ON CANCER OF THE DUODENUM AND SMALL INTESTINE.

BEING THE PRESIDENTIAL ADDRESS DELIVERED TO THE
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BY

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THE distribution of cancer in the section of the alimentary canal known as the gastro-intestinal tract is remarkable. Cancer is very common in the stomach, but in the intestine between the pylorus and the ileo-caecal valve it is uncommon. Primary cancer is rare in any part of the small intestine, but it occurs more frequently in the duodenum, short as it is, than in the jejunum or the ileum.

CANCER OF THE DUODENUM.

A study of the effects produced by cancer of the duodenum shows that the time-honoured division of this section of the small intestine into first, second and third parts is of little use for the purposes of clinical medicine. It is more convenient, following Sherren, to call the portion above the bile papilla the supra-ampullary segment; the portion containing the bile papilla, the ampullary, and the remainder the infra-ampullary segment.

Supra-ampullary Cancer.

Duodenal ulcer is a common affection, and observations made on the living in the course of operations, and on the dead, have shown that the ulcer, for it is nearly always solitary, occurs most frequently in that section of the duodenum immediately adjacent to the pylorus. The chronic indurated duodenal ulcer is usually situated in the first 2 cm. of the duodenum, and four-fifths of the patients are men.

Many surgeons who have had great experience in gastric surgery believe that a chronic ulcer of the stomach is a precancerous condition. There is much evidence to support the view that a chronic gastric ulcer—like a chronic ulcer of the leg, a lupus patch, or a chronic syphilitic ulcer of the tongue—occasionally becomes cancerous. Physicians and surgeons admit the difficulty of early diagnosis in cancer of the alimentary canal from the pylorus downwards; the disease furnishes no sign until it becomes septic or obstructs the gut. This explains our great ignorance of the early stages of cancer arising in the stomach, duodenum, and on through the intestine to the anus. It is insisted by some surgeons that if chronic gastric ulcers are liable to become cancerous the same changes should affect chronic duodenal ulcers. Observation teaches that cancer of the duodenum is a rare disease, and there is no evidence that it arises in a chronic duodenal ulcer. Malignant disease of the duodenum of any kind is uncommon, and very few specimens of cancer of the small intestine are preserved in the hospital museums in London. This is sufficient to indicate, not only that the disease is uncommon, but the important fact that cancer of the duodenum is rarely excised by surgeons. The only example of malignant disease in the supra-ampullary section of the duodenum I have seen associated with a chronic duodenal ulcer was a sarcoma. A man, aged 55, had well-marked symptoms of pyloric obstruction, and at the operation a polypoid mass could be felt in the duodenum, and was easily pressed into the pyloric ring. There was a well-marked scar on the serous surface of the duodenum opposite the pylorus. I resected the pylorus with the adjacent part of the stomach and the duodenum to within half an inch of the bile papilla. The duodenum was closed, and the stomach also. Union of the stomach with the intestine was re-established by a

posterior gastro-jejunostomy. The parts excised are drawn of natural size in Fig. 1. A fungating growth springs from the floor of a chronic ulcer. Microscopically, it is a spindle-celled sarcoma. The post-operative course of this case is of some interest. A few days after the operation the duodenal stump leaked and much bile-stained fluid escaped through the lower angle of the abdominal incision. Frequently the fluid was quite clear, alkaline, and excoriated the skin. This fluid was mainly pancreatic juice, and in a few days the patient was in the condition of Pavlov's famous dog. This animal had an artificial pancreatic fistula, and the escaping fluid eroded the skin. The dog was tied up in the laboratory and at night scraped the plaster from the wall and lay with its belly in the debris. This suggested a plan of treatment, and a bed of sand was prepared for the clever dog, and the pancreatic juice no longer eroded the skin. I did not give my patient a bed of sand, but the erosion of the skin was prevented by covering the skin surrounding the fistula with gauze, or lint, soaked in paroline. A perusal of Pavlov's experimental observations helped me a great deal in the management of my patient. We know the average amount of fluid secreted daily by important organs, such as the liver, kidney, and stomach, but no one has determined the average amount of fluid secreted by the pancreas, because the pancreatic secretion varies in quantity with the nature of the food. The greatest

stimulant is fat. In my patient there were times when the fluid flowed in an almost continuous stream and quite clear. This happened when he swallowed milk. A fat-free dietary was then arranged, consisting of whey, beef-tea from which fat was carefully removed, water, and tea. The fistula soon closed. It was unfortunate that, after piloting the patient through many difficulties, he died a month after operation with apparently an abdominal dissemination of the disease. The man being a Jew, his relatives refused a *post-mortem* examination.

Cancer arising in the duodenal mucous membrane around the bile papilla is known as circum-

ampullary cancer, in order to distinguish it from cancer arising in the ampulla, or in the common bile duct, but the three varieties lead to obstruction of the bile duct, jaundice, and distension of the gall bladder. There can be little doubt that cancer of this section of the duodenum would often escape detection if it were not for the obstruction it offers to the flow of bile from the common duct. It is very difficult to distinguish clinically between circum-ampullary cancer, ampullary cancer, and malignant disease of the head of the pancreas, for all give rise to obstructive jaundice, often associated with an over-distended gall bladder.

Cancer of the Ampulla.

From a practical standpoint the distinction between cancer arising in the mucous membrane of the duodenum near the ampulla and cancer arising in the ampulla may not be important, but primary cancer of the ampulla is interesting in itself and exhibits some remarkable peculiarities. Nowhere in the body does so small a growth lead to such grave interference with digestion. A cancerous growth, sometimes no larger than a small cherry, will block the outflow of bile and pancreatic juice, causing intense jaundice, and great emaciation by interfering with digestion in consequence of the obstruction to the outflow of pancreatic juice. The three clinical signs of cancer of the ampulla are painlessness, intense jaundice, and great emaciation. The pathological features of cancer in this situation are its slight tendency to infiltrate surrounding structures, the infrequency of dissemination, and the enormous dilatation of the main bile ducts and the gall bladder. A feature of cancer of the ampulla which distinguishes it from cancer of the gall bladder is the infrequency with which it is associated with gall stones. In spite of the local nature of the disease it quickly

Fig. 1.—The pylorus and supra-ampullary section of the duodenum. A sarcoma occupies the scar of a chronic ulcer. Excised from a man aged 55.

destroys life. When cancer of the ampulla gives rise to jaundice, death usually follows within six months.

The daring resourcefulness of modern surgery is well exemplified in the attempts to deal with this singular form of cancer, and there can be little doubt that some means will be found for dealing with it successfully. Some valuable papers have been written on this subject by Hartmann, Körte, Schuler, Kausch, and Upcott. An American surgeon, Oosterbridge, has recently collected 100 reported cases. An example from a case under my care at the Middlesex Hospital is represented in Fig. 2.

Very few specimens of ampullary cancer have been described in London, and there are few specimens in the metropolitan museums. Perhaps it is only necessary to draw attention to this deficiency in order to have it remedied.

Cancer of the Transverse or Infra-ampullary Duodenum.

This is the common place for duodenal cancer. The symptoms associated with it are like those set up by cancer of the pylorus, but the vomited matter contains bile and pancreatic juice, and is sometimes very offensive. The cancer is usually of the constricting type, and the duodenum above the constriction becomes enormously distended; the dilated stomach and duodenum constricted by the pylorus resemble a bilocular stomach. Cancer sometimes arises in the middle of the transverse portion of the duodenum and the growth involves the vena cava and the superior mesenteric vessels. A constricting cancer in this part of the duodenum may be so hidden as not to be visible until the gut is opened. Rolleston has seen the channel of the gut so narrowed that its lumen in the cancerous section would only admit the passage of a pencil. I had an opportunity of operating on a man in whom the duodenum was completely obstructed by cancer. The patient, aged 56, was invalided from Burma on account of persistent vomiting and rapid emaciation. Cancer of the stomach seemed to be the most probable cause of the illness, but no lump could be felt in the stomach or its neighbourhood. The vomiting resembled that seen in the condition known as a "vicious circle" after gastro-jejunostomy; it was very offensive. At the operation the stomach was found to be con-

tracted, and on turning it over to examine the posterior surface I found a small constricting growth in the middle of the third part of the duodenum. This hard ring of cancer completely obstructed the gut, so that the bile and pancreatic juice regurgitated into the stomach, where they mingled with the gastric juice and ingested fluids to be ejected as filthy vomit. The duodenum above the stricture was enormously dilated, and produced an appearance like a bilocular stomach. The cancer had involved the walls of the duodenum, and implicated the superior mesenteric vein; excision of the affected area of the gut was impracticable. Posterior gastro-jejunostomy was performed, and the distended section of the duodenum was also anastomosed with an adjacent coil of jejunum. The vomiting ceased after the operation, and the patient began to take food freely and assimilate it. Pain ceased, and we hoped that his life might be prolonged. Cardiac dyspnoea began to cause trouble, circulatory complications arose, and he died fourteen days after the operation. A post-mortem examination confirmed the opinion, formed at the time of the operation, in regard to the impracticability of removing the cancerous portion of the intestine, for it involved the pancreas extensively as well as the large blood vessels. In the infra-ampullary cases the vomit always contains bile and pancreatic juice; this is of diagnostic value. Pancreatic juice can be demonstrated by the digestion of fibrin in the filtered vomit, with the addition of a few grains of sodium bicarbonate.

CANCER OF THE JEJUNUM AND ILEUM.

Tumours of the jejunum and ileum are interesting pathologically and clinically. A tumour of any kind in the small intestine is rare, and those belonging to the benign group are, as a rule, pedunculated; the propulsive movements of the intestine not only affect the contents, but influence tumour formations within its walls. The simple tumours arising in the intestinal walls may be lipomas, some are described as myomas, and many as sarcomas, but, whatever the structure, the constant propulsive efforts of the intestine tend to force the tumour towards the lumen of the bowel until it projects within it covered merely by a layer of mucous membrane. The danger to be feared from such tumours is invagination, or intussusception of the gut, for the tumour, acting as a foreign body, is urged along the bowel, and being fixed to the bowel wall drags it in and produces an intussusception, which, if unrelieved by art, or the timely sloughing of the intussusceptum, ends in fatal obstruction. The peristalsis of the small intestine exercises moulding effects on deposits of cancer within its walls, as well as on benign tumours; this applies to secondary as well as primary deposits. A man with disseminated melanoma was admitted into the Middlesex Hospital with intestinal obstruction. In the face of wide-

spread melanomatous deposits an operation for the relief of the obstruction was regarded as useless; to the astonishment of the physician, the symptoms abated and the patient passed a long slough of intestine which proved to be a piece of ileum containing a deposit of melanoma. This had led to intussusception, and the intussuscepted piece of gut sloughed and the man recovered.

The museum of the London Hospital contains a portion of ileum in a state of intussusception caused by a secondary deposit of melanocarcinoma. The specimen was obtained from a woman admitted with signs of strangulated femoral hernia; at the operation the supposed hernia proved to be an enlarged lymph node charged with black pigment. The woman died and the invaginated gut was discovered after death. The seat of the primary growth is not stated.

Cancer and Accessory Pancreatic Tissue.

A consideration of tumours of the small intestine would be incomplete without reference to the suggestion that cancer of the small intestine

may arise in an accessory pancreas. Small detached masses of pancreatic tissue have been detected in the stomach near the pylorus and in the duodenum; they may be situated in the mucosa, muscularis mucosae, or in the muscular layer of the intestine, and measure 3 or 4 cm. in diameter. An accessory pancreas is occasionally situated at the apex of a diverticulum. Although such diverticula usually arise in the duodenum they have been observed in the lower parts of the ileum, and regarded as persistent Meckelian diverticula. A pancreatic and a Meckelian diverticulum have been found in the same individual. It is possible that pancreatic diverticula are produced by traction; they are by no means harmless, and several cases have been reported in which a diverticulum, with an accessory pancreas at its apex, has invaginated into the bowel and produced intussusception. In a remarkable case reported by O'Connor an inverted diverticulum caused intussusception in a boy aged 13. On the fourth day after the attack he passed 11½ in. of gangrenous intestine with the diverticulum attached.

It is necessary to mention accessory pancreas when considering cancer of the duodenum and small intestine, because those pathologists who still believe that cancer arises in embryonic vestiges think it probable that this disease may arise in islands of pancreatic tissue. There is no evidence to support this theory, nor that which attributes duodenal cancer to morbid changes in Brunner's

Fig. 2.—Cancer of the ampulla. The common duct contained three gall stones, and one had ulcerated through the growth. From a woman aged 58. (Museum, Royal College of Surgeons.)

glands. Like the theory attributing parotid chondromas to relics of Meckel's cartilage, they belong to the domain of fiction. Such theories indicate that pathologists, like poets, are not devoid of imagination.

Cancer at the End of the Ileum.

The frequency of ulcer and cancer at the pylorus is not repeated at the ileo-caecal valve. This part of the small

Fig. 3.—The caecum and terminal segment of the ileum. The specimen shows the manner in which cancer arising in the caecum may involve the ileum.

intestine, notwithstanding its narrowness, is rarely attacked by morbid growths, and they have been rarely the subject of critical analysis. For many years I have been interested in this question, and find obstructive growths at the valve are of four kinds:

1. Cancer arising in the ileum.
2. Cancer arising in the caecum.
3. Malignant growths in the vermiform appendix.
4. Hyperplastic tubercle of the ileum.

Cancer at the ileo-caecal junction, in the cases I have seen, has been of the circular contracting type, and leads to almost complete occlusion of the opening. The contraction is so extreme that it is necessary to make a careful search in order to detect it, and, as a rule, the disease is more easily felt than seen.

It is a remarkable thing that such inconspicuous growths give rise to widespread metastasis in the abdomen. For example, an elderly woman had a large ovarian cyst associated with frequent vomiting—two conditions forming a sinister combination, and suggestive of malignant disease of the bowel associated with the ovarian cyst.

The removal of the cysts—there were two, one as big as the patient's head, and the other the size of a turkey's

egg—was easily accomplished, but the presence of much solid tissue in the walls of the cyst convinced me that the solid matter was implanted cancer. The distended condition of the small intestines led me to carefully search for an obstruction, and I found a thin, narrow, hard ring of growth completely obliterating the ileo-caecal orifice. I joined the ileum to the ascending colon by a lateral anastomosis. The woman survived, and lived free from pain and able to look after her house for twelve months. In this instance the primary lesion, though contracting and atrophic, had shed cancerous cells into the general peritoneal cavity which had fallen on the walls of the ovarian cysts and converted them into large, solid, cancerous masses. The frequency with which ovaries, and ovarian cysts, are converted into solid blocks of cancer by the implantation of cells shed from a primary focus in the gastro-intestinal tract is not properly appreciated by gynaecologists, but I am glad to note that the number of converts is steadily increasing, and my scepticism in the existence of primary cancer of the ovary is intensified by further experience.

Cancer arising in the caecum does not obstruct the lumen of the bowel at such an early stage as when it arises in the colon, but there is an anatomical arrangement by which cancer arising in the caecum can obstruct the ileum. The terminal segment of the ileum rests in close contact with the wall of the caecum; if cancer, or hyperplastic tubercle, attacks the mucous membrane of the caecum immediately in relation with the terminal portion of the ileum, the intermediate tissues become infiltrated with growth, the walls of the ileum are implicated, and ultimately its lumen becomes obstructed (Fig. 3).

A study of the specimens of primary cancer of the small intestine preserved in the hospital museums in London shows that the disease presents the same characters as in

Fig. 4.—The caecum and terminal piece of the ileum. The vermiform appendix is obliterated by a new growth with the microscopic features of a sarcoma. Removed from a man aged 73. He only survived the excision of the caecum six days. (Museum, Middlesex Hospital.)

the colon. Some are of the annular contracting type, constricting the gut as if a piece of cord had been tightly tied around it. In others the disease sprouts like a cauliflower into the bowel; there is a massive form which envelops the intestine with a hard collar of new growth. An

annular constricting cancer strictly limited to the ileal aspect of the ileo-caecal valve is associated with signs of intestinal obstruction rendering accurate localization of the obstruction a matter of uncertainty. There is nothing in the signs and symptoms approaching the definiteness characteristic of a constricting cancer of the third part of the duodenum. The chief feature connected with cancer of the gastro-intestinal tract is its extreme frequency at the pylorus and its rarity at the ileo-caecal valve. The age-distribution of cancer of the small intestine agrees with that of the stomach and colon.

THE APPENDIX.

Primary Malignant Disease.

In order to show the difficulty of properly assessing the frequency of cancer at the ileo-caecal valve, the following case is useful:

A man, aged 73, came under observation with symptoms of chronic intestinal obstruction, and a lump was easily detected in the region of the caecum. It was freely movable and painless. The age of the patient, the absence of fever and tenderness, the presence of a movable swelling in the right iliac fossa, accompanied with intestinal stasis and vomiting, indicated that the mass was in all probability a cancerous growth in the caecum. This view being confirmed in the course of the operation, I excised the caecum and joined the ileum by an end-to-side anastomosis in the ascending colon. The patient died suddenly six days after the operation. The caecum and excised portion of the ileum were preserved, and, on subsequent examination, the mass proved to be a primary tumour of the vermiform appendix which had infiltrated the adjacent walls of the ileum and caecum, including the segments of the valve (Fig. 4). Microscopically, the growth possesses the features of a sarcoma. There were no signs of dissemination and no enlarged lymph nodes were detected. Such growths in the appendix are probably rare. I have had only one

Fig. 5.—Melanosis of the mucous membrane of the colon. From a man aged 61 who died of bronchopneumonia. (After Professor Dr. Ludwig Pick.)

specimen of primary cancer of the vermiform appendix. I removed it from a spinster aged 30.

Hyperplastic Tuberculous Affections in the Neighbourhood of the Valve.

An analysis of the various growths which arise at the ileo-caecal junction makes it evident that some of the tumours in this situation labelled after operation "cancer," are in some instances tuberculous. The hyperplastic form

of intestinal tuberculosis is most common in the caecum and caecal end of the ileum. It differs from other varieties of tuberculous disease in that the lesion is not destructive and leads to an increase in the bulk of the part affected. The disease begins in the submucous, or subserous, tissue, and spreads to the other coats of the bowel. The new tissue contains clumps of giant cells and sometimes calcareous deposits. Occasionally the thickened bowel is enveloped in a mass of fibro-fatty tissue such as sometimes

Fig. 6.—Melanosis of the colic mucous membrane showing the deposits of pigment in the stroma between the crypts. (After Ludwig Pick.)

surrounds chronic tuberculous kidneys. The cavity of the bowel is narrowed, sometimes a track no larger than a writing-quill remains, and the ileo-caecal valve is obstructed; in rare cases the disease is limited to the valve. This condition is very liable on mere naked-eye examination to be mistaken for cancer of the ileum or caecum, and it is very probable that some cases in which the caecum has been excised for a tumour casually regarded as cancer, and the patients have remained free from recurrence, the disease was hyperplastic tuberculous disease.

From the operative point of view the distinction between cancer and hyperplastic tubercle is not important, because the treatment for both conditions is the same—excision—but is a matter of great concern in regard to prognosis. Cancer and hyperplastic tubercle left to run their course end fatally, but the latter is curable by excision. Hyperplastic tubercle of the bowel was not recognized till 1891, then it received attention from Billroth, Hartmann, and Pilliet. Very little attention has been given to the disease in Britain, although there is reason to believe that tuberculous disease attacks the caecum more frequently than any other part of the gastro-intestinal tract.

MELANOSIS OF THE COLON.

Melanosis is a morbid condition of the mucous membrane of the colon that has received little attention in Great Britain. My experience is limited to one example:

A septuagenarian spinster suffered from recurring attacks of intestinal obstruction; at last colostomy was necessary, and a constricting annular cancer was excised from the iliac colon. Four months later the cut ends of the bowel were rejoined, successfully. The mucous membrane of the excised portion of the gut was of an inky blackness, but the cancer in the bowel had the microscopic structure common to primary cancer of the colon and was devoid of pigment. The blackness of the mucous membrane depended on a deposit of pigment in the connective tissue of the mucosa. I am unable to state how much of the colon was pigmented, because the patient recovered from the operation, but I examined her thoroughly with the object of finding evidence of a melanoma or an ulcerating pigmented wart, but found none. This pigmentation of the colon puzzled me. During the Christmas vacation, 1912, I visited the museum at the Friedrichshain, Berlin. There I saw a colon with the same deep pigmentation. (Fig. 5.) The intense blackness affected the colon uniformly, being sharply limited by the ileo-caecal valve and extending thence to the anus. The terminal portion of the vermiform appendix was obliterated, but the mucous membrane of its proximal unobliterated part shares in the pigmentation.

Professor Dr. Ludwig Pick has discussed in an exhaustive manner the anatomical, histological, and chemical features of this rare form of pigmentation. He also gives a useful summary of nearly a score of similar cases, beginning with one recorded by Virchow, 1847, and three described in England by C. J. Williams, 1867, G. Newton Pitt, 1891, and H. D. Rolleston, 1892. Pick states that the coloration is not due to metallic deposit—it is essentially a pigmentation of the connective tissue of the mucous membrane, and haematogenous.

Although the pigmentation begins, as a rule, at the ileo-caecal valve and extends to the anus, cases have been observed in which it does not involve the whole length of the colon. When the colic membrane is involved throughout, the pigmentation is discoverable at the anus by means of a speculum. The condition is a clinical curiosity, but if detected in the course of a clinical examination it might have undue significance attached to it. It will be useful to have some further observations on this curious pigmentation.

I selected cancer of the small intestine as the subject of the address this evening because it is a matter neglected in the ordinary works on surgery. It is intended to hold a discussion at our next meeting on the surgery of tumours of the large intestine, and we hope to have an exhibition of illustrative specimens of tumours of the small intestine as well as tumours of the caecum and colon. The council is hopeful that a series of specimens illustrating hyperplastic tuberculous disease of the caecum will be shown. This disease, often mistaken for cancer of the caecum, has not received much attention in this country, although Henri Hartmann made it the subject of the oration in 1911. The society will also be grateful for the loan of specimens illustrating primary cancer of the vermiform appendix, a disease concerning which there is much uncertainty. It will also be useful to obtain some further observations on the curious pigmentation of the colon.

PRESENT-DAY LESSONS FROM THE LIFE WORK OF MITCHELL BANKS.

BEING THE THIRD SIR WILLIAM MITCHELL BANKS MEMORIAL LECTURE.

BY SIR VICTOR HORSLEY, F.R.S., M.B., F.R.C.S.

THOUGH the keeping bright the memory of our benefactors is a pleasant and, as in the present instance, a most honourable duty, the object and value of a memorial lecture rests equally on the fact that even a superficial consideration of the conditioning circumstances of our predecessors' work evolves a whole crowd of conclusions which are full of lessons for us.

The life work of Sir William Mitchell Banks in every aspect is not only interesting and educational but it is also a pleasant study of how much active public benefit can be secured to the community by the efforts of one of our profession, and how much can be effected by single-mindedness.

For Mitchell Banks tried to live up to Pasteur's scientific idea of what should be the inspiration of a medical practitioner, namely, that "A doctor must consider what people will say about him 100 years hence and not trouble himself about the blame or praise of to-day." Probably Banks, in his active advocacy and support of surgical and educational reforms, realized Pasteur's ideal more completely than many of his contemporaries.

Seventy-two years ago Mitchell Banks, as he was familiarly known to most of us, was born in Edinburgh (in 1842), his father being Mr. Peter S. Banks, Writer to the Signet, and his mother, Miss Ann Williamson. A student of the greatest ability, originality, and promise, he took his M.D. degree in 1864, with the highest distinction, and under the stimulating scientific influence of Goodsir, produced original work on the Wolffian bodies, which at once became the classical authority on that subject. Banks had, in fact, entered the profession at the moment when the greatest advances in medical science were being made by the anatomists owing to the development of microscopical technique. Goodsir had all John Hunter's

feeling that anatomy should be pursued not only as part of natural truth to be determined for its own sake, but also always with the interpretation of function as the purpose and object of progress, and Banks's work and thought throughout his whole life exhibited this practical combination.

We have to thank the Scottish School of Medicine and its various teachers for many things, but especially the academic recognition of anatomy. For just as Goodsir was the successor to the distinguished line of Munros, so Bell made his contribution to the progress of surgical science more notable through his enforcing dissection by all his students.

But Goodsir was far more than an anatomist limited to his special subject. There was another aspect of Goodsir's influence which, perhaps, has not been so well realized outside the inner circle of the Edinburgh School fifty years ago, and yet it must have exercised a considerable effect on Banks's active intellect. I refer to Goodsir's comprehensive views of medical work in general and its bearing on social life, which led him, though in many respects a recluse, to take a part in the organization of the Edinburgh Society which was called the "Universal Brotherhood of Friends of Truth," and the principles of which were declared to be the promotion of "Fellowship, Work done, Love for the good and beautiful," and, above all, "Co-operation." Pre-eminently among Goodsir's pupils Mitchell Banks tried to carry out these principles of his teacher in his social, communal public life, as well as in his professional work.

There was thus from the first the development in him of that knowledge and sympathy for anatomy as a pure science which subsequently he so extended during his tenure of the chair of anatomy in the Medical School as to make that at first the most flourishing teaching department in University College at its foundation in 1882. And later on his work for the developing Medical School and University meant labour, not merely for medical science alone but his sympathy for social science as well, because of the inestimable benefit the University has conferred on the citizens of Liverpool.

What now of the main work of his life—his surgical achievements?

Two subjects will always be honourably associated with Mitchell Banks's name and the Liverpool School of Surgery—namely, cancer and hernia. To-day they are humanity problems just as important and just as much in need of constant notice, consideration and reconsideration as they were when he began to hold up the light of surgical progress.

Both, too, are subjects respecting which his teacher Goodsir had put the true value of surgical work in words which for their scientific precision and accuracy are worthy of resuscitation here, and for their just appreciation of the possibilities and limitations of clinical work ought not to be forgotten.

It is with methods of prevention and recovery that our profession has to do. If we make use of the terms *cure* and *remedy* we do so in their fundamental and not in their vulgar sense, for we do not profess to perform the one or to provide the other in their vulgar sense.

What we undertake to provide are, *firstly*, the conditions of relief or alleviation of pain as far as these have been discovered; *secondly*, the conditions of recovery, provided these conditions can be restored; and, *thirdly*, the conditions of longevity within the limits assigned to the life of man in the present phase of his existence.

Every one who followed Mitchell Banks's work, whether in the wards or as revealed in his writings, knows that these words exactly express what he did, and no one recognized more clearly the scientific limits of the surgery of his day on the fundamental questions of "cure," "relief," "longevity," etc., which were so clearly laid down by Goodsir. No one in speaking of "results" used the word "cure" with more meticulous care, and no one weighed up more carefully in the interests of his patient the risks, especially to life, of any suggested procedure. On this last of Goodsir's points—namely, "longevity"—a word must be interpolated here, for social changes advance so unnoticed by those participating in them that the handicapping conditions under which our predecessors have worked are seldom remembered and often unknown.

The numerous risks to life caused by even a simple operation and due solely to ignorance and want of civiliza-