

sidereal heavens became visible on earth. Addison's popular illustration, drawn from one of the calculations of Newton, made in an age when comets were believed to be solid bodies, rendered the reading public familiar, considerably more than a century ago, with the vast time which large bodies greatly heated would take in cooling. "According to Sir Isaac Newton's calculation," said the exquisitely classical essayist, "the comet that made its appearance in 1680 imbibed so much heat by its approaches to the sun, that it would have been two thousand times hotter than red-hot iron had it been a globe of that metal ; and that, supposing it as big as the earth, and at the same distance from the sun, it would be fifty thousand years in cooling before it recovered its natural temper." Such was an estimate of the philosopher, that excited no little wonder in the days of our great-grandfathers, for the vast time which it demanded ; and, now that the data on which such a calculation ought to be founded are better known than in the age of Newton, yet more time would be required still. It is now ascertained, from the circumstance that no dew is deposited in our summer evenings save under a clear sky, that even a thin covering of cloud,—serving as a robe to keep the earth warm,—prevents the surface heat of the planet from radiating into the spaces beyond. And such a cloud, thick and continuous, as must have wrapped round the earth as with a mantle during the earlier geologic periods, must have served to retard for many ages the radiation, and consequently the reduction, of that internal heat of which it was itself a consequence. Further, the rocks and soils that form the surface of our globe would be much more indifferent conductors of heat than the iron superficies of Newton's ball, and would serve yet more to lengthen out the cooling process. Nor would a planet covered over for ages with a thick screen of vapour be a novelty even yet in the universe. It is doubtful whether astronomers have ever yet looked on