examination double—one part in hospital and the other at the medical school.

The clinical in midwifery and gynæcology is a great advance.

In addition to the other parts of the examination as held at present, I would, as I have already indicated, institute a laboratory examination in Clinical Methods and a clinical examination in Diseases of the Throat, Nose, and Ear. For obvious reasons, I would not institute a practical examination in Dentistry.

To sum up. I have urged that all our courses of study should be more entirely based on their intimate connection with practical Medicine. I have endeavoured to lighten the curriculum by leaving out botany and zoology (or biology, if that name is used), and by lessening the amount of anatomy and physiology taught to a student. On the other hand, I have advocated that the final subjects be given more time, that special courses be given in laryngology, in clinical methods, and in elementary dentistry, and I have urged that the final examinations be made fuller and more searching than is the case at present.

I have two requests to make of the Club. The first, that you may all believe that in the criticisms which I have made, I am criticising, not the Dublin teachers nor their methods—for both I have nothing but profound admiration—but I am criticising the principles which underlie their work; and, secondly, as I have been somewhat unsparing in my criticism, so I beg you to be even more unsparing in your criticisms not only of my scheme but also of my methods and my work.

ART. IV.—*Glycosuria and Graves's Disease.*^a By HENRY C. DRURY, M.D. Dubl.; F.R.C.P.I.; Physician to Sir Patrick Dun's Hospital, Dublin.

FROM time to time the occurrence of glycosuria in Graves's disease has been noted by various observers, but

^a Read before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, January 7, 1910. [For the discussion on this paper, see page 114.]

rather as an accidental phenomenon than as a combination which pointed to any remote connection between the two diseases. Of late years, however, it has been observed that the combination was more frequent than had been suspected; not only so, but that in a considerable number of cases of diabetes there was a history of past Graves's disease. These facts suggested that there might be some connection not hitherto thought of, between the two.

That little importance was attached to this question is seen by a glance at the standard text-books of a few years ago. Indeed, the most recent additions do not add much. In Hilton Fagge's "Practice of Medicine," 2nd edition, 1888, there is no mention of glycosuria in Graves's disease, nor of Graves's disease associated with diabetes. Osler, in his "Practice of Medicine," 2nd edition, 1895, makes no mention of Graves's disease associated with diabetes, but says that in Graves's disease glycosuria is not infrequent. Saundby, in "Allbutt's System," 1st edition, 1897, mentions as an example of the rarer complications of diabetes that it may be associated with Graves's disease. Williamson, in Gibson's "Text-book of Medicine," 1901, makes no mention of the combination in his article on diabetes. Sir Lauder Brunton, in the same text-book, in his article on Graves's disease, says "the patients generally belong to neurotic families, in other members of which hysteria, epilepsy, diabetes, and mental diseases have appeared." This in 1901, although in 1874 he described, in Bartholomew's Hospital Reports, Vol. X., page 253, a fatal case in which the two diseases were combined. It would appear, therefore, that in 1901 he did not attach much importance to the combination. A similar case was recorded by Sir Samuel Wilks in the *Lancet* of the following year—1875. A third case was reported by O'Neill in the *Lancet* of 1878. H. Stern, in the *Journal of the American Medical Association*, 1902, has given a general survey of the subject, and has collected twenty-four cases of combined Graves's disease and

diabetes. Twenty-two of these were in women, two in men. The ages varied from eighteen to fifty-nine. He quotes Chvostek as having found alimentary glycosuria in 69 per cent. of his Graves's disease cases. Dr. George Murray, Professor of Systematic Medicine in Victoria University, Manchester, has published an interesting paper on the relationship between these two diseases in the *Clinical Journal* of July 28, 1909, and in it reports four cases which have come under his own observation. The first in a female, aged twenty, who had exophthalmic goitre and recovered; four years later she was found to have severe diabetes in March, and died in June. The second, a female, aged twenty-five, had Graves's disease for two years; three years later she developed severe diabetes. Third, a female, aged thirty-eight, had Graves's disease and recovered; she was given thyroid extract, the Graves's disease recurred, and in addition diabetes appeared. Fourth case, a man aged twenty-two, had Graves's disease as a youth; eleven years later he developed diabetes.

To this valuable paper of Dr. Murray I am indebted for most of my information and ideas on the subject, and I have freely made use of it in this short communication. To my colleague, Dr. Magee Finny, I am indebted for bringing Dr. Murray's paper under my notice.

It would appear, then, that this combination of diseases is not a mere accident, but that there exists some morbid connection between the two. Let us see what further support there is for this idea.

We are only beginning to understand the functions of some of the ductless glands, and also beginning to realise that other duct-bearing glands besides the liver have important internal secretions. It is probable that between these glands there is considerable interdependence, but we know little about this yet. An illustration of it, however, is seen in the case of myxœdema. Here one of the symptoms of the loss of thyroid secretion is the cessation of the secretion of the sweat glands, and

probably also of the sebaceous glands. Apparently this is a case of interdependence, for when thyroid extract is supplied in such cases artificially, not only do the other symptoms disappear, but the sweat glands again begin to act. If diminished activity of the thyroid reacts on the activity of certain glands, it is quite likely that over-activity of the thyroid will also react on some other gland or glands, and one example of this over-action is again seen in the case of the sweat glands, which in Graves's disease are stimulated and cause excessive sweating.

In Graves's disease there appears to be excessive activity of the thyroid gland; and of recent years great interest has been centred round the pancreas as the organ in some way at fault in diabetes.

Of twenty-seven cases of diabetes examined by Saundby, in only six of these could the pancreas be described as normal, and, as he says himself, "we have a good deal still to learn about the significance of slighter changes in its structure, and it is possible that, while appearing normal to the naked eye, it may be extensively diseased." We know that extirpation of the pancreas in dogs is followed by diabetes, and in one case in which it was removed in man (by W. T. Bull) diabetes resulted. In many cases of diabetes a gross lesion of the pancreas has been found, and in many others, in which there was no gross lesion, microscopic changes of structure have been made out. These finer changes are chiefly increase of fibrous tissue or changes in the so-called islands of Langerhans. Now, it is believed that these islands of Langerhans are concerned with the internal secretion of the pancreas, and that the internal secretion, or, rather, its disturbance, is concerned with diabetes.

Rolleston, discussing cirrhosis of the liver, says:—"The gland (*i.e.*, the pancreas) cells undergo fatty and pigmentary degeneration, but, according to Steinhaus, the islands of Langerhans, which play an important part in the production of the internal secretion and in the

production of diabetes, remain intact. In the cirrhosis of hæmochromatosis, however, which is an exception to this rule, the islands of Langerhans are eventually destroyed, and as a result there is diabetes." Further on he says:—"It is rare to find sugar in the urine in ordinary cirrhosis. Glycosuria occurs in a high proportion of the cases of pigmented cirrhosis. . . . but it is then due to a concomitant fibrosis of a very intimate nature in the pancreas (involving the islands of Langerhans), a change which is not present in ordinary cirrhosis." And again:—"When the fibrosis of the pancreas reaches such a degree that the islands of Langerhans are involved diabetes results."

Quite recent researches practically confirm this. Macallum, in the Johns Hopkins' Hospital Bulletin for September, 1909, summarises thus the results of his experiments:—"When a portion of the pancreas is separated from the rest, and the duct ligated, it undergoes extensive atrophy, a tissue remaining which is apparently composed of enlarged islands of Langerhans and the remains of pancreatic ducts. If the rest of the pancreas be removed, this atrophied remnant is capable of warding off glycosuria, even when considerable amounts of dextrose are injected. When it itself is removed also glycosuria appears at once. Whether this glycosuria would persist until the death of the animal remains to be proved. The experiment seems to demonstrate the specific control of carbohydrate metabolism by the islands of Langerhans."

H. Eppinger and others have shown that there is a direct relationship between the thyroid and the pancreas, and that the glands tend to inhibit each other—that as a result of hyperthyroidism there is inhibition of the pancreas causing relative insufficiency of the internal secretion with alimentary glycosuria or its easy induction (*Zeitsch. für klin. Med.*, 66, 1908, p. 1). Lorand has found that thyroidectomy caused increase of Langerhans' islands. Also, that the glycosuria resulting from re-

moval of the pancreas ceased on removal of the thyroid. The animal, however, lived only a short time. (*Comptes Rendus des Séances de la Soc. de Biologie*, t. lvi., p. 488.) Hector MacKenzie says:—"The carbohydrate secretion is influenced to some extent by the thyroid secretion; sugar is excreted in the urine of dogs after thyroid feeding, when large quantities of carbohydrates have been given; and the amount of glucose which can be given without causing glycosuria is less than the average in patients suffering from Graves's disease or in persons who have been treated with large doses of thyroid substance." In one of Stern's cases the Graves's disease had subsided, but diabetes supervened, and on the administration of thyroid extract with arsenic there was a rapid and large increase of the output of sugar. In one of Dr. George Murray's cases that had recovered from Graves's disease the administration of thyroid extract was accompanied not only by a relapse but also by diabetes.

In view of all these facts, Dr. George Murray suggests that in Graves's disease the excessive thyroid secretion thrown into and circulating in the blood first inhibits the islands of Langerhans, and so causes relative insufficiency of the internal secretion, and thus alimentary glycosuria or its easy induction on increase of carbohydrate food. Finally, it may lead to atrophy of the islands. and thus brings about true diabetes.

These very interesting questions have induced me to bring under your notice, and so record, a case which I have lately met with, and which directed my attention to this subject:—

On the 2nd of November, 1909, a young girl, aged eighteen, was admitted to Sir Patrick Dun's Hospital under my care, with symptoms of diabetes. She was greatly emaciated, weighing only 6st. 4lbs. 3ozs., though of average height. She stated that she had noticed herself getting thin for about two months, and latterly had become very weak, but began to suffer from

thirst about the middle of August—that is, two and a half months before. She had also missed two menstrual periods. It was evident that she was also suffering from Graves's disease, there was only slight exophthalmos, but well-marked retraction of the lids; von Graefe's sign was present in limited extent, being only seen when the visual axis passed below the horizontal line. There was decided bronzing of the eyelids. There was slight tremor of the hands, and the skin was unduly moist, though no profuse sweating. The thyroid was moderately enlarged; it pulsated, and a thrill could be felt in it. The heart's action was tumultuous and very rapid, the cardiac impulse being widely diffused; the apex beat violent, but no murmur could be detected. The pulse-rate varied while in hospital from 100 to 140. The areolæ of the breasts were deeply pigmented, but the breasts themselves were small and functionless. She complained of the throbbing of her heart, and said it had troubled her for a long time—several months—before she noticed the thirst or the increased quantity of urine.

While in hospital the amount of urine passed varied from 100 ounces to 177 ounces in the twenty-four hours. Its specific gravity was 1042, and at first it gave a slight diacetic acid reaction with perchloride of iron, but the reaction for acetone itself, though looked for, was not found. The diacetic acid reaction disappeared in a couple of days.

Her carbohydrate food was considerably limited, but not altogether withdrawn, and she was given crude opium in the form of compound soap pill night and morning. She remained in hospital only seven days, as she fretted greatly to get home, and on two occasions got into such an excited hysterical state that more harm than good would have resulted in her remaining longer. Her condition could not be said to have improved in any way during her stay in hospital. She has been kept under observation since, and has been seen from time to time. There is no improvement; she has steadily lost weight, the specific gravity of the urine is always high, 1040 to 1050, and acetone was present in the urine on each occasion. The signs of Graves's disease also are more evident, though the heart's action is quieter.

Dr. Murray points out that not only do the two diseases run concurrently, but that also, if it be looked for, glycosuria not producing symptoms will be found

more frequently than hitherto suspected. Also, as already alluded to here, a considerable number of cases are on record in which Graves's disease has at one time been present and recovered from, and that subsequently true diabetes has developed. That when the two diseases run together the diabetes is always of severe type.

ART. V.—*Remarks on the Treatment of Gastric Ulcer.*^a

By JAMES CRAIG, M.D. Univ. Dubl.; F.R.C.P.I.;
Physician to the Meath Hospital, Dublin.

IT is not only just but expedient that physicians should recognise and acknowledge the splendid work which their surgical colleagues have accomplished within recent years in the domain of gastric surgery.

So excellent have been their results in certain classes of cases that one is not surprised to find a growing tendency among all sufferers from any variety of gastric trouble to gravitate to the consulting-rooms and hospital wards of the operating surgeons.

Fifteen years ago the physician called the surgeon to his assistance when some calamity, such as perforation, had arisen in connection with the treatment of a gastric case. To-day there are signs that the positions are becoming reversed, and it may be that somewhere in the near future it will rest entirely with the surgeon to decide what cases he will himself treat and what he will relegate to the care of the physician.

Needless to say, the prospect that such a state of affairs may arise is not altogether pleasing to the physician, and, furthermore, I believe, if it does happen, that it will neither tend to the advancement of scientific surgery nor lead to greater confidence on the part of the public. There is great need that the physician and surgeon should continue to work together, for there is still room for both, and in no section of human ailments is it more necessary

^aRead in the Section of Medicine, Royal Academy of Medicine in Ireland, January 7, 1910. [For the discussion on this paper see page 145.]