

tion given by Lodge, of a uniform charge in motion. He says, "While the charge is moving at constant speed (growth would represent the same force of accumulation of charges) the current is steady, and we have a steady magnetic field superposed upon a steadily moving electric field," etc. Electric lines of force are straight lines, and we see the lines radiating from a centre, and the curved and circular rings growing upon the straight lines.

In Figure (8) we have the picture of the first forms of sponge growths, and we find the same directions in formation of lines as "magnetic lines of force which form at right angles to those of the electrostatic lines. In the sponges we have the three different directions in which the spinal nerves are found in the human body, as transverse, oblique, and vertical. The lines of growth on these sponges show their protoplasmic origin as "seafoam" or in bubbles as a water-cell filled with gas crystallized into lines as "fibrilla, and a network."

#### PLATE 4

This plate shows specimens of growth characteristic of *Eozoon Canadense*, bacteria (17) and a formation of iron ore, sawn through the piece of rock (18). Number (9) is bacterial growth forming at right angles along a vertical line. Number (10) a growth of *Eozoon*, showing the same direction of growth. Figures (5) and (6) show growths of *Archæospherina* and a bacterial formation. Numbers (10) and (16) are forms of growth of bacteria and *Eozoon*. Figures (14) and (15) are *Eozoon* and bacteria, but turning in an opposite direction. (11) and (12) are pictures of bacteria and *Eozoon*. Figures (7) and (8) are a colony of bacteria (after staining) and a specimen of *Eozoon*. The directions in which the rod-shaped cells lie in the bacteria colony only show a definite arrangement, and a definite number in each direction. The influence of the staining agent would interfere with a grouping in primal groups in a steady succession, but they would group according to chemical combinations resulting from union with the substance used in staining. The cells are "pushed" in definite positions, because the stain could only enter through the primal or single field of gaseous electricity. The part of a bacteria colony that will not take the stain is in the "magnetic" field, because it is already occupying its position as a balanced filling of space.

The resemblance between *Eozoon* and bacteria must be explained in the laws of growth beginning at the point of decomposition of parts into primal groups. The external must show this primal marking.