

The demonstration of the marvellously exact bipartition of nuclear elements; the discovery of the centrosomes, which *appear* to act as dynamic centres in cell-division; the experimental proof that a cell bereft of its nucleus may move and feel for a time, but cannot assimilate or secrete; and the growth of criticism as to the adequacy of the cell-theory, may be noted as representative steps in modern cytology.

In regard to development, the most momentous step has been the recognition of germinal continuity. The unique potentiality of the germ-cells depends upon their continuity through successive cell-generations with the germ-cells of the parent organism. We may associate this doctrine with the name of Weismann.

Also of great importance is the renewed attack on the problems of physiological embryology, and the discovery of some ingenious experimental methods, in connection with which the names of Roux and O. Hertwig are especially prominent. And although no answer is yet forthcoming, there has been a clearer statement than heretofore of the fundamental question: Is the path of embryonic development definitely predetermined in the organization of the germ-cells; or is the path, so to speak, mapped out, as development goes on, by the varied relations and conditions to which the embryonic cells are exposed?

Palæontology has risen to high dignity as a branch of biology, its results being now universally recognized as the surest contributions to the history of life upon the earth. The distinction between the anatomist and the "fossilist" has disappeared, both being now equally morphological and evolutionary. We may connect the change with the name of Zittel.

Among the characteristics of modern physiology we may notice the slow but important development of comparative work, with its evidence that there is unity amid diversity in vital processes; the increased concentration on the problems of metabolism (the chemical changes of the living body); the application of physiological results and methods to the problems of development; and the rise of a school of "neo-vitalists", who have helped to