

THE MOON.

See yonder fire ! It is the moon
 Slow rising o'er the eastern hill,
 It glimmers on the forest tips,
 And through the dewy foliage drips
 In little rivulets of light,
 And makes the heart in love with night.

- Longfellow. *The Golden Legend.*



THE moon is the only heavenly body that seems to belong especially to ourselves, to be and to move entirely for our earth, and, on this account, many have been the strange beliefs concerning it, and the powers and influences attributed to it. To our forefathers it was alike an object of reverence and dread ; even yet among new peoples, and the more superstitious of our own nation, the pale and silent queen of night is looked upon as the ruler and cause of many of our everyday phenomena. On account of its apparent size—nearly equal to that of the sun—its strange motion and varying phases, it cannot fail to be an object of curious interest to every one. The little child ever loves to watch it, and see the old man with his bundle of sticks, whilst the greatest astronomers have, from the earliest times, endeavored to determine what these markings really are.

We have evidence that the motions and phases of the moon were made a study of in very early times. They must have been carefully watched by the Chaldeans to enable them to discover the *saros* or cycle of eclipses. We find Aratus, who lived about the year 230 B. C., speaking of the position of the moon's horns as a weather portent. The ancients must have thought the moon the only body which moved in the celestial vault, and that all the others were fixed. We may infer this also from the saying of Job, "If I beheld the sun when it shined, or the moon *walking* in brightness." In fact, it was the observation of the moon's motions that first gave rise to the study of astronomy.

There have been at different ages many and conflicting hypotheses as to the

character and physical constitution of the moon. The first recorded theory as to its condition is that of Thales (640 B. C.), who thought part of its light was inherent, being led to this conclusion by observing its illuminated face in the phenomenon popularly called "The old moon in the new moon's arms," when, at new moon, we see its whole surface faintly illuminated by light reflected from the earth, and also by the fact, due to the same cause, of its not being wholly obscured during a total eclipse. Pythagoras thought, as did also Aristotle, that the moon was unlike the earth, that it was a crystalline sphere, having the power of reflection like a mirror, and that the spots seen on its surface were but the reflection of terrestrial seas and mountains. But this we know to be impossible, as the moon's surface always appears the same, to us, and not as if it bore the reflection of the constantly changing outlines of our earth. We are told by Diogenes Laertius that Anaxagoras (B. C. 500) thought the moon inhabited, and that the markings on its surface were due to mountains and valleys. He believed, and was ridiculed for the belief, that the moon was as large as the Peloponnesus. Others thought it inhabited like the earth, and on account of its fifteen days' light, fancied its creatures fifteen times as large as those on the earth. Diogenes thought the moon self-luminous, with uneven surface, and considered the dark spots regions of shadow. The stoics believed it a mixture of fire, earth, and air, but round like the earth and sun. Plutarch concluded, from the irregular shadows, that its surface was mountainous.

Such were the opinions at different times put forth, and nothing more certain was known till, in the 16th century, Galileo astonished the world by his discovery of the telescope, the means of unveiling to men the mysteries of this celestial sphere, hitherto accessible but in imagination.