

laws of nature power, after so long an operation unproductive of vitality, to produce organic natures? Who can conceive of any inherent force that should thus enable them, all at once, to do what true philosophy shows to have demanded infinite skill?

In short, of all the sciences, geology most clearly shows special divine interference to explain its phenomena. It presents us with such stupendous changes, after long periods of repose, such sudden exhibitions of life, springing forth from the bosom of universal death, that nothing but divine, special, miraculous agency can explain the results. And of all the vast domains of nature, it seems to me no part is so barren of facts to sustain this hypothesis as the rocks; nor so full of facts for its refutation. These, however, have been so fully detailed in a previous part of this lecture that they need not be here repeated.

*In the fourth place, the prodigious increase of the power and the means of reproduction, which we find among the lower tribes of animals, affords a strong presumption against this hypothesis.*

The animals highest on the scale, and most perfect in their organization, have only one mode of reproduction, namely, the viviparous. Descending a little lower, we come to the oviparous and ovoviviparous tribes. Passing to the invertebrate animals, we meet with two other modes of reproduction, the gemmiparous and fissiparous. In the first mode, the animal is propagated by buds, like some plants, as the tiger lily; by the second mode, a spontaneous division of the animal takes place.

Now, in some of the lowest of the invertebrate tribes, we find most of the modes of propagation that have been enumerated in operation; so that the same individual in one set of circumstances is oviparous, in another gemmiparous or fissiparous. The consequence is, a power of multiplication inconceivably great. Mr. Owen calculates that the *ascaris lumbricoides*, the most common intestinal worm, is capable of producing sixty-four millions of young; and Ehrenberg asserts that the *hydatina senta*, one of the infusoria, increased in twelve days to sixteen millions, and another species, in four days, to one hundred and seventy billions.

Why, now, are these astonishing powers of reproduction given to these minute animals, if it be true that they can also