

are the sins that do so easily beset writers on popular science. The volume, which contains some excellent illustrations, deals with "pioneer labourers," "soil-makers," "soil-carriers," "soil-binders," "field-labourers," "guests welcome and unwelcome," "nature's militia," and so forth. We do not propose to tell who or what the labourers, the guests, or the militia are. We advise those of our readers who are interested in the transactions of the Great World's Farm to get the volume and ascertain for themselves.

LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

Measurement of Distances of Binary Stars.

SOME years ago I communicated to a few astronomers a plan for measuring the distance which separates us from some of the binary stars, believing, as I did, that by using the diameters of their paths as a basis, determinations of distance could be made which are impossible with the means at present in use.

This basis could, I hoped, be calculated by first ascertaining the velocities with which the stars are moving in their paths, in a somewhat similar manner to that employed for measuring the motions of stars with the spectroscope, except that instead of making a comparison with a hydrogen flame, the spectra of the two stars should be compared by photographing them together. The width of any double lines, which may show themselves (the one line belonging to the spectrum of the receding star, and the other to the advancing one) would be a measure of their velocities expressed in miles. Applying this information to the known period of revolution of the system, its diameter can also be expressed in miles, and this would enable one to estimate the distance from the earth if the angle between the two stars were known. This suggestion has already borne fruit, the relative velocity of some rapid, but as yet inseparable, binaries having recently been determined.

The answers received to my suggestions were discouraging, but since then instruments have been improved, and I trust that you will think the matter of sufficient importance to be brought before the notice of your numerous astronomical readers. Should any of them be able to make the necessary determination, a foundation-stone will have been laid, not only for obtaining a true idea of perhaps undreamt of stellar distances, but also of the masses of binary stars, and possibly a connection may ultimately be traced between them and the adjoining ones.

The two most brilliant binary stars are α Centauri and α Geminorum, and as in both these cases the paths are elongated ellipses, and the stars near their extremities, efforts should be directed towards determining their distances as suggested above.

C. E. STROMEYER.

Strawberry Hill, November 16.

Remarkable Weapons of Defence.

THE following extract from a letter from such a careful observer as Mr. E. E. Green is of such general and special interest as to require publication.

Mr. R. J. Pocock informs me that the Acaroid is almost certainly *Holothyrus coccinella*, Gerv., a species that appears to be common in Mauritius, and that in the lateral membranous area between the carapace and the cephalothoracic limbs is a distinct orifice which was regarded by Dr. Thorell as of respiratory import, but in connection with Mr. Green's interesting discovery of the existence of offensive glands in this animal it is necessary to bear in mind the possibility of its being the outlet of the e organs.

The mite has such a hard integument, that being taken into the mouths of the lizards and birds that would probably prey upon it in the situations it frequents, would probably do it little or no damage if it were speedily rejected. G. F. HAMPSON.

THE accompanying insects—apparently Orobatiid mites—were found by me in the district of Tallawakelle, Ceylon (alt.

4600 ft.), under stones and rocks in damp, shady situations. It was only by accident that I became aware of their remarkable weapons of defence—an exceedingly pungent secretion.

About five hours after handling one of these insects I accidentally touched my tongue with my finger. Immediately an extraordinarily pungent, galvanic sensation or taste commenced rapidly to spread over my mouth, quickly reaching my throat. Rinsing my mouth and gargling with hot water failed to arrest the progress of the sensation, which was accompanied with excessive salivation. The unpleasantness lasted for several hours, and then died away without any further consequences. I also unconsciously rubbed my face, at the angle of the eye, with the same finger; after which a rather pleasant warmth spread over that part of my face, and was distinctly perceptible the following morning.

I could not for some time trace the cause of this effect. I at first put it down to the agency of a fungus that I had been carrying, but a further experiment negated this idea. I afterwards tested the insect, and found it to be the real agent. The experiment was repeated at my suggestion, by a medical friend—Dr. R. J. Drummond—who can testify to the result. He described the sensation as somewhat like that produced by the strongest menthol. We both noticed that it had a numbing effect upon the mucous membrane of the mouth.

It is evident that this property must be a very efficient protection to the insect. The rapidity with which the secretion acts would cause it to be very quickly ejected if picked up by either a bird or a lizard—the only enemies that would be likely to attack it.

E. ERNEST GREEN.

Eton, Pundulorja, November.

A Suggestion.

AS very shortly now NATURE will reach its jubilee volume, I hope you will permit me, as an uninterrupted subscriber for nearly twenty years, to offer a suggestion with regard to that occasion.

As the volumes of NATURE contain original contributions, observations, and notes in all branches of science, more varied and valuable than are to be found in any other scientific periodical publication in existence, there is not a worker, in whatever branch he may be engaged, that does not find it necessary to be continually referring to its pages; but, unfortunately, through lack of a general handy index, he discovers what he wants only after the expenditure of a very great deal of time and worry.

I write, therefore, not only in my own name, but (by request in a private way) in that of a large number of fellow-workers in the subjects in which I am myself specially interested—biology, palæontology, anthropology, geography—to suggest that you should celebrate the jubilee of NATURE by conferring on your readers the immense boon of a classified index to its contents.

During some investigations I was making in 1876-7 I so felt the need of a collected index that I went to the trouble of compiling for myself one, up to that date, classified according to sciences, subdivided again according to the sections of each, which in subsequent work saved me weeks of time and trouble. To my regret, this MS. got lost or destroyed, and there is nothing in connection with NATURE that I, and I am certain every other worker, would now hail with greater satisfaction than the announcement that the means of reaching with expedition and precision the treasures at present so deeply buried in your (nearly) fifty priceless volumes, will be effected within our reach with its jubilee volume.

OLD SUBSCRIBER.

Superstitions of the Shuswaps of British Columbia.

REFERRING to the above, as recorded by Dr. George Dawson, F.R.S., in the Transactions of the Royal Society of Canada, and included in your Notes of last issue, in which attention is called to the belief among the Shuswaps and some other North American races, that small lizards enter the bodies of men, pursuing them, and devouring their hearts, I was at once struck with the almost exact resemblance of this belief to one very generally prevailing in Ireland, as regards common water Newts, which go by the name of Man-eaters (pronounced Man-aters). This I can testify to from personal knowledge; but it has been accidentally confirmed by an experiment which I hope I may be pardoned for referring to. Where I reside are three Irish servants, to whom I caused to be shown a drawing of the Water Newt, and with the request that I might be told its