being tiny spheres 1-120th inch in diameter, visible to the naked eye as minute specks under favorable conditions. He discovered likewise that from this tiny ovum of the mammal there develops first a characteristic germ globule, a hollow sphere with liquid contents, the wall of which forms the slender germinal membrane, or blastoderm.

Ten years after Baer had given a firm foundation to embryological science by his theory of germ layers a new task confronted it on the establishment of the cellular theory in 1838. What is the relation of the ovum and the layers which arise from it to the tissues and cells which compose the fully developed organism? The correct answer to this difficult question was given about the middle of this century by two distinguished pupils of Johannes Müller—Robert Remak, of Berlin, and Albert Kölliker, of Würzburg. They showed that the ovum is at first one simple cell, and that the many germinal globules, or granules, which arise from it by repeated segmentation, are also simple cells. From this mulberry-like group of cells are constructed first the germinal layers, and subsequently by differentiation, or division of labor, all the different organs. Kölliker has the further merit of showing that the seminal fluid of male animals is also a mass of microscopic cells. The active pin-shaped "seed-animalcules," or *spermatozoa*, in it are merely ciliated cells, as I first proved in the case of the seed-filaments of the sponge in 1866. Thus it was proved that both the materials of generation, the male sperm and the female ova, fell in with the cellular theory. That was a discovery of which the great philosophic significance was not appreciated until a much later date, on a close study of the phenomena of conception in 1875.