly always with calm air; this is not precisely a ray, but a flash of green light that has a very perceptible duration of some tenths of a second.

AUGUSTO ARCIMIS.

Madrid, April 24.

Soot-figures on Ceilings.

THE phenomenon noted by Mr. Poulton in NATURE (vol. xlvii. p. 608) is a matter of very common observation; except in the detail of the nail-heads it has been often noticed. The explanation is, I fancy, simpler than that suggested by Prof. Lodge. It is probably a simple case of *sifting of air*, as it passes by upward diffusion through the porous plaster, where its passage is not barred by contact of the plaster with the wood on the upper side. The plaster acts as the plaster of Paris plug does in the classical researches of Graham on the diffusion of gases, and as the plug of cotton-wool does in the common process of sterilising air in biological work. That warm air does stream up through a plaster-ceiling in this way is a matter of experience to

¹ As regards the origin of new species, the author, like Prof. Weismann, attributes the greatest importance to sexual reproduction, and especially to cross fertilisation" (see ante, p. 606).

every householder, when in the winter a bedroom over a sitting-room in which a fire is kept burning all day and a lamp or gas-flames for some hours in the evening, is always found to be drier and warmer than another room in the same house not so situated. We can scarcely classify dry wood and iron together as conductors of heat.

A. IRVING.

Wellington College, Berks, April 29.

THE soot-figures on ceilings described by Mr. Poulton remind me of the appearance of very similar figures brought out by hoar-frost. The first time I noticed this effect was on the surface of a smoothly-boarded gate, where the parts behind which the bars of the framing ran were marked out by a much thicker coating of hoar-frost than the rest. Subsequently I noticed the same effect on a wooden pier where the planking was crossed by broad belts of white, exactly outlining the timbers to which the boards were nailed. On another occasion thick hoar-frost had formed on the roof of the after-cabin of the steam yacht *Medusa*, composed of a close pile of fine needles of ice about one-eighth of an inch high, inclined at various angles. At first the places where the thin teak boards were nailed to the cross-beams were covered only a little more thickly than the rest, but as the warmth of the day increased the ice spicules disappeared—evaporated rather than melted—from the unsupported parts, but remained in a broad band outlining each beam except above the nail-heads, over each of which a small clear space had melted.

At the time I satisfied myself that the phenomena were due to peculiarities of melting rather than of deposition. Supposing the whole surface to have been coated uniformly, the thicker parts would take longer to heat up by the sun, and so tend to prolong the life of the ice spicules resting on them. If this were so, conversely the thickened parts of the structure, cooling more slowly, should have received a lighter coating to begin with, but this I was never fortunate enough to observe. Is the similarity to the soot-figures accidental?

HUGH ROBERT MILL.

1, Savile-row, April 28.

AS this subject has been under discussion lately in NATURE, it seems worth while recording a striking instance which must be well known to many who have been in the large mess room of the Royal Engineers at Chatham. This room has a lofty, highly ornamented ceiling, which was for many years bordered with a deep cornice with a plain moulding either in plaster or papier maché, mostly stuck on one simple template, and coloured either white or some very pale tint. The room was lit by three sunlights in the roof, containing about 190 gas jets. In the course of time the whole of the white moulded cornice became grey with soot-deposit *marked at intervals with light bars*, which were apparently the outline of the wooden ribs carrying the mouldings. This pattern was fairly conspicuous, and was often a subject of discussion at mess (1885 to 1890). Dr. A. Lodge's explanation of the cause seems to be the true explanation.

ALLAN CUNNINGHAM.

Kensington, April 28.

THE mapping out of the heads of nails driven into the joists of the ceiling at Felixstowe seems to be inexplicable by the theory of filtration, although this may very probably account for the more common cases of a deposit between but not upon the joists of a ceiling. I am endeavouring to get a photograph of the best part of the Felixstowe ceiling. Dr. Mill's observation seems to be due, as he suggests, to a different process.

E. B. POULTON.

THE APPRECIATION OF SCIENCE BY GERMAN MANUFACTURERS.

RECENTLY, when giving evidence before the Gresham University Commission, I had occasion to speak of the attention devoted in German chemical laboratories to higher studies, and when asked what were the results of this instruction I drew attention to an article published a short time before in that most enterprising of chemical periodicals, the *Chemiker-Zeitung*, edited by Dr. Krause. In this article a description is given of the research laboratory provided to accommodate *six and twenty skilled chemists*, attached to the works of the *Farbenfabriken*,