

ON THE ACTION OF COLD OR LUKEWARM TEA ON
BACILLUS TYPHOSUS.

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WHILE carrying out a series of experiments to determine whether, when milk containing *Micrococcus melitensis* was added to tea, that organism was likely to survive or not, I was led to investigate the action of cold tea upon it. Finding that after a period of contact of five hours or more, *M. melitensis* could not be recovered from cold tea, I proceeded to investigate the action of cold tea on *B. typhosus*. The experiments were carried out as follows:—

Tea was prepared in an ordinary earthenware teapot capable of holding about $1\frac{1}{2}$ litres of fluid. Before proceeding to infuse the tea, the teapot was washed with boiling water. The amount of tea used was three heaped-up teaspoonfuls; the amount of boiling water poured on to the tea in each case was about 1 litre. The tea was allowed to infuse for ten minutes, and filled into sterile test tubes in quantities of 10 cc., then allowed to cool down to room temperature (17° C.). Control tubes containing 10 cc. of peptone-broth were used in each experiment. To each tube was added one loopful of a very dilute emulsion of *B. typhosus*. At varying intervals nutrose-litmus-agar plates were prepared from each tube. The tubes were incubated at 37° C. between the first and subsequent platings. The plates were incubated at the same temperature and examined daily for a period of seven days. The results obtained are shown in the following table.

It will be seen from the table that, after four hours' contact, *B. typhosus* diminished greatly in numbers, and that after twenty hours it could not be recovered from cold tea.

The results obtained are of interest with reference to the question of the use of cold tea as a substitute for water in the men's water-bottles on active service. Even when water is sufficiently sterilised, it is liable to become infected after sterilisation; moreover, water-bottles which have once been filled with infected water are capable of retaining infection for some time. If, how-

ever, tea be carried in the water-bottle, any chance infection with *B. typhosus* would appear to cease to be harmful in the course of a few hours.

ACTION OF COLD OR LUKE-WARM TEA ON *B. TYPHOSUS*.

| Test fluid | Quantity of <i>B. typhosus</i> emulsion added | PERIOD OF CONTACT | | | | | | | | | |
|-------------------|---|-------------------|-----------------------|---------------|-----------------------|---------------|--------------------|---------------|-----------------------------|---------------|-----------------------------|
| | | 10 minutes | | 3 hours | | 4 hours | | 20 hours | | 24 hours | |
| | | Amount plated | Result | Amount plated | Result | Amount plated | Result | Amount plated | Result | Amount plated | Result |
| Tea I. | One loopful of a dilute emulsion | 2 loopfuls | Profuse growth B.T.A. | 2 loopfuls | Profuse growth B.T.A. | 4 loopfuls | 7 colonies B.T.A. | 1 cc. | No colonies B.T.A. | 2 loopfuls | No colonies B.T.A. |
| Tea II. | One loopful of a dilute emulsion | 2 loopfuls | Profuse growth B.T.A. | 2 loopfuls | Profuse growth B.T.A. | 4 loopfuls | 7 colonies B.T.A. | 1 cc. | No colonies B.T.A. | 2 loopfuls | No colonies B.T.A. |
| Peptone Broth I. | One loopful of a dilute emulsion | 2 loopfuls | Profuse growth B.T.A. | 2 loopfuls | Profuse growth B.T.A. | 4 loopfuls | 70 colonies B.T.A. | ·005 cc. | Innumerable colonies B.T.A. | 2 loopfuls | Innumerable colonies B.T.A. |
| Peptone Broth II. | One loopful of a dilute emulsion | 2 loopfuls | Profuse growth B.T.A. | 2 loopfuls | Profuse growth B.T.A. | 4 loopfuls | 80 colonies B.T.A. | ·005 cc. | Innumerable colonies B.T.A. | 2 loopfuls | Innumerable colonies B.T.A. |