

the fact that the vaccine employed for antityphoid inoculations must contain constituents of the bacterial protoplasm, he recognized at the same time the risk of disseminating the germ of the disease as well as the risk of communicating the disease in a serious form, should the practice of early preventive inoculations be adopted—cultures of living attenuated micro-organisms being employed.

It appears that the whole aspect of the question was altered by an observation of Professor R. Pfeiffer, who had in man obtained the specific agglutinative reaction to typhoid bacilli by the subcutaneous inoculation of a heated typhoid culture. Working upon the proposition that the typhoid culture preserves its vaccinating efficacy after exposure to a temperature of 60°C. its truth has been established experimentally, for according to Wright the inoculation of such cultures of or typhoid bacilli induce in the organism agglutinating, bactericidal, bacteriolytic, and antitoxic properties to the blood.

Some objection to the use of the vaccine is found in the pain at the site of injection and the constitutional reaction which may follow. With a synoptical table of statistical records and a critical commentary on these statistics the subject of antityphoid inoculation closes. Dr. Wright admits that the inoculations have been done in most instances under many disadvantages and that statistics are at the same time permeated with error. Yet making due allowance for all this it appears. 1. that a *great saving of life has already been effected*; 2. the incidence of typhoid fever has been diminished by at least one-half in the inoculated; 3. case mortality has diminished; 4. there is evidence pointing to the persistence of protective effects during the second year after inoculation.

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W. S. THAYER. "On the Late Effects of Typhoid Fever on the Heart and Blood Vessels." *Am. Jour. Med. Sc.*, March, 1904.

This study was carried out on a series of patients who had previously been treated for typhoid in the Johns Hopkins Hospital, and the writer presents strong reasons for accepting the view that typhoid is frequently followed by changes in the heart and arteries.

Numerous observers have pointed out the frequency of fresh gelatinous and fatty sclerotic plaques in the aorta and larger vessels of individuals dead of acute infectious disease, and similar changes have been induced by injecting pathogenic organisms into the vessels. An examination of the arterial tension by the Riva Rocci apparatus showed a distinct higher tension in old typhoids than in a series of healthy individuals taken under similar conditions, the result being clearly shown in a graphic chart.