The existence of the stratosphere has taught us, however, that this is not the case.

Though it seems rational to presume that the high westerly winds are an extension of those at higher latitudes ($\pm 15°$), and also that the Krakatoa wind comes from still higher latitudes, being deflected by the rotation of the earth in an easterly direction, more observational data from other stations are urgently wanting for a thorough explanation of the facts.

Batavia, September 24. W. VAN BEMMELEN.

The Blind Prawn of Galilee.

IN describing the eyeless prawn from Galilee that he named *Typhlocaris galilea*, Dr. Calman stated that, according to the information at his disposal, it was found in a small pool near the town of Tiberias communicating with the lake and fed by a mineral spring (see Trans. Linn. Soc., London, 2nd ser., zool. xi., p. 93, 1909). As Typhlocaris is one of the most peculiar crustacean genera described of recent years, further particulars as to its *provenance* may be of interest to naturalists. The pool in which alone, so far as is known, it occurs is situated some two hundred yards from the Lake of Tiberias, an hour and a half's sail north of the town of that name. Originally this pool was one of the chambers in a Roman bath at some forgotten city, perhaps Capernaum or Bethsaida. It is still completely enclosed by stout masonry which gives it a symmetrically octagonal outline, but its surface is choked with gigantic floating grasses. There is now no visible outflow or inflow of water, which apparently percolates through the bottom at several places and decreases in volume by desiccation. As its temperature is distinctly lower than that of the water in the aqueduct that works a corn-mill between it and the lake, it seems improbable that there is any great outward percolation. It is evident, however, that the water, which even now is nowhere less than about 4 ft. deep, was in ancient times much deeper, and that the overflow was conducted away by means of apertures in the wall high above the present surface, while there are traces of an aperture through which it may have entered the pool in volume in a masonry platform that juts out into the pool from one of its eight sides. The water is slightly saline, but not so markedly so as that of some springs in the vicinity.

The first Typhlocaris that I saw on a recent visit to the pool was crawling on the side of the platform about three feet below the surface, making its way slowly in and out of the crevices. Apparently the claws as well as the antennæ were used in testing the surface along which it moved. A piece of bird's flesh weighted with a small stone was lowered on a string to attract it away from the stones and render its capture more easy. It seized the string in both its claws and gave it a vigorous tug. It then made its way to the flesh, but when the latter was forthwith attacked by a number of small fish (*Discognathus lamta*), the prawn moved away. Although the fish made no attempt to injure it, it invariably avoided them. When touched with a net it darted violently backwards, straightening its claws in front of it as it did so, but no great difficulty was experienced in capturing it. At the time of our visit (about 5 p.m.) the pool was in shade, but the prawn did not seem to avoid such light as reached it. A second individual was seen crawling on the bottom at dusk, but none were seen in the early morning.

There was no trace of colour on the living prawn, except that the internal organs of the thoracic region produced a dusky blotch externally. The whole body was otherwise of a semi-opaque white like that of paraffin-wax.

The appearance of Typhlocaris in the pool is most erratic. Herr Grossmann, who sent the first specimens to the British Museum and assisted me greatly in my search for more, tells me that he has often visited the pool without seeing any, and one of the German fathers who have a hospice in the neighbourhood stated that while on one occasion a Bedouin caught five individuals in a single day, on another none were seen for six months. On the whole, I agree with Dr. Calman in thinking that the real habitat of Typhlocaris is subterranean, but I have little doubt that having once made their way through some crevice into the pool, individuals are able to flourish there, hiding in crevices in the walls or under the vegetation that floats on the surface. N. ANNANDALE.

Tiberias, Palestine, October 8, 1912.

Is the Earth Shrinking?

IN a recent popular work I find the statement, "The earth is still slowly shrinking. . . ." I am aware that this statement fits in with our preconceptions and may even appear trite and commonplace, but it is sometimes just such statements that best repay investigation. I would, therefore, inquire whether there is any unequivocal evidence that the volume of the earth as a whole either is now suffering, or has in the past suffered, progressive diminution.

If there were direct evidence of progressive cooling on the part of the earth, diminution of volume would be almost a necessary inference, but on this point I understand that geological evidence is by no means favourable. As regards the presence in various regions of folding, overthrusting, reversed faulting, &c., such phenomena are evidence of surface compression in regions where they are found; and in a precisely similar manner the presence of rifts, fissures, ordinary faulting, &c., is evidence of local surface expansion, although the latter result is seldom emphasised. In a given region it is easy to picture such a combination of folding with fissures cutting across the folds as would cause the region to suffer distortion without either diminution or increase of superficial area. If such be conceivable within the limits of a local region, it is evident that the mere presence of folding and the like, unsupported by an intricate quantitative examination, will not warrant the conclusion that the earth as a whole is shrinking. On the other hand, if due regard be paid to the physical properties of the materials composing the earth's crust, is it not remarkable that extensive regions exist which do not appear—at least in geologically recent times—to have suffered compression?

October 13. H. BIRRELL.

FOR a quantitative discussion of the effects of secular cooling on the earth's crust, Mr. Birrell may be referred to a couple of papers by Dr. C. Davison and Sir George Darwin in the Philosophical Transactions of the Royal Society for 1887. He will find that though the speculative nature of the assumption is frankly confessed, yet the observed phenomena are shown to be consistent with the theory of contraction and secular cooling. On the whole, students of cosmogony (as opposed to geology), arguing to some extent from the analogy of other celestial bodies, are in agreement in accepting the hypothesis of secular cooling. A notable exception is Prof. F. R. Moulton, of Chicago. In conjunction with Prof. T. C. Chamberlin, he has developed a "planetesimal hypothesis," according to which the earth was built up by a series of solid accretions. The hypotheses of secular cooling and initial high velocity of rotation for the earth have no place in his theory. For details Mr. Birrell may be referred to "The Tidal and other Problems" (Carnegie Institution of Washington, 1909).

F. J. M. STRATTON.