

VITRUVIUS

BOOK IX, CHAPTER II THE PHASES OF THE MOON



1 According to the teaching of Berossus, who came from the state, or rather nation, of the Chaldees, and was the pioneer of Chaldean learning in Asia, the moon is a ball, one half luminous and the rest of a blue colour. When, in the course of her orbit, she has passed below the disc of the sun, she is attracted by his rays and great heat, and turns thither her luminous side, on account of the sympathy between light and light. Being thus summoned by the sun's disc and facing upward, her lower half, as it is not luminous, is invisible on account of its likeness to the air. When she is perpendicular to the sun's rays, all her light is confined to her upper surface, and she is then called the new moon.

2 As she moves on, passing by to the east, the effect of the sun upon her relaxes, and the outer edge of the luminous side sheds its light upon the earth in an exceedingly thin line. This is called the second day of the moon. Day by day she is further relieved and turns, and thus are numbered the third, fourth, and following days. On the seventh day, the sun being in the west and the moon in the middle of the firmament between the east and west, she is half the extent of the firmament distant from the sun, and therefore half of the luminous side is turned toward the earth. But when the sun and moon are separated by the entire extent of the firmament, and the moon is in the east with the sun over against her in the west, she is completely relieved by her still greater distance from his rays, and so, on the fourteenth day, she is at the full, and her entire disc emits its light. On the succeeding days, up to the end of the month, she wanes daily as she turns in her course, being recalled

by the sun until she comes under his disc and rays, thus completing the count of the days of the month.

3 But Aristarchus of Samos, a mathematician of great powers, has left a different explanation in his teaching on this subject, as I shall now set forth. It is no secret that the moon has no light of her own, but is, as it were, a mirror, receiving brightness from the influence of the sun. Of all the seven stars, the moon traverses the shortest orbit, and her course is nearest to the earth. Hence in every month, on the day before she gets past the sun, she is under his disc and rays, and is consequently hidden and invisible. When she is thus in conjunction with the sun, she is called the new moon. On the next day, reckoned as her second, she gets past the sun and shows the thin edge of her sphere. Three days away from the sun, she waxes and grows brighter. Removing further every day till she reaches the seventh, when her distance from the sun at his setting is about one half the extent of the firmament, one half of her is luminous: that is, the half which faces toward the sun is lighted up by him.

4 On the fourteenth day, being diametrically across the whole extent of the firmament from the sun, she is at her full and rises when the sun is setting. For, as she takes her place over against him and distant the whole extent of the firmament, she thus receives the light from the sun throughout her entire orb. On the seventeenth day, at sunrise, she is inclining to the west. On the twenty-second day, after sunrise, the moon is about mid-heaven; hence, the side exposed to the sun is bright and the rest dark. Continuing thus her daily course, she passes under the rays of the sun on about the twenty-eighth day, and so completes the account of the month.

