

In 1883, in his valuable work entitled *The Law of Heredity*, Professor W. K. Brooks gave full expression to a modification of Darwin's view of pangenesis. The main positions, which are here relevant, may be summarized as follows, almost in the author's words:—

(1) The male and female cells are specialized in different directions; their union gives variability.

(2) The ovum is a cell which has gradually acquired a complicated organization, and which contains material particles of some kind to correspond to each of the hereditary characteristics of the species.

(3) The ovum reproducing its like, as other cells do, gives rise not only to the divergent cells which build up the body of the organism, but also to cells like itself, which are the future reproductive cells.

(4) Each cell of the body has the power to throw off minute germs. The cell does this especially when some change in its environment has disturbed its functions.

(5) These germs may be carried to all parts of the body. They may penetrate to an ovarian ovum or to a bud, but the male cell has gradually acquired, as its especial and distinctive function, a peculiar power to gather and store up germs.

(6) In fertilization each germ or gemmule unites with that particle of the ovum which is destined to give rise in the offspring to the cell which corresponds to the one which produced the gemmule, or else it unites with a closely-related particle, destined to give rise to a closely-related cell. Such a cell will be a hybrid, tending to vary.

(7) As the ovarian ova of the offspring share by direct inheritance all the properties of the fertilized ovum, the organisms to which they give rise will tend to vary in the same way.

(8) A cell which has thus varied will continue to throw off gemmules, and thus to transmit variability to the corresponding part in the bodies of successive generations of descendants, until a favourable variation is seized upon by natural selection.

(9) As the ovum which produced this selected organism will transmit the same variation to its ovarian ova by direct inheritance, the characteristic will be established as specific, and transmitted henceforth without gemmules.

The above theory, being important, has been stated at some length. Apart from the suggestion of variation as due to sexual intermingling, with which Weismann has made us more familiar; apart, too, from the suggestion of germinal continuity, the credit of which