in the axillary region, using an ordinary Luer syringe and needle of 23 or 26 gauge.

Almost immediately after injection of from 0.2 to 0.5 cc. of the antigen, there is a sharp and marked rise in tonus accompanied by other symptoms (lachrymation, salivation, dyspnea, convulsions, etc.) of anaphylactic shock. Since the tonus increase occurs in decapitated, curarized, atropinized, epinephrinized, hepatectomized and anesthetized pigeons, the seat of stimulation is in the crop musculature itself independently of the brain, autonomic nerves, and liver (anaphylatoxin). Moreover, the stimulation is completely removed by papaverine, a direct muscular depressant. Hypodermic, intramuscular and intraabdominal administrations of the antigen are ineffective.

The same method gives interesting and striking effects with physically treated serum and with drugs which will be reported later.

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The presence of iron depositing bacteria in milk.

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Harder[1] has made a careful study of the group of microorganisms, generally classed by him as the trichobacteria, to which he ascribes the deposition of certain sedimentary iron ores. Although Harder devotes himself largely to these trichobacteria, he mentions finding a number of bacteria (eubacteria) which were also able to precipitate ferric hydroxide and other ferric salts from media containing iron salts of organic acids. Since these iron depositing bacteria are soil types, it is not surprising that to a greater or lesser degree they should be found in milk and its products.

The ferric ammonium citrate media of Harder was used both as a broth and as a solid medium. On the agar were obtained colonies described by Harder as typical; that is, large, irregular,

[1] Harder, E. C., U. S. Geol. Survey Professional Paper 113, 1919.

iron-incrusted colonies. Other types as well were found. Of the organisms forming these colonies, cocci and bacilli seem to occur in about equal numbers. There were very few spore formers, no motility, and no liquefaction of gelatin. Dextrose is fermented but lactose and saccharose only rarely so. As a class these organisms were able to utilize the salts of organic acids for their source of carbon, the pH of the medium rising distinctly. Thus they correspond to the group of alkali bacteria studied by Ayers.[2]

The knowledge of the presence of these organisms in milk is believed to be new and significance is attached to them, since frequently undesirable qualities are found in the milk when they are present in considerable numbers.

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The possible rôle of iron depositing bacteria in the formation of hard pan.

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During the studies of iron depositing bacteria as found in milk (see preceding paper) and being impressed with the possible relation of these organisms to hard pan formation, some iron hard pans such as abound in certain sections in the state of California were inoculated into the ferric ammonium citrate medium of Harder.[1] After standing two months a precipitate appeared which is typical of the reaction of iron depositing bacteria in this medium. Plates poured with this medium showed colonies of bacteria (bacilli) and actinomyces. Observation of these pans under the microscope disclosed as well some very minute threads which on staining suggested crenothrix. Not all of the pans, however, showed this appearance.

[2] Ayers, S. Henry, Rupp, Philip, and Johnson, W. T., Jr., U. S. D. A. Bulletin No. 782.

[1] Harder, E. C., U. S. Geol. Survey Professional Paper 113, 1919.