

the physiological and psychological powers or weaknesses of the player are of equal importance. There is a limit to the weight of club which can be most efficiently used by the average man, and there must also be a limit to the weight of the ball. From the point of view of atmospheric resistance, the ratio of the surface to the weight must be kept as low as possible; but too small a surface will diminish the lifting power of the underspin, just as too large a weight will cut down the velocity of projection. The one quality which

must be as perfect as possible is the resilience of the material; but no ball can have a higher coefficient of restitution than unity, and therefore no ball can start on its flight with a velocity greater than twice that of the club head at the instant of impact. Physical and physiological considerations necessarily fix a limit to the range of flight attainable, and probably that limit is now being approximated to. Which, then, is simpler—to standardise or to re-arrange our golf courses?  
C. G. K.

### Nature in a Himalayan Valley.<sup>1</sup>

By LT.-COL. J. H. TULL WALSH.

WE have here the notes made by an officer of the Indian Medical Service in the Hazara valley of the foot-hills, during the years 1914-16. These observations are wide in their range, and were, no doubt, a relief to more serious work. The author is an amateur naturalist, far from works of reference and museum specimens, and the opinions are strictly personal. No man can possess full knowledge in all the branches of science alluded to—for there is compilation as well as observation in this book—but Capt. Hingston has acknowledged his borrowings. The ordinary lover of Nature, who likes a pleasantly written account of geology and animal life in an area not well known to many, will enjoy this book, ignoring opinions with which he may not agree, and errors which the technical naturalist would claim as serious. The general features of the Hazara valley are shown on the map facing p. 4. It is a "slender wedge of British soil" about 120 miles long, its width varying from 56 miles at the base of the wedge to 15 miles at the apex. "To the south its foot-hills sink into the plains of the Punjab; to the north it rises into massive peaks 17,000 ft. in height that blend with the still loftier summits of western Kashmir."

The first five chapters are devoted to ants, harvesting ants, a species placed in the genus *Mymecocystus*, and others. Habits, etc., are freely discussed, and a great deal is written concerning instinct. The author asks too much from instinct, and "folly" (p. 41) is scarcely the correct word to apply to mistakes which are not provided for among instincts inherited by insects. Two

plates (facing pp. 13 and 60) are given of certain ants commonly found in the Hazara valley. While

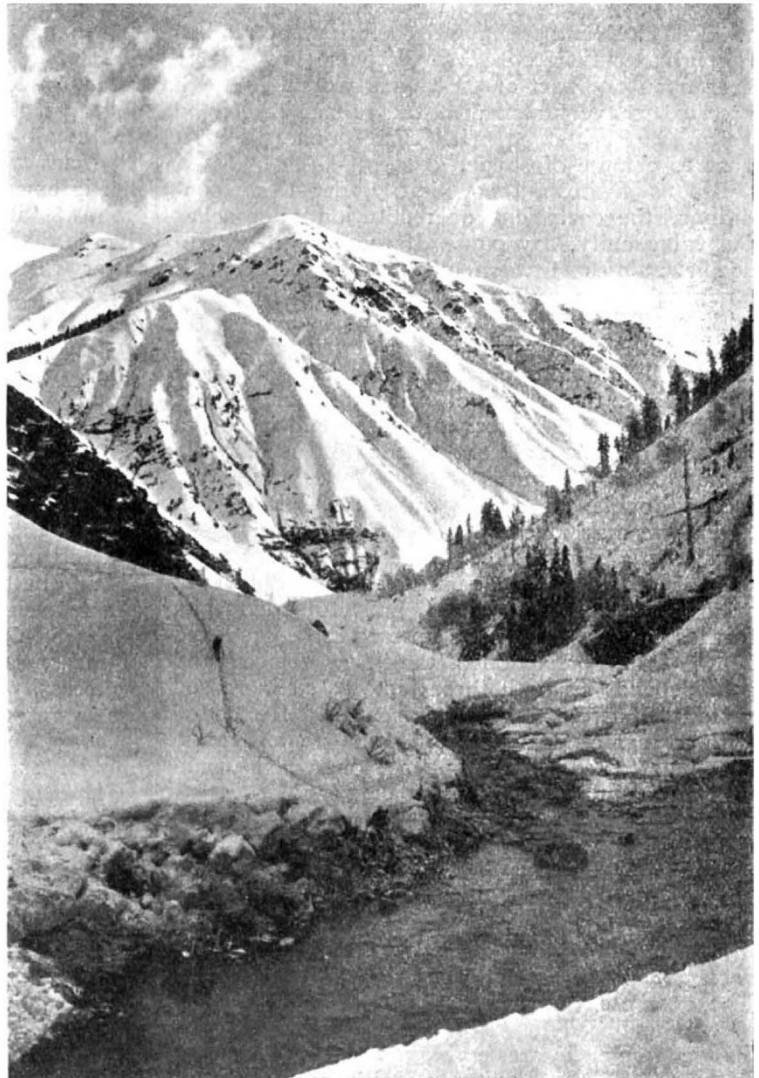


FIG. 1.—In the Himalaya. From "A Naturalist in Himalaya."

on the subject of plates, we think it would have been better to give them numbers. The illustrations themselves are excellent, as our examples prove.

<sup>1</sup> "A Naturalist in Himalaya." By R. W. G. Hingston. Pp. xii+300 +plates. (London: H. F. and G. Witherby, 1920.) 18s. net.

Chaps. vi.-x. deal with geometrical and sheet-building spiders, their work and habits. The miscellaneous contents of chap. x. include "water-boatmen" and "mentality of fishes," as well as the habits of wasps and bees. Interesting observations on mimicry in butterflies—chap. xi.—include *Kallima inachus* and a *Melanitis*, which, like Kal-

attention in chap. xii. Few will agree that the male glow-worm is "not even capable of perceiving a light" given out by the female; and on the pages where the massacre of a flight of winged termites is described there is much repetition of the names of various birds taking part in the orgy. We do not like the somewhat Teu-

tonic view that in Nature "all is war and carnage, greed and cruelty." Animals, including man, must destroy life for food, and no doubt there is even unnecessary killing by some of the carnivora; but, on the whole, Nature is fairly peaceful, and among many orders the unfit are removed in honourable battles between males, while bloodless competition by dance or song governs selection in others.

Among the observations of mammals, that concerning the flying squirrel is very interesting, and the author gives us a beautiful picture—here reproduced (Fig. 2)—of *Petaurista inornata*. The only comment necessary is upon the statement (p. 243) that "the tail of a bird cannot be used as a rudder." Most readers will take the opposite view. Chap. xiv. contains the best account of soar-



FIG. 2.—The Flying Squirrel (*Petaurista inornata*). From "A Naturalist in Himalaya."

lima, resembles dry leaves blown by the wind; and these are compared with *Dophla patala*, which, "coloured a rich green," blends with the fresh foliage; "the *Dophla* alights where it is lost upon the branches, the *Melanitis* seeks concealment on the leaf-strewn ground; the *Dophla* rests with wide-open wings . . . *Melanitis* with wings tightly closed." Glow-worms, termites, and shells receive

ing we have ever read, and the explanation will be welcomed by many who may not be able to observe the phenomenon for themselves. The book ends with a sketch of the geology of the Himalaya based on the work done by the Geological Survey of India. The author acknowledges his indebtedness to the labours of Mr. C. S. Middlemiss.

## The Annular Eclipse of April 8.

By DR. A. C. D. CROMMELIN.

FINE weather in most parts of the country favoured observation of this phenomenon. Great public interest was taken in the search for stars. Venus was seen with ease nearly everywhere, Mercury was also undoubtedly observed, and Vega was suspected at Oxford, though not seen by Mr. Mitchell at Mallaig, which is inside the zone of annularity. The lowering of temperature was marked, amounting to as much as 9° F. The diminution of light was striking, probably more so than if the sky had been partially covered with cumulus clouds. The light had the purplish hue that so often prevails in large eclipses; it doubtless arises from the absorption of the solar atmosphere, which is more noticeable in the region near the limb. Successful spectroscopic observations of the reversing layer and chromosphere were made by Profs. Fowler, Newall, and Sampson at

Kensington, Cambridge, and Edinburgh respectively.

At Greenwich efforts were made to improve the determination of contact times by Mr. Innes's method of making a number of rapid measures of the distance between the cusps near the beginning and end of the eclipse. The measures are not yet fully reduced, but it is probable that each contact will be determined within 2 sec. by the combined results.

It can already be stated that the Hansen-Newcomb right ascension of the moon needs to be corrected by about +0.80 sec., which is just double the correction that was applied in the Nautical Almanac eclipse elements. Several photographs were taken near the beginning and end of the eclipse, also near the greatest phase. One of the last, exposed at 8h. 48m. 2s., Greenwich mean