will be adopted by the mean of students as the safe course and will serve to give these men a safe and broad foundation for specialization. It is often said that a curriculum should be arranged for the average student, that the brightest students will take care of themselves. True! but why not stimulate students and teachers by giving to those who elect advanced knowledge along chosen lines?

I take it, that you will grant me that the elective system is desirable at some period in the education of a medical man. Many will insist that no specialization should exist until after the student has graduated. My answer to this is that, "by hook or by crook," the majority of the best students who graduate from medical colleges today elect that they will devote more time to one given subject than to another. This demand exists. It is a condition which is present. Why not meet it and adjust our curriculum accordingly? After all, what, as teachers of medicine, we desire to do is to see that a medical graduate shall have a safe and competent knowledge of the science and practice of medicine; and beyond that we should insist that the best students shall have the facility, when they possess the ability, to go as far as they may along their chosen line of selection.

How can this be obtained? I believe by a minimum required curriculum—minimum in the number of subjects to be taught the students and minimum in the number of hours to be devoted to the subject. The minimum number of subjects should be anatomy, physiology, pathology, medicine, surgery, obstetrics and, possibly, hygiene. The number of hours that should be devoted to these subjects should be reduced to the absolute minimum which would be necessary to give the knowledge that every well-educated medical man should possess as a foundation.

An impartial board of three members of a faculty could determine the amount of time to be occupied by these fundamental studies. The head of the department of these fundamental studies is too apt to exaggerate the importance of his individual department.

A very thorough system of examinations should be adopted for these required fundamental studies. A written examination at the end of the course is entirely inadequate; it should be supplemented by recitations, laboratory work and tests applied to bring out the student's power to do rather than to simply memorize.

Students who demonstrate at the end of a year their incompetency should be given another trial, and if they fail should be dismissed from the school. The system which obtains in some schools of allowing men to come up year after year for their examinations and to finally, by a chance, squeeze through is not right. It allows men to eventually secure a degree for which they are entirely unfitted. No student should be allowed to fail in an individual subject more than three times without having his case taken under advisement, and if he should then be found un-

fitted to continue he should be dismissed from the school.

That special knowledge should be required in such subjects as surgical pathology, therapeutics, orthopedics, genito-urinary surgery, syphilis, bacteriology, medical chemistry, histology, embryology, legal medicine, ophthalmology, otology, laryngology, gynecology, neurology, military medicine, dermatology and pediatrics is open to question. If required, it should certainly be the minimum and not the maximum, as it is in many instances at present.

In conclusion, the elective system is now in use in schools of medicine by the best students. It is a legitimate demand on their part, and it should be met by the teachers of medicine. It can best be obtained by insisting upon a minimum required curriculum on the subjects which teach the knowledge, and those alone that should be possessed by every well-grounded medical man.

If, in presenting this subject to the University of Pennsylvania Medical Society, I have succeeded in stimulating thought, I shall be deeply gratified.

REPORT OF A CASE OF CHRONIC, CONTINUOUS HYPERSECRETION WITH HYPERCHLORHYDRIA (REICHMANN'S DISEASE), WITH ESPECIAL REFERENCE TO TREATMENT.¹

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THAT the class of case here presented is rare, that it is new to many physicians, and that it is of interest to those concerned with the treatment of gastric diseases, are deemed sufficient reasons for the following report. The patient was kindly referred by Dr. E. O. Otis:

Mr. J. C., Exeter, N. H., age thirty, married, born in England. For the past nine years he has been employed in a shoe factory in this country; previously he worked on a farm, and for a short time in an iron foundry in England. He says his mother always had a stomach trouble. Excepting the present affection he has had no illness since childhood. His present trouble began fifteen years ago when he was fifteen years old. The onset was gradual and he can attribute no cause.

The chief subjective symptom is pain in the epigastrium, localized to an area of about four inches in circumference, it is sharp in character, often causing him to "double up." It usually occurs two to three hours after meals and frequently awakens him at night; its duration is several hours. It is relieved by eating. Starchy foods, he believes, are more liable to excite it than proteids. On account of this pain he estimates that he has been obliged to lose two to three months' work each year. He states that he has never been free from the pain for three consecutive weeks during the past fifteen years except when he came to this country. During his ocean voyage he was able to retain but very little food, but he was free from the pain and enjoyed this immunity for three months after his arrival, when it again returned with its former severity. This incident is mentioned, not only as a point of history, but also as having some possible therapeutic significance. Although he has consulted many physicians (fourteen,

¹ Read before the Clinical Section of the Suffolk District Medical Society, Feb. 19, 1902.

he says) he has found no remedy that would afford greater relief than hot milk and soda and this has been but temporary. Marked tenderness in the epigastrium accompanies the pain and persists for a time after the pain has ceased. The appetite, though variable, is usually good, fear of the ensuing pain has at times caused him to omit some of his regular meals. There has been no excessive thirst. Eructations of an odorless gas often occur at the time of the pain and give some relief; there has never been much pyrosis. There has been no nausea, and no vomiting except one attack several years ago, but he feels at times as if vomiting would afford relief from the pain. The bowels have been constipated for years, and there has been some flatulence. Hematemesis has never occurred, nor has melena been observed. The patient uses neither alcoholic liquors nor tobacco. He drinks one cup of coffee and one or two cups of tea a day.

Examination on Jan. 17, 1901. The patient has a sandy complexion, the facial expression is somewhat serious and sad, the temperament is judged mildly nervous. The present weight is about 145 lbs.; formerly he weighed about 160. The tongue is thinly coated, the teeth are in good condition, the breath is not offensive. The heart, lungs and urine are negative. The liver, spleen and kidneys are not palpable. Palpation shows marked tenderness in the epigastrium, even gentle percussion causes the patient to flinch. Succussion sounds are elicited although the patient has fasted 10 hours. There is no tumor. The contents from a test meal at this time amount to 400 cc., strongly acid in odor. A large amount of free HCl is present. Through an accident no quantitative tests are made. Lavage is done and the stomach inflated. By percussion the greater curvature is found to be 1 inch below the navel in the median line. The lowest zone of resonance follows the ninth rib to the midaxillary line and upwards to the sixth rib. The stomach with but little discomfort contains 1,300 cc. fluid. A. S. & B. pills are prescribed at this visit.

Jan. 23. Patient's expression is cheerful. The pain is diminished in frequency and severity, the tenderness is also lessened. Breakfast at 7 A.M., oatmeal, milk and coffee. The contents from a test meal about seven hours later, without previous lavage, amount to 400 cc. The only solid constituents are swollen particles of the oatmeal eaten at breakfast. Free HCl, 2.2 per M.; total HCl, 2.7 per M.; total acidity, 77 per C. Albumose peptone, rennet and pepsin are present. Lavage is done as at each future visit. A nitrogenous diet was ordered, all condiments curtailed; also antacid tablets, one and one-half hours after each meal, to be repeated every thirty minutes until four tablets are taken, or, if pain is present, until it ceases. (The tablets used are composed of calcium carbonate, 3 1-2 gr.; magnesium carbonate, 2 1-2 gr.; sodium chloride, 1 gr. The total of 7 gr. is equivalent in alkalinizing power to sodium bicarbonate, 10 gr.)

Jan. 20. Patient has had three attacks of "gnawing" at stomach, but no real pain since last visit. The epigastric tenderness has practically disappeared. The appetite is increased. Milk, 500 cc. with 30 cc. of lime water is ordered to be taken between meals.

Feb. 11. There has been but two slight attacks of pain during the past thirteen days. Breakfast, milk, 400 cc. The stomach contents seven hours later amount to 200 cc. of clear consistency, without blood or mucus. Free HCl, 3 per M.; total HCl, 3.8 per M.; total acidity, 104 per C. Lavage is done and a test meal given. Contents, 135 cc.; free HCl, 1.9 per M.; total HCl, 2.5 per M.; total acidity, 78 per C.

Feb. 18. No pain since last visit. Patient has gained 3 lbs. in weight. Many fat globules are noticed in the fasting contents today. They probably came from the butter eaten at breakfast. It is deemed advisable to limit the amount in the future to a minimum.

Feb. 27. No pain for the past fourteen days. Breakfast, 7 A.M.; steak, bread, coffee and potatoes; fasting contents seven hours later, 200 cc. Free HCl, 3.8 per M.; total HCl, 4.6 per M.; total acidity, 125 per C. Lavage is done and a test meal given. Result: Con-

tents, 150 cc.; free HCl, 3 per M.; total HCl, 3.5 per M.; total acidity, 95 per C. Note the high acidity of fasting contents after heavy breakfast.

March 9. There has been practically no pain for the past month. The patient is cheerful and much encouraged with the results of treatment. As he seems to be doing well, and as frequent visits are not convenient, it is decided that he shall do self-lavage at home on alternate days. In order to combine a laxative and antacid, artificial carlsbad salts after meals are substituted for the A. S. & B. pills and antacid tablets. The seven hour fasting contents today amount to 120 cc.; free HCl, 2.9 per M.; total HCl, 3. per M.; total acidity, 97 per C.; test-meal contents, 220 cc.; free HCl, 2.8 per M.; total HCl, 3 per M.; total acidity, 93 per C.

March 23. The pain has returned and persisted for past several days, but is less severe than formerly. The patient seems much dejected, and states that he does not care to live if he is always to have the pain. Breakfast, 7 A.M., consists of 400 cc. of milk. The fasting contents seven hours later amount to 210 cc. They contain many curds, though these had not been observed previously after a milk breakfast. The original treatment is resumed in detail, but the patient is to do lavage on alternate days. Bromide of potash, 10 grs. three times daily is prescribed. The seven-hour fasting contents are 210 cc.; free HCl, 3.2 per M.; total HCl, 3.8 per M.; total acidity, 104 per C.; test-meal contents, 180 cc.; free HCl, 2.9 per M.; total HCl, 3.2 per M.; total acidity, 97 per C.

April 5. Notwithstanding the return to former treatment the pain and tenderness have persisted since last visit. The diet is changed to peptonized milk, malted milk, soups and mashed vegetables. Self-massage of the stomach two to three hours after meals is recommended. Atropia sulphate, 1-100 gr., after meals is prescribed. Lavage is done and a test meal given. Result: Contents, 140 cc.; free HCl, 3.6 per M.; total HCl, 4 per M.; total acidity, 129 per C.

April 13. The atropia was stopped after three days' use on account of its physiological effects being produced. During its administration the pain continued the same, its effect on the secretions was not determined. Breakfast, 7 A.M., meat, toast and coffee. Fasting contents seven hours later 180 cc., 1-8 consisting of food particles. The gastralgia is present at this visit; removal of the stomach contents relieved it.

We had previously decided that if the pain had not stopped by this time, rectal feeding should be tried for a week; therefore it was begun on the afternoon of this day. Peptonized milk, 8 oz., four times a day, was given at first; on and after the third day about two quarts were consumed daily. Lavage was done daily after removal of the fasting contents.

April 14. The second day. Fasting contents, 210 cc.; free HCl, 2.1 per M.; total HCl, 2.6 per M.; total acidity, 82 per C.

April 15. Third day. Fasting contents at 1 P.M., 85 cc.; free HCl, 1.8 per M.; total HCl, 1.8 per M.; total acidity, 61 per C.

April 16. Fourth day. Fasting contents, 11 A.M., 53 cc.; free HCl, 1.8 per M.; total HCl, 1.8 per M.; total acidity, 71 per C. Patient first experiences slight hunger and thirst; he becomes quite homesick.

April 17. Fifth day. Fasting contents, 9 A.M., 175 cc.; free HCl, 2.9 per M.; total HCl, 2.9 per M.; total acidity, 94 per C. Fasting contents at 4 P.M., 100 cc. Patient is more homesick than yesterday and much worried about home affairs. We decide to send for his wife and child.

April 18. Sixth day. Fasting contents, at 9 A.M., 100 cc.; free HCl, 2.1 per M.; total HCl, 2.1 per M.; total acidity, 77 per C. Fasting contents at 4 P.M., 40 cc. Wife and child arrive this afternoon. Patient seems more cheerful. Begin bromide of potash, 20 gr., three times daily this afternoon; also lavage with silver nitrate, 1 to 1,200.

April 19. Seventh day. Fasting contents, 25 cc. Patient feeling well but quite hungry. Beef tea, 1 oz., allowed by mouth this evening.

April 20. Eighth day. Fasting contents, 11 A.M., 20 cc.; free HCl, .5 per M.; total HCl, .5 per M.; total acidity, 31 per C. Allowed beef tea, peptonized milk and toast by mouth today; rectal feeding discontinued.

April 21. Morning contents, 65 cc.; free HCl, 3.9 per M.; total HCl, 4.1 per M.; total acidity, 120 per C. Patient has had no pain since the rectal feeding was begun. He feels weak, and has evidently lost flesh. He is, of course, aware of the increase in amount of contents today, and is told that the acidity is higher. He is also told that he may expect to be free from pain a few weeks or a few months. He states that he would willingly undergo the treatment again if it would insure three months' freedom from the gastralgia. He is directed to gradually return to a mixed diet, avoiding coarse foods, all condiments, and those foods which we had found inadvisable for him to eat. He is to continue the bromide of potash, 15 gr., three times daily, the antacid tablets after meals, and to do lavage three times a week with the silver nitrate solution.

April 28. Reports that he lost 9 lbs. during the rectal feeding, has had no gastralgia, and is feeling well every day, "appetite enormous."

May 13. Condition the same as at last report.

June 13. Has discontinued the bromide of potash; also the antacid tablets. No gastralgia to date.

Sept. 14. Five months since the rectal feeding, and no gastralgia. He seems bright and cheerful, a marked contrast to his former condition. Has eaten nearly everything he desired, all kinds of fruits, vegetables, etc. Is still using silver nitrate solution. He says that he notices the fasting contents are always less after rubbing his stomach. He is not gaining in weight. At the present time he feels "nervous in his stomach," as he formerly did when the pain was coming on. Caution is advised as to diet. The fifteen-hour fasting contents are 180 cc.; free HCl, 3.2 M.; total HCl, 3.3 per M.; total acidity, 105 per C.; test-meal contents, 185 cc.; free HCl, 3.2 per M.; total acidity, 99 per C.

Nov. 28. Reports that soon after last visit he had some pain, he fasted thirty-six hours, and it left. Nov. 17 he had some tenderness in the epigastrium but no pain, which was probably prevented by daily lavage.

Jan. 30, 1902. Reports that he is well. He says: "I might say I have had practically no pain for ten months." He is still moderately constipated.

In considering cases of chronic continuous hypersecretion with hyperchlorhydria, or Reichmann's disease, it must be admitted they are rare. Reichmann² states that in years he has seen only six cases, while Boas, in his large experience, has encountered only ten. Bouveret,³ Riegel⁴ and others claim to have seen considerable numbers, but it seems possible that some of their cases were of the periodic type. Several cases of this latter type have recently been observed by the writer, one of which has been incidentally reported.⁵ In this case a cure was apparently effected in the course of several months. Had the case been observed a shorter period, it might have been recorded as one of the chronic continuous form.

It is not within the province of this paper to discuss the etiology or pathology of this condition. Perhaps too little is known of either to warrant much being said. It, however, may not be out of place to state here that the nervous element in our case did not seem sufficient to demand more than passing notice.

The diagnosis is comparatively easy when the proper methods of examination are employed and sufficient time devoted to observation.

Periodic hypersecretion with hyperchlorhydria, stasis from any cause and ulcer of the stomach must be differentiated. That we have to deal in the case under consideration principally with a continuous hypersecretion is well shown by the results of the various examinations extending over a period of one year, while the findings during the period of rectal feeding furnish conclusive proof. The accompanying dilatation and stasis are of secondary importance, as they are probably results of the hypersecretion. Ulcer may be excluded by the absence of blood, the characteristic pain and tenderness.

In addition to the chemical findings, Boas claims we must also have the subjective symptoms: heartburn, eructations, occasional vomiting, gastralgia, increased appetite, constipation and emaciation, in order to make a diagnosis of Reichmann's disease. In our case the majority of these symptoms are present.

As to the prognosis, Einhorn⁶ says, according to his experience, it is not bad. As a rule, most patients improve under rational treatment. Frequently, however, there are relapses. Some very obstinate cases are occasionally met with, and the trouble, although yielding somewhat to treatment, may persist for years. There is, however, no danger of a fatal issue resulting from this disease alone. Bouveret mentions tetany and ulcer as possible resulting complications. With our present knowledge of the treatment of this condition, a cure of the case under consideration does not seem probable.

On reviewing the case it is seen that for the first two months the patient was relieved of his subjective symptoms by a nitrogenous diet of five meals a day, the antacid medication and weekly lavage. A nitrogenous diet was ordered because that is the one usually employed in this condition. All condiments were prohibited, as they are supposed to excite secretion. The antacid, although continued several months, was at no time taken in the large doses recommended; it was with difficulty that the patient was induced to take twelve tablets a day, which is equivalent to bicarbonate of soda, two drams. He believes they did no good. It is also seen that accompanying a change of the antacid tablets to carlsbad salts and the beginning of lavage on alternate days, the gastralgia returned, and, notwithstanding an early resumption of the original treatment, the pain continued. It is further seen that a vegetable diet with liquids, together with the administration of atropia and bromide of potash, had no effect upon the gastralgia. The vegetable and liquid diet was tried, because some contend that it is better suited to this condition, for the reason that it is supposed to excite less secretion than the nitrogenous diet. Its use in this case produced no apparent effect. Bromide of potash seemed to have no influence on the pain, neither

² Ewald's Diseases of the Stomach, second edition, p. 506.

³ Bouveret: *Maladies de L'estomac*, 1893.

⁴ Riegel: *Deutsch. Med. Woch.*, May 25, 1892.

⁵ See Boston Medical and Surgical Journal, Feb. 20, 1902, vol. cxlvi, No. 8, pp. 198-200.

⁶ Einhorn: *Diseases of the Stomach*.

did the atropia. But a fair trial of the atropia was not made. The patient could not stand 16 gr. three times daily for any considerable length of time, so it was discontinued after three days; moreover, no examination of the secretions could be made; consequently, in this case, it is not known if they were effected; the pain, apparently, was not. Lavage, during the latter part of treatment, was done on alternate days by the patient. It was not until the commencement of rectal feeding that the pain again ceased.

The sickness of the sea voyage and its effect on the gastralgia suggested rectal feeding. Later, it was seen recommended by Hemmeter¹ in this condition; it is not, however, mentioned in several of our better works on stomach diseases. Besides the relief from pain, there are several other features connected with the procedure which seem worthy of note.

From the beginning, a diminution of the secretion and acidity is noted.

TABLE No. 1, SHOWING THE AMOUNTS OF FASTING AND TEST-MEAL CONTENTS AND ACIDITIES OF THE SAME.

Breakfast 7 A. M.	Hours Fasting.	Fasting Contents, cc.	Free HCl per M.	Total HCl per M.	Total Acidity per C.	Date.	Test-meal Contents, cc.	Free HCl per M.	Total HCl per M.	Total Acidity per C.	Period of pain.
None.	13	—	—	—	—	Jan. 17	400	—	—	—	Yes
Light.	7	—	—	—	—	" 23	400	2.2	2.7	77	Yes
Light.	7	—	—	—	—	" 29	350	—	—	—	Some
Milk, 400 cc.	7	120	—	—	—	Feb. 6	—	—	—	—	No
Milk, 400 cc.	7	200	3.8	3.8	104	" 11	135	1.9	2.5	78	No
Heavy.	7	200	3.8	4.6	125	" 27	150	8.	3.5	95	No
Milk, 400 cc.	7	120	2.9	3.	97	Mar. 9	220	2.8	3.	93	No
Milk, 400 cc.	7	210	3.2	3.8	104	" 23	180	2.9	3.2	97	Yes
Light.	7	Lavage done	—	—	—	Apr. 5	140	3.6	4.	129	Yes
Heavy.	7	180 Lavage done	—	—	—	" 13	180	2.9	3.6	98	Yes
None.	16	65	3.9	4.1	120	" 21	—	—	—	—	No
None.	15	180	3.2	3.3	105	Sept. 14	185	3.2	3.4	99	No

It will be remembered that the normal amount of free HCl is about 1.5 to 2. per thousand one hour after an Ewald test meal; that the stomach contents one hour after such a meal should be less than 100 cc, and that the contents of the stomach after 10 to 12 hours fasting should not exceed 10 or 20 cc.

TABLE No. 2, SHOWING THE AMOUNTS OF SECRETION AND ACIDITIES DURING RECTAL FEEDING.

Date.	Time.	CC. Contents.	Free HCl.	Total HCl.	Total Acidity.
Apr. 14	11 A. M.	210	2.1 per M.	2.6 per M.	82 per C.
" 15	1 P. M.	95	1.8 " "	1.8 " "	61 " "
" 16	11 A. M.	63	1.8 " "	1.8 " "	71 " "
" 17	11 A. M.	175	2.9 " "	2.9 " "	94 " "
" 17	4 P. M.	100	—	—	—
" 18	9 A. M.	100	2.1 " "	2.1 " "	77 " "
" 18	4 P. M.	40	—	—	—
" 19	A. M.	25	—	—	—
" 20	A. M.	20	.5 " "	.5 " "	31 " "
" 21	Food by mouth today.	—	—	—	—
" 21	A. M.	65	3.9 per M.	4.1 per M.	120 " "

The temporary rise in the amount of secretion on the fifth day is attributed solely to homesickness; the following drop in the amount occurring after

¹ Hemmeter's Work on Diseases of the Stomach.

the arrival of his wife and child would tend to strengthen this conviction.

The later experience with bromide of potash and silver nitrate solutions, begun at this time, would seem to show that they had little influence in the drop which here occurred.

The early return of the hypersecretion following the resumption of food by the mouth was somewhat disappointing, and was attended by a feeling that the treatment had been in vain. Future observation, however, leads to the belief that it was beneficial, and in a similar case, under like conditions, would be tried again. The gastralgia was stopped by this treatment, and it is now prevented by lavage, attention to diet, and occasional fasts of from twenty-four to thirty hours. Consequently, as long as this treatment insures freedom from the pain, it will be continued; when it fails, rectal feeding will be resorted to again.

A study of Table No. 1 shows that the amounts of fasting and test-meal contents, also the amounts of the acidities, were much the same at the close of observation of the case as they were at the beginning. From this fact alone it would seem that the benefit which the patient has derived from treatment is not due to any alteration of the secretions, but probably to some favorable change in the gastric mucosa, whereby it has been made more tolerant of the highly acid secretions. Thus we see the object of our treatment (a cure through suppression of the secretions) has not been attained. Yet, something has been done for the patient. He has had placed in his hands the means with which he can protect himself from the intolerable gastralgia. He has been enabled to follow his occupation continuously for the past ten months, whereas previously he was losing one-sixth to one-fourth of his time. The state of dejection and despair, in which he affirmed he did not care to live if he were always to have the pain, has been replaced by one of comparative comfort and happiness.

THE USE OF SUPRARENAL EXTRACT IN HAY FEVER.¹

BY J. PAYSON CLARK, M.D., BOSTON.

It has been well said more than once that the length of the list of remedies proposed for any human ailment is a good index of our ignorance of its pathology. And there is no better illustration of the truth of this statement than the affection which we designate hay fever or vasomotor rhinitis. All that we can say of it is that it is a neurosis, manifesting itself in a hyperesthesia of the nerves supplying the nasal mucous membrane, this hyperesthesia being exhibited especially towards the pollen of certain plants, and resulting in a vasomotor paresis. We treat these cases by sending them where they may not be exposed to the pollen to which they are especially susceptible, by relieving any general dyscrasia, where

¹ Read before the Clinical Section of the Suffolk District Medical Society, Feb. 19, 1902.