

susceptibility than others which are apparently similarly exposed. The only explanation that can be made in this connection is, that the organism has undergone a special sensitizing process which renders its growth more easy in the species presenting the greatest losses.

Methods of Infection.—Animals become infected with anthrax through the entry of the causative organisms directly into the system by inoculation. This inoculation may occur in a variety of ways. It may result from the germ passing in through an abrasion of the skin on the surface of the body or through a similar injury occurring in the lungs or intestines. The feeding of anthrax organisms does not always result in the contracting of the disease. If, however, the organisms are fed along with thistles, briars, or similar materials having sharp points, anthrax will invariably result.

The pasturing of animals on infected land may result in infection either through the digestive tract or through inoculation under the skin. Inoculation through the skin is possible in muddy soils, swamps, swales, and in fact any low lying soil, as sharp sticks and stones are invariably present. Where present they cannot be avoided by an animal whose weight causes it to sink to a greater or less depth.

Soil Infection.—Bearing in mind the statement already made that the organism or germ may be transformed into a very resistant state it is easily seen how a piece of ground once infected must thereafter be considered dangerous to the pasturing of animals. This being the case the necessary precautions should be taken to keep animals away from such infected soil, or, if they are to be permitted to graze thereon, they must be protected by vaccination, which will be described later.

We have been able to demonstrate the anthrax organism in the soil at the border of an infected creek. An amount of soil approximately two grains in weight had sufficient anthrax germs to prove fatal to a guinea-pig. Our experiments would also indicate the probability that the germ is not only capable of remaining alive in soil but that it can also reproduce itself where conditions are favourable. All soils, however, would not lend themselves with equal facility to the vegetation of the anthrax organism. A suitable soil must be slightly alkaline if marked growth is to take place. We have found that a decoction of leaves is too acid to permit the growth of the bacilli. When, however, such a decoction is tempered with an alkaline soil growth may take place under favourable temperature conditions.

Diagnosis of Anthrax.—So rapidly does anthrax run its course that it is frequently thought that death has resulted from the eating of poisonous weeds or from poison administered by some enemy. While death appears to take place very suddenly a careful observer would note something amiss with the animal some hours previously. Infection usually takes place about three days before death supervenes. A very high temperature may be expected twenty-four hours before the fatal issue and in some instances has been recorded as being from 108°F. to 110°F. in cattle.

After death or just immediately before, bloody discharges may be seen coming from the normal openings of the body. Such discharges should always make one very careful as these bloody discharges teem with the causative germs and their spore formation may assist in disseminating the disease not only to the ground but to other animals.