

which I find to be full of these fossil skeletons! And it is curious that if care be taken in placing the substance beneath the microscope, these skeletons will generally be found to be entire, although so thin that the light passes through them so as to render them almost invisible. The only species I have yet noticed has the shape of the common angle worm or earth worm, and it would take hundreds of thousands of them, probably millions, to make up a cubic inch. Yet the deposit that contains them is probably two thirds composed of their remains, and in many places it forms a stratum several feet thick, covering many acres, and may be found, I doubt not, in every town in the State. I happen to have specimens only from Andover, Bridgewater, Barre and Pelham, all of which contain the relics. . . In Europe it has recently been found that several rocks of considerable thickness, (among which are flint and opal,) are made up chiefly of animalculæ. Indeed, the famous Prussian naturalist, Ehrenberg, has determined twenty-eight fossil species, nine of which are extinct, and the others correspond to the living species. Of those in the Polish Slate, (a variety of rotten stone,) Ehrenberg says: "About 23,000,000 of these creatures would make up a cubic line, and in a cubic inch there would be 41,000 millions, weighing 220 grains; the silicious shield of each animalcula weighs about the 187 millionth part of a grain. The fossil animalcula of the iron ochre is only the 21st part of the thickness of a human hair and one cubic inch of this ochre must contain one *billion* of the skeletons of living beings!"—*Professor Hütcheok*.

THE CIRCLE OF NATURE.—Every thing is formed for every thing, and subsists by the kind intercourse of giving and receiving benefits. The electric fire that so alarms us by its thunder, and by the awful effects of its flash, purifies the stagnant atmosphere above us; and fuses, when it rushes beneath us, a thousand mineral veins into metals of incalculable utility. New islands are perpetually rising from the unfathomable gulfs of the ocean, and enlarging the boundaries of organized life; sometimes thrown up all of a sudden, by the dread agency of volcanoes, and sometimes reared imperceptibly by the busy efforts of corals and madrapores. Liverworts and mosses first cover the bare and rugged surface, when not a vegetable of any other kind is capable of subsisting there. They flourish, bear fruit and decay, and the mould they produce forms an appropriate bed for higher orders of plant-seeds, which are floating on the wings of the breeze, or swimming on the billows of the deep. Birds next alight on the new formed rock, and sow, with interest, the seeds of the berries, or the eggs of the worms and insects on which they have fed, and which pass through them without injury; and an occasional swell of the sea floats into the rising island a mixed mass of sand, shells, drifted sea weed, skins of the casuarina, and shells of the cocoa-nut. Thus the vegetable mould becomes enriched with animal materials; and the whole surface is progressively covered with herbage, shaded by forests of cocoa and other trees, and rendered a proper habitation for man and the domestic animals that attend upon him. . . . Frosts and suns, water and air, equally promote fructification in their respective ways; and the white ant, the mole, the hamper, and the earth worm, break up the ground or delve into it, that it may enjoy the salubrious influence of the elements. In like manner they are equally the ministers of putrefaction and decomposition; and liverworts and fungi, the ant and the beetle, the dew-worm, the ship-worm, and the wood-pecker, contribute to the

general effect, and soon reduce the trunks of the stoutest oaks, if lying waste and unemployed, to their elementary principles, so as to form a productive mould for successive progenies of animal or vegetable existence. Such is the simple but beautiful circle of nature. Every thing lives, flourishes, and decays; every thing dies, but nothing is lost; for the great principle of life only changes its form, and the destruction of one generation is the vivification of the next.—*Good's Book of Nature*.

THE FINITE DURATION OF THE SOLAR SYSTEM.—There is a resisting medium in which the solar system moves, and therefore its movement cannot go on for ever. The vast periods which are bought under our consideration in tracing the effects of the resisting fluid, harmonise with all that we learn of the constitution of the universe from other sources. Millions, and millions of millions of years are expressions that at first sight appear fitted only to overwhelm and confound all our powers of thought: and such numbers are no doubt beyond the limits of any thing which we can distinctly conceive. But our powers of conception are suited rather to the wants and uses of common life, than to a complete survey of the universe. It is in no way unlikely that the whole duration of the solar system should be a period immeasurably great in our eyes, though demonstrably finite. Such enormous numbers have been brought under our notice by all the advances we have made in our knowledge of nature. The smallness of the objects detected by the microscope and of their parts;—the multitude of the stars which the best telescopes of modern times have discovered in the sky;—the duration assigned to the globe of the earth by geological investigation;—all these results require for their probable expression, numbers, which, so far as we can see, are on the same gigantic scale as the number of years in which the solar system will become entirely deranged. Such calculations depend in some degree on our relation to the vast aggregate of the works of our Creator; and no person who is accustomed to meditate on these subjects will be surprised that the numbers which such an occasion requires should oppress our comprehension. No one who has dwelt on the thought of a universal Creator and Preserver, will be surprised to find the connection forced upon the mind by every new train of speculation, that, viewed in reference to Him, our space is a point, our time a moment, our millions a handful, our permanence a quick decay. . . . We are in the habit sometimes of contrasting the transient destiny of man with the permanence of the forests, the mountains, the ocean—with the unwarred circuit of the sun. But this contrast is a delusion of our own imagination: the difference is after all but one of degree. The forest endures for its centuries and then decays; the mountains crumble and change, and perhaps subside in some convulsion of nature; the sea retires, and the shore ceases to resound with the everlasting voice of the ocean. Such reflections have already crowded upon the mind of the geologist; and it now appears that the courses of the heavens themselves are not exempted from the universal law of decay; that not only the rocks and the mountains, but the sun and the moon, have the sentence "to end" stamped upon their foreheads. They enjoy no privilege beyond man, except a longer respite. The ephemeron perishes in an hour; man endures for his three-score years and ten; an empire, a nation, numbers