

vegetable infusions and in curdling milk. These two may be taken as representatives of the group above referred to. The *bacillus subtilis* (*bacillus*, from the Latin, a small stick or staff) is a straight rod-like body, so short in its longest diameter that it would require 3,500 or 4,000 of them placed lengthwise—end to end, to extend to the length of one inch.

#### THE BACILLUS ANTHRACIS—METHOD OF ITS PROPAGATION.

The first reliable observation of the presence of foreign organic forms in the body in infectious disease was made by Pollender in 1855. He discovered minute staff-shaped bacteria in the blood of animals suffering from anthrax or splenic fever, a formidable disease to which sheep, cows, horses and man are liable. The discovery was confirmed by the researches of Brauell, Davaine, Klebs and, most of all, and more recently, by Koch, who has removed all doubt on the subject. According to Cohn, the organism of splenic fever, the *bacillus anthracis*, is a straight, rod-like body, identical in size, form and development with the *bacillus subtilis*. The only difference between them which he could detect was, that while the former were motionless, the *bacillus subtilis* exhibited movements. Yet one is a deadly contagium, the other a comparatively harmless saprophyte.

The manner of propagation of these bacilli, as observed by Koch, is most interesting. He placed a speck of the spleen containing the *bacillus* on a glass slide in a drop of the blood-serum of an ox, and covered it with a piece of thin glass. He kept this in an incubator, at about the temperature of the body, and examined it from time to time under the microscope. In a couple of hours the rods began to lengthen, and in a few hours more they grew into long threads from twenty to a hundred times as long as the original rods. By and by they assumed a dotted appearance and the dots gradually increased in size and distinctness, until, after the lapse of fifteen or twenty hours from the beginning of the experiment, they appeared like oval bodies placed at regular intervals along the threads. Finally, the threads broke down and the oval bodies were set free and sank to the more depending parts of the drop. These bodies were spores, and on additional nourishment being provided, the new spores were seen presently to elongate into rods exactly resembling those originally existing in the blood of the spleen.

The *bacillus* of fowl cholera and that of tubercle (consumption) have been discovered and described; and also it appears those of