

Nematodes were found to be plentiful in localities rich in detritus, such as the fine shingle among the rocks and boulders in the Laminaria zone and among the small filamentous seaweeds in the rock-pools. But they were almost equally abundant (though some of the genera were different) in shore-sand, in which there was scarcely any detritus.

Nematodes were not observed to be plentiful in actively decaying animal and vegetable matter. Two were seen feeding within the almost completely emptied skin of a decaying Tubificid worm. There were, however, quantities of small flagellates present, and it may have been these, and not the worm, that the nematodes were devouring.

Nematodes occurred in quantity in situations where diatoms were plentiful, as among small red and green seaweeds growing in the rock-pools and attached to boulders just exposed at low tide. Several individuals, which appeared to belong to the genus *Oncholaimus*, were seen to contain diatoms, all of the same genus *Fragilaria*, both in the œsophagus, down which they were passing, and in the intestine, where they were congregated. The diatoms found inside the nematodes were all of the elongated, pennate type, that is, of such a shape as would allow them to pass readily down the œsophagus. These diatom-consuming nematodes were found among tufts of *Corallina officinalis* in the rock-pools and in bunches of small filamentous seaweeds, such as *Polysiphonia*, which were growing epiphytically on *Fucus vesiculosus* and *Ascophyllum nodosum*. The same genus, and apparently the same species, of nematode, however, was plentiful in shore-sand where diatoms were found to be relatively scarce. Bastian in his monograph records the similar occurrence of diatoms in nematodes. He says (p. 84):—"In individuals of the genera *Cyatholaimus* and *Spilophora* I have frequently seen the intestine filled with large Diatomaceæ, whilst in species of other genera I have occasionally made out a few cells of algæ."

In Leuckart's *Festschrift*, 1892, Dr. de Man described a new species of nematode forming wart-like galls on the "stems" of *Ascophyllum nodosum*, the knotted wrack. It is closely related to the notorious *Tylenchus devastatrix*, and was named by him *T. fucicola*. This was the first discovery of galls formed by a parasitic nematode on seaweeds. The galls themselves were described by Miss E. S. Barton in the Phycological Memoirs of the British Museum, part i., 1892. The material on which they were found was collected at Stonehaven, Kincardineshire, on the east coast of Scotland, and at Seamill, W. Kilbride, Ayrshire, on the west. I kept a careful lookout for these galls at Port Erin, but, being unfamiliar with their appearance, was only fortunate enough to find one, though probably they are really plentiful. The galls and the nematodes present inside them corresponded to the descriptions given by Miss Barton and Dr. de Man, and are without doubt the same.

No relation was discovered between the position or vertical movements of nematodes in the shore-sand and the presence or absence of daylight, though it is possible that some sort of relation exists.

GILBERT E. JOHNSON.

Zoological Department, Birmingham University,  
May 20.

### Lobsters in the Ægean.

IN NATURE of March 7 (p. 9) "W. T. C." quotes from Prof. Herrick the statement that the common lobster is not found in the Mediterranean east of the Adriatic; and, if perhaps this statement be not made so categorically elsewhere, I can at least find no mention of the lobster's occurrence in the Ægean in

the works of Forbes, Heller, Carus, or other authoritative writers. The point is interesting, as the writer points out, because the lobster was well known to Aristotle; and so I have sought further information from my friend Prof. N. Apostolides, of Athens. Prof. Apostolides tells me that the lobster does occur in the Ægean, but comparatively rarely. On the islands of Syros and Sciathos there is a great fishery of *Palinurus vulgaris*, the crawfish or "Langouste," in modern Greek *ástrakós*, and with it the market of Athens is abundantly supplied. Together with it, but only in the proportion of one in a thousand, the common lobster, *Homarus vulgaris*, modern Greek *καρabiða*, also occurs; in the Sea of Marmora, however, the latter species is more abundant.

It would be highly interesting to know something more about the distribution of the two species in other parts of the Ægean, and to verify further, for instance, Aristotle's statement (*H.A.*, V., 17, 459 b) that lobsters are found in the Hellespont and on the coast of Thasos, and crawfish in the neighbourhood of Sigeum and Mount Athos. It would be especially interesting to know something of their relative abundance at Mitylene, where (as I believe) Aristotle did much or most of his zoological work; but this is only one of the multitude of points interesting to the student of Aristotle that might be cleared up by exploration of that particular neighbourhood.

It will be seen that the names of the two species in modern Greek do not agree with Aristotle; for it is abundantly clear that (e.g. in *H.A.*, IV., 2, 526 a, 12) Aristotle describes the common lobster under the name of *ástrakós*, and that his *καρabiðos* is *Palinurus locusta*. In this identification of the Aristotelian names the chief commentators, Cuvier, Schneider, Young, Aubert and Wimmer, are all at one: and so there would seem to have been an exchange of the two names, one with another, for which transference we cannot at present account.

May 21.

D'ARCY W. THOMPSON.

### Birds' Nests.

BEING occupied at present in an endeavour to ascertain the method of transmission of the trypanosomes and other blood parasites occurring in common British birds, such as the chaffinch, I very much desire to obtain nests, with the view of searching them for fleas; the nests which I want especially are those of the house-sparrow and the chaffinch, in both of which occurs the particular flea (*Ceratophyllus fringillæ*) that I require. May I ask any of your readers who may be interested in the subject if they can procure for me nests of either of the above-mentioned birds? I shall be greatly obliged if any nests will be sent to me at the Lister Institute of Preventive Medicine, Chelsea Gardens, London, S.W. Nests should be well and closely wrapped up in paper, as soon as possible after being obtained, in order to prevent the possible escape of any fleas which may be present. Of course, any out-of-pocket expenses, &c., will be gladly refunded.

H. M. WOODCOCK.

The Lister Institute, May 27.

### June Meteor-showers.

THE following meteor-showers become due during the month of June:—

Epoch June 4, 10h. 30m. (G.M.T.), approximately twenty-fourth order of magnitude. Principal maximum, June 4, 9h. 10m.; secondary maxima, June 3, 7h. 5m. and 14h. 10m.

Epoch June 7, 6h. 30m., approximately eighth order of magnitude. Principal maximum, June 6, 7h. 30m.; secondary maximum, June 7, 0h. 30m.

Epoch June 10, 18h. 30m., approximately fourteenth

order of magnitude. Principal maxima, June 7, 21h. 35m., and June 9, 18h. 15m.; secondary maximum, June 9, 7h. 20m.

Epoch June 13, 6h. 30m., twenty-eighth order of magnitude. Principal maximum, June 11, 1h. 5m.; secondary maximum, June 10, 22h.

Epoch June 12, 6h. 30m., eighth order of magnitude. Principal maximum, June 12, 9h. 55m.; secondary maximum, June 13, 16h. 45m.

Epoch June 13, 7h. 30m., twenty-eighth order of magnitude. Principal maximum, June 14, 22h. 10m.; secondary maximum, June 13, 11h. 40m.

Epoch June 16, 2h. 30m., twenty-second order of magnitude. Principal maximum, June 15, 21h. 10m.; secondary maximum, June 14, 10h. 45m.

Epoch June 18, 1h., approximately second order of magnitude. Principal maxima, June 15, 16h. 10m., and June 17, 12h. 55m.; secondary maximum, June 17, 5h. 10m.

Epoch June 18, 4h., fourteenth order of magnitude. Principal maximum, June 17, 22h.; secondary maximum, June 16, 18h. 50m.

Epoch June 26, 19h., eighth order of magnitude. Principal maxima, June 24, 15h. 50m., and June 25, 14h. 45m.; secondary maximum, June 25, 4h. 30m.

Epoch June 27, 12h. 30m., thirteenth order of magnitude. Principal maximum, June 26, 13h.; secondary maximum, June 27, 11h. 20m.

Epoch June 26, 19h., ninth order of magnitude. Principal maxima, June 27, 1h. 5m., and June 28, 21h. 45m.; secondary maximum, June 28, 10h. 20m.

During the first week in June there is not much meteoric activity, the first important maximum of the month occurring on June 7, 21h. 35m. Another interesting maximum, but not so large, is that of June 11, 1h. 5m. Of the two principal maxima of the epoch of June 18, 1h., that due on June 15, 16h. 10m., is the more noteworthy, and this remark is also specially applicable to the maximum of June 28, 21h. 45m.

JOHN R. HENRY.

May 27.

### Solar Halos on May 17.

READERS of NATURE may like to hear of a curious set of halos seen at Goudhurst on May 17 at 6.45 p.m.

The first thing noted was an object high over the setting sun, just like a moustache brushed into a fierce upward curve. This had a metallic lustre like burnished brass, and marked the contact between two coloured circles, the top one, of which only about one-sixteenth was visible, showing two colours, silvery blue on the concave and rusty buff on the convex. The lower halo was complete down to the horizon, and showed all the colours, while from the sun itself a long slender cone rose about half-way up to the moustache, and had exactly the same colour and lustre.

Both halos were enveloped in a huge outer one, of which the top was visible for a few seconds only, and that while the others were very dim. There was thus no chance of seeing the relation of it to the top inner circle.

A rough attempt to measure the radius of the big halo with the hand and outstretched thumb seemed to make it subtend about 44°, and the inner one by a still rougher method about 23°; perhaps someone will be able to tell me whether anything near these angles is possible.

To the eye the outer circle seemed just double the inner one, but the top of it, during the brief time that it was visible, seemed to narrow almost to a pointed arch.

W. P. HASKETT-SMITH.

United University Club, Pall Mall, May 24.

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### A Mineral from Copper Ore.

A FEW weeks ago I received a quantity of copper ores from Atacama, Chile, and on examining them was struck by the peculiar appearance of one specimen. The ground mass consisted of a kind of quartz conglomerate, containing some fissures, which were filled with a loose aggregate of minute clear and bright-green crystals. These crystals, of about one-sixteenth of an inch in length, are very thin, and belong to the monoclinic system. Some are double pyramids, others more columnar, with base, but the majority are absolutely distorted, owing to their growth being impeded by others of their kind.

This mineral seemed to be natro chalcite,

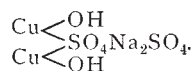


but even on heating the crystals for more than an hour up to 170° C. no loss of water occurred. On examining the crystals we found that they contained only 32 per cent. of copper, but 48 per cent. of  $\text{SO}_4$ , instead of, as in natro chalcite, 39 per cent. Cu and 43 per cent.  $\text{SO}_4$ .

The formula for the mineral would therefore be :



viz.



The crystals are insoluble in cold water, but get broken and partly dissolved in boiling water.

They are easily soluble in acids or liquid ammonia.

P. WALTHER.

44 Sanderson Road, Jesmond, Newcastle-on-Tyne, May 15.

### Clouds and Shadows.

GIVEN a background of fine stratus, blue-black shadows are often thrown upon it, particularly by the setting sun from mountain peaks or the summits of masses of cumulus. On this coast such shadows attain a great length; there may be four or five ray-like shadows diverging from the sunset glow to the zenith, becoming broader as they rise. This seems quite simple, the shadows being cast by the reflected light of the glowing clouds in the west, not by the sun itself, of course; but what to me needs explanation is the reappearance of the rays in the east. Opposite the sunset is a broad band of lilac-pink extending for 30° or so towards the zenith, and upon this the dark bands reappear, converging and narrowing upon a point opposite the sunset. In some cases one can almost trace the shadow bands the whole way from the west over the zenith to their eastern focus. The appearance is very striking, but I have seen no description of it.

CYRIL CROSSLAND.

Sudan Government, Red Sea Province, Office of the Marine Biologist, Dongonab, May 5.

### THE ASIATIC SOCIETY OF BENGAL.

ALL societies which attempt, as the Asiatic Society of Bengal professes to do, to cover the whole field of scientific knowledge are at present exposed to obvious danger. In the first place, the growth of specialism, with societies and journals devoted to single branches of learning, tends to attract important contributions to periodicals which provide for the wants of the botanist, chemist, or geologist. The Bengal