

MR. CRAWSHAY'S interesting letter does not affect the question of *Tinea vastella* and its feeding on horns. Reference to the authorities quoted in your issue of September 15 last, or to the accounts of Lord Walsingham (*Trans. Ent. Soc. Lond.*, 1881, p. 238; *id. Proc.*, 1881, p. viii., 1882, p. xx.), and Mr. R. Trimen (*Trans. S. Afr. Phil. Soc.*, iii. p. 24), shows that the moth has been bred repeatedly from horns, and in one case, from a hoof of the troop-horse killed with the Prince Imperial in Zululand, and by naturalists whose competence is beyond question. Recently M. de Joannis has described (*Bull. Soc. Ent. France*, 1897, p. 109), the emergence from buffalo and ox-horns in Algeria of a large number of examples of a new Tineid moth, *Tineola infuscatella*, together with a few specimens of *Blabophanes nigricantella*, Mill., *B. imella*, Hübn., and *Trichophaga bipartitella*, Rag., the larvæ of which moths had apparently also fed upon the horn-substance.

The horn-feeding habit cannot be impeached; but I do not regard the evidence hitherto brought forward as to the horns of a living ruminant being attacked, as absolutely conclusive. With respect to infestation of horns of newly-killed animals exposed for sale in African market-places, it has, I believe, been stated (although I am unable to give any reference thereto) that the natives are in the habit of "faking" old horns for sale by anointing their bases with fresh blood.

Mr. Crawshay's communication is of importance, however, as calling attention to the existence of other horn-attacking insects. The beetles which he has forwarded are examples of *Necrobia rufipes* (or an allied species—his "green beetle") and a *Dermestes*, which cannot be identified from the poor material sent. The larvæ are those of the *Dermestes*.

It is not news to myself, nor, I imagine, to other entomologists, that these beetles are often as common in uncleaned horns or skulls of African animals, as they are in many bone-houses in this country. When the skeleton of the African elephant, now in the Museum of Zoology and Comparative Anatomy at Cambridge, was unpacked, these two (or similar) species fell out of the bones literally in pints. I question, however, whether either of them attacks horns from which the cores and all matter other than the horn-substance have been removed. That the latter was extensively burrowed in Mr. Crawshay's examples is not by itself a proof, for that remarkable and destructive insect, *Dermestes vulpinus*, has the habit, as an adult larva, of attacking any substance that will yield to its jaws, not for food, but for the purpose of forming a suitable nidus in which to pupate. It is thus sometimes exceedingly injurious to woodwork, as in a case, by no means isolated, observed by myself in 1890, where it occurred in great abundance in the bone-sheds of a soap-works, and destroyed all the timbers so rapidly that three new roofs were required in the space of a year, even the scaffold-poles used in their erection being damaged. The fir rafters were hollowed out along the layers of the spring-wood into very thin and brittle concentric laminae; and the damage had much resemblance to that of the most destructive species of Termites. The species, now cosmopolitan, but perhaps of Oriental origin, had been imported into the works in a cargo of Indian bones, and was never abundant or injurious so long as boiling was resorted to for extraction of grease from the bones. Their multiplication dated from the introduction of a method of fat extraction by a solvent which left behind the fragments of muscle, cartilage, &c., adhering to the bones, as well as the gelatin. It was pointed out to me, and, though incredulous, I satisfied myself of the truth of the observation, that the larvæ occasionally enlarged the "blow-holes" in the friable brickwork of the sheds in order to turn them into pupal chambers. On one occasion a workman left in the sheds a white-spotted blue handkerchief; by the next morning every white spot had been gnawed out of it.

Not only is *Dermestes vulpinus* injurious to hides, leather, furs, bones and, secondarily, to woodwork. In India it is destructive to stored silk-cocoons. I have examined examples of, I believe, this identical species unwrapped from cat-mummies, and have received it from Hong Kong, where it had damaged bunting flags in the Naval Depot. This injury was, no doubt, due to the burrowing of larvæ which had bred in provisions or the like stored near the flags.

A still stranger instance of its habits has been lately communicated to me by Sir H. Trueman Wood, to whom a correspondent, a provision preserver in Australia, sent specimens as examples "of a grub or weevil which derived its sole sustenance from salt." Accompanying them were lumps of salt (agglomerations of fine crystals such as table-salt is apt to form), which

were bored through by the insects in such a manner as to lead any non-scientific person to suppose that it had actually been done for the purpose of feeding!

Mr. Crawshay's mention of cocoons on the outside of the horns is not easily reconciled with what is known of the habits of *Necrobia* or *Dermestes*. The species of the former genus, like other Clerids, probably form a cocoon, but are unlikely to do so in an exposed situation. The pupæ of *Dermestes* are found in the above-mentioned chambers enclosed in the split larval skin.

WALTER F. H. BLANDFORD.

London, January 27.

Indian Solpugæ or Pseudo Spiders.

IN your issue of April 28 last there is an interesting article by my friend Mr. R. I. Pocock, of the British Museum, on the Solpugæ (Pseudo Spiders). In that article he does me the honour to refer to certain information I gave him, and to my having allowed numbers of them to bite me to prove to the natives of India that they were not poisonous. Mr. Pocock gives the native name as I gave it to him phonetically as "Jerry-manglum." I have since found that the correct spelling of the word is "Jalamundalum," which is used in the Tamil and Telegoo (Dravidian) languages to denote the larger spiders (Pæcilotheria), the Whip Scorpions, and generally to any animal of the kind which they dread. The derivation is from "Jala," which means heat, fever, or perspiration; and "Mundalum," a period, usually forty-seven days; the belief being that a bite of one of the spiders, Galeodes or Whip Scorpions, will give fever that may last for forty-seven days. A friend, at my request, got this information from a Brahman B.A. of the Madras University, and I think it is interesting enough to deserve a place in your columns.

H. R. P. CARTER.

20 Priory Road, Bedford Park, Chiswick, W., January 30.

Colouring of Plants.

ON reading the very interesting and suggestive article on "Experiments on the Autumn Colouring of Plants," by E. Overton, in NATURE for January 26, it occurred to me that the following observation might be of interest. While I was in Switzerland last summer, I noticed that different plants of *Sempervivum arachnoideum*, L., growing under apparently very similar conditions, differed much in colour, the leaves of some being very red, especially at the tips and on the dorsal surface; and those of others being of a whitish green, almost or quite untinged with red. Wishing to see if any correlation existed between colour and assimilation, I collected two or three specimens of each kind, planted them in boxes, and, after keeping them on a sunny window-sill for some days, so that the environment might be as far as possible exactly alike for all, I tested them for starch by Sachs' iodine method, and found that the leaves coloured by anthocyanin contained far more starch than those without the red colouring matter. From this it will be seen that my results, so far as they go, appear to differ somewhat from the conclusions drawn by Mr. Overton. Perhaps, however, I ought to add that, unfortunately, I did not examine the leaves carefully to see whether or not the red colouring matter was confined to the epidermis, or extended also to the mesophyll, though my impression is that in some cases, at any rate, it did so. My plants were gathered at the end of July or beginning of August.

MAY RATHBONE.

Backwood, Neston, Cheshire, January 30.

THE ORIGINS OF THE LINES OF a CYGNI¹

WHEN engaged in the classification of stars, according to their photographic spectra, in 1893² I came across two sets of lines of unknown origin, one in the hottest stars, the other in stars of intermediate temperature.

After the discovery of a terrestrial source of helium by Prof. Ramsay, I showed in a series of seven notes communicated to the Royal Society,³ May–September 1895,

¹ Paper read at the Royal Society on February 2, by Sir Norman Lockyer, K.C.B., F.R.S.

² *Phil. Trans.*, A, vol. 184, p. 675.

³ 1st Note, *Roy. Soc. Proc.*, vol. 58, p. 67; 2nd, *ibid.*, vol. 58, p. 113; 3rd, *ibid.*, vol. 58, p. 116; 4th, *ibid.*, vol. 58, p. 192; 5th, *ibid.*, vol. 58, p. 193; 6th, *ibid.*, vol. 59, p. 4; 7th, *ibid.*, vol. 59, p. 342.