

girders. There is a very clear analysis of the strains on the struts and ties in the lattice girder; the construction and sectional area of each strut and tie is worked out; next the suspension bridge is discussed, the general construction being explained.

The last few subjects treated in the volume include the fire-engine and gas-engine, with several other short chapters of the newest inventions, concluding with a chapter on the strength of materials.

In the publishers' preface we read that the present work is intended to furnish a reliable guide to practical engineers and others connected with the engine-shop and building-yard. This end has been most satisfactorily accomplished, and both authors and publishers may be congratulated on having placed before the public a most useful book; the printing is exceedingly clear, and the illustrations in the text good; the separate series of engraved plates add much to the value of the volume, without which many long descriptions would have been necessary. The book deserves a place in every technical library in the country. Those learning any branch of mechanical engineering will do well to study it, for it is one of the few really practical works published.

#### OUR BOOK SHELF

*Catalogue and Handbook of the Archæological Collections in the Indian Museum.* Part II. By John Anderson. (Calcutta.)

WE have already drawn attention to the first part of this excellent Catalogue, which thoroughly fulfils its promise of being not only an exhaustive list of the valuable objects in the Indian Museum, but a scholarly guide to them as well. The second part is occupied with Buddhist, Jain, Brahminical, and Mohammedan sculptures, and with the collections from Southern India, Persia, and other parts of the East. Appendixes have been added at the end of the book, including two by Prof. Warden and Mr. Growse. The work will be of great value to students of Indian archæology, and more especially to those who are devoting themselves to Buddhistic research. The Indian Museum is naturally a storehouse of antiquities throwing light on the past history of India and its relations with the West, and these have now been brought to the knowledge of scholars in a thoroughly satisfactory way.

#### 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.]

#### Barnard's Comet

LAST night (September 22) this comet was well seen in the 3-foot telescope. It was large (at least 4' over), brighter to the middle, but without nucleus; a position was measured from a faint star involved in the light of the head. At 8h. 20m. the position by circle reading was a 19h. 45m. 50s., and  $117^{\circ} 16' 30''$  N.P.D.

A. A. COMMON

Ealing, September 23

#### The Krakatoa Eruption

By this morning's post I have received, in a rather round-about way from India, a translation of a Dutch account of the Krakatoa eruption, which, if you have not had it already, seems

to contain some interesting variations on, or additions to, the mass of matter that you have already printed on that subject. Indeed the only postscript that could now be well added to it is the comfortable and encouraging discovery of the late French scientific expedition to the effect that the eruption is now positively over. The Batavians, as you are probably aware, feared that another eruption was preparing, in consequence of the immense number of stones still being ejected and clouds of smoke emitted. But the French *savants* discovered that no stones were being thrown up, only immense quantities of them tumbling down the mountain's sides; and this because the material, of which those new sides of the mountain are now composed, is so extraordinarily friable that the heat of the sun each day breaks them up, and the quiet force of gravitation brings the pieces galloping down the steep slopes, and plunging at last into the sea, to the danger of passing vessels,—but only by day, and when the sun is shining, for at night everything is quiet; and if by day and night a cloud forms above the mountain-top, it is neither smoke nor gaseous emanation, but merely the infinitely fine powdery matter of the broken-up and rolling stones of the day rising into the air and moving along with its currents up along the slopes which have been warmed by the sun.

C. PIAZZI-SMYTH

15, Royal Terrace, Edinburgh, September 15

#### The Sky-Glows

I WAS not aware before reading Mr. Leslie's letter in NATURE of the 11th inst. (p. 463) that any of the phenomena supposed to be connected with the volcanic dust had been seen before the eruption of Krakatoa in May 1883. Would the whole text of the description of those seen in February 1883 in Natal, from which Mr. Leslie gives a quotation, indicate them to be exactly similar to those seen since the great eruption? Where can a description of them be found?

The remarkable sunsets reported as seen in Mauritius after May 1883 and before the great eruption of Krakatoa, were by some attributed to the earlier volcanic disturbance, while others have expressed doubts whether they were really similar to those so generally noticed last autumn and winter.

It was not in the least the purpose of my former letter to imply the necessity of visiting a mountainous country to see the red corona round the sun; I am aware it is still plainly visible in England, and do not doubt even in London in fairly clear weather, having observed it when there in May last, not only within an hour of sunset or sunrise, but at all times of the day. But I wished to draw your readers' attention to the fact that this corona is much better seen in the clearer air at great altitudes, where also it is not necessary, as in England, that the sun be hidden by a cloud for it to be well seen.

I had not seen it stated before that the phenomena have been visible in England for years past. There is much more to be seen than a "blanching of the sun," as Mr. Leslie calls it, so that perhaps we are not both discussing the same phenomenon. Besides the bluish or greenish light immediately round the sun, which is not very striking, there is a broad red or brown band beyond, which is so. Has this been seen in England previous to last November? It has been habitual for me to scan the neighbourhood of the sun for halos during twenty-five years, and I never observed it previously to the date mentioned. It is true that the circumstances favourable for producing halos are unfavourable for seeing the red ring; nevertheless, since the latter first appeared in November I have not unfrequently seen it at the same time with a halo. It is also true that I saw portions of this red ring some days before I recognised them as a new phenomenon, but then they were only visible in gaps between clouds, so that I took them to be on thin cloud, and simply examples of the nacreous hues of thin films; any large extent of sky would probably have enabled me to perceive their true character. It is therefore very difficult for me to believe that the corona was visible in this country much, if at all, before last November.

Whether the phenomenon is ordinarily noticeable in volcanic countries I have not learnt; information from observers in such places would be of much value towards the elucidation of this interesting question. I gather from Prof. G. H. Stone's statement (NATURE, vol. xxix. p. 404) that a somewhat similar appearance is commonly visible in Colorado, where it may perhaps be attributed to the higher layers of dust of that very dusty region.

T. W. BACKHOUSE

Sunderland, September 20