more in the vertical. On Feb. 5th I determined to needle the right lens; on the next day there was a little pain and the lens was evidently swelling up. On the 15th I evacuated the lens matter and again on March 22nd. On March 30th she could tell the time by a watch at 16 inches. On May 16th the vision of the operated eye was $\frac{1}{2}$ c. - 2 D. sph. c. - 2 D. cyl. axis 90°, and J. 1 easily with a + 5 D. sph. and cylinder. The vision of the other eye was then $\frac{3}{8}$ without a glass and $\frac{6}{8}$ with a - 18 D. sph. and cylinder.

CASE 3.—The patient was a boy, aged six years. Refraction was - 10 D. sph. with - 3 D. of astigmatism in vertical meridian of each eye; J. 1 at four inches each. The fundi were nearly normal. After two dissections of the right eye vision was J. 1 + 3 D. at 12 inches.

CASE 4.—The patient, a woman, aged 24 years, complained of advancing short sight. The vision in the right eye was $\frac{6}{8}$ c. - 20 D. $\frac{6}{8}$; that of the left eye was $\frac{6}{8}$ c. - 16 D. $\frac{6}{8}$. On March 4th, 1901, dissection of the right lens was performed, also evacuation on the 18th and capsulotomy on April 10th. In October, 1901, the vision in the right eye was $\frac{3}{4}$ without any glass, c. + 2 D. $\frac{1}{8}$, and the patient could read J. 4 with + 5.50 at 12 inches; with the left eye only she could read J. 6 with - 7 D.

CASE 5.—The patient, a boy, aged nine years, had more than - 18 D. of myopia in each eye and saw J. 8 only at eight inches and $\frac{3}{8}$. The following operations were performed. On May 6th, 1901, dissection of the right lens and on June 5th and August 19th evacuations. On Sept. 15th, 1902, vision in the right eye was $\frac{3}{4}$ without glasses and J. 4 with + 3 D.; with the left eye the patient could only see $\frac{6}{8}$ with - 2 D. and not J. 8. Small crescents.

CASE 6.—The patient was a young man, aged 19 years, who complained of advancing myopia and incapacity for work. Vision in each eye was $\frac{6}{8}$ c. - 18 D. $\frac{6}{8}$ and J. 1 at three inches. Dissection of the right lens was performed on July 16th and evacuation on August 15th and 22nd, 1900. On Dec. 18th vision in the right eye was $\frac{3}{4}$ c. - 2.25 D. $\frac{1}{2}$, and J. 1 at 12 inches without a glass.

CASE 7.—The patient, a girl, aged 16 years, suffered from advancing myopia, choroidal atrophy, macular degeneration, and some peripheral lental changes in both eyes; the left was the worse. Divergence was commencing. More than - 12 D. of error was present. Corrected vision in each eye was $\frac{3}{8}$ badly. Dissection of the left lens, with subsequent evacuation, was performed; uncomplicated. The patient lives in the country and the final result has not been obtained, but a report on Sept. 20th, 1902, stated that her distant vision with the left eye had improved, so that she had been able to take a situation.

CASE 8.—The patient, a youth, aged 18 years, suffered from advancing myopia. Vision in the right eye was c. - 15 D. $\frac{6}{8}$, and J. 4 with - 10 D.; in the left eye it was c. - 18 D. $\frac{6}{8}$, and J. 6 with - 10 D. Dissection of the left lens was performed on August 12th and evacuation on August 19th and Oct. 25th, 1901, respectively. On Nov. 7th, 1901, the vision of the operated eye was noted as $\frac{6}{8}$ with + 3 D. $\frac{3}{8}$ and J. 4 with + 6 D.

CASE 9.—The patient, a young woman, had advancing myopia. Vision was $\frac{3}{8}$ in the right eye and $\frac{6}{8}$ in the left eye and was unimproved by glasses. With the left eye she could see J. 1 with - 15 D. and + 3 D. cyl. axis vertical. Dissection of the right lens, followed by evacuation, was performed. Vision now with the right eye was $\frac{3}{8}$, with + 2 D. and + 2 D. cyl. axis vertical $\frac{1}{2}$, and J. 1 at 12 inches with + 5 D. and + 2 D. cyl. axis vertical.

The results will appear more clearly when set out in tabular form:—

Cases in which Lenses have been removed for High Myopia.

No. of case.	The best vision obtainable before operation.	The best vision obtainable after operation.
1	J. 10.	J. 1.
2	$\frac{6}{8}$.	$\frac{1}{2}$ and J. 1.
3	J. 1 at 4 inches.	J. 1 at 12 inches.
4	$\frac{3}{8}$.	$\frac{1}{8}$ and J. 4.
5	J. 8.	J. 4.
6	$\frac{1}{8}$ and J. 1 at 3 inches.	$\frac{1}{2}$ and J. 1 at 12 inches.
7	$\frac{3}{8}$.	Distant vision improved.
	$\frac{3}{4}$ and J. 6.	$\frac{3}{8}$ and J. 4.
	$\frac{6}{8}$.	$\frac{1}{2}$.

It will be seen that in all the nine cases there has been some improvement of vision and in some very great improvement. But results thus stated do not tell the whole tale. The improved vision without resort to glasses has been a great boon and has enabled some to take situations which previously were not open to them. In no case has the operation been followed by untoward symptoms, though the first case gave rise to a little temporary anxiety. I have never operated on both eyes, though several of the patients have requested me to do so after appreciating the improvement of vision in the first eye from the operation. I think that the operation in suitable cases, a limited class, is so reasonably safe and attended often with such brilliant results that it should be regarded as a recognised procedure in the treatment of high or advancing myopia in young persons.

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A CASE OF CHRONIC GASTRIC ULCER SUCCESSFULLY TREATED BY EXCISION.

By ERNEST W. HEY GROVES, M.D., B.Sc. LOND.

It is only within recent years that the disease of gastric ulcer has fallen within the domain of surgical practice. And at first it was only in cases of rupture of an ulcer where death was almost inevitable if the case was left to expectant treatment that it was proposed to operate, but now it is well recognised that the chronic gastric ulcer, simulating as it does some of the worst features of malignant disease, is amenable to radical treatment. The following case illustrates these points well.

A man, aged 48 years, complained of epigastric pain, vomiting, and loss of flesh. He had had no illness until July, 1899, when he had a "bilious attack" followed by frequent attacks of vomiting at intervals of one or two days but unaccompanied by pain. This continued until Christmas, 1899, from which date he began to have severe abdominal pain, lasting from one or two days to a fortnight at a time with intervals of a month or six weeks' freedom. The posture which relieved him most was stooping. The seat of the pain was under the left ribs. Vomiting and pain continued in this way until December, 1900, when he was first conscious of a sense of resistance in the region of the upper abdomen and from about this date constipation began to be marked, so that without aperients and enemata the bowels only acted every four or five days and the pain became much worse. During the early part of 1901 he steadily but slowly lost flesh, falling in weight from 9 stones 3 pounds to 7 stones, but between March and May all his symptoms spontaneously abated and he gained 12 pounds in weight. This improvement, however, was followed in June by relapse and in August, 1901, his condition was as follows. He was pale and emaciated and his face was drawn and bore an expression of pain. The tongue was red and raw. The abdomen was retracted and it moved tardily on respiration. Between the left costal margin and the navel was a tender resistant area which was slightly dull to percussion. Deep palpation under an anæsthetic revealed an indefinite hardness in this situation which appeared to be attached to the abdominal wall. This hard tender area was oval in shape and measured about two inches by one and a half inches, the long axis lying in the length of the body. Washing out the stomach gave no evidence of gastric dilatation or decomposition and free hydrochloric acid was proved to be present by Gunsberg's test. When dilated by carbonic acid gas the stomach appeared to lie behind the resistant area and to be normal in its size and position, not descending below the umbilicus. But its outline was obscure. He was never free from abdominal pain but it became much worse about two hours after food. The vomit was frothy and yellow, rarely exceeding a few ounces, and had never contained blood and seldom food. The act of vomiting used to relieve the pain but it had not done so lately. The pain and vomiting were both increased by movement. During the months of August and September, 1901, he was kept under careful nursing and observation. For two weeks he was fed by nutrient enemata alone and feeding by the mouth was begun very carefully with only the lightest and artificially digested food. This treatment stopped the vomiting and made the pain much less, the tongue became normal and he gained seven pounds

in weight; he then tried to resume work but by the end of October the pain had returned and his weight had fallen to 6 stones 7 pounds.

On Nov. 2nd, 1901, I operated. An incision was made in the median line four inches above, and one inch below, the umbilicus. The parietal peritoneum was thickened and was densely adherent to the underlying structures. By carefully avoiding the adherent part, the peritoneal cavity was opened above and below the indurated area and a portion of thickened parietal peritoneum of the size of a crown piece in close union with the anterior wall of the stomach behind, the liver by the thickened round ligament above, and the great omentum and transverse colon below was separated from the abdominal wall. The round ligament of the liver, which was indurated and thickened to the size of a finger, was cut through and then the omentum was tied and cut in sections. The stomach wall was held up by two silk ligatures passed through its muscular coats above and below the induration and sponges were packed around. A portion of the anterior stomach wall, measuring two inches long by one and a quarter inches broad and having its long axis transverse to the long axis of the stomach, was cut out with curved scissors, closely following the edge of induration. The edges of the gap left by this excision were sewn together by a double layer of silk sutures, one embracing the mucous membrane and the other the muscular and serous coats. The peritoneal cavity was carefully mopped dry with sponges and the abdomen was closed by a single layer of fishing-gut sutures, a strip of gauze being left in the wound as a drain. The inner surface of the portion of stomach wall removed was smooth and depressed below the surrounding mucous membrane and was limited by a terraced edge, the appearances being typical of an indolent chronic gastric ulcer. On Nov. 4th the drain was removed under an anæsthetic. There was no discharge. The wound healed by first intention; there was no vomiting at all after the operation. For the first five days the patient was fed by the bowel but after this he took food well by the mouth and had no pain. He was moved from his bed on the 16th, a fortnight after the operation.

As regards the subsequent history of the case the patient has steadily gained in weight, so that in April, 1902, he weighed 10 stones 2 pounds—an increase of 3 stones 9 pounds in six months—and this is nearly a stone heavier than he has ever been before. He has resumed his business and can move and eat without pain or sickness.

The chronic gastric ulcer of which the above is an example, occurs usually in middle-aged men and does not often cause either hæmorrhage or perforation but it is accompanied by a most intense dyspepsia, associated with progressive emaciation. In all these points it offers a marked contrast to the acute gastric ulcer, but in the majority of cases the chronic gastric ulcer is situated near the pyloric end of the stomach where by its contraction it causes obstruction and gastric dilatation, or it is on the posterior wall where it becomes adherent to the pancreas and the tissues in the neighbourhood of the great vessels. In these latter cases the ulcer generally cannot be excised but, according to Mr. A. W. Mayo Robson, the best treatment consists in a gastro-jejunostomy, which relieves the symptoms by putting the stomach in a condition of physiological rest.

The main point of interest in this and similar cases is the diagnosis from malignant disease. In early stages this is almost impossible and it would probably be more to the patient's advantage if no undue delay occurred in the endeavour to make this diagnosis but every case of intractable dyspepsia of recent occurrence associated with emaciation should be subjected to exploratory, and, if possible, radical, operation. There were, however, three points in this case which indicated the innocent nature of the disease. 1. The presence of free hydrochloric acid in the gastric contents. 2. The remissions of pain and vomiting and the increase of weight which occurred twice in the course of the disease, once spontaneously and once as the result of treatment. 3. That with a history extending over more than two years malignant disease would probably have produced a greater mass of new growth. It is interesting to note how some of the symptoms were connected with the anatomical relations of the disease. The pain was increased when the patient stood upright because the ulcer was adherent to the parietes. Breathing was chiefly costal because the movements of the diaphragm pulled upon the stomach through the adhesions of the liver, and the fixation of the colon to

the stomach and anterior abdominal walls accounted for the obstinate constipation and the increase of pain which occurred when the bowel was loaded.

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NOTES ON SLEEPING SICKNESS.

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THE following notes were taken from the Wa-Semi, a people belonging to the Wa-Kavirondo, residing on the north shore of Kavirondo bay in Lake Victoria Nyanza, about one and a half days' journey from Kisumu, the inland terminus of the Uganda railway.

At this place I found the disease very common and evidently (from what I learnt of the history) spreading very rapidly, as, although the natives all declared that it had only been in that neighbourhood for 14 or 15 months, nearly half of the whole population were affected with it. I had no difficulty in seeing cases as they had heard of Dr. C. Christy (one of the commissioners of the Royal Society on sleeping sickness) going all round the country pricking the natives' ears, and they firmly believed that it was a preventive *dawa*. I took full notes of 150 cases and also blood films, and the percentages mentioned below are taken from these cases. I was unable to find filaria perstans in any one of the films and I have been unable to find it in any Kavirondo in or near Kisumu, though I have found it in nearly every Msoga resident or passing through here, whether he was healthy or otherwise. Dr. A. D. P. Hodges, on the other hand, found filaria perstans in 100 per cent. of his cases among the Wa-Soga and in 78 per cent. in healthy natives there. The Wa-Kavirondo do not seem afraid of it as they do in Usoga, but take great care of the patients in advanced cases. Some patients were brought to me from long distances and had to be carried all the way. They have no theory of their own as to its origin; they only know that it had spread from Usoga. The only account I have seen is that in Manson's "Tropical Diseases" and I tried to find how often the symptoms which he mentions occur.

By far the most striking sign of the disease is the expression, and after a very short acquaintance with an infected area one can tell at a glance whether a native has the disease or not, and still further the length of time that the patient has suffered from it can be deduced fairly accurately—at least this can be done among the Wa-Semi, in which the disease has a definite and well-defined course of from four to five months. At the end of the first month the sufferer has simply a vacant expression with a characteristic drooping of the lower lip downwards and forwards so that all the lower teeth are seen; the lip is slightly swollen and very dry and cracked. At the end of the second month the manner, like the expression, becomes listless and vacant, the face gets puffy, the upper eyelids begin to droop, and the lip hangs lower and is more cracked and dry. If the patient puts out his tongue it is tremulous and occasionally the hands also if they are held out. At the end of the third month everything is intensified. Saliva drips over the hanging lip unnoticed and unchecked, and the whole body is filthily dirty, though the Wa-Kavirondo, I may say, are a very clean race when in health. There are marked tremors in all the limbs, especially in the arms, and the sufferer has to support himself with a long stick to which he clings, as his limbs are very liable to give way suddenly, when he falls in a heap on the ground without attempting to put out his hands to save himself. The tremors are often choreic in character and are always more exaggerated on the left side than on the right. At the end of the fourth month the sufferer cannot get about at all, but he lies on the ground in his hut without moving his position. He generally lies in one of three positions: (1) flat on the ground with the face downwards, the legs out straight, and the head resting on the hands and turned to one side; (2) doubled up on the left side with all the limbs curled up; or (3) kneeling down and leaning forward with the forehead resting either on the ground or on the side of the hut. This last position looks most uncomfortable. During this last month the most horrible sores develop, and the patients are most unpleasant to see as they pass their motions as they lie and a heap of saliva accumulates by the head and dried secretion and filth