

Spores of the potato bacillus were obtained from a pure culture on agar, by incubating at 34°C over night and then leaving four days at room temperature ($19\text{--}20^{\circ}\text{C}$); anthrax spores by incubating the culture for 16 hours (when, according to Koeh spores begin to form) and then letting stand at room temperature for 48 hours. This procedure worked well in practice, though some observers place the optimum for spore production (anthrax) at 31°C and others at $24\text{--}35^{\circ}\text{C}$.

Resistance of the Spores to High Temperature

To compare their resistance to high temperatures, capillary tubes were filled with the second suspensions of potato spores, and anthrax spores respectively, their ends were sealed, and they were plunged into boiling water. After a measured interval they were removed, broken into sterile broth, and the growth noted. In the case of the potato spores there was a heavy growth after 2 minutes at 100°C , a smaller growth after 4 minutes, and a slight growth after 6 minutes, but none after 8, 10 or 15 minutes; in the case of anthrax, also, some were found alive after 6 minutes immersion in the boiling water.

Effect of Temperature on the Rate of Poisoning by Phenol

That the resistance of the potato spore to phenol is much the same as that of anthrax, may be seen by comparing the following measurements with those given later for anthrax spores; the immediate object of this set, however, was to ascertain how much effect the temperature of the poison bath had on the time it took the potato spores to die. Solutions were made up containing 2.5, 3.0, and 3.5 percent of phenol, respectively, and 10 cc of each of them was inoculated with one loop of the potato spore suspension, and kept at room temperature for two weeks, plates being poured each day. As a control, one loop of the same suspension was added to 10 cc of 0.6 percent salt solution at the same time as the others. Counts of plates made immediately after inoculation showed no less numbers than the control. On the second day, a very slight reduction in the number of colonies was observed on