

the existence of cancer, as in a few cases hydrochloric acid has been absent and yet no cancer present, and also some cases in which hydrochloric acid was present, although there existed undoubted cancer.

Dr. Hüfler made a number of examinations of the gastric juice of patients who were suffering from different cardiac lesions, and found hydrochloric acid absent in all but one. In phthisical patients, it is sometimes absent. In thirteen cases of carcinoma of the stomach reported by Dr. Mears, of Philadelphia, hydrochloric acid was found in six, and not detected in seven cases. It appears to me that if we consider the cause of the disappearance of hydrochloric acid from gastric juice in cases of carcinoma of the stomach, we shall find an explanation for its presence in some cases. Rosenheim examined repeatedly the contents of the stomachs of sixteen patients with this disease, and hydrochloric acid was found wanting in fourteen. In all of these autopsies showed well-marked atrophy of the gastric mucous membrane. In the other two cases in which hydrochloric acid was present during life, after death the mucous membrane, except for the cancer, was found normal. We may therefore conclude that the absence of hydrochloric acid is due, not to the cancer, but to the nearly constant concomitant atrophy, and that in those cases in which hydrochloric acid is present the mucous membrane is not atrophied to any great extent.

It might be in place here to consider the most accurate means of determining the presence of free hydrochloric acid in gastric juice. Regarding this there is considerable disagreement among authorities, but it would seem that Günzburg's phloroglucin-vanillin test is generally considered as the most satisfactory. This has the following formulæ:

Phloroglucin, grs. xxx.; vanillin, grs. xv.; abs. alcohol. \bar{z} j. M.

One minim of this solution in the presence of a trace of concentrated hydrochloric acid takes on immediately a bright-red hue, while at the same time beautiful red crystals are deposited.

Organic acids—acetic and lactic—give only negative results in the presence of this reagent; others use tropeolin, Congo red, methyl violet. The latter is very commonly used, and although some doubt its reliability it is convenient, and seems to give sufficiently accurate results for practical purposes.

Fourthly, cachexia. This is well marked in this case, as indicated by early and rapid emaciation, progressive debility, a dirty sallow complexion, and an anxious countenance.

Fifthly, dilatation of the stomach or gastrectasia. This is present, and invariably occurs if the disease of the pylorus is sufficient to cause any considerable obstruction to the passage of food through it. At first the obstruction causes compensatory hypertrophy of the gastric muscles; but after a time, as the disease extends and the obstruction becomes greater, we have