

and of certain long, slender bacilli frequently found by him in the stomach-contents in such cases.

The first of these micro-organisms, *sarcina*, is usually described as a frequent ingredient of the gastric contents of carcinoma, but this Oppler denies. He has repeatedly introduced *sarcina* in pure culture into the stomach in carcinoma cases, and has always in advanced cases noticed its disappearance in the course of twenty-four hours. In two cases *sarcina* was found early in the disease while hydrochloric acid was still present, but suddenly disappeared a few days later when hydrochloric acid ceased to be present and lactic acid began to be formed in considerable quantity. Coincident with the disappearance of *sarcina* was the appearance of long, slender bacilli, which had been absent as long as hydrochloric acid continued. These soon became very numerous, forming long chains and masses, almost filling the interstices between the fragments of undigested food.

These observations are believed by Oppler to throw much light upon the processes occurring in the stomach in carcinoma. The ability of *sarcina* to develop in the presence of hydrochloric acid is well known. Its presence, then, during the early stages of the disease depends upon diminished motor activity of the stomach and consequent stagnation of its contents. In later stages, after the disappearance of hydrochloric acid and the establishment of the lactic-acid fermentation, the conditions are favorable to the development of the slender bacilli above referred to, which multiply rapidly and displace the *sarcina*. Thus, while *sarcina* may be present in the early stages of carcinoma, it is invariably absent later in the disease. Since these changes depend for their production to a considerable degree upon the existence of diminished motor activity of the stomach, they are usually observed earlier in the course of the disease when it is located in the pylorus than when its site is elsewhere in the gastric wall.

Oppler would accordingly formulate the conditions in carcinoma of the stomach as follows:

1. In cases of preserved motor activity (as, for example, in carcinoma of the curvatures or walls), hydrochloric acid is often absent, occasionally lactic-acid fermentation, particles of the tumor and bacilli are found; *sarcina* never.

2. When the motor activity is decidedly impaired hydrochloric acid may be either present or absent.

- a. When present (as in the early stages of cancer of the pylorus) *sarcina* may be found, but never lactic-acid formation nor the slender bacilli.

- b. When hydrochloric acid is no longer present (as in the later stages of carcinoma of any portion of the stomach) lactic-acid formation is pronounced, and with it large numbers of the slender bacilli. There is a tendency to gas-formation. *Sarcina* is always absent.

The conditions enumerated under 1 and 2, a, may pass into those of 2, b, as the disease progresses.

SUPPURATIVE PAROTITIS CAUSED BY THE TYPHOID BACILLUS.

To the list of suppurative processes complicating typhoid fever, in which the typhoid bacillus alone has been found as the cause of the abscess-formation, JANOWSKI (*Centralblatt f. Bakt. u. Parasitenkunde*, 1895, xvii., No. 22, 785) has recently added a case of suppurative parotitis.

The patient, a young man, had been sick in the hospital seven weeks, during which time he had greatly emaciated; had had more or less fever, and toward the last had developed hemorrhagic nephritis and a tender enlargement of the right parotid gland. The diagnosis of typhoid fever was first made on the autopsy-table, Peyer's patches showing distinct appearances of recently healed ulceration. The right parotid gland was found to be infiltrated with pus, which was in places collected in small abscesses. Cultures from this pus developed only the typhoid bacillus, whose identity was carefully proved by comparison with known cultures of the typhoid bacillus and of the *bacillus coli communis*.

As has been repeatedly observed in connection with suppurative processes due to the *bacillus typhosus*, the progress of the complication was slow, so that the parotitis became fully developed only after the termination of the primary disease.

Those cases of suppurative parotitis occurring in connection with typhoid fever, which have heretofore been examined bacteriologically, have been found to be due to the ordinary pyogenic bacteria, *staphylococcus pyogenes aureus* and *streptococcus pyogenes*, or to have contained one or the other of these germs in association with the typhoid bacillus. Janowski's is the first case in which the *bacillus typhosus* has been found alone.

A METHOD OF QUICK EXAMINATION OF PATHOLOGICAL TISSUES FOR DIAGNOSTIC PURPOSES.

It is very often desirable to be able to make a diagnosis of tumors and other pathological tissues at the time of operation or as soon thereafter as possible. Many difficulties have attended the employment of frozen sections prepared in the ordinary way, but by a slight modification of the procedure CULLEN (*Centralblatt Allg. Path. u. f. Path. Anat.*, 1895, vi., No. 11, 448) has been able to obtain well-stained and satisfactory sections in fifteen minutes.

Frozen sections are first made, and are collected in normal salt-solution. They are then immersed for five minutes in a 50 per cent. solution of formalin, for three minutes in 50 per cent. alcohol, for one minute in absolute alcohol; then washed in water and stained in hematoxylin and eosin after the ordinary method; are dehydrated, cleared, and mounted in balsam.

The difficulty attending this method is that the blood is lost. By a somewhat longer process this may be avoided. Small pieces of the tissue to be examined are immersed in a 10 per cent. solution of formalin for two hours. Frozen sections are then made, and are carried through 50 per cent. alcohol, absolute alcohol, water, hematoxylin, etc., as before.

These methods have yielded good results at the laboratory of the Johns Hopkins Hospital, and are well spoken of by Prof. von Kahliden, of Freiburg.

HEREDITY AND TUBERCULOSIS.

KUTRY (*Pester Med.-Chirurg. Presse*, 1894, No. 51) has attempted by a statistical study of 432 cases of tuberculosis to determine the influence of heredity in the etiology of that disease. In 23.8 per cent. of the cases one or both parents had the disease; in 11.5 per cent., the father; in 9.9 per cent., the mother, and in 2.4 per cent. both parents.