

Prof. Cohen claims that his figures for soot formation agree substantially with those obtained by the late Sir W. Roberts-Austen; but do they? Sir W. Roberts-Austen's figure was 6 per cent. of soot on the coal burned, whilst Prof. Cohen's figure is 6.5 per cent. of soot on the carbon burnt to carbon dioxide—carbon dioxide being the product of complete combustion, whilst soot has been defined by the authors as a product of incomplete combustion.

As pointed out in the review, no such method as that employed by the authors can give even approximately accurate results unless the carbon escaping as carbon monoxide and hydrocarbons is also estimated; and when Prof. Cohen says that the reviewer fails to see that the percentage of soot on carbon burnt can be easily calculated on the fuel used if the amounts of carbon in the fuel and carbon dioxide in the flue gases are known, he is truly stating the case.

In conclusion, I can only say that my opinion of the book is unchanged by Prof. Cohen's reply, and that it is a pity that so excellent a work has been marred by the points to which attention was directed in the review.

THE REVIEWER.

#### Remains of Prehistoric Horse in the Stort Basin.

WITHIN the last few weeks a metatarsal and an astragalus identical in type with those previously found at Bishop's Stortford (see Report B.A., Portsmouth meeting, 1911, p. 521) have been exhumed from beneath 3 ft. of native peat and 2 ft. of an overlying pond-silt of probably outwash from the Boulder Clay capping of the Essex Plateau. The site is about 300 ft. O.D. at Pledgdon Hall Farm, in the parish of Henham, on the left bank of the brook which flows through Stansted Mountfichet into the Stort. I am contemplating further excavation, with the kind permission of Sir Walter Gilbey, the proprietor. I may say that the shallow cutting for the new light railway to Thaxted makes the stratigraphy of the high ground to the north of this minor upland valley quite clear; and there again we have evidence of the "rubble-drift" movement on the hill-slope, of which I have already recorded a good number of examples in the Stort Valley. I reserve details until the excavation has been carried further.

Meanwhile, it may be interesting to note here the exhumation of a fairly complete skeleton of probably a mediæval ox (a "stray," perhaps, of the time of the ancient Essex "forest-laws"). The characteristic structural features of the skull rank it very closely with the type furnished by the remains of Bos from Newstead, as described by Prof. J. C. Ewart, F.R.S. ("On Skulls of Oxen from the Roman Military Station at Newstead, Melrose," Proceedings of the Zoological Society of London, 1911, text-figure 74), while the lower jaw and its dentition present us with but a slight modification of those of the *Bos primigenius* of the glacial shingle of the Stort Valley, at the same time differing strongly from those of *B. longifrons* (see B.A. Report, *loc. cit.*). This Essex ox-skeleton was cut through by Mr. H. G. Featherby, of Bishop's Stortford, in sinking an iron cylinder on the site of a spring for water supply to the farm. It was found in what is probably interglacial gravelly sand, and beneath some 3 ft. of *remanié* boulder clay stuff, which had worked down ("rubble-drift" again) from the Boulder Clay capping of the plateau above. It was evidently one of a number of landslides, which have furrowed the sloping meadows on both sides of the brook at Collier Street Farm, on the Barrington Hall Estate, in the parish of Hatfield Broad Oak.

Bishop's Stortford, April 27.

A. IRVING.

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#### An Anode Dark Space in the Discharge in Oxygen.

IT may be of interest to readers of NATURE to know that I have recently obtained unmistakable evidence of an anode dark space in the discharge in oxygen at low pressures. The anode which exhibited this remarkable phenomenon was an aluminium plate which had been used as an anode during an extended series of measurements of the Crookes dark space with kathodes of different metals. As these were continued for some months, and as the phenomenon was not noticed when the anode was fresh, one is inclined to connect the occurrence with the excessive fatigue of the metal surface.

The anode dark space is a region of comparative darkness just in front of the anode, and can only be seen when the latter is immersed in the bright negative glow. Its thickness is small, but as its edge is exceedingly sharp, it can be measured with fair accuracy. The rough values already obtained are very interesting, as they show it to be entirely unaffected by changes of pressure and to vary inversely as the square root of the current density; with the latter at one-tenth of a milliampere per sq. cm., its value is about 1.2 mm. in pure oxygen.

The same anode showed it, though faintly, in air and nitrogen, but no trace of it could be observed in hydrogen.

F. W. ASTON.

Cavendish Laboratory, Cambridge, April 25.

#### May Meteor-showers.

THE following meteor-showers become due during the period May 1-24, their arrangement being according to the times of the principal maxima:—

Epoch May 3, oh. 30m. (G.M.T.), approximately tenth order of magnitude. Principal maximum, May 3, 22h. 50m.; secondary maxima, May 3, 18h. 50m., and May 5, 19h. 40m.

Epoch May 4, 5h., third order of magnitude. Principal maximum, May 4, 5h. 10m.; secondary maximum, May 4, 17h. 50m.

Epoch May 8, 11h., twelfth order of magnitude. Principal maxima, May 5, 13h. 25m., and May 7, 10h. 10m.; secondary maximum, May 7, 12h. 20m.

Epoch May 8, 14h. 30m., approximately fifteenth order of magnitude. Principal maximum, May 9, 13h. 10m.; secondary maximum, May 9, oh. 40m.

Epoch May 12, 23h. 30m., twenty-fifth order of magnitude. Principal maximum, May 11, 16h. 15m.; secondary maxima, May 9, 19h. 30m., and May 12, 5h.

Epoch May 13, 10h., approximately twenty-fifth order of magnitude. Principal maximum, May 13, 15h. 55m., May 14, 23h. 25m., and May 16, 11h. 45m.

Epoch May 19, 6h., fifteenth order of magnitude. Principal maximum, May 18, 17h.; secondary maximum, May 18, 9h. 55m.

Epoch May 19, 18h., fourteenth order of magnitude. Principal maximum, May 18, 5h. 30m.; secondary maxima, May 19, 13h. 55m. and 16h. 5m.

Epoch May 19, 18h., thirteenth order of magnitude. Principal maxima, May 19, 20h. 55m., and May 21, 16h. 55m.; secondary maxima, May 21, 5h. 45m. and 12h. 50m.

Epoch May 21, 22h., second order of magnitude. Principal maximum, May 23, 13h. 45m.; secondary maxima, May 22, 10h. 30m., and May 23, 7h. 30m.

The intensity of an epoch being inversely as its order of magnitude, the greatest meteoric activity occurs on May 4 and May 23. The epoch of May 21, 22h., apart from its high intensity, is a very interesting epoch, and this remark applies also to the double epoch of May 19, 18h.

April 29.

JOHN R. HENRY.