

found that, out of about 58,000 eggs laid by unimpregnated silk-moths, many passed through their early embryonic stages, showing that they were capable of self-development, but only twenty-nine out of the whole number produced caterpillars. The same principle of quantity seems to hold good even in artificial fissiparous reproduction, for Haeckel<sup>17</sup> found that by cutting the segmented and fertilised ova or larvæ of Siphonophoræ (jelly-fishes) into pieces, the smaller the pieces were, the slower was the rate of development, and the larvæ thus produced were by so much the more imperfect and inclined to monstrosity. It seems, therefore, probable that with the separate sexual elements deficient quantity of formative matter is the main cause of their not having the capacity for prolonged existence and development, unless they combine and thus increase each other's bulk. The belief that it is the function of the spermatozoa to communicate life to the ovule seems a strange one, seeing that the unimpregnated ovule is already alive and generally undergoes a certain amount of independent development. Sexual and asexual reproduction are thus seen not to differ essentially; and we have already shown that asexual reproduction, the power of re-growth and development are all parts of one and the same great law.

*Re-growth of amputated parts.*—This subject deserves a little further discussion. A multitude of the lower animals and some vertebrates possess this wonderful power. For instance, Spallanzani cut off the legs and tail of the same salamander six times successively, and Bonnet,<sup>18</sup> did so eight times; and on each occasion the limbs were reproduced on the exact line of amputation, with no part deficient or in excess. An allied animal, the axolotl, had a limb bitten off, which was reproduced in an abnormal condition, but when this was

less vitality" than those from fertilised eggs. In the third parthenogenetic generation not a single egg yielded a caterpillar.

<sup>17</sup> 'Entwicklungsgeschichte der Siphonophora,' 1869, p. 73.

<sup>18</sup> Spallanzani, 'An Essay on Animal Reproduction,' translated by Dr. Maty, 1769, p. 79. Bonnet, 'Œuvres d'Hist. Nat.,' tom. v., part i., 4to. edit., 1781, pp. 343, 350.