VALUE AND NECESSITY OF BACTERIOLOGICAL EDUCATION

[Written for the "News."]

The science of bacteriology is comparatively a new one, though the creation of a certain amount of preliminary work has been done, a part of which has since proved to be correct, perhaps to a greater extent than not. It is only within the last twenty-five or thirty years that the science of bacteriology has been prominently raised to the dignity of a separate study, and yet the time when the principles of sanitation and ventilation have been applied with such marked and satisfactory effect in the domain of medicine and surgery. The advance of this branch of science, like all others, has had its up-grades and difficulties. These have been overcome in the particular case by the ability of the organizers to be successful, and their success and ability should be an encouragement to others.

Bacteriology is a very young science, but still is one of the greatest importance to humanity and mankind. On this account particularly early investigations which were but an aid to others, who also were able to make use of the results with all our improved appliances and other modern means of investigation, many points in it are particularly valuable, and yet many points of which is to be sought. But this is true of all sciences, and it is only by the aid of the many mistakes made that we are able to make progress, one of special interest was that of the discovery of the germ theory of disease. This had many minute organisms to deal with, and yet it, by general consent, has stood the test of time. Yet we have many points in it which are still in dispute. Among the bacteria which are known to be pathogenic, or of a nature to produce disease, there are many points which are not yet fully understood, and which are yet in dispute. Among the most important of these are the following:

First—That the specific organisms may exist in a state of nature, and yet not be pathogenic. This is a point which should be considered very carefully, for it is of great importance, for it is only by a knowledge of the conditions under which the bacteria do not produce disease that we can be enabled to prevent it. For instance, the bacteria that cause tuberculosis, typhoid fever, and many other diseases, are very tenacious of life, and can be kept for years in a state of nature, and yet not be pathogenic, and yet they may be made so by a change in the conditions of their environment. Thus, when all is in a healthy condition, the bacteria may be in the vicinity of a healthy individual, and yet not be pathogenic, but when the conditions are changed, the bacteria may be made pathogenic. Such, for instance, is the case with typhoid fever. This, however, is not required except for certain other forms, in most cases of the disease, it is sufficient to destroy the bacteria in the vicinity of the patient, with bacteria and spores. Cold, dryness and direct sunlight always retard or destroy the growth of the bacteria. Thus, warmth, moisture and darkness, or shade, are conditions favorable to their development. Different species of bacteria may exist under different conditions, but in general we may say that cold, dryness and sunlight are the most effective means of destroying them. They are in the air and earth, and in the ground. Though they are in the air, they are not in the air as a rule, but are carried by currents of air, and in particular they are carried by the wind. From this and other sources they are spread all over the world. They are found in the air, in the water, in the earth, in the ground, and even in the human body. They are found in all climates, and in all seasons of the year