

count of the creation was proved a myth; but every candid reader must admit that in the first chapter of Genesis there is not a word inconsistent with the most remote antiquity of creation. On this subject the works of Hugh Miller, Pye Smith, and Harris may be consulted with advantage.

Till recently the distance of the Sun from the earth was put down at about 95 millions of miles. The usual mode of ascertaining that distance has been by observations made during the transits of Venus across the Sun's disc, which take place at regular intervals of 8, 122, 8, 105, 8, 122 &c., years. The process is too intricate for description here. Suffice it to say that when a transit is about to take place, observers usually station themselves at points far separate from each other. These observers, marking the planet in its transit at the same moment, must see it on the disc of the Sun in different positions, corresponding, according to a law of the transmission of light, with the actual distance by which the points of observation are separated. It is the angle thus obtained on which the calculation of the Sun's distance is based. The estimate of 95 millions of miles was mainly founded on a calculation made by Professor Encke, of Berlin, during the transit of Venus in 1769, and was regarded as the usual unit of astronomical measurement till 1861, when M. Le Verrier—a celebrated living French Astronomer, to whom in conjunction with Adams of England, we are indebted for the discovery of the splendid planet Neptune, which we will notice fully in its proper place—announced that he could only reconcile discrepancies in the theories of Venus, the earth, and Mars by assuming the Sun to be nearer than the position specified. Observations of Mars made at Victoria, New South Wales, in 1862, and at Greenwich in the same year, agreed closely with LeVerrier's calculation, and the space which separates the earth from the Sun is now admitted to be about 91,430,000 miles instead of 95,293,055, as formerly calculated. The next transit of Venus takes place in 1874. The result of the calculations then made will be regarded by scientific men with great interest as testing the accuracy of LeVerrier's estimate. As

the astronomical instruments now in use are of the most delicate character, and the transit will be observed simultaneously at so many different points, a most satisfactory result may be confidently expected.

Has the reader tried to form a correct idea of the distance of the Sun from the earth? If not, we may convey it by inviting him to accompany us thither by railway. Suppose we start on the first of January, 1872. Assuming that the train travels at the rate of 30 miles an hour night and day without stopping, and that we live long enough to come to the end of the journey, we cannot arrive at the Sun till the year 2218, or 346 years after starting! Yet light traverses the vast chasm in about eight minutes.

The distance of the Sun from the earth being determined, and its apparent diameter known, it is easy to ascertain its true diameter, which is estimated at present at 852,584 miles. Its surface therefore exceeds that of the earth 11,574 times, and the volume 1,245,130 times. Its mass is approximately 674 times the masses of all the planets. Within its surface the moon might revolve as it now does round the earth, being separated from the sun's centre by the same distance by which it is now separated from the earth! Travelling at the rate already mentioned by railway one could go round the world in 33 days, but to go round the sun nine years and a half would be required. Place a globe two feet in diameter on your table and a pea beside it, and you have an idea of the relative magnitude of the Sun, and this little world of ours.

But, what about the Sun's constitution? Well, the Astronomer can tell its mass, or in other words, its attractive power—he can tell its density as compared with that of the earth—he can put it in a scale and tell the number of tons it weighs—he can, as we have seen, estimate its distance and its bulk, but he is comparatively ignorant of its constitution, and entirely ignorant of the means by which its heat is generated and maintained. The density of the earth is a little more than five times that of water, and the density of the Sun is little more than a fifth of that of the earth.—Hence the lightness of the matter of