

north of Kashmir, where there are several high passes between the altitude of 18,000 and 19,000 ft. Within my own personal knowledge, the highest inhabited house (at least for a few weeks in the summer of each year) is near the summit of the Donkia Pass in the north of Sikkim, which is claimed by the Tibetans to be in Tibet, the height of the pass, according to the trigonometrical survey, being 18,100, and per aneroid 18,400 ft., at which height the amount of oxygen in the air is only about half that at sea-level. This is a stone hovel, and is occupied by a Tibetan guard or outpost of four or five men. It would be an easy matter for the inhabitants of the Tibetan Plateau to become acclimatised to that altitude, living, as they do, at a height of between 15,000 and 16,000 ft. I wonder, however, whether the rarefaction of the atmosphere adversely affects their longevity, as is known to be the case with the monks of St. Bernard in the Swiss Alps.

Plymouth.

W. HARCOURT-BATH.

THE remark found fault with by Mr. Harcourt-Bath is not mine, but the author's (Prof. Bowman, p. 52 of his work on "The Andes of Southern Peru").

The surest way of breaking a supposed world record is to publish it.

No doubt Prof. Bowman was not aware of Mr. Harcourt-Bath's experience in Tibet, otherwise he would not have stated that "the loftiest habitation in the world is in Peru." Both may be stone hovels, oblong and grass-thatched (there is a good photograph on p. 48), and both houses happened to hold five people. But whilst the Tibetan custom-house officers seem to be on duty for only a few weeks in the height of the season, the Peruvian shepherd family appear to use their place as a permanent residence. "At frequent intervals during the three months of winter snow falls during the night and terrific hailstorms in the late afternoon drive both shepherds and flocks to the shelter of leeward slopes or steep canyon walls."

The altitude of the Great St. Bernard Hospice is only 8,100 feet, about the same, or even less, than that of several large towns in Mexico where longevity is common. The self-sacrificing Augustine monks, resident for a limited number of years, do suffer, not from the rarefied air, but from the severe and vile climate and unheated rooms.

THE REVIEWER.

The Use of the Classics.

IN discussing "Classical and Modern Education" (NATURE, September 8, p. 64) is there not some clear separation needed between two very different purposes of training in the classics? For knowledge of human nature, for political sense, for the feeling of the life of past times and its views, translations are practically as effective as original texts. The gain from using the original language is that of the æsthetic values and training. To revile "the inadequacy of translations" solely refers to the æsthetic values, and not to the practical values for life. What has been the effect on Europe of translations from Hebrew and Greek in the Bible? Do we talk of exposing their inadequacy as a reason for ignoring them? Why have many great scholars worked for years at translations if they thought them useless?

The cant of the grammarian trying to sink the classics under the weight of his own interests in language must be ignored. Let us have every child in a secondary school familiar with the great authors, from Herodotus to Ammianus, and then let those who have ability and time for language learn, as we learn Hebrew, off a familiar translation.

W. M. F. P.

Indian Land Mollusca.

IN Lt.-Col. Godwin-Austin's instructive review of the latest volume in the official "Fauna of India" (NATURE, September 22, p. 106) he rightly lays stress on the importance of preliminary work in the preparation of what are supposed to be authentic hand-books. May I state that on hearing that Mr. Gude's volume was in actual preparation I wrote offering the loan of the material in the Indian Museum, including both the whole of Nevill's type-specimens and the vast accumulation of unnamed material obtained by the Zoological Survey of India in recent years. My offer was ignored or refused, apparently because the volume had to be out by a given date. I make this statement because I find that it is commonly believed that the Zoological Survey of India, of which I have the honour to be director, is in some way responsible for the "Fauna of British India." This is not the case.

N. ANNANDALE.

Auroral Display of September 28-29.

DURING the whole night of September 28 I was photographing the spectra of stars. In the early morning, at 1.25 a.m. G.M.T., I was leaving the dome to proceed to another dome, in which Mr. W. B. Rimmer was working, when I observed a bright aurora low down on the northern horizon. I called Mr. Rimmer, and we observed it together.

The streamers, of a whitish hue, were scintillating and changing their intensities very rapidly; sometimes one streamer became very brilliant and faded away, and sometimes another. The whole phenomenon from the time I first observed it lasted about twenty-five minutes. Up to the time of writing I have seen no published record of this aurora.

WILLIAM J. S. LOCKYER.

Norman Lockyer Observatory, Salcombe Hill,
Sidmouth, South Devon, October 2.

The Isotopy of the Radio-elements.

THE nucleus-model of the radio-elements proposed by Lise Meitner (*Die Naturwissenschaften*, vol. 9, pp. 423-27, 1921) permits of the division of the radio-active isotopes into three, or even four, classes.

(1) Isotopes of the first class are elements which possess only the same nuclear charge and the same arrangement of their outer electrons, e.g. Ra and MsTh.

(2) Isotopes of the second class have, in addition, the same nuclear mass (i.e. the same atomic weight) and the same total number of nuclear "building stones," e.g. Io and UY.

(3) Isotopes of the third class still possess the same number of each nuclear building stone, but they have a different arrangement of these in the atomic nucleus, and thus also different chances of disintegrating, e.g. RaD and AcB.

(4) Isotopes of the fourth class would be elements possessing the same arrangement of the nuclear building stones in the atomic nucleus, and thus the same probability of disintegration. Such elements actually exist, but we have no available means of distinguishing between them. Hence we cannot at present designate them as isotopes (e.g. RaG and AcD).

The branching of the uranium family at U₁₁ thus ends with the end-product of the radium- and actinium-family. This common end-product of the two radio-active families is leaf with the atomic weight 206.

The more detailed discussion of this subject will appear in the *Zeitschrift für physikalische Chemie*.

M. L. NEUBURGER.

Neubaugasse 79, Vienna, VII., September 10.