

OUR BOOK SHELF

Our Insect Enemies. By Theodore Wood. 220 pp. small 8vo. (London: Society for Promoting Christian Knowledge, 1885.)

WE have read the book through without discovering anything (save in some questions that may be regarded as essentially controversial) to find fault with. The illustrations are not numerous, but to the point, and, although somewhat coarse, are better selected than is sometimes the case in books of this nature. There are fourteen chapters in all, of which four are not inappropriately devoted to Aphides. The important subject indicated by the title is treated calmly, and apparently with a view to discourage the undoubtedly ill-effects produced by panic-mongers in economic entomology. The first (or "introductory") chapter is well considered and well reasoned.

Some Account of the "Palan Byoo," or "Teindoung Bo," (Paraponyx oryzae), a Lepidopterous Insect-pest of the Rice-Plant in Burma. By J. Wood-Mason, Officiating Superintendent, Calcutta Museum. (Calcutta, 1885.)

A PAMPHLET of 12 pp., with a plate, concerning a lepidopterous larva that damages, but does not, as a rule, appear to kill the rice-plant. It is more useful as a contribution to pure biology than to economic entomology. It describes one of the few Lepidopterous larvæ that breathe mainly by gills (or branchiæ), and from this cause is considered an ally of our common little aquatic moth known as *Paraponyx stratiotalis*. The vernacular names by which the insect is known are not such as to be readily remembered by "foreigners;" yet it might have been better had the author not applied a scientific name based solely on larvæ and habits. All babies are supposed to be very much alike, save to the fond parents of each in particular.

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. No notice is taken of anonymous communications.]
- [The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.]

Krakataô

ALTHOUGH I have not yet had the good fortune of reading Dr. Verbeek's "Krakataô," yet in the review published in NATURE of October 22 (p. 601) there are one or two points I would like to draw attention to. In speaking of the earthquake of September, 1880, we are told that it may have facilitated the entrance of water by the Sunda fissure. If this were so, it certainly seems a strange thing that no less than three years should be necessary to heat the water before the explosion took place. I think that at present few geologists believe in water gaining access to the magma by fissures while we neglect percolation through porous rocks. It seems to me that the above earthquake was the result of rupture and extension of the magma-filled fissure towards the surface, in consequence of which the final outburst was put off for a short time by increasing the space for, and so lowering the tension of, the magma-filled fissure. By a careful study of the products of many volcanoes I have shown how the magma gradually dissolves or takes up within it water from the surrounding rocks, and as this is a slow process, the longer a volcano remains inactive, other things being equal, the more violent will be the subsequent eruption and the more vitreous will be the pumice owing to the rapid cooling of the magma froth in consequence of the large absorption of heat in converting the dissolved water into the gaseous state of steam, in the same way that the temperature of seltzer water falls on allowing the gas to escape on removal of the cork. The above earthquake has its parallels in A.D. 63 at Vesuvius,

those of 1536 and 1537 at Monte Nuovo, and in the late Ischian shocks.

The thickness of ejected materials is certainly gigantic, for the maximum thickness of the Plinian eruption at Vesuvius was under 10 metres, or just one-sixth that of Krakataô.

There is reference made to round concretions called "Krakataô marbles" that are met with amongst the ejectamenta, as being things so far unobserved. Of course, it is not possible to judge clearly from the description, but I have little doubt that they may be similar to those met with in the marl-like tufa of Ischia and others, commonly found amongst the ejectamenta of Monte Nuovo, which at the latter locality are fossiliferous. They are simply concretions in a marine resorted tufa.

The cooling of the atmosphere, referred to, at Batavia and elsewhere at a moderate distance around the volcano, might be explained by the vortex inrush of air towards the vapour column. Observations of wind direction would be interesting as settling this point.

Another question of interest that was raised is the cause of non-correspondence of one part of the earth with another in seismic or volcanic activity. If we suppose a volcano to be supplied with magma by ramifications from large extensions of fluid rock within our globe, the gradual absorption of water by one of these ramifications, and the consequent increase in its tension may be quite independent of another ramification not far off, yet perhaps more or less favourably placed in relation to porous strata and superincumbent pressure and the necessary results.

I have drawn attention to these few points not with any intention to undervalue the report, which has all the characters of being one of the most important additions to the vulcanological literature of the nineteenth century, but simply to prevent certain unsound theories from becoming current.

Naples, October 26

H. J. JOHNSTON-LAVIS

The Recent Total Eclipse of the Sun

IT may be interesting to your readers to supplement the description given in NATURE, vol. xxxii. p. 631, with the following notes which I have just received from a friend who observed the eclipse at Nelson, N.Z.: "As the period of totality passed away, a bright point of light as from a diamond



Total Eclipse of the Sun, Nelson, N.Z., September 9, 1885.

of wonderful brilliance shot forth from the upper surface of the moon, and at first this seemed to be only a flame, but it speedily extended to the moon's shadow, passed downwards and to the right, and totality was over." Another feature was the fall in the temperature: "A thermometer which registered 50° at