## SMITH'S PLANETARY ALMANAC.

the Sun and the Earth, thus appearing upon the bright disk of the orb of day as a round, dark spot. Transits are very interesting. Mercury breaks in upon the Sun as a dark notch, sometimes preceded by a penumbral shade ; not to miss the earliest impression, the exact point of ingress should be kept in the field of the telescope or opera glass—said telescope or opera glass to be properly protected from the Sun's rays by layers of smoked or colored glass held between the eye and the eye piece.

As Mercury advances from the eastern disk of the Sun, he may become visible before he is in actual transit, by being projected upon the "Corona," or solar atmosphere which sometimes relieves a dark body in front of it. Just at the final entry or departure, the planet may be lengthened towards the Sun's limb. This is due to irradiation, and is called the "black drop." When fully upon the disk, Mercury appears intensely black ; sometimes has a dusky border, or a luminous ring, which some have considered to be due to an atmosphere like our own, but much thicker and denser, surrounding the planet. Others believe, however, that it is due to violent contrast and eye fatigue in the observer. Bright spots upon the planet have several times been seen, while in transit. Another optical illusion, no doubt.

A Transit of Mercury can only occur in May or November. This is owing to the fact that it is only in these months that Mercury crosses the path of the Earth (crosses the Ecliptic), and is then said to be in the "descending" or "ascending" node. This is the final transit of the present century, which, at its conclusion, will have witnessed thirteen transits of Mercury, as follows :—

| 1802 Nov. 9 | 1861       |
|-------------|------------|
| 1815 " 12   | 1868 " "   |
| 1822        | 1878       |
| 1832 May 5  | 1881 No. 7 |
| 1835        | 1801       |
| 1845 May 8  | 1001 May 9 |
| 1848 Non 0  | 1094       |
| 1098        |            |

The Right Ascension of the Sun and Planet is 15h. 2m. 44s. Sun's Declination South, 17° 18' 59"; Mercury's, 17° 14' 6". Sun's semi-diameter, 16' 11"; Mercury's, 4".9.

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