Saturday at the Academy of Medicine.

The guest faculty will be three orthopedic surgeons of international reputation: Mr. Peter S. London, Birmingham Accident Hospital, Birmingham, England, Dr. John J. Fahey, Northwestern University of Chicago, and Dr. Otto Russe, Chief Surgeon of the Vienna Accident Hospital and Assistant Professor on the Teaching Staff of the Medical Facul ty of the University of Vienna. These guests will be associated in the program with Dr. A. L. MacIntosh, W. R. Harris, H. M. Coleman, G. F. Fennal, F. P. Dewar, J. E. Hall, W. Barrington, and J. S. Kennedy, all of Toronto. The program will cover the following areas: Upper Extremity Injuries, Injuries of the Pelvis and Hip, and Lower Extremity Injuries. Feature presentations by the guest faculty on Saturday morning will be as follows: "Colles Fracture," J. J. Fahey, "Observation on Behaviour of Broken Bones," Peter S. London, and "How to Plan and Run an Accident Unit," Otto Russe.

In view of the steady increase in trauma in this country, an opportunity to discuss the management of fractures and trauma with highly qualified practitioners and teachers will be welcomed by orthopedic and general surgeons alike.

For further information on these three programs please write to Dr. R. Ian MacDonald, Director of the Division of Postgraduate Medical Education, University of Toronto, 174 St. George Street, Toronto 5, Ontario.


As the title of this book by Hall and Colman indicates, it covers the more important aspects of otolaryngology for students and general practitioners. It is not intended to cover the more specialized aspects of the diagnosis, treatment of ear, nose and throat problems as seen through the specialist's eyes.

The anatomy, which precedes each section, is short and concise. It does not fully cover all the regional anatomy which can be obtained from larger works.

The chapters on methods of examination of the ear, nose, pharynx and larynx are particularly appropriate for this type of publication.

The history of anatomy in Manitoba falls into several natural periods. First came the period of practitioner-anatomists, Blanchard to England (1833-1909). This period was characterized by dissecting and sound teaching of gross anatomy with emphasis on clinical applications. Then came the first full-time anatomists, Evatt and Inkster (1909-1936). These men established anatomy as a subject in Manitoba, built up the anatomical collections, and produced publications that made a reputation for the Department.

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The Manitoba Medical College

After a stormy entry, Manitoba became a province in 1870, the first child of Confederation. By 1877, it possessed both a College of Physicians and Surgeons and a university. The university was formed by an agreement between three denominational colleges, St. Boniface, St. John's, and Manitoba. It was fashioned after the University of London, England which at that time possessed only examining and degree-conferring powers.

The construction of the Canadian Pacific Railway and the promise of free homesteads brought a flood of settlers into Manitoba, the gateway to the last great west. In the early 1880s, Winnipeg had attracted a group of remarkably able medical men: Kerr, Blanchard, Good, Ferguson, Church, Brett, and Jones. After the decision had been made to take the railway across the Red River at Winnipeg, rather than to Selkirk as had been projected, a spirit of optimism led to a boom and land values soared.

About this time a young doctor with high professional qualifications arrived from the east and declared his intention of starting a proprietary medical school. Some Winnipeg doctors joined him, but the great majority opposed the proprietary scheme, and chose as their leader Dr. James Kerr, a graduate of Queen's University, Belfast, Ireland. Dr. Kerr had practised for five years at the Londonderry Iron Mines, Nova Scotia, and was a friend of Alexander Graham Bell, William Osler, and Francis Shepard. The Winnipeg doctors supporting Dr. Kerr decided to apply to the Manitoba government for a charter for a medical school. Dr. Kerr laid down two guiding rules: (1) that it must be governed by the established practitioners and (2) that it must be affiliated with the University of Manitoba. Many of the doctors imagined that the charter would lie dormant until a more opportune time, but they reckoned without the medical students who were taking their courses elsewhere and who twice appeared before the doctors to point out the hardships and expense consequent upon attending eastern universities. The 13 incorporators gave way and the Manitoba Medical College was formally inaugurated with a lecture by the new Dean, Dr. James Kerr, who was only 35 years old at the time. The lecture was given in the Education Office in a building at the corner of Main and Portage Avenue on the evening of November 15, 1883.
The first anatomy lecture was given to nine students at 8:00 a.m. on November 21, 1883, in a cottage on Isabel Street (Fig. 1). The first dissections were also done in this cottage. During the first year, classes in other subjects were held in the Central School on William Avenue and in an adjoining church. Later they were held in the first Medical College, a stone and brick building that stood at the corner of Kate Street and McDermot Avenue (Fig. 2). This first Medical College building was opened in 1884 with funds raised by the faculty. The greater part of the second floor was occupied by the dissecting room lighted by a skylight during the day and at night by gas. The building was considerably enlarged 10 years later (Fig. 3). About 1901, a separate building for the teaching of histology by Dr. Gordon Bell was erected on the property. These buildings served as the Manitoba Medical College until a new building was erected in 1905 on the present site west of the Winnipeg General Hospital.

In 1904, when the Faculty of Medicine was deliberating on sites for a new building, Dr. W. S. England, the Professor of Anatomy, informed his colleagues that he had an option on a block of land immediately west of the General Hospital and offered it at the same figure to the Medical College. The offer was gladly accepted. The first section of the new building was opened in January 1906 (Fig. 4). The anatomy department occupied the second floor. The dissecting room could accommodate about 30 students. The building contained two amphitheatres between the first and second floors. The larger was for general use; the smaller, which resembled the anatomy theatre at Padua in William Harvey's day, was used for anatomy.

In 1911 a second section of the Medical College was built (Fig. 5). This large addition to the rear of the original building almost doubled the teaching space in the Department of Anatomy. Most of the new space was used for a larger dissecting room and museum. The old dissecting room was converted into offices and technical laboratories and the anatomy theatre disappeared.
In 1913 a small addition was made whereby the new space on the second floor became the Professor’s office. (This room is now the I. Maclaren Thompson Reference Library.)

With the session of 1918-1919, the Manitoba Medical College ceased to exist as a separate institution. It made a gift of all its property and equipment to the University of Manitoba “on the condition that the University establish a Faculty of Medicine and carry on the work of medical education in an efficient manner.” The present medical school as it appeared in 1922 is shown in Fig. 6.

Fortunately, anatomical material could always be obtained legally in Manitoba, legislation having been passed before the opening of the Medical College in 1883. The first definitive “Act Respecting the Study of Anatomy” was passed in 1899 and improvements were made in the Act in 1902, 1903, 1913, 1937, 1947, 1954 and 1959. Under the terms of the Manitoba Anatomy Act of 1947, persons may voluntarily arrange for their bodies to go to the Department of Anatomy. The Act also provides for the burial of the remains in a cemetery with a committal service by a clergyman of the denomination of the deceased. These services are attended by relatives, staff and students. This Act has worked satisfactorily for over 20 years. The names of all such benefactors are recorded in a Book of Remembrance on view in the Medical Library. This arrangement has developed a good relationship between the University and the public. Professor I. M. Thompson was influential in planning and carrying through the provisions of the present Anatomy Act. 4

THE MANITOBA ANATOMISTS

R. J. Blanchard

The first members of the faculty of the Medical College were general practitioners. In the Winnipeg General and St. Boniface Hospitals there was no division of patients as medical or surgical, although Dr. Kerr urged the Board of the Winnipeg General Hospital to separate the patients on admission. The greatest kudos came to the chief surgeon and in those days the professorship of anatomy was a natural stepping stone to that coveted position. Dr. James Kerr, who had been well trained in Listerian principles by Sir William MacCormac at Queen’s University, Belfast and who was a natural leader, was appointed Professor of Surgery and Dr. Robert Johnstone Blanchard (Fig. 7) became Professor of Anatomy. Born in Truro, Nova Scotia, Dr. Blanchard had studied anatomy under Sir William Turner in Edinburgh University and in his final year, 1877, served as dresser under Joseph Lister. Returning to Canada, Blanchard had become surgeon for the Canadian Pacific Railway at Fort Portage (now Kenora), Manitoba but had moved to Winnipeg in 1881 when the railway was completed to that point. 5

In 1887, after teaching anatomy for four years, R. J. Blanchard was appointed surgeon to the Winnipeg General Hospital when Dr. Kerr moved to Washington, D.C. In 1909 Blanchard was elected President of The Canadian Medical Association. When the First World War broke out he served in France as Commanding Officer of No. 3 Canadian Casualty Clearing Station. It was to this unit that Lieutenant Revere Osler, only son of Sir William Osler, was brought when fatally wounded on August 27, 1917. In 1921 Blanchard received an LL.D. degree from the University of Manitoba.

H. H. Chown

In 1887, Dr. B. J. Blanchard was succeeded as Professor of Anatomy by Dr. Henry Havelock Chown (Fig. 8) who, although coming to Winnipeg in 1881, was not one of the 13 original incorporators of...
W. Stephen England

Dr. W. S. England, a McGill graduate, was Professor of Anatomy from 1905 to 1906 and then became a professor of surgery. He had obtained a thorough knowledge of anatomy at McGill University, Montreal under Dr. Francis J. Shephard, and was an inspiring teacher. He introduced cross-section anatomy and was interested in anatomy in art. A daring surgeon, he successfully removed a superior maxilla for cancer.

E. J. R. Evatt

Upon the death of Dr. England in 1909, the first full-time professorship of anatomy was established and the first such appointee was Dr. E. J. R. Evatt (Fig. 9). Up to that time, members of the Faculty of Medicine had received no remuneration for teaching other than prestige. It will be understood that, before 1909, no Professor of Anatomy in the Manitoba Medical College (as in many others of that period) was a professional anatomist. Dr. Evatt was not only the first full-time Professor of Anatomy, he was the first trained anatomist. In 1904 the University of Manitoba became a teaching body in science. It appointed Professors before the First World War. He was the first Professor of Anatomy in the newly created Faculty of Medicine at the University of Manitoba. On the outbreak of hostilities he volunteered for service in the Royal Army Medical Corps. On the way to Egypt his troopship was torpedoed in the Adriatic Sea but he was rescued.

On his return to Winnipeg he resumed his teaching but in 1919 resigned to practise as an orthopedic surgeon. He devised a posterolateral approach to the hip joint which has been widely used. He maintained a lively interest in the Department and, in 1924, he was appointed Lecturer in Applied Anatomy, an appointment that he held until 1939. He was a moving spirit in the Scientific Club of Winnipeg. In 1925 he was made a Senior Member of The Canadian Medical Association and in the next year he was Lecturer in Surgery for the Royal College of Physicians and Surgeons of Canada. Almost to the day of his death in 1950, he served as Orthopedic Consultant to the Assiniboine Hospital at Brandon, which was operated by the Manitoba Sanatorium Board. He was especially interested in congenital dislocation of the hip in Indian patients. In 1961 an Annual Memorial Lecture was established in his honour; the

Fig. 8.—Dr. H. H. Chown.

Fig. 9.—Dr. E. J. R. Evatt.

Fig. 10.—Dr. Alexander Gibson.
first lecturer was Sir William Mercer, Emeritus Professor of Orthopedic Surgery, University of Edinburgh.9

I. C. Boileau Grant

Dr. J. C. Boileau Grant (Fig. 11) succeeded Dr. Gibson in 1919 and served until 1930 when he became Professor of Anatomy in the University of Toronto. He had received his training at Edinburgh (M.B., Ch.B., F.R.C.S.(Edin.)) and in the First World War won the Military Cross. With the coming of Grant, the teaching of histology was transferred to Anatomy from the Department of Pathology. The first practical course in histology was given in the new laboratory. During the period of transition, Dr. William Boyd, Professor of Pathology, assisted with the course.

Before coming to Winnipeg, Dr. Grant published a study of synovial cavities and membranes. While in Winnipeg he made an anthropometric study of the Cree and Saulteaux (Ojibwa) Indians inhabiting the territory between James Bay and Norway House at the end of Lake Winnipeg, and Chipewyan and Cree Indians in the neighbourhood of Lake Athabaska. He also contributed some notes on an Eskimo skeleton.

During his years in Toronto, he produced three books which have enjoyed wide and continuing popularity: "A Method of Anatomy" (1937), "Handbook for Dissectors" (with H. A. Cates) (1940) and "Atlas of Anatomy by Regions" (1943). Each of these has passed through several editions. He also revised the section on the respiratory system in the eighth edition of Cunningham's "Text-Book of Anatomy" (1943) and (with C. C. Smith) the section on the musculature in the eleventh edition of Morris' "Human Anatomy" (1953).

Dr. Grant was an enthusiastic teacher of gross anatomy and is still remembered by his former students in Winnipeg with respect and affection. Some features of his teaching are reflected in his paper, "On the Appreciation of Anatomical Relationships",10 and in his book, "A Method of Anatomy".

Robert Gaskin Inkster

Edinburgh again produced a Professor and Head of the Department in Robert Gaskin Inkster, M.B., Ch.B. (1922), M.D. (Gold Medal, 1927) (Fig. 12). He demonstrated anatomy at Edinburgh and Leeds then became Lecturer before coming to Manitoba in 1931. Like Dr. Grant he became interested in the anthropology of the North American Indian. In 1936 he accepted the position of University Anatomist at Trinity College, Dublin. He revised the chapter on osteology in the ninth edition of Cunningham's "Text-Book of Anatomy". Later he returned to Edinburgh and rose to the rank of Reader in Anatomy.

Ian Maclaren Thompson

Dr. I. M. Thompson (Fig. 13) enjoyed the longest period of service as Professor of Anatomy in Manitoba (1937-1965). Born in Newfoundland, he received his science and medical training at Edinburgh University, graduating B.Sc. in 1919 and M.B., Ch.B. in 1920. For his B.Sc. his major subject was "Anatomy including Physical Anthropology". He was awarded the Baxter Scholarship in Natural Science. Before graduating he enlisted in the Royal Naval Volunteer Reserve as surgeon probationer. He was wounded in the sinking of H.M.S. Strongbow, and was mentioned in dispatches for his service in the first defence of a British convoy.

Before graduating in medicine he served as student demonstrator in zoology and anatomy. In 1920 he accepted a lectureship at McGill University, where he rose to Assistant Professor. In 1927 he went as Associate Professor to the University of California, Berkeley, where he rose to Professor by 1932. In 1930 he was appointed Chairman of the Division of Anatomy. In 1937 he was appointed Professor and Head of the Department of Anatomy of the University of Manitoba, a post he held until 1965.

Dr. Thompson greatly changed the teaching of anatomy at the University of Manitoba.11 The usually unrelated courses in gross anatomy, histology, embryology and neuroanatomy were replaced by a single co-ordinated course in anatomy, in which the various aspects of the subject, taught by experts, were synchronized and correlated. He developed the teaching of x-ray anatomy, and especially the laboratory study of the normal living human body. Anatomical clinics were inaugurated by Professor Thompson. In these clinics, small groups of anatomy students were taken into the hospital where they were shown, and discussed, diseased and injured people from an anatomical point of view. His anatomical clinics12 carried the anatomical study of the living body from the normal to the abnormal, thereby training students to mobilize their anatomical knowledge and apply it to clinical pathological problems. Lectures in medical biometry, a technique that he used in much of his research, gave students some insight into the processes of assessing numerical medical data.


Dr. Thompson's researches on the nervous system include: evolution, development and anomalies of the septum pel-
An electric method of mapping certain cutaneous nerve areas; the variability of the cutaneous nerves of the forearm and hand and of their overlapping, including the discovery that, whereas the total areas vary according to the normal probability curve, it is the logarithms of the overlaps that follow this type of curve; the application of this knowledge in connection with peripheral nerve lesions; the effect of local ischemia upon human nerve fibres; the electric masking of sensations and the experimental demonstration that this occurs in the brain; the anatomical basis of the body image and of the localization of sensations; and an experimental anatomical research on the feeling of pressure, concluding that this is an integrated concept rather than a primary sensation. His other researches include a widely quoted monograph on variations of the bile ducts and of the hepatic and cystic arteries. He has published numerous lectures and addresses on a variety of scholarly subjects, including medical history and biography, the teaching of anatomy, the philosophy of science and medicine, and even Gilbert and Sullivan. His researches gained him election as a Fellow of the Royal Society of Canada (1947) and as Fellow of the Royal Society of Edinburgh (1952).

His distinctions include the following: former President of the Canadian Association of Anatomists, the Manitoba Medical-Legal Society, and the Manitoba Museum Association; former Chairman of the Board of the Canadian Federation of Biological Societies; former member of the Council of the American Association of Anatomists, and of the Council of the Anatomical Society of Great Britain and Ireland; Honorary President of the Manitoba Medical Students' Association (1942-1943), Life Member of the Winnipeg Medical Society, the Manitoba Museum of Man and Nature, and the Scientific Club of Winnipeg; honorary member of the Omicron Kappa Upsilon (Dental Honor Society).

The high regard of the anatomy staff for him was symbolized by the dedication of the Department Library as the I. Maclaren Thompson Reference Library.

Other Full-Time Anatomists
Several anatomists served the Department full-time for various periods. These were Dr. R. T. McGibbon, Dr. Tudor Jones, Dr. G. I. Boyd, Dr. J. L. Jackson, Dr. D. Mainland, Dr. I. W. Monie and Dr. A. H. Sinclair-Hall. Drs. McGibbon, Jackson, Mainland and Monie became heads of anatomy departments elsewhere.

Other full-time assistants to Dr. Thompson were K. P. Nagy, Dr. R. G. La Fleche, Dr. Ruth Graeme and Miss J. C. Hay.

D. J. Bowie
Dr. D. J. Bowie came to Manitoba in 1937 as Assistant Professor; he was the first full-time trained histologist in the Department. A graduate of the University of Toronto (B.Sc.(Med.), M.A., Ph.D.), he took his doctorate in physiology under Professor J. B. Macleod, investigating the islets of Langerhans. While a lecturer at McGill, he developed a method of staining the pepsinogen granules in gastric glands.

Upon hearing that Dr. Bowie was being considered for appointment at the University of Manitoba, Sir Frederick Banting wrote recommending him; however, the decision had been made before Banting’s letter arrived.

In Manitoba Dr. Bowie was promoted to Associate Professor in charge of the teaching of histology; he planned the present Students’ Histology Laboratory. He continued his research on pepsin-forming cells and did notable work in autoradiography, being the first member of the Manitoba faculty to employ radioactive substances in biological research.

Dr. Bowie retired in 1968, but continued his research, and in 1960 published an important paper on galleycin as a nuclear stain in connection with autoradiography.

The high regard of the anatomy staff for him was symbolized recently by dedicating the Tracer Laboratory planned for the new Basic Sciences Building as the Donald Bowie Tracer Laboratory.

L. A. Sigurdson
Dr. L. A. Sigurdson, a native of Manitoba, graduated M.D. (Man.). After a year as Instructor in Anatomy at Stanford University, California, he was awarded an M.A. for research on synovial membranes. He was appointed Demonstrator in Anatomy in Manitoba in 1932, subsequently rising to the rank of Associate Professor. During the interregnum between Dr. Inkster’s departure and Dr. Thompson’s arrival, he was Acting Head of the Department. He retired in 1965 after 33 years of service.

Although technically a part-time teacher (by his own desire), he was one of the pillars of the Department, his opinion as a general practitioner greatly influencing teaching policies. He was joint author, with Dr. Monie, of a paper on uterine and vaginal anomalies.

Discussion
How far Manitoba has progressed in medicine may be seen in the contrast between the situation in November 1883 and that of September 1967. The former marked the first lecture in anatomy given in makeshift quarters to nine students, the latter was the date of the three-day symposium held in the beautiful auditorium of the library building of the Medical College in memory of a beloved professor of physiology, the late Dr. "Joe" Doue. The theme of the symposium was "The Relationship between Basic Science and Clinical Medicine". Although the program was graced by the addresses of Dr. William Boyd, who made his name through his textbooks on pathology while Professor in Manitoba from 1916 to 1937, and of Dr. A. C. Burton, Department of Biophysics, University of Western Ontario, these two were quite outnumbered by the young men who had studied under Dr. Doue and now, to 10 to 15 years after graduating, hold high positions in Canadian and American universities and who presented some 20 papers on highly scientific problems.

Retrospect
These teachers of anatomy have taught not only the dry bones, but have striven to make the dry bones live. They have followed the philosophy of William Harvey: "not from books, not from the tenets of philosophy, but from the structures of nature do I profess to learn to teach and to teach anatomy". They have taught anatomy not merely as a preface to surgery, but as an integrated science basic to a proper understanding of all medicine. With this they have manifested a proper reverence for the human body. Their attitude has been that of Hamlet, "What a piece of work is a man! how noble in reason! how infinite in faculty! in form and moving how express and admirable!"
The writer wishes to express his indebtedness to Professor Emeritus I. Maclaren Thompson for reviewing this paper and to Professor Keith L. Moore for his assistance in its preparation. He is also grateful to Miss Wilma Service and Mr. Mel Stover, senior members of the Department of Anatomy, who contributed valuable information and pictures.

References

THORACIC AND ABDOMINAL ANEURYSMS

For no obvious reason aneurysms of the abdominal aorta far exceed in number those of the thoracic aorta. In 1956, while using homologous vascular grafts as aortic replacements, we found that, shortly after the implantation of one of these vascular aneurysms they occurred. This problem eventually became so common and recurrent that we decided to investigate the reason for the failure of these homologous vascular grafts. Since it was our belief that this was basically an anatomic problem, we began to study the blood supply of the aorta, although we knew that all major vessels, like any other internal organ, have a definite blood supply and that the supply for the aorta was from the vasa and vena vasorum. The vasa vasorum arise from the branches of major arteries or neighbouring vessels at considerable distance from the point at which they are distributed. They ramify in the loose areolar tissue connecting the artery with its sheath and are distributed to the external coat but do not penetrate the other coats. These vasa vasorum are accompanied by the vena vasorum which leave the host vessel and empty into some associated regional venous structures. Vena vasorum, as a rule, run perpendicular to the long axis of the host vessel. Our investigation, at this time, demonstrated that the vasa vasorum arose from an intercostal or a lumbar artery or another major branch of the aorta. Where the intercostal artery, lumbar artery, or major arterial branch left the aorta, a fibrous ring was noted at the point of exit and at the point of exit of the intercostal artery, lumbar artery, or any one of the major arteries, small vasa vasorum branched off just at the juncture of the wall of the aorta and returned to supply this vessel. The reason for the failure of the original work was that the branches of the aorta were tied off very close to the host vessel so as not to allow for a lake of stagnant blood with associated emboli.

Our present investigation concerns the reason for the higher incidence of abdominal aortic aneurysms as related to aortic aneurysms in the thoracic cavity. Insofar as the aorta in the thoracic cage gives rise to a greater number of branches, many more than does the abdominal aorta, the thoracic aorta has many more vasa vasorum. The incidence of abdominal aortic aneurysms must, therefore, be greater because occlusion of any one of these small vasa vasorum will negate the blood supply to a considerable portion of the aorta. In the thoracic area, however, if one small vasa vasorum is occluded at one of the intercostal arteries, that of the opposite side would still supply the area. In addition, immediately adjacent intercostal arteries, superiorly and inferiorly, contribute to the supply of the area of the occluded intercostal.—Benjamin, H. B. and Becker, A. B.: Etiologic incidence of thoracic and abdominal aneurysms, Surg. Gyne. Obstet., 125: 1307, 1967.

This paper describes my personal experience with 12 patients suffering from a stricture of the common bile duct. From careful study of these 12 patients, certain lessons can be drawn that may not be found in reports of large series, many of which are statistical.

Case 2.—In 1961, A.D., a 78-year-old man, had an attack of acute cholecystitis. After four days an operation was performed. At this time, despite a gossamer gallbladder, cholecystectomy was undertaken. Because the patient soon became deeply jaundiced, the surgeon operated again but was unable to identify any of the biliary passages. Three weeks later the patient was transferred to my care at the Vancouver General Hospital. He was desperately ill and his serum bilirubin was 40 mg./100 ml. and alkaline phosphatase was 20 KA units.

Fig. 1.—Case 1. Common-duct injury incurred at cholecystectomy and relieved temporarily by choledochoduodenostomy. Three years later, a second repair with a Roux-Y loop of adequate length minimized reflux and has kept the patient symptom-free for seven years. Four other patients had similar duct reconstructions. (D—duodenum; S—stomach)

Case Reports
Case 1.—Mrs. E.G., a 60-year-old woman, had a cholecystectomy for calculus biliary disease in 1957. Duct injury was recognized postoperatively and biliary continuity restored by a second surgeon who performed a choledochoduodenostomy. For the next two years she suffered from recurring chills and jaundice. In 1960 she had a further “flare up” (serum bilirubin 10 mg./100 ml. and alkaline phosphatase 167 King-Armstrong (KA) units) and I undertook an operation. The previous anastomosis had become stenosed and it was necessary to create a choledochojunostomy (Roux Y) (Fig. 1). The patient has remained well; in 1967, her serum bilirubin was 0.5 mg./100 ml. and alkaline phosphatase was 20 KA units.

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