

natural and inherited, but in some cases it has been possible to establish an artificial immunity by a process of vaccination, as is done in Pasteur's treatment of rabies, or Haffkine's vaccination against cholera. The production of acquired immunity is one of the most important steps in recent bacteriological work, and it is only a matter of time until the method is extended to all infectious diseases.



FIG. 6. A SMEAR CULTURE OF THE BACILLUS OF TUBERCULOSIS.

strongly attracted to the point of invasion. They swarm to that point, and begin there the warfare against the invader. In cases where animals are not immune, the phagocytes are not attracted, and the bacteria have an opportunity to grow unhindered. Though we do not yet know all the conditions which render the white

The reason for the difference in the action of the white blood cells lies in the fact that in cases of immunity, whether partial or complete, they are extremely sensitive to the poisons which the bacteria produce, and are not only immediately warned of their presence in the body by meeting the poisons in the blood stream, but are

blood cells sensitive to these poisons, we do know most of the conditions which destroy this sensitiveness. All influences which lower the vital tone of the body, such as fatigue, cold, bad air, the absorption of foul gases and noxious fumes, hinder the phagocytes in their action and so give an opportunity for disease germs to grow. If we could eliminate the evils of inherited tendencies, give our bodies the best possible chance by obtaining pure air, sunlight and exercise, and at the same time act on Herbert Spencer's dictum, that "he who contaminates his neighbor's atmosphere infringes his neighbor's rights," we would go far towards abolishing infectious diseases.

Bacteriology has made the path of the sanitarian as clear as daylight; it is only the ignorance of the public which places obstacles in his way. We know that

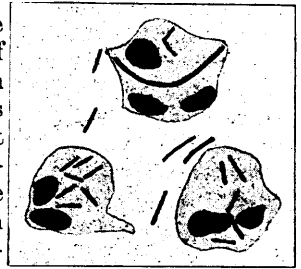


FIG. 7. PHAGOCYTES.

dry air and bright sunlight will destroy the cholera germ in two hours, and diphtheria in very little longer time, whilst in a damp, dark cellar they will remain alive for months; yet people continue to build and live in houses which are damp and dark.

These are some of the broad facts relating to bacteria, facts which are of practical importance to the public.

