it enters the blood becomes loosely associated with the hæmoglobin and myoglobin. The blood of animals under it show less oxyhæmoglobin, but as the blood exposed to the air readily gives up the nitrous oxide, the connection must be a slight one. The watery portion of the blood also absorbs the gas, but as yet there are no data which show that any changes are produced. The most important effect upon the circulation is due to its effect on the nerve centres that govern the heart. In the early stages the heart appears little affected, but later it is slowed to a slight extent. The force of each beat is increased, as before mentioned, and its regularity maintained. If the anæsthesia is pushed until respiration ceases, the heart still beats, the pulsation becoming gradually slower and at last ceasing. If artificial respiration is begun, the heart recovers its regular beating. The blood pressure in deep anæsthesia is lowered, but this is not progressive.

With regard to the injurious effect upon the kidneys, a point which has been raised against the gas, Buxton claims that, as the blood pressure is lowered and the bulk of the kidneys reduced, it is difficult to believe there can be any congestion in these organs.

So far as these elaborate experiments go, nitrous oxide is the safest anæsthetic known, and when given by Bert's method, the most perfect and lasting.

TEST FOR SULPHOCYANIC ACID IN THE SALIVA.[17]

Precipitate the mucus with alcohol, reduce the volume of the saliva by heat, dilute it with water, and add a few drops of an aqueous solution of cupric sulphate. This will immediately produce a fine emerald green color.

CHEEK PLUMPER.[18]

In certain cases of excessive absorption of the alveoli it is necessary to attach to the artificial teeth bunches to distend the cheeks, to restore the original contour of the face. These cheek distenders were the invention of Dr. Allen, but as they were hard and not movable, they interfered with the expression when the face was not in repose. Wall proposes to make them movable, so that they will follow all the motions of the muscles of the cheeks. He does this by making them of light and thin material, and attaching them to the plate by means of springs.

IMPRESSIONS FOR OBTURATORS.[19]

The ordinary or Suersen method is an attachment to the plate, and extends backward into the cleft. When the impression is to be taken, this projection is covered with soft gutta-percha, and placed in the mouth, the patient being directed to swallow and talk, so that the soft gum may be molded into proper form by the muscles of the soft palate and pharynx. The difficulty met with is in adjusting the backward extension of the plate, so that it shall not be distorted by the contraction of the muscles. The invention of Shenker consists in providing a round rod with a metal shield at the end, movable so that it can be adjusted to suit the muscles before the impression is taken. The contraction of the muscles of the pharynx pushes the shield forward, and when it is in the proper position it is fixed, and the impression can be taken with certainty.

[17] Therapeutic Gazette, p. 57, 1888.
[18] Wall, in Journal British Dental Association, p. 41, 1889.
[19] Shenker, in Dental Review, p. 715, 1888.

CONCLUDING NOTES.

Dr. Andrews has accomplished a great feat in photographing the germs which produce decay. He has made sections of decayed teeth, and has been able to show by photography all the appearances described by Miller in his investigation of caries.

Black has published an extremely complete monograph on the periosteum and peridental membrane which should have been mentioned in my previous report, but could not be properly noticed at that time.

The friction between those dentists who believe patents unprofessional, and those who patent all their ideas and charge the profession for them, is greater this year than ever before; and it is difficult to see where the matter will end. Great efforts have been made by the Massachusetts Dental Society under the lead of Dr. Merriam, to introduce non-patented devices to the members of the profession, and to induce the dentists to purchase their materials of houses who are not in the Dental Trust.

The year is marked by the formation of a Dental Protective Association, the object of which is to raise a fund out of which to pay the legal expenses of the members who may be sued by the great companies which are gradually patenting about all the operations performed by dentists. This matter of patent rights is becoming more serious every year. There is no remedy for the present state of things. We must wait till the professional spirit prevents dentists from taking out patents and selling them. At present the majority of dentists believe in patents, and only object to them when they are not their own, and when they feel the effects in the shape of royalties and suits at law for infringments.

Clinical Department.

ULCER OF THE STOMACH, AND ITS COMPLICATIONS.[1]

BY I. J. CLARKE, M.D., HAVERHILL, MASS.

PATIENT, N. J. F., aged forty-two, office clerk. Came under my care October 20, 1883. Family history was good, and there was nothing in the patient's history to account for his disease unless it be the fact that he had formerly been intemperate. His health till within a short period prior to above date had been excellent.

Symptoms: There were the ordinary symptoms of a mild attack of indigestion. Patient complained of a pain just below sternum. The pain was believed to be gastric (gastralgia). There was distress after eating. An anti-dyspeptic mixture of pepsin, bismuth and nux vomica was prescribed. The uncomfortable symptoms increased in severity. Patient had a profuse hæmatemesis the evening after his first visit to my office; the loss of blood caused him to faint. This was followed by another hæmorrhage the next day, which much prostrated him. Five days afterwards there was a return of the hæmatemesis, which was followed by five more similar attacks; the loss of blood in all was estimated at more than four quarts. Great prostration, with loss of consciousness and general convulsions ensued. All food was witheld; hypodermic injections

[1] Read before the Essex, North District Medical Society, January 9, 1889.

of ergot and stimulants were administered; cold was applied externally; Monsell's solution was given by mouth, and nourishing enemata were resorted to. Opium was also given per rectum, and the patient was kept thoroughly under its influence. Under this treatment he recovered sufficiently to be removed to the City Hospital, Boston, where he made a fair convalescence.

I next saw the patient June 7, 1884; and from that time occasionally until the middle of December, 1885. During this time he complained more or less of his old trouble, but there was no return of hæmorrhage, and he was able to attend to his business.

In September, 1885, a consultation was held with Dr. F. Minot, of Boston, who confirmed the diagnosis of ulcer of the stomach. Dr. Minot did not see any reason to regard the patient's condition as complicated with malignant disease. Peptonized milk was suggested and pretty large doses of bicarbonate of soda. Patient was still able for several months to attend to his business, when one day he lost consciousness and was sent to the Massachusetts General Hospital. There was no hæmatemesis, although hæmorrhage was suspected. He remained in the Massachusetts General Hospital nearly five weeks.

I saw him again June 20, 1886; he was then suffering from indigestion, pain and flatulence, also vomiting and inability to assimilate but small quantities of food, which was given often, a spoonful at a time. There was marked emaciation and loss of strength. There was considerable dysphagia, the cause of which was obscure.

Dr. Minot again saw the patient July 15th. He did not see reason to change his diagnosis, no tumor was perceptible to palpation. Dr. Minot thought the prognosis very unfavorable. Peptonized foods were continued although nothing seemed to nourish. Food was generally vomited as soon as introduced into the stomach. Nutritious enemata were resorted to for four weeks prior to death. The pain became very severe, assuming the character of the pain of peritonitis, and death occurred August 30th.

The autopsy revealed a mild general peritonitis, more particularly in the region of the stomach and pancreas. The peritoneum was adherent to the stomach and pancreas. The coats of the stomach showed acute and chronic interstitial gastritis, and five ulcers, averaging about the size of a ten cent piece, also a scirrhous cancer involving the whole stomach and head of pancreas. Two of the ulcers were situated upon the anterior and three upon the posterior wall. Two were exactly opposite each other, about one inch from the pyloric orifice, these surfaces coming closely in contact. One may possibly have been caused by the irritating pus of the other. Both seemed to be in the same stage of cicatrization. Of the five ulcers present, three were healed, and presented a peculiar pale rugous appearance; they projected above the level of the surrounding tissues. The two that were in process of repair, showed a healthy granular condition, discharging a creamy pus, and were about half cicatrized. The walls of the stomach were about half an inch in thickness, and were transformed into a scirrhous tissue which projected here and there in the form of hard nodules which so obliterated the cavity of the stomach that it would not contain more than four ounces. The character of the disease invading the head of the pancreas was the same. Large accumulations of fæcal matter were found in the transverse colon, which accumulated in great measure from the persistent flatulence.

The above can hardly be looked upon as a typical case of ulcer of the stomach. Some may see reason to think that the cancerous disease was primary, and the ulcerous secondary. Leube says that the combination of carcinoma with round ulcers of the stomach is particularly interesting, not only from a pathologico-anatomical, but also from a etiological point of view. In 160 cases Dietrich found this combination eight times; in some of the cases, cicatrices of the healed ulcers existed unconnected with the cancer; in others the carcinoma appeared to be implanted upon an old ulcer. Waldeyer speaks of quite superficial nodules with an indurated, slightly granular, ulcerated base, which were with difficulty to be distinguished from simple round ulcers, even with the aid of the microscope; and he comes to the conclusion, "that there is no pathologico-anatomical reason why a process which at first is simply ulcerative may not in time be converted into a cancerous one, if the epithelial elements of the wall of the stomach instead of passively disintegrating, take part in the proliferation of the border of the ulcer." [2]

Reports of Societies.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

TWENTY-FIFTH Annual Meeting, held at the Pequot House, New London, Conn., July 17 and 18, 1889.

WEDNESDAY MORNING SESSION.

The Society was called to order by the President, DR. WILLIAM F. NORRIS, of Philadelphia.

The first paper read was

AN ANALYSIS OF NINETY CASES OF SIMPLE CHRONIC GLAUCOMA, WITH SPECIAL REFERENCE TO THE EFFECTS OF IRIDECTOMY UPON THE ACUITY OF VISION AND THE VISUAL FIELD,

by DR. CHARLES STEADMAN BULL, New York.

Detailed histories of the ninety cases were presented and the following conclusions formulated.

In endeavoring to draw some rational conclusions from the study of ninety cases, it seems wise to begin with a quotation from Priestly Smith, to whom ophthalmologists owe so much of their knowledge of the pathogeny and pathology of glaucoma.

(1) In considering the expediency of an operation in chronic glaucoma, he says, "In every case of chronic glaucoma, the responsibility of advising an operation is a heavy one, and should on no account be undertaken without a full explanation to the patient or his friends of the almost positive certainty of blindness on the one hand and of the uncertainties which beset the operation on the other. Having regard to the age of the patient, the impossibility of great benefit, and the possibility of a painful and accelerated progress, the prudent surgeon will only operate on the express desire of the patient to secure the only possible chance of benefit, however small it may be." Armed with the preceding precaution, it seems to be our duty to operate in cases of chronic progressive glaucoma, and the earlier the better.

(2) If the disease in a given case seems to be stationary and is still in the primary stage, and if it be

[2] Ziemssen's Cyclopædia, vol. vii, p. 236.