received glasses for constant use enabling him to see clearly. He was allowed to eat what he liked and to use soda mints as he had done for two years. I prescribed "Tritipalm," a combination of triticum repens and saw palmetto with improvement in the force of the stream and diminution of bladder irritability. Soon benzoate of soda was added and the urine became acid. There was still residual urine, but on the seventh day after commencing treatment he voluntarily gave up the catheter and since the nineteenth day there have been no gastric symptoms—two and a half months. Permanent cure in such a case is hardly to be expected.

The object of this paper is to call attention to eye strain as one factor to be considered in searching for the cause of a gastric or intestinal neurosis. The cause or causes can be discovered and must be removed to effect a cure. Treatment, even when based on accurate conception of the kind of neurosis, is from the nature of the case only palliative.

To guard against the injurious effects of eye strain we should recommend the routine examination of children's eyes by oculists at the earliest practicable age.

A NOTE ON RECTAL FEEDING IN PEPTIC ULCER.¹

BY GEORGE G. SEARS, M. D., BOSTON.

THE two following cases have been selected as a text because they are interesting in themselves, beside illustrating a point in the treatment of peptic ulcer of which I wish to speak very briefly:

CASE I. Margaret H., age eighteen, a domestic, admitted to the City Hospital, July 19, 1898. Although never strong, she had had no special symptoms, and was in her usual health until her catamenia began three days ago. Since then she has several times vomited a dark, bloody material, which once "amounted to a pailful." She was in fair flesh, but anemic, the red cells, a few days after entrance, numbering 2,600,000 and containing but 25% of the normal hemoglobin. There was general tenderness over the upper abdomen, especially on the right of the median line. She was given nutrient enemata containing one egg in a pint of peptonized milk every six hours, and for the first week received nothing by the mouth; she was then allowed small quantities of water, although she complained but little of thirst or discomfort. After ten days the rectum became somewhat restive, and five minims of laudanum were added to each enema, but they were omitted two days later as no longer necessary. Her color improved and her weight apparently increased. On the fourteenth day small quantities of peptonized milk were given by the mouth, and from that time the diet was gradually increased without discomfort. On August 7th, twenty days after entrance, the red cells numbered 4,000,000. She was discharged at her own request on August 26th. Her temperature throughout her stay at the hospital was somewhat irregular, but it rarely exceeded 100° F.

She was readmitted on the surgical side on January 20, 1900. Since her discharge a year and a half ago she has complained at times of dyspeptic symptoms

with pain and nausea, but she has never vomited blood. During the last three months she has twice been confined to bed with a sharp attack of abdominal pain accompanied by vomiting. On the day before her entrance, without apparent cause, she had acute pain in the epigastrium, the left side of the abdomen and the left shoulder, which lasted about five hours. There was no vomiting and no blood in the stools. She was restless and feverish during the night, but in the morning she felt much better. Her color was good and she did not look ill. The temperature was 102° and the pulse 112. There was no abdominal distention, but there were spasm and tenderness of the left rectus muscle and the whole left side of the abdomen, with extreme tenderness over the epigastrium. Operation by Dr. Munro by median incision in the epigastrium showed a perforation about one-quarter of an inch in diameter through which some curds could be pressed, situated at the pyloric end of the stomach close to the lesser curvature. There was evidence of an old peritonitis in the neighborhood which may have accounted for her irregular temperature during her first visit to the hospital. A few flakes of lymph were found in adjacent coils, but no pus. The perforation was closed and the patient was discharged on March 2d.

CASE II. Moses P., age 66, a shopkeeper, of excellent habits, was admitted January 15, 1900. Since he was twenty-five years old he has been subject to attacks of indigestion resembling the present one in many details. They have recurred about every six months, and have been growing worse with increasing years. The prominent feature has always been pain which is relieved only after vomiting. The vomitus has never contained blood, but during an attack ten years ago, he noticed that the movements were tarry. He always becomes very pale and has a slightly yellowish tinge to the skin. On two occasions he has been so weakened that he has been confined to the house for three months. He has been losing flesh for the last three or four months, but the acute symptoms did not begin until three days before entrance, when he lost his appetite and began to have sharp pain in the epigastrium, which was relieved rather than increased by eating. After an injection he passed a small tarry movement. Two days later while sitting in a chair he suddenly felt faint and lost consciousness. On coming to he vomited considerable brownish-red blood.

The patient was very anemic and had evidently lost considerable flesh. The heart was not enlarged, but systolic murmurs were heard at both apex and base, the latter disappearing during his stay in the hospital. The peripheral arteries were in good condition for a man of his age, and the liver was of normal size. Pressure over the epigastrium was not painful, but there was slight spasm of the right rectus muscle. The feet were slightly edematous. The urine was negative. The red cells numbered 2,536,000. All food by the mouth was stopped, and he was given an enema containing one egg, two ounces of beef juice, one ounce of brandy, and enough peptonized milk to make a pint, every six hours. These were continued until February 3d, but he began to receive small quantities of peptonized milk on January 23d, as he was growing restive and complained of thirst. On the former date the red cells numbered 2,400,000, with 30% of hemoglobin. He steadily improved, and was

¹ Read before the Clinical Section of the Suffolk District Medical Society, May 16, 1900.

discharged at his own request on February 26th, when a blood count showed 3,756,000 red cells, with 35% of hemoglobin.

Apart from the interest which attaches to the first case from the success which followed Dr. Munro's prompt resort to surgical measures, and to the second from the length of time, apparently over forty years, during which the process was active, both cases illustrate the tolerance of the rectum to much larger enemata than are usually prescribed. Theoretically, the best treatment of peptic ulcer is by rest of the stomach, the more complete the better and for the longest possible time, but this cannot be obtained in every case, owing either to the patient's objections to the incidental discomforts, of which the chief is thirst, or to the intolerance of the rectum which may soon come on; yet, in an experience with a considerable number of cases requiring rectal feeding, during the past three years, intolerance has not seemed to be acquired sooner with the larger than with the smaller amounts, while the comfort of the patient is certainly enhanced and thirst alleviated by the larger quantity of fluid. The routine method has been to give a high enema of plain water, early in the morning. This is retained by the patient, if possible, for an hour, at the end of which time, if it has not come away, an enema of soapsuds is given to cleanse the rectum for the work of the day. The nutrient injection of peptonized food is then given through a half-inch soft-rubber tube. The patient's buttocks are raised and an attempt is made to get the fluid beyond the sigmoid flexure, but whether ever successfully or not I must leave to the anatomist to decide. At all events, it is possible to insert a tube of this calibre, which is almost too stiff to bend up on itself within the narrow limits of the rectum, from 8 to 12 inches. The fluid is injected slowly, the tube being gradually withdrawn. Efforts at expulsion are restrained by a pad in the usual way. The enemata are repeated every six hours.

It is not claimed that all the necessary nourishment can be given in this way, yet in the first case the improvement in the anemia and the apparent gain in weight are encouraging signs, and show that it is possible to prevent the patient at least from losing ground.

ACHLORHYDRIA; ITS EFFECTS AND THEIR TREATMENT.¹

BY H. F. HEWES, M.D., BOSTON.

OF 250 cases of disorder of the stomach which I have treated during the last few years, the condition of achlorhydria was present as a constant condition investigated by several analyses at considerable periods of time in 15. Of these cases 6 were cases of simple chronic gastritis, 4 cases of gastritis with carcinoma of the stomach, 1 achylia gastrica, 3 cases in which the achlorhydria was the only abnormal objective sign.

The importance of the recognition of this condition arises from the fact that it may itself, regardless of the nature of the organic lesion of the body with which it may be associated, be a cause of special definite disturbances in the process of digestion, and thus a special treatment directed to remedying its effects is necessary in cases where it exists. The results of this absence of hydrochloric acid in the

stomach are (1) an absence of peptic digestion, (2) an increase of bacterial fermentation in the stomach and intestine.

Where the motility of the stomach is undisturbed, as is not infrequently the case with achlorhydria, the absence of peptic digestion is of little or no effect upon the organism, since the intestine can perform this function of proteid digestion. Our first aim in the treatment of this condition is, therefore, the preservation or adjustment of the motor function of the stomach. The proteid diet must be in such a form and given in such a manner that it can be easily passed through the stomach, the starches with the cellulose envelope broken so that salivary digestion may occur freely in the stomach.

In some of my cases the achlorhydria has existed for years and it is only when the motility of the stomach becomes affected that the patients have symptoms of stomach trouble and come for treatment. A proper regulation of the diet, with a regimen of rest after meals, and regular out-of-door exercise and exercise of the abdominal muscles, with strychnia or hydrochloric acid and strychnia given internally, soon causes in these, as well as in the more numerous cases of hypochlorhydria, a relief of symptoms, and presumably a readjustment of function.

The device of supplying the hydrochloric acid for peptic digestion by administration of the artificial acid, often useful in cases of hypochlorhydria where the deficiency of acid is slight, cannot be utilized with success in achlorhydria, as it would be necessary to use excessive amounts of the acid—a quart of dilute hydrochloric acid, for instance, with a meal.

That an abnormal fermentation occurs when the stomach contents lack their normal antiseptic, the hydrochloric acid, has been definitely proven by Dubarry, Bunge, Simon and others. This causes little or no effect in the stomach or intestine where the motility is normal, although the quantity of bacteria or fermentative products which are passed into the intestine and the fermentation which occurs there are increased over normal even in these cases. (*Vide* Simon's "Researches upon the Conjugate Sulphates of the Urine in Cases of Hypochlorhydria.")

In cases where motility is affected a considerable amount of fermentative products is formed, causing frequently disturbance of both stomach and intestine. In these cases marked symptoms of intoxication and of intestinal sepsis, as drowsiness, urticaria (?), intestinal flatulency, diarrhea, may occur. The treatment of this second result is, therefore, like that of the first, primarily the adjustment of the motility of the stomach. Where this function is intact antiseptics destined to act in the stomach (salicylic acid, resorcin, or large quantities of HCl given frequently throughout digestion) or in the intestine (salol) may be useful in limiting fermentation. In cases where intestinal sepsis is suggested by symptoms the antiseptic treatment must be applied and foods which do not easily undergo fermentation must be given.

The presence of achlorhydria can be determined by a simple method of analysis of the contents. A qualitative test for free HCl determines whether or not we are dealing with a marked condition of hypochlorhydria. A further qualitative test of the contents for the presence of combined HCl² determines whether

¹ Abstract of a paper read before the Clinical Section of the Suffolk District Medical Society, May 16, 1900.

² Hewes: Analysis of Gastric Contents (Ewald-Sjoqvist Test), Journal, January 4, 1900.