that is, 53 days more than the average number of hot days per year, it is evident that the method will seldom give results that are useful.

I think the most striking fact brought out by the diagram is that a distinct relationship exists between the total number of hot days in five consecutive years and the difference between that number and the corresponding one for the next five years. I have used the diagram to find the coefficient of correlation between these quantities, and I find that its value is as high as -0.725 ± 0.059.

Five hot years are thus usually followed by five cold years, and *vice versa*. This may be accounted for by supposing that the number of hot days at Greenwich is subject to a regular fluctuation with period not far from 10 years. If the period were exactly 10 years the coefficient of correlation would be nearly -1, and all the dots would practically lie on a straight line passing through the origin of the diagram. The fact that they do not lie on a straight line means either that there is another period or periods superposed, or that 10 years is nearly, but not quite, the true period.

It would be interesting to learn whether the directions of the lines joining successive points (chronologically) on the diagram show any sort of regularity. If they proceed generally in a clockwise direction they indicate that the period is slightly greater than 10 years; if in a counter-clockwise direction the period is less than 10 years. The whole arrangement is similar in some respects to Dr. Schuster's well-known periodogram. R. CORLESS.

October 14.

Insects Feeding on "Slime Flux" of Trees

MY attention has been directed to three elm trees at Ettington, near Stratford-on-Avon, which it is said have been "killed by wasps." It appears that the wasps were attracted by the sweetness of the sap, and attacked the trees in such swarms, and so drained them of sap, that the death of the trees seems imminent, all the leaves having gone yellow long before the usual time.

I should be glad to know if others have noticed similar attacks on elm trees, and whether the averred sweetness of the sap is due to some previous degenerative change in the tissues of the tree, or whether wasps would attack a normal tree if they could get access to the sap.

The elms are all three comparatively young trees, and belong to the common variety. My informant tells me that he has previously noticed the same thing happen with an elm tree in one of his fields, which died the next winter.

JOSEPH A. GILLETT.

Woodgreen, Banbury, October 9.

A SIMILAR phenomenon may be seen at the present time in the collection of elms at Kew. The trunk of a fine specimen of *Ulmus parvifolia* has for some weeks past—but more especially during August and September—been the daily rendezvous of hundreds of wasps and bluebottles. As is the case with the trees at Ettington, the attraction is the sweet sap that exudes from the trunk. It is a mistake, however, to blame the wasps for the damage that is being done to the trees. They do not cause the outflow of sap, but are merely there feeding on it. A piece of bark has been removed from the tree at Kew and microscopically examined. It was found to be suffering from what is commonly known as "slime flux," the bark being saturated with sugary moisture. The primary cause of this somewhat obscure disease appears to be a yeast, which finds its way to the cambium layer by means of a wound. Often, as in the Kew instance, ingress has been facilitated by the borings of an elm beetle. The yeast sets up a decomposition of the cells, and starchy, ultimately sugary, products are formed, which exude from the trunk in solution. It is this which attracts the multitude of wasps, bluebottles, and other insects. It is evident from the odour of the bark that a certain amount of fermentation is going on, and the presence of alcohol is further indicated by the behaviour of the wasps, which, after feeding for some time, become stupid and lethargic.

Although "slime flux" is not an uncommon disease of trees in Britain (it is much more prevalent on the Continent), it is not one of the most troublesome. Still, where it attacks it is nearly always ultimately fatal. The Kew tree is evidently suffering from severe debility. Unfortunately, the disease, as a rule, has become firmly established before there are any outward indications of its existence. When noticed on a branch the part attacked can be removed, but when the trunk is badly affected there seems to be no means of curing it. W. J. B.

Meteor Showers.

THE following meteor showers become due about the time when the Orionids may be expected to put in an appearance:—

Epoch October 18 22h. (G.M.T.), approximately twenty-ninth order of magnitude. Principal maximum, October 20 12h. 45m.; secondary maxima, October 20 11h. 15m. and October 22 8h. 10m.

Epoch October 20 9h. 30m., approximately fifth order of magnitude. Principal maximum, October 21 11h. 15m.; secondary maxima, October 20 9h. 30m. and October 22 10h. 35m.

From the foregoing it may be seen that there is likely to be a considerable amount of meteoric activity on the nights of October 20–22. These three nights seem well favoured as regards maxima, which occur at times very suitable for observations.

Other radiants besides that in Orion may be found active on the nights mentioned, but Orionids ought to prove most numerous on the night of October 20, as it is on this night that the general Orionid maximum becomes due. JOHN R. HENRY.

October 16.

The Possible Identity of the Kiess Comet.

IT is well known that the aphelia of many comets are grouped at distances which are nearly the same as those of the larger planets, and astronomers have sometimes attempted to use this fact to demonstrate the existence of a planet beyond Neptune. M. Flammarion mentions two cases—a comet which appeared in 1532 and 1661, and Tuttle's 1862 comet, which is related to the Perseid meteors, and has a period of 121½ years. These are taken as indications of a planet at a mean distance of about 48 astronomical units. The evidence is obviously insufficient; and special interest therefore attaches to the statement that the Kiess comet (1911*b*) is possibly the same as 1790 I. If the identity can be established, this comet must belong to the same group as the other two, and may be regarded as strengthening their evidence as to the hypothetical planet. P. H. LING.

7 Chandos Road, Redland, Bristol, October 2.

Standard Time in New Zealand.

I NOTE that in NATURE of March 16, in an article headed "Standard Time in France," it is stated on the authority of "Hazell's Annual" that the standard time adopted in New Zealand is 11 hours fast on Greenwich.

This is not correct. New Zealand standard time is the time of the meridian 172½° E., that is, 11½ hours in advance of Greenwich civil time. This is correctly stated in "Whitaker's Almanac," 1911, p. 89.

G. HOGBEN.

Seismological Observatory, Wellington, New Zealand, September 4.

Habits of Dogs.

MR. VENABLES'S reference to formic acid (NATURE, September 21, p. 382) reminds me that once, in the pine-woods at Potsdam, I came upon a forester performing some curious evolutions, apparently patting something on the ground and then holding his hands to his face. He explained that it was an ant-hill, and the smell was "very good for the nerves." A. EVERETT.