

complete pedigree. We lack, and shall ever lack, the indispensable palæontological foundations. The most ancient records will ever remain sealed to us, for reasons which have been previously mentioned. The most ancient organisms which arose by spontaneous generation—the original parents of all subsequent organisms—must necessarily be supposed to have been Monera—simple, soft, albuminous lumps, without structure, without any definite forms, and entirely without any hard and formed parts. They and their next offspring were consequently not in any way capable of being preserved in a petrified condition. But we also lack, for reasons discussed in detail in the preceding chapter, by far the greater portion of the innumerable palæontological documents, which are really requisite for a safe reconstruction of the history of animal tribes, or phylogeny, and for the true knowledge of the pedigree of organisms. If we, therefore, in spite of this, venture to undertake their hypothetical construction, we must chiefly depend for guidance on the two other series of records which most essentially supplement the palæontological archives. These are ontogeny and comparative anatomy.

If thoughtfully and carefully we consult these most valuable records, we at once perceive what is exceedingly significant, namely, that by far the greater number of organisms, especially all higher animals and plants, are composed of a great number of cells, and that they originate out of an egg, and that this egg, in animals as well as in plants, is a single, perfectly simple cell—a little lump of albuminous constitution, in which another albuminous corpuscle, the cell-kernel, is enclosed. This cell containing its kernel grows and becomes enlarged. By division it forms an