a simple egg-cell, a simple lump of mucus, containing a kernel (p. 297, Fig. 5).

In the same way as the kernel of the organic cell arose in the interior or central mass of the originally homogeneous lump of plasma, by separation, so, too, the first *cell-membrane* was formed on its surface. This simple, but most important process, as has already been remarked, can likewise be explained in a purely physical manner, either as a chemical deposit, or as a physical condensation in the uppermost stratum of the mass, or as a secretion. One of the first processes of adaptation effected by the Moneron originating by spontaneous generation must have been the condensation of an external crust, which as a protecting covering shut in the softer interior from the hostile influences of the outer world. As soon as, by condensation of the homogeneous Moneron, a cell-kernel arose in the interior and a membrane arose on the surface, all the fundamental parts of the unit were furnished, out of which, by infinitely manifold repetition and combination, as attested by actual observation, the body of higher organisms is constructed.

As has already been mentioned, our whole understanding of an organism rests upon the cell theory established in 1838 by Schleiden and Schwann. According to it, every organism is either a simple cell or a cell-community, a republic of closely connected cells. All the forms and vital phenomena of every organism are the collective result of the forms and vital phenomena of all the single cells of which it is composed. By the recent progress of the cell theory it has become necessary to give the elementary organisms, that is, the "organic" individuals of the first order, which are usually designated as *cells*, the more