Of *T. fausta* (typical) we possess six examples from the Turco-Persian frontier, three from Kandahar, and one of doubtful locality; the "Zeller" collection added seven examples, in all of which the discocellular spot of primaries is replaced by a minute pale-centred ring, and the pattern of the underside is extremely pale; these specimens were received from Beirût and Bagdad, and may either represent a distinct local type or a seasonal form. Of *T. faustina*, owing to the generosity of Major Yerbury, we possess six examples; of *T. orientalis* the male type only; of *T. vi* eight specimens sent to us by Major Yerbury from Aden; of *T. solaris* four males, for three of which we were indebted to Col. Swinhoe; of *T. fulvia*, previously unrepresented in our series, we now have the male; of *T. trinotatus* we have three males and a female; and, lastly, we now have a pair of *T. Palliseri*. Every species of this group hitherto described is therefore represented.

Of the carmine-tipped group Mr. Palliser obtained two species, which he tells me are indiscriminately called *T. danae* in Bombay: one of these, which was represented only by a single male, is apparently a dwarfed example of that species; the other, of which there was a good series, is *T. sanguinalis*, and only differs from the Ceylonese types in being slightly larger.

Of the *T. etrida* group there were examples of *T. bimbura* and *T. pernotatus*, the latter less heavily bordered than usual; and of the *T. evanthe* group, *T. pseudevanthe* and *T. titea*.

LVII.—*Notice of an Abnormal Growth in a Species of* Haliotis. By Edgar A. Smith.

The British Museum has recently acquired a specimen of *Haliotis* which is remarkable for having *two* rows of perforations in the shell instead of one. So far as I can ascertain this is the only instance recorded of such an abnormality. The shell in question is an example of the large Japanese species *H. gigantea*, and measures $5\frac{1}{2}$ inches in length and nearly $4\frac{1}{2}$ in width. It is well known that the perforations in the shells of *Haliotis* are caused by a slit in the mantle of the animal at the particular part immediately beneath them. Instead of perfecting the contour of the shell, in the course of growth an interruption or sinus in the margin is produced,

which subsequently is formed into a complete raised perforation. The number of perforations which remain open indicates the extent of the mantle-slit, but *not* the number of the tentacular filaments along the margins.

In this example four of the holes of the outer or normal series are open, whilst of the inner series, which runs parallel with the other at a distance at the widest part of a little more than an inch, all are closed or filled up. From this I conjecture that the edge of the mantle at this particular point was accidentally notched in early life (or perhaps it may have been a peculiarity from birth) and that the notch was not deep.

The perforations in the shells of this genus are supposed to be for conveying water to the branchiæ and also, to some extent, for the extrusion of fæcal matter. This theory in all probability is correct, as the gills and anal opening are situated immediately beneath, and one fails to see what other purpose they can serve. There being neither gills nor anal opening under the abnormal series of holes, they had no special function to perform, and consequently the animal appears to have filled them up with nacre from within as soon as possible, so that not even the last-completed one is left unclosed.

The supposed abnormal slit or *peculiarity* in the mantle must have been present when the creature was very young, for the series of holes is noticeable to within an inch of the apex, where the shell is so eroded that traces of both this and the outer series become obliterated. The growth of this abnormal series seems to have been more slowly effected than that of the outer row, since, in the same period, which can be judged of by the lines of growth, twelve were produced in the latter to eight in the former.

In the figures of the European *Haliotis tuberculata* which appear in the works of Cuvier * and Fischer † it will be observed that a tentacle is protruded through each of the last six or seven perforations. Cuvier, however, only describes "trois ou quatre filets" on the edges of the mantle-slit, and therefore it is all the more remarkable that in the figure referred to seven are represented. In another figure on the same plate (figure 11) three only are shown (the actual number which exists), and these are drawn in the relative positions which they seem invariably to occupy.

I have carefully examined three specimens of *H. tuberculata* and examples of five other species from various parts of

* Anat. Mollusques, pl. i. fig. 9.

† Man. Conchyl. fig. 596 (from an unpublished cut by Deshayes).

the world, and find in every instance *only three* tentacles present, and *always similarly located.* One is at the posterior end of the slit at the junction of the two margins just over the anus, and I believe would be protruded from the last open perforation, or, in other words, that most remote from the lip of the shell. The second is situated well forward on the left margin of the slit, and doubtless would, when the animal was living, occupy the last-completed opening. The third is on the right margin somewhat further back, and, judging by the distance which separates it from the preceding tentacle, probably would be extruded through the second perforation.

Philippi, in his 'Handbuch der Conchyliologie' (p. 215), states that the animal thrusts through the holes the tentacular prolongations of the left side of the foot. This, however, is an impossibility, as the examination of any species at once shows, and possibly was merely a conclusion derived from the appearance of Cuvier's or some other figure.

LVIII.—*Professor Blake and Shell-growth in Cephalopoda.*

By F. A. Bather, B.A.

In the 'Annals' for April (p. 298) a paper on shell-growth in Cephalopoda was published, in which I described certain facts that appeared inconsistent with the views of Dr. Riefstahl and others. From facts first published by Drs. Riefstahl and Appellöf, but verified and extended by my own observations, I ventured to draw a few conclusions and to suggest an explanation which was avowedly theoretical. Prof. Blake ('Annals,' May, p. 376) has been good enough to criticize my paper without delay. Unfortunately misconception on all sides necessitates a reply. His remarks dealing with questions of priority and trustworthiness must be kept distinct from those dealing with facts and the conclusions based thereon. I first reply to the former; for if a man is proved ignorant of previously published results and guilty of substituting fancy for fact, his credit as a scientific worker is destroyed.

There is no doubt that readers of Prof. Blake's article understood him to mean that, so far as facts were concerned, I had said nothing new. This they inferred from such sentences as "Nor do I find that these writers have anything definite to