

Eastern Hindu Kush, giving a brief sketch of the physiography of the region. Prof. T. G. Bonney and Miss C. A. Raisin furnish notes on the rocks collected by Mr. Conway, from which it appears that the majority much resemble those of the Alps. The most interesting specimens are a peculiar schist with secondary mica, a piemontite-schist, and a fragment allied to pseudo-jade. Mr. W. F. Kirby identifies the butterflies, Dr. A. G. Butler the moths, and Mr. W. B. Hemsley the plants. Of the last about a dozen were obtained at or over 16,000 feet. The well-known *Saxifraga oppositifolia* was gathered at 17,000 feet, and another species (the highest habitat) at 17,320 feet. Mr. W. L. H. Duckworth writes on two skulls brought from Nagyr, and Prof. C. Roy discusses Mr. Conway's notes on mountain sickness, coming to the conclusion that the primary cause of it is asphyxia. Mr. Conway's observations agree with those of other experienced climbers, that a man in good condition begins to feel the effect of increased altitude at about 16,500 feet. The fact that he is sensible of more inconvenience when in a hollow among the peaks than when on an exposed ridge, Prof. Roy attributes to some loss of oxygen by the air when it has passed over a considerable tract of melting snow. Mr. Conway has made valuable additions to our knowledge of the geography and physical history of this remote mountain region, and the present volume supplements the more popular account of his travels, which appeared earlier in the year.

The Royal Natural History. Edited by Richard Lydekker, B.A., F.R.S. Vols. i. and ii. (London: Frederick Warne and Co., 1893-94.)

ABOUT twelve months ago (*NATURE*, vol. xlix. p. 220), in a short notice of the two first parts of this work, we heartily recommended it as worthy of the notice of our readers. On a careful perusal of the two volumes now before us, which equal one-third of the projected series, we still feel quite justified in our recommendation; the illustrations are for the most part extremely good, and the text is not only interesting, but it is also intelligently written.

The first of these volumes treats, in fifteen chapters, of the Primates, the Chiroptera, the Insectivora, and the Carnivora, as far as the dogs. We would especially notice the chapters on the cats and the dogs, as having information well up to date. Instead of the often-quoted old stories, it is refreshing to meet with accounts of the habits of these animals, taken from the writings of V. Ball, Blandford, Guillemard, Hudson, and Sterndale. Thus, in the account of the common Indian mungoose, we find mention of the results, to within the last year or two, of Mr. Espent's experiments of introducing this little carnivore to Jamaica. The sugar-planting industry in this island was threatened with destruction on account of the swarms of rats; within three or four years after the introduction of the mungoose the rat plague came to an end, and the beneficial results to the island exceeded £150,000 a year. Volume ii. commencing with the bears, finishes the Carnivora, and describes the hoofed mammals. The illustrations play so important a part in these volumes, that we would suggest that the comparative sizes of the figures should always be given, and when possible the reader should be told where the figures first appeared.

Kitchen Boiler Explosions. By R. D. Munro. Pp. 44. (London: Charles Griffin and Co., 1895.)

THE time having again arrived when domestic boilers will be a source of trouble to paterfamilias, Mr. Munro comes forward with an account of a series of experiments with red-hot kitchen boilers, apparently reprinted from the *Transactions* of some Society. Whether this be so or not we do not wish to inquire, but to us it seems that the diagrams of steam-pressure are little

sued to the "intelligent householder" for whose edification they are intended. The chief conclusions drawn from the experiments are that (1) a dead-weight safety-valve should be fitted to every boiler; (2) water will flow into a red-hot boiler although there is no free outlet, and, also, that a steam-pressure can be attained in such circumstances sufficient to cause rupture of the strongest boilers in use; (3) whilst a very high steam-pressure may be generated in a red-hot boiler by the sudden injection of cold water, a disastrous explosion cannot thus be produced; (4) an explosion, in the true sense of the word, cannot occur unless the boiler contains water as well as steam. Probably the perusal of Mr. Munro's book will help to diminish the disasters from boiler explosions.

The Island of Madeira, for the Invalid and Naturalist.

By Surgeon-General C. A. Gordon, M.D., C.B. Pp. 110. (London: Baillière, Tindall, and Cox, 1894.)

PERSONS who are fortunate enough to be able to leave England during the dreary months of winter, and who select to sojourn in Madeira—"The Flower of the Ocean"—should take this brochure with them. The characteristics of the people and the place are concisely stated, and there is more information on the geology, meteorology, zoology, and botany of the island than is usually given in guide-books of a similar kind. It is well known that Madeira has an extensive fauna and flora, and we agree with the author that it is a matter of regret that the island has no public museum where they could be collected and investigated. Prof. Smitz, however, is gradually forming such an institution at the college in Funchal.

LETTERS TO THE EDITOR.

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"Acquired Characters."

Now that the correspondence on this subject, which you allowed me to start in your number of November 1, seems drawing towards a close, I ask leave through you to thank your correspondents for their courtesy in replying to my inquiries, and also to make a few observations by way, so far as I am concerned, of conclusion.

As none of your correspondents has found any fault with the conditions which I suggested as essential to a good definition, I conceive that I may assume them to be correct.

Furthermore, as none of these writers has adopted or defended any of the definitions which Weismann appeared to me to give or to suggest, or has said anything by way of criticism on my strictures on these definitions, I think that I may conclude that I was not far wrong in those strictures, and that Weismann's writings do not afford any good definition of the words to which he has given currency.

Mr. Poulton has suggested that a definition may be found in the statement that "whenever an organism reacts under an external force, that part of the reaction which is directly due to the force is an acquired character." But surely this is difficult of application: for in every case of a reaction on an external stimulus there are two elements—viz. first, the internal capacity to respond, and secondly, the external force or stimulus. Each of these is necessary to the result and to every part of the result, and neither is of itself sufficient to the result or to any part of the result. How then can we analyse or break up the result or the reaction into two parts, and say that the one is the direct result of the external force, and the other is either not its result at all, or its indirect result? Where there is the joint action of two causes, each necessary but neither sufficient of itself, I conceive that you cannot either logically or physically sever any part of the result from the action of both of the causes, and there is no ground for attributing directness to one part of the effect, and indirectness to another. Mr. Poulton dwells truly on the reaction having two causes—the internal and the