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NOTE ON A CASE OF CHOLELITHIASIS IN WHICH BACILLUS TYPHOSUS WAS ISOLATED FROM THE CENTRE OF A GALL-STONE.

By Lieutenant-Colonel H. Marrian Perry, Professor of Pathology, Royal Army Medical College.

A patient, aged 43, was recently admitted to Queen Alexandra's Military Hospital, London, suffering from symptoms of acute cholelithiasis. The history of the patient was interesting, as he stated that he had suffered from "enteric fever" in South Africa in 1900. An operation undertaken for relief of his condition disclosed a gall-bladder much enlarged; its walls were thickened and fibrosed and within the cavity there were two large gall-stones. The outer surface of one of the gall-stones was seared and the other opened.

In the centre of the stone there was a nucleus of viscid bile, which on culture in suitable media yielded a pure growth of B. typhosus giving all the characteristic sugar reactions and agglutinating in specific antiserum.

Unfortunately there was no opportunity of bacteriological examination either of the faeces prior to operation, or of the contents of the gall-bladder at the time of its removal, and examination of the stools a week after the operation failed to demonstrate any pathogenic organisms.

Histological examination of the walls of the gall-bladder evidenced the marked fibrosis resulting from chronic inflammation of the viscus. The changes affecting the mucous membrane were more interesting. In places this had undergone atrophy from the pressure of the gall-stones. In other areas the irregular proliferation of the epithelium which had occurred would classify the change as being pre-cancerous.

It is probable that the attack of "enteric fever" twenty-three years ago was a typhoid infection and that catarrhal inflammation of the gall-
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bladder induced by infection of the viscus with B. typhosus had resulted in the formation of gall-stones. The indirect etiological relationship of this typhoid cholecystitis to a subsequent possible malignant growth originating in the lining of the viscus is of interest.

The occurrence of infection of the gall-bladder during the course of an attack of typhoid or paratyphoid fever is so common and well known as to call for little comment. The organism reaches this situation in the bile into which it is eliminated from the blood. In the very great majority of cases no evident symptoms are induced by the presence of the bacillus, but in certain instances an acute cholecystitis may result from infection of the viscus. From surgical experience of this condition it has become evident that cholecystitis originating during the course of the disease is not asso-

associated with the presence of gall-stones, but that the condition of cholelithiasis is encountered in cases which occur at some interval of time, it may be years subsequent to the enteric infection. It must be assumed that in such cases the prolonged infection of the gall-bladder results in a chronic inflammatory condition of the mucous membrane directly exciting the development of gall-stones.

The relation of the gall-bladder infection to the "carrier" condition has of course long been recognized, and the fact that the greater proportion of chronic intestinal carriers have some evidence of chronic cholecystitis has often been placed on record. In the case quoted above no evidence could be obtained of the occurrence of cases of typhoid or paratyphoid infection which could be attributed to the elimination of organisms by the patient.

The illustrations represent the gall-stone from which B. typhosus was isolated and the gall-bladder removed at operation.