

of horizon that is effective is about two miles, at which the change of colour is just visible. The "second phenomenon" of Prof. Porter is the only one which I have seen with open eyes.

W. M. FLINDERS PETRIE.

A Broadcast "Rainbow."

ON Friday, September 16, I witnessed an atmospheric phenomenon sufficiently unusual, I believe, to merit a record. Standing on Ogmores Down near Bridgend in this county (Glamorgan) at 2.30 P.M. and looking northwards across the broad vale towards the Maesteg hills, there appeared to me a broadcast rainbow colouring, stretching east and west for several miles along the vale. The day was exceptionally fine, with brilliant visibility and no trace of mist. The clouds were small and scattered, with a distant bank of cumulus beyond the hills, while the colours were clear and unmistakable, covering, from red in the west to blue in the east, an angle of about fifty degrees. The height of my point of view was about 300 ft. above the sea, and the whole apparition hung, like a veil of pure, immaterial colour, at about the level of my eyes, covering the distant hills but without screening their smallest particular. R. C. McLEAN.

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Colour Observations of the Moon.

I WISH to place on record a few observations I have made of the lunar surface seen through colour filters, which point to the presence of coloured light of various shades reflected from different parts of the moon.

The light values of various points of the moon's surface were fixed by means of a photometer shaded by colour-screens, corresponding to similar screens fixed to the eye-piece of the telescope.

Owing to the two different sources of light, electric light in one case and the lunar rays in the other, and also owing to atmospheric changes, the two sets of filters had to vary considerably in colour, in order to produce the identical colour impression on the eye.

For the telescopic eye-piece I used the following colour screens throughout these observations:

- 1. Red of approx. 6563 "Tenth-metre" wave-length (absorbing practically all but red rays and a little yellow).
- 2. Green " 5173 wave-length (absorbing all but green and blue rays).
- 3. Violet " 4420 wave-length (only absorbing yellow rays).

For the photometer I used varying colours (according to atmospheric conditions), averaging

- 1a of approx. 6120 wave-length.
- 2a " 4922 "
- 3a " 4550 "

The area examined was the vicinity of Clavius. I determined the light value of the brightest spot in the neighbourhood (A) through the three screens, and in the same way a number of other spots; B, the eastern inside wall of Clavius; C and D, the floor of the crater plain; E, the great valley to the west of Clavius; F, the southern slopes of Maginus.

The result of the two observations, No. I. on August 31, No. II. on October 1, 1922, was as follows;

reducing the figures to percentages, the brightest spot (A) being taken as 100 per cent. in each case:

| | A. | B. | C. | D. | E. | F. | |
|---------------|------|--------------------|--------------------|--------------------|--------------------|---------------------|--------|
| Red screen | 100% | I. 46.0 II. 9.1 | I. 1.2 II. 0.66 | I. 3.6 II. 0.85 | I. 10.0 II. 2.2 | I. 15.7 II. 9.1 | % % |
| Green screen | 100% | I. 4.2 II. 22.2 | I. 0.7 II. 0.3 | I. 1.3 II. 0.46 | I. 14.0 II. 2.5 | I. 49.0 II. 22.2 | % % |
| Violet screen | 100% | I. 30.0 II. 5.4 | I. 3.3 II. 1.7 | I. 8.4 II. 2.0 | I. 15.0 II. 2.8 | I. 21.4 II. 5.4 | % % |

In examining the above list it will be noticed that there is a discrepancy regarding the point B, which may be due to the dazzling brilliancy of this area during the first observation. All the remaining figures, however, agree remarkably well, considering the extreme simplicity of the instruments I employed.

The experiments tend to show that (1) the floor of Clavius (also of Longomontanus, which I observed on October 1) is of a mauve colour. These areas may be basaltic and not unlike some Hawaiian crater plains of solid lavas. (2) The Terra Photographica to the west of Clavius has most probably a mottled surface of brown areas on a blue background such as copper sulphate. (3) The southern slopes of Maginus are intense green, probably streaked with areas of the same substance and colour of the crater valleys recorded.

It would be of great interest to survey accurately in this manner districts such as the crater Linné. Later tests would then clearly show if any change could be recorded in these debated areas, at least so far as coloration is concerned. A. F. WARTH.

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The Local Handbook of the British Association.

IN NATURE of October 21, p. 539, a reviewer states that "the ideal handbook in connexion with the annual visits of the British Association has yet to be written." A Committee of the Association might well be appointed to draw up a scheme. Meanwhile, I venture to offer the following suggestions:

- 1. The book should above all be portable, and for this purpose it should be divided into separate pamphlets, each tucked under a separate tape in a cloth-covered binding, common to the series. One could then select one's pamphlet and leave the rest in one's hotel.
- 2. Every handbook should have a complete index for facilitating rapid consultation.
- 3. There should be a map of the district on the half-inch or quarter-inch scale.
- 4. There should be a geological map.
- 5. The compilers should take a lesson from Baedeker and give practical details: population, railway stations, hotels, cab-fares, post office; short list of the chief features—museums, art galleries, libraries, churches of architectural interest, and other guide-book information—in two or three pages, with street in which situated, times of opening, etc., with an asterisk indicating the most noteworthy.
- 6. Unless the handbook can be sent by post in advance to members (they might pay the postage) it is of little use writing long-winded articles, as visitors—attending sections in the morning, scientific excursions in the afternoon, and addresses in the evening—have no time to read them.

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October 20.