

may be supposed to have their seat in these fundamental elements. They make up all living matters, are the bearers of heredity, and the real builders of the organism."

Chapter X.

Embryology.

The Scope of Embryology—Ancient Embryology—Harvey—Bonnet and the Preformationists—Wolff and Epigenesis—Von Baer—Alternation of Generations—The Influence of the Cell-theory—Nature of the Ovum—Nature of the Spermatozoon—Fertilization—Maturation—The Mode of Development—Germinal Layers—Influence of Evolution Doctrine—The Gastræa Theory—The Recapitulation Doctrine—Substitution of Organs—Experimental Embryology—Theories of Development.

Embryology is the study of the early stages in development. Its problem is the making—the "becoming"—of the organism up to a vague point at which the specific characters begin to be well defined. This limit is determined rather by convenience than by logic, for embryology is really but a part of that larger study which considers a living creature in its time-relations, and is concerned with the breaking down in old age as well as with the building up in youth.

Embryological study has two main aspects: it is, on the one hand, *morphological*, describing the form and structure of the organism at successive stages from the fertilized egg to the adult; it is, on the other hand, *physiological*, seeking to disclose the immediate vital conditions which lead on from stage to stage. The first task is obviously the easier, for at any stage the developing organism may be killed, dissected, sectioned, and photographed; the second task is beset with unconquered difficulties.

This paragraph is too much like that on "the snakes of Iceland", for there was, so far as we are aware,