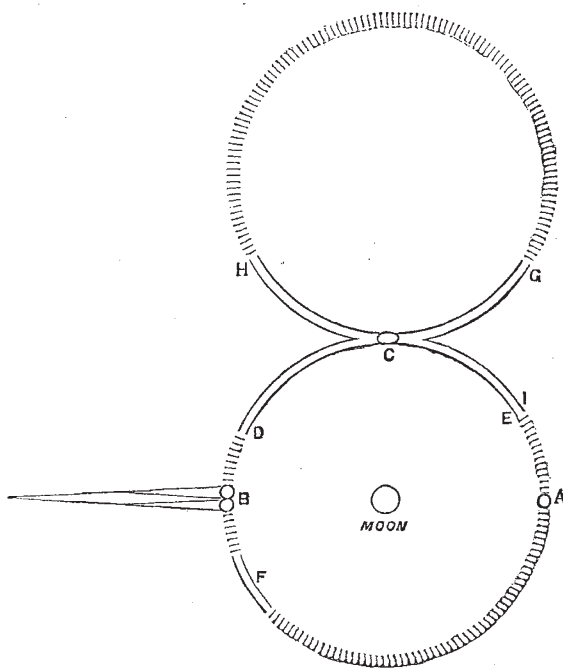


22° 30' radius marked DCE, together with a detached portion of F, had the moon for its centre; at the apex of this circle was the apex of another of similar dimension, HCG, whose centre was about 45° above the moon. On the horizontal level of the moon on either side were mock moons, AB, and immediately above the moon within the same circle was an oval mock moon, C.



Both A and C, though very apparent, were nevertheless not brilliant, the grandeur of the phenomenon centering in the double mock moon B; this was so brilliant that it attracted immediate attention, and that portion nearest the moon was sensibly orange-red. At first it appeared as one large mock moon (twice as broad as it was long), and at 7<sup>h</sup> 19<sup>m</sup> divided into two with a thin dark band between. Whilst the two moons (touching each other) were visible, each had a tail of 10° or more in length, and these were included within a gigantic tail of 25° long, considerably more brilliant, but colourless, and contrasting much with the orange-red of the mock moons. At the time of the phenomenon a fog spread over the valley, and overhead were strong cirri in parallel bands. The temperature was 37°·2, and on the grass 30°·6.

The moon shone brightly and the sky was cloudless near her throughout the whole time. At 7<sup>h</sup> 33<sup>m</sup> a cloud of considerable density obscured both the moon and the phenomenon.

E. J. LOWE

#### Structure of Lepidodendron

I MAY, perhaps, notwithstanding the editorial injunction to the contrary, be permitted to make one remark by way of addition to what I said in my last letter on this subject. I have been favoured by Mr. J. T. Young with the inspection of some Lepidodendroid stems from the Lancashire coal-fields. These are somewhat different from any others which I have seen, and are probably similar to those Prof. Williamson is working with. At any rate they enable me to understand, what otherwise I have failed to comprehend, namely, the three structures which Prof. Williamson sees in the vascular axis of these plants. In Mr. Young's specimens a transverse section of the vascular axis exhibits (1) the investing cylinder, (2) a zone of larger scalariform vessels, (3) a central irregular mass of vertically disposed rows of scalariform cells with transversely truncate ends. Suppose the transverse septa separating these cells absorbed, as probably eventually they would have been, and the rows of cells become scalariform vessels. I see no reason therefore to lead me to alter my views upon this matter, or to look upon 2 and 3 as forming more than one central structure distinct from 1, the investing cylinder.

W. T. THISELTON DYER

#### Is Blue a Primary Colour?

No exception can be taken against Dr. Aitken's argument in your number for Oct. 12. The colours of the substances he experimented on could not be regarded as simple. But he does not consider how loosely all names of colours must be applied in common language. The colours of most blue pigments, especially in thin washes, no doubt contain a large proportion of green. But let the colour of the blue salvia, or that of the pigment called French blue or ultramarine (often given as the best example of true blue) be tested in conjunction with the purest yellows (even with the almost greenish yellow of the pigment called lemon-yellow) and the two will be found perfectly complementary. This is the colour of Newton's indigo rays, which he himself in his colour circle put opposite to his yellow. In fact, in good English, not only sea-greenish blues, like the colour of Newton's blue part of the spectrum, or that of the pigment called azure or cæruleum, but even the colour of the violet itself, is properly called blue. Witness Milton's "beds of violets blue." The violet of the spectrum is in truth little more than a pure blue diluted with white by reason of the fluorescence of the retina, as recent researches have shown. (See J. J. Müller's paper in *Poggendorff's Annalen*, March and April last.) I must, therefore, protest against substituting a fanciful term like violet for the good English blue, as the designation of a simple colour-sensation. It is hard enough to make artists believe that yellow is not a simple colour. To tell them the same of its complementary blue would add to their disgust, and not unreasonably.

WILLIAM BENSON

MR. AITKEN in his letter in NATURE, Oct. 12, seems to confound primary with pure colours; it is true they are pure in a certain sense, but in what sense is fully explained in Prof. J. C. Maxwell's lecture, given in NATURE, vol. iv. p. 13. All the experiments mentioned by Mr. Aitken merely prove that the blue colours we commonly see are mixed ones; but the same is the case with almost all the colours we see, while any tint of the spectrum, whether primary or not, may be had pure, *i.e.*, consisting of homogeneous light. Likewise colours which appear just the same to the eye may be made of very different components.

T. W. BACKHOUSE

#### A Shadow on the Sky

ON the 21st of last August, being at Zermatt, Switzerland, I witnessed from the balcony of the *salle-d-manger* of the Hotel du Mont Cervin a very remarkable appearance. The sun had recently set, and, as I was intensely enjoying the view of that extraordinary mountain, the Matterhorn, I saw its shadow thrown upon the clear sky in the most distinct manner. It was the exact figure of a cone lying obliquely, with its apex somewhat in an upward direction, and its base taking its origin from the S.S.E. side of the mountain. The cone was well defined, the edges of the shadow being sharp and regular. The moon was, from our point of view, at this time behind the Matterhorn. I immediately acquainted some gentlemen, who were at supper in the *salle-d-manger*, with this interesting appearance, and all were much struck with it. My son, Marshall Hall, had just retired to rest, having to be up at two the next morning, in order to make a new ascent in this locality; but I called him out into the garden to enjoy with me this striking scene. The deep, distinct shadow added to the weird effect always produced by this extraordinary mountain, and it so impressed me that I thought the phenomenon might be worth recording in your journal.

Brighton, Oct. 23

CHARLOTTE HALL

#### A Plane's Position

THIS question is becoming one *de gustibus*, and its further discussion will probably be profitless. I retain my opinion, and am content with the few who side with me. In the two finest treatises on astronomy published during the present century, Herschel's "Outlines of Astronomy," and Grant's "History of Physical Astronomy," the word position is used as I use it. Not systematically, I admit; for Herschel sometimes wrote "situation" where I should write "position." Grant in one place deals somewhat definitively with the word, for at p. 258 he writes, "The position of Saturn's ring is usually determined by the inclination of its plane to the ecliptic and the longitude of its ascending node," the longitude of this node being defined,