

the cheering influence of her beams. Strike lunar imagery from our best poetry and what a blank! At such a spectacle the shade of Shakespeare would cry shame! Imagine the extinction of such a passage as the following:—

ROM.—Lady, by yonder blessed moon I swear,
That tips with silver all those fruit
tree tops.

JUL.—O, swear not by the moon, the inconstant moon,
That monthly changes in its circled orb,
Lest that thy love prove likewise variable."

Our satellite is a body 2,160 miles in diameter, reflecting the light of the sun, and being distant from the earth about 240,000 miles. Many years have elapsed since the writer viewed it through a powerful telescope, and never shall he forget the wonder and excitement of the moment. It seemed so near that he felt tempted to hail "the man in the moon," whose homely visage has been so long familiar to the world, but whose innate modesty shrinks from the too prying scrutiny of the telescope. The surface presents the roughest piece of scenery imaginable. Divest the rugged precipices and jetting rocks of the celebrated Glen Coe of all verdure, and you have a section of the view in miniature. Apart from the surface you see flashing spots which are the tops of mountains reflecting the light of the sun. These are not in ranges like those of the earth, but rise from the surface in the form of a sugar loaf, in not a few cases to an altitude of five miles. There are also fearful cavities, not less than four miles in depth, which are evidently of volcanic origin, and from whose bottom matter has been extruded which has solidified into steep and rugged minor eminences. There are also plains of great extent similar to the sandy deserts of the earth. There are no traces of water, and no atmosphere which can be detected. An eminent astronomer supposes from the peculiarity of the curve described by the moon in revolving round the earth that the side turned to the earth is a protuberance to which there is a corresponding compression on the opposite side, which may enjoy the benefit of an atmosphere, and may consequently be the theatre of animal and vegetable life.

The reason why we only see the one side of the moon is that the period of her revolution—27 days and some hours—round her primary is precisely the period of her revolution on her axis. Young people are often puzzled how the moon can go round the earth revolving on her axis without shewing the other side of her fair face. To make the matter plain, strip an orange of half its skin, and make it describe a complete circle round a jet of gas, in the same time as it turns upon its axis, and a child will at once see that starting with the peeled side turned to the gas a spectator at the jet could not see the other side during its progress. The moon's days and nights are alternately about a fortnight long—that half exposed to the sun being in the opinion of one of the Herschels in a state of heat exceeding the temperature of hot water, whilst the opposite half is correspondingly cold. All attempts, however, to detect radiation from its surface sufficient to reach the earth have failed. The earth appears in the lunar sky thirteen times larger than the moon appears to us, presenting similar phases, but in the reverse order as to time. When the moon is full to us the earth is invisible at the moon, and *vice versa*. Our knowledge of the moon's surface has been greatly augmented by means of Lord Rosse's magnificent reflector. That wonderful instrument reveals blocks of rock at the bottoms of the craters which abound on it, and is of sufficient power to show buildings the size of St. Paul's in London, if such existed on the Satellite.

To the astronomer the moon as the means of extending his knowledge is invaluable. It was mainly by observations of the moon that Sir Isaac Newton rendered himself immortal. To questions as to the weight of the earth, the excess of its equatorial diameter over the polar, the distance of the sun, the permanency of the axis of rotation, and the uniformity of the revolution of the earth on its axis, our satellite furnishes satisfactory answers.

At the outset of this paper we referred to the bulging of the earth at the equator as affecting its motion in space. The ridge of matter which girdles the globe is produced by its motion on its axis. And if so it may be asked why does not