

one of two generative substances, either the male or the female. The female individuals, both in animals and plants, produce eggs or egg-cells. The eggs of plants in the case of flowering plants (Phanerogama) are commonly called "embryo sacs;" in the case of flowerless plants (Cryptogama), "fruit-spores." In animals, the male individual secretes the fructifying sperm (sperma); in plants, the corpuscles, which correspond to the sperm. In the Phanerogama, these are the pollen-grains, or flower-dust; in the Cryptogama, a sperm, which, like that of most animals, consists of floating vibratile cells actively moving in a fluid—the zoosperms, spermatozoa, or sperm-cells.

The so-called *virginal reproduction* (Parthenogenesis) offers an interesting form of transition from sexual reproduction to the non-sexual formation of germ-cells (which most resembles it); it has been demonstrated to occur in many cases among Insects, especially by Siebold's excellent investigations. In this case germ-cells, which otherwise appear and are formed exactly like egg-cells, become capable of developing themselves into new individuals without requiring the fructifying seed. The most remarkable and most instructive of the different parthenogenetic phenomena are furnished by those cases in which the same germ-cells, according as they are fructified or not, produce different kinds of individuals. Among our common honey bees, a male individual (a drone) arises out of the eggs of the queen, if the egg has not been fructified; a female (a queen, or working bee), if the egg has been fructified. It is evident from this, that in reality there exists on wide chasm between sexual and non-sexual reproduction, but that both modes of reproduction are directly