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## BACTERIA

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Many times during the period that I have been engaged in microscopical and bacteriological work, I have felt that some little explanation, in a simple way, regarding bacteria and the many terms pertaining to them might be appreciated by at least a few interested readers.

The knowledge of germ life that is possessed by the majority of the people is the result of reading the newspapers. To those having made some study of the subject from reputable works, many of the newspaper items appear rather absurd, and are truly misleading. With the many important improvements that have been made during the last few years upon the microscope, the science of bacteriology has advanced very rapidly, and is developing much information that will add to the betterment of many conditions in our everyday life.

Bacteria is the name given to a class of vegetable organisms that exist everywhere and in countless numbers. Because of their minute size they are called micro-organisms, being discernable only by aid of the highest

powers of the microscope, in most instances.

The more common word "germ," meaning embryo, has come into general use because of certain forms of bacteria being the origin of disease. Bacteria are simply a class of low plants. They are the active principle in many of nature's processes and are as necessary to our life as the blood in our veins. They are the cause of putrefaction or decay of all animal and vegetable substances. They enrich the soil by a process of nitrification in a way that cannot be done by artificial means. They are the curing agents of the farmer's hay in the mow, as well as his fodder in the silo. In the dairy they are of great importance, the souring of milk being caused by the action of bacteria, converting the sugar of the milk into lactic acid. The ripening of cream and its changes into butter, and the ripening of cheese are the direct results of bacteria growth. It is to their powers of producing chemical changes during their growth that they owe their importance in the world.

Bacteria are more universally prevalent in nature than any other forms of plants or the animals. They are in the air, water and soil. They also cling in vast numbers to almost every object on the earth including man and the lower animals. They do not, how-