are contained in the simple germ cell.

The first step taken in this direction was a revival of the old theory of Democritus by Darwin. It was Darwin's theory of Pangenesis, arrived at only after careful and laborious study, that might be said to place heredity on a scientific footing. It is this: He assumed that each cell that goes to form every part of the body constantly gave off minute particles or "gemmules." These gemmules like the parent cell can develop and reproduce themselves, but their ultimate destiny is to be collected, not necsssarily through circulation, in the reproduction organ. It was further assumed that each gemmule contained all the characteristics of the parent cell, so that in each egg of the reproductive organ all the essential natures of the cell-body will be represented in the aggregated protoplasm. When the egg is fertilized, growth goes on, this indicates how the young will preserve the likness of the parents. In the light of the theory of Pangenesis it is plainer how like begets like, since the egg is made up of representative cells from every part of the parent organism. Next Darwin sought to explain certain irregularities in transmission of parental characters to offspring. He supposed that when certain gemmules became latent and did not develop in the egg, or were not sufficiently vital to enter into active production, then latent gemmules transmitted with others and waking up at some future time, would revive the qualities latent in the last generation and derrived from the original parent. Hence would arise a "reversion" to a former type. Thus if a blue rock pigeon should occur among a flock of any pure breed, the irregularity would be explained as a reversion to the former type, some latent gemmules suddenly woke up into vital activity and so reverted to the original ancestor or blue rock. Darwin's theory of pangenesis is based on many instances in the vegetable as well as animal kingdom. In the vegetable there is the begonia and a species of Bryophyllum capable of reproducing themselves from their leaves. The potatoe by its budding is an example on which depends this theory. In the animal kingdom, the fresh water hydra will survive many divisions of its body. Each part will develop into a mature hydra. Again the sea-anemone may be divided into very small parts and yet each part will produce a new and perfect creature