

If we were to follow the guidance of those curious analogies which present themselves when we consider the growth of the individual plant or animal from the spore or the ovum, and the development of vegetable and animal life in geological time— analogies which, however, it must be borne in mind can have no scientific value whatever, inasmuch as that similarity of conditions which alone can give force to reasoning from analogy in matters of science, is wholly wanting—we should expect to find in the oldest rocks embryonic forms alone, but of course embryonic forms suited to exist and reproduce themselves independently.¹

I need not say to palæontologists that this is not what we actually find in the primordial rocks. I need but to remind them of the early and remarkable development of such forms as the Trilobites, the Lingulidæ and the Pteropods, all of them highly complex and specialized types, and remote from the embryonic stages of the groups to which they severally belong. In the case of the Trilobites, one need merely consider the beautiful symmetry of their parts, both transversely and longitudinally, their division into distinct regions, the necessary complexity of their muscular and nervous systems, their highly complex visual organs, the superficial ornamentation and microscopic structure of their crusts, their advanced position among Crustaceans, indicated by their strong affinity with the Arachnidans or spiders and scorpions. (See figures prefixed.)

¹ I may be pardoned for taking an example of the confusion of thought which this mode of reasoning has introduced into Biology from a clever article in the *Contemporary* written by a very able and much-esteemed biologist. He says: "The morphological distance between a newly hatched frog's tadpole and the adult frog is almost as great as that between the adult lancelet and the newly hatched larvæ of the lamprey." The "morphological distance" truly, but what of the physiological distance between the young and adult of the same animal and two adult animals between which is placed the great gulf of specific and generic diversity which within human experience neither has been known to pass?