BRITISH MEDICAL JOURNAL

LONDON SATURDAY JUNE 4 1938

THE CHANGING GROUND OF SURGERY*

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The student of surgery must be grounded in a teaching that has the foundation of tradition, or, in other words, the continuous approval of the best minds of many years behind it; only when his feet have been thus firmly planted on the solid rock of accepted doctrine can he advance to greater heights along paths of his own discovery. But the practising surgeon should contemplate change rather than immutability, for in the simmering theories of to-day are crystallizing the orthodoxies of to-morrow. Change is always with us, and it is interesting to look over the period of our own experience and to consider how far surgery has changed in that time, what have been the forces impelling those changes, and in what direction they are likely to lead us in the immediate future.

We must take into account that gradual rise in the station and training of the surgeon himself that has been in progress over many centuries, but has reached its culmination only in the present one. Surgery originated in the need for members of the religious orders, who first had a monopoly of medical practice, to employ what we should now call "technicians" for the manual part of their work. This view of the subservient position of surgery which inspired the now-coveted title of "Mister" persisted till the war in the practice of admitting abdominal emergencies to medical wards, where the physician made the diagnosis and summoned his colleague to hear, his views and carry out his suggestions; it was often justified, for though many instances might be cited of surgeons who were scientists and men of letters, the majority reached their positions by force of character, decision, and manual dexterity, and few had a scholastic record equal to that of their medical contemporaries or undertook postgraduate study in any science but anatomy. Now, however, the scholars and best students in our medical schools seek surgical posts, and, having become surgeons, find their College taking the lead in research of every kind, and offering them facilities to work out their own ideas and help and encouragement in their difficulties.

Thirty years ago it was the highest praise to call a surgeon a brilliant operator; to-day such an encomium carries the same slight as to say that a girl has a kind heart—the implication that more important merits are lacking. The operation is regarded as part of a plan of treatment which precedes and follows it till its object has been attained rather than an isolated *tour de force*, and interest centres more in measures to eliminate its risks and counteract its effects than in the development of spectacular technique. The details of asepsis have been improved one by one, till chance infections are almost unknown. The sterilization of gowns and dressings is

now certain rather than hoped for; the air in most modern theatres is conditioned—that is, washed, filtered, and rendered bacteria-free before being put into the room; some enthusiasts have even introduced a ring of mercury-vapour lamps round the operating light, following the suggestion of Hart of Connecticut, to sterilize the air over the working field itself. But air- and dust-borne organisms are usually non-pathogenic or of low virulence, and do not constitute a danger comparable to that of the human streptococcal carrier. It has lately been shown that where a presumably clean case has been infected by a streptococcus an identical organism can nearly always be recovered from the throat of some member of the operating team who may as yet have no symptoms. The risk of such infection disappears if masks containing a layer of "cellophane" are worn by all those taking part in the operation.

Synthetic Drugs for Infections

For declared streptococcal infections we have a new, and in most cases a potent, remedy in sulphanilamide. This drug is no more than two years old, but it is familiar and used by all of us. In surgery, apart from its value in chance infections, it has entirely altered the outlook in some of our commonest and most distressing problems, notably infections of the hand. A tendon-sheath or tissue-space infection formerly meant a ruined hand, usually a ruined life. Following Kanavel's anatomical researches the operative treatment was put on a sound basis, and many hands were saved with perfect function; but in all except the earliest cases the result was still imperfect. By the use of sulphanilamide in combination with early and correct incision the period of active infection and necessary drainage is now reduced to a minimum, and the good function that can only come with early healing results.

Almost more encouraging than the particular applications of sulphanilamide is the general promise that it brings. Since the days of Pasteur chemists have been chasing the ideal of an agent lethal to bacteria that will act in the body. They have produced a series of antiseptics said to be effective in septicaemia when given intravenously, but proved in practice to do more harm to the host than to the invader. Salvarsan seemed to promise a new era, but the group of arsenical preparations it introduced were soon found to be active against protozoa but not against bacteria. With the standardization of the arsenicals and the increasing production of drugs by synthesis rather than extraction, with the apparent limitation of remedies to the amelioration of symptoms and the lack of any of proved efficacy in bacterial diseases, it seemed that the pharmacologist was bound to disappear

* An address to the Southern Medical Society, Glasgow.

and leave his work to be divided between the research chemist and the research physiologist. Sulphanilamide has found him fresh employment, the judge and tester of a new group with untold possibilities, the protector of the innocent and gullible medical profession against the wiles of the commercial drug houses. If he can find a similar compound lethal to the staphylococcus he will indeed have changed surgery in our time.

If the outlook and methods of surgery are changing, so is its material. Whenever we prepare a lecture to students we are reminded, in the depressing way that everything seems to remind us of the passing years, that diseases are not what they were. They, too, have their enemies, and natural immunity, medicine, surgery, and public health have all combined to eliminate the favourites of pre-war days.

The Decline of Syphilis

Bacterial diseases, like tribal migrations, are most calamitous when they first descend on a populace unprepared for them; with time, resistance is organized, the invaders weaken and finally disappear. Syphilis ravaged the world at the close of the fifteenth and beginning of the sixteenth century; it remains a scourge, but its manifestations, even in untreated cases, are becoming milder. Tuberculosis is even more evidently doomed to extermination by the gradual development of natural immunity. Its incidence and its mortality have both dropped steadily during the last fifty years, and the satisfaction which we as doctors might take from this fact is shaken by the notable absence of any acceleration in the downward curve when Koch discovered the organism or when open-air treatment was advocated. The youngest student to-day will probably see tuberculosis vanish from the face of the earth.

Medicine, or rather therapeutics, by the improved drug treatment of syphilis has abolished almost entirely the third stage of that disease. In 1910 about one-quarter of the patients whom I saw on surgical and dermatological out-patient rounds came for some manifestation of tertiary syphilis. In the last six months I have found only a single gumma, and that a doubtful one. Surgery, by the routine repair of herniae and the early treatment of urethral stricture, has almost wiped out strangulation and extravasation of urine, the "high lights" of a pre-war emergency week. Radium and x-ray therapy have claimed most cancers, apart from those of the alimentary canal. Public health and improved economic conditions have reduced the incidence of gastric ulcer and put rickets and osteomyelitis into the ranks of the rare and disappearing diseases.

Let you should think that these remarks are a prelude to a swan song of surgery, I would hasten to say that there is always a new generation of disease knocking at the door. The very advance of civilization, which has removed those troubles due to poverty and ignorance, is bringing others peculiar to itself. I can mention only two factors that seem to be operative: the rush and the strain, the competitive element, and the constant feeling of insecurity in modern life; and the unnatural diet, consisting largely of foodstuffs preserved to be eaten long after their time of preparation and far from their place of origin, and therefore robbed for canning purposes of all portions that cannot be proved to have a high nutritive or vitamin value. These factors are responsible, the one for the appearance of new diseases and the increase in old ones due to nervous stress, the other for the apparently increasing incidence of infections of the alimentary tract. Both bring fresh problems to surgery.

Duodenal Ulcer

Duodenal ulcer is essentially a disease of civilization, a fact that we shall appreciate more fully if we try to dissociate it in our minds from gastric ulcer. The chief causes of gastric ulcer seem to be sepsis, undernutrition, or faulty diet, and trauma caused by insufficient mastication and the angulation of ptosis; the typical gastric ulcer patient is a timid, depressed, and sedentary old lady, with poor muscle tone and a low acid curve. Duodenal ulcer, on the other hand, is associated with worry, overwork, and the excessive smoking that accompanies these two; the duodenal patient is a live wire, a go-getter, a high-pressure salesman, a hundred per cent. man, thin, restless, with a small stomach and hyperchlorhydria. His type is increasing, and so undoubtedly is duodenal ulcer, and for the first time it is becoming fairly common in women. While this increase in duodenal ulcers is undoubted, I cannot support it by my own figures, since my records concern cases coming to operation, and in them gastric ulcers predominate largely. I find that much of my time at the out-patient department is spent persuading gastric ulcer patients to have an operation and duodenal patients not to have one. Gastric ulcer, if medicine has not cured it early, is a surgical disease, and the results of excision are excellent. Duodenal ulcer is the outcome of high-pressure living: if the patient can be persuaded to mend his ways the ulcer will disappear without surgery; if he cannot, surgery, unless it is of a most drastic nature, will give him only temporary benefit. One of the most manifest changes in the surgical outlook within recent years is that the great body of men of experience and judgment are agreed that in duodenal ulcer operation should be reserved for the complications—perforation, stenosis, and severe haemorrhage—and not be looked upon as a cure for the ulcer tendency.

Operation for Graves's Disease

Graves's disease, again, is a malady which is very constantly associated with emotional shock. Many of the functions of the thyroid gland are understood, but its place in the complicated corporation of ductless glands, whether that of a director or merely of a bulky foreman, is not yet unravelled. Crile looks upon the thyroid as the regulator of constant energy output as the adrenals are of intermittent outbursts. He points out that the great majority of animals are either hunters or hunted, always alert for attack or escape, always ready to spring from rest to intense activity. Two creatures alone are lords of all they survey—man on the earth and whales in the ocean—and in them alone does the thyroid exceed the adrenals in weight. The definite association of thyroid activity with the important phases of woman's life—puberty, menstruation, and pregnancy—and the frequency of all thyroid diseases in females, might be cited in further support of Dr. Crile's contention that thyroid dominance is the mark of a superior place in the scale of creation. Be that as it may, Graves's disease has hitherto been seen almost exclusively in women, and chiefly in young women of the age when emotional crises are common. Within the last few years an increase which is apparent to any surgeon interested in thyroid work has been noted in the incidence of Graves's disease in men, almost entirely those of intermediate social position. The millionaire may have worries, but they are not serious enough to affect his thyroid; the labouring man can put all his troubles on the broad shoulders of the State; but the clerk nearing 40 with an increasing family and no promotion in sight, the small business man threatened by powerful com-

petitors, the schoolmaster uncertain whether he can hold down his job—these people must carry their responsibilities alone, and they are showing the strain by developing hyperthyroidism. It is indeed fortunate that the operative treatment of Graves's disease has been transformed within the same period from a chancy and fairly sound procedure to one of the safest and most satisfactory in surgery. One cause is the worthy circle (for not all circles are vicious) that good results bring patients at an earlier stage, and fitter patients mean yet better results; another is the use of iodine, which, though it has no curative action, yet enables the physician, by doses checked against frequent basal metabolic estimations, to bring any goitre patient to the condition of a normal individual for a few days and to predict to his surgical colleague when that time will come; yet another is the standardization of operative procedure to a bilateral subtotal excision of the thyroid gland, leaving no more than two cubic centimetres of gland tissue on each side in the tracheo-oesophageal groove. Most important is the division of labour between the physician and the surgeon, the former accepting responsibility for the preparation, for fixing the date of operation, and for the after-care; the latter content to work under orders and do no more than guarantee to return a live patient with a respectable scar covering a job neatly done.

The Problem of Arterial Hypertension

Most alarming among the problems presented to surgery to-day is that of arterial hypertension. High blood pressure with its consequences is nothing new, and many famous men have died of apoplexy or lost their fire in the dotage of cerebral softening. But they were old, and reached this "last infirmity of noble minds" after a long life of scorned delights and laborious days. The tragedy of the present time is that men and women are succumbing to the stress before they have time to bring their ideas to maturity or to reap the reward of their labour. Still under 30, they are stricken with intolerable headaches and failing vision, and find themselves unable to concentrate without a further increase in these distressing symptoms, which are the outcome of a systolic pressure that may be from 200 to 300 mm. of mercury.

Such a problem has naturally received the fullest attention from research workers, particularly in America, where this scourge of the intellectual is increasing rapidly. Hypertension does not occur spontaneously in animals, but it can be produced by applying a clamp to the renal pedicles and closing it gradually. If the arterial supply is so reduced that the nutrition of the kidneys is impaired, albumin and casts appear in the urine, and a condition comparable to the hypertension of renal disease in man is reproduced. But by gradual occlusion a point can be reached short of renal damage where the systolic pressure of the animal is raised and remains up as long as the clamps are kept on the pedicles. The hypertension thus produced resembles non-renal or essential hypertension in man, but is certainly not identical. Experimental hypertension persists as long as the obstruction to the blood supply of the kidneys is maintained. It is not a reflex effect, for it remains when all nerves to the kidney have been divided, and even when one kidney is removed and the second transplanted to the thigh—an irrefutable denervation. It may be lowered by various operations, such as transection of the cord, designed to dilate the arterioles of a wide area, but this depression is temporary. It appears likely, therefore, that the hypertension is due to some pressor substance produced in the kidney when its blood supply is jeopardized.

In man, on the other hand, the blood pressure can be lowered in many ways. Surgical alleviation of these victims of an intellectual machinery that has run its bearings was first suggested by the profound fall in systolic pressure that follows a spinal anaesthetic, and the operations performed to-day have all been designed to remove the vasoconstrictor impulses from a large part of the splanchnic vascular bed. Whether the resulting benefit is due to reduced peripheral resistance in the arterial tree, or whether, as seems more likely in view of the experimental evidence mentioned above, it depends upon the denervation of the renal vessels alone—"the removal of Nature's renal clamp"—is uncertain. Many alternative procedures are undergoing trial. Their relative merits are still undecided, the choice of suitable patients varies from surgeon to surgeon, and the benefits that may be expected from any or all of them have still to be assessed.

Operations for Raised Blood Pressure

Heuer, at the Cornell Medical Centre, New York, performs laminectomy and divides the anterior roots of the lower six dorsal nerves. Max Peet, at Ann Arbor, does a bilateral extrapleural operation above the diaphragm. By removing no more than an inch of the eleventh rib on each side he is able to resect the three splanchnic nerves as they reach the diaphragm, and the two lowest ganglia of the thoracic sympathetic chain. He insists that the least splanchnic must be found and excised if possible, as it carries the renal vasoconstrictors. Adson, at the Mayo Clinic, approaches the splanchnic nerves just below the diaphragm, through a long incision along the outer border of the erector spinae from the eleventh rib to the iliac crest. Retracting the kidney in its fatty envelope forwards, he follows the last dorsal nerve to the crus of the diaphragm and finds the great splanchnic nerve. He divides this, and, drawing out the semilunar ganglion which it enters, removes the greater part of it, coagulating it by diathermy before cutting to avoid the risk of haemorrhage. In addition to the three splanchnic nerves he removes the upper two lumbar ganglia. Crile, at Cleveland, denervates the adrenal and removes the semilunar ganglion through a smaller lumbar incision, working with long blunt dissectors and scissors guided by touch.

Each of these operations appears to have its advantages and drawbacks, its successes and failures. To the visitor with little personal experience, who must base his opinion largely on technical criteria, Peet's operation appears the best. It is the only one, apart from Heuer's, in which both sides can be done at a sitting; it is bloodless, and though the field is limited access to all parts of it is adequate and vision excellent. Adson's operation is, in his hands, a masterpiece of neat work. The important part is, however, carried out at the limits of a deep dissection, aided by exact retraction and well-placed lights, and it would seem that any chance bleeding at this stage would be controlled with considerable difficulty. These doubts apply with greater force to Crile's blind operation, which would probably be very dangerous in the hands of any surgeon not possessing his unrivalled experience and delicate touch. Division of the anterior spinal roots inside the theca seems needlessly severe in its approach and destructive in its scope.

The results obtained after operations for hypertension seem to vary in the most remarkable manner, even in groups that should be comparable—that is, in patients of similar age with an identical clinical syndrome and treated by the same operation. As might be expected, therefore, surgeons differ considerably in their indications for opera-

tion, in their criteria of operability, in the enthusiasm with which they regard this branch of surgery, and in their outlook on its future. At one extreme Adson will only accept for treatment a small group of picked patients. They must at any rate be under 50, and preferably under 40, and must have a sound heart and good kidneys. They are first put to bed and their blood pressure taken every hour for twenty-four hours or longer to establish a normal. They are then subjected to several tests. Five per cent. pentothal sodium is given intravenously till there is no further drop in blood pressure, three grains of sodium amytal by mouth every hour for three successive hours, and six half-grain doses of sodium nitrate at half-hourly intervals. If the blood pressure returns to normal, or nearly normal, with all these tests that patient is considered suitable for operation, but if it does not it is assumed that the hypertension is due almost entirely to organic changes in the arterial tree and that it will not be improved with surgery. At the other extreme is Max Peet, who finds that some of the cases that appear most unfavourable show dramatic improvement, if not cure, and, while he carries out a thorough preliminary investigation and vasodilator tests, is willing to operate on any case that does not show obvious renal damage.

One of the wisest surgeons in the United States, himself a neurosurgeon, told me that he felt as yet quite unable to foresee the ultimate outcome of this work, but he thought it was well worth continuing. A symptomatic improvement seems to occur in every case—that is, the patients lose their headaches, and their vision improves—but in many of these there is no appreciable drop in the systolic pressure to explain the improvement. Some, though their pressure remains unaltered, become sensitive to drugs such as cyanates, to which they were formerly resistant. Many show a fall in blood pressure of about half the amount by which they exceed the normal, but after a few months they start to climb, and by the end of the year have reached their former figure. A few return to normal or near normal, and remain at that level. Four years ago a surgeon of about 40 was forced by a rising blood pressure, inability to concentrate, headaches becoming at times intolerable, and failing vision to resign his university post and abandon his practice. He underwent the operation of bilateral splanchnicectomy, and immediately lost all his symptoms and returned to a normal blood pressure. He obtained another post at a university in another State, and has been in full work ever since, his blood pressure showing no tendency to rise again. I had not the good fortune to meet him, but I met many of his colleagues, and they all agreed that he was now able to work as hard as any of them. To my question as to whether he was as good a man as before his symptoms appeared, they replied that he had lost some of his fire; he was not the “go-getter” he used to be, but he was still a fine surgeon. Many of us are apt to become less energetic between 40 and 44, without the excuse of an operation to explain it, and would count the loss of some enterprise a small price to pay for rescue from idleness, imminent blindness, and impending death. It is cases like this—and they are by no means rarities—that illustrate the real value of surgery in hypertension, and provide a reason for its fuller study.

Increased Incidence of Appendicitis

That infections of the alimentary tract are on the increase is undeniable to one who surveys the change in surgery over even a brief period. I was sufficiently impressed by this increase in 1923 to attempt an experimental

investigation of its cause that formed the basis of a Hunterian lecture the following year. In that lecture I sought to prove that bacteria are normally carried through the intact wall of the alimentary tract, and that in conditions of injury or stasis the number passing through is considerably increased. I suggested that such stasis is an almost inevitable sequel of the modern dietary, which differs from that of our ancestors in two main respects: the high degree of preparation to which our cereals are subjected, robbing them of many vitamins; and the smaller and still lessening amount of indigestible material, chiefly cellulose, which we consume.

Whatever its cause, the most striking manifestation of this increase is seen in appendicitis, which first appeared as a relatively common disease at the beginning of the century and has since become more frequent every year. Some would explain this appearance and increase by saying that appendicitis was formerly just as common but seldom diagnosed. The clinical acumen of our predecessors cannot be assessed, but their post-mortem reports survive in their detailed thoroughness, and it is very unlikely that the association between peritonitis and a gangrenous appendix would have escaped the eyes of men like Gull and Wilks. Bright described infection of the vermiform appendix in 1839, but did not look upon it as a common disease. Others, again, ignore this increase in their attempt to find statistical support for a revival of the pre-Listerian treatment of appendicitis by procrastination. They point to a slight rise in the total mortality for appendicitis in Britain over a ten-year period as evidence that early operation has not lowered the death rate, omitting to allow for any increase in the total incidence of the disease. An examination of the hospital records of South-East London, however, shows that during the same period, while the number of deaths has risen by 8 per cent. only, the number of operations for acute appendicitis has increased by 260 per cent.

Irritable Bowel and Ulcerative Colitis

Ulcerative colitis is another alimentary tract infection which, though old, has become common only during the present century and a subject for surgical attention during a much more recent period. The term is used, somewhat loosely, to describe a group of disorders of the large intestine characterized by the passage of frequent loose stools containing mucus and often blood. Three conditions at any rate must be excluded before the label of ulcerative colitis is applied. The first and most important is that of “irritable bowel” or “maltreated bowel,” which becomes a disease when it is labelled mucous colitis. The distal colon is richly set with mucous cells whose purpose is to lubricate the normal excreta in transit, and whose habit is to pour out mucus when abnormal constituents appear. The bowel consciousness instilled by infant training becomes, in those lacking the interests of work or a family—that is, the wealthy—an absorbing passion that has made the fortunes of countless drug manufacturers, fashionable physicians, health resorts, and irrigation parlours. The vested interests that profit by the colon complex are indeed so powerful that it is only a few bolder spirits like Hurst who have dared to point out that habitual constipation is usually the result of habitual purgation, that intestinal intoxication is caused not by stasis but by the drugs given to relieve it, and that the Plombières treatment can wreck the healthiest colon in a few weeks. The patient with mucous colitis can nearly always be put right if her drug chest, which will be found full to overflowing, is emptied into the dustbin and she is put on a rational diet and exercises.

The second condition that must be excluded is multiple polyposis, a disease that may be suspected when there is a history of others in the family similarly affected, and that can usually be recognized by sigmoidoscopy or contrast radiography. Apart from its complete intractability polyposis nearly always goes on to cancer, and therefore demands excision—segmental in those rare instances where part of the colon can be proved to be free, total colectomy in the majority. The third condition to be excluded and treated by the appropriate serum is bacillary dysentery. There remains a large group that must be classed as true ulcerative colitis, a disease for which specific streptococci have been held responsible by Bargen and others, but about whose primary cause no agreement is yet possible.

The medical treatment of ulcerative colitis does not concern us here, except to know that it sometimes fails and that these failures provide a new problem for surgery. Between the successes and the worst failures, those patients who have gone progressively downhill and are poisoned and bloodless, lies the intermediate and most important class of those that are bound to fail, but are not yet at the point of death, and therefore provide the most promising material for surgical treatment. When the colon has at last been got to heal after prolonged ulceration, when its wall is thick, rigid, and fibrous, and the scars on its mucous coat are covered with a single layer of non-glandular epithelium, it may act as a reasonably efficient sewer while it is flushed out repeatedly and asked to transmit no more than paraffin-lubricated pulp, but it cannot function as a colon and is bound to ulcerate afresh on the first attempt to restore normal diet, at the first period of lowered resistance.

Surgery of the Ulcerated Colon

The surgical treatment of the ulcerated colon may be divided into three stages—rest, excision, and restoration. Rest of the diseased bowel can be obtained only by complete transverse division of the ileum six or eight inches above its termination. Appendicostomy and caecostomy have both passed into disfavour: the feeble flushing of the colon which they allow does not appear to be as effective as washing out through the rectum, and neither of them rests the colon to an appreciable extent. Transverse ileostomy, however, diverts the whole intestinal flow to the surface. The colon, no longer filled with bacterial pabulum, mechanically irritated, or stimulated to contract, rapidly becomes more healthy. It is not to be expected, in the advanced type of case in which such a grossly destructive operation as colectomy has come to be considered, that it will recover sufficiently to function again; but the discharge becomes one of purulent mucus, rapidly decreasing in amount, bleeding gets less or stops entirely, and the absorption of toxins is diminished when infected fluids no longer reach the ulcerated surfaces and mass movements do not aid the lymphatic and venous flow. Almost as important as the mechanical exclusion is the fact that the diet need no longer be chosen to spare the colon. Part of the difficulty in treating the disease is to provide a diet that gives a minimum residue, yet is varied, appetizing, and sufficient in all elements. After ileostomy the patient may be fed on anything and everything, and this alone causes a marked improvement. To start with, the ileal efflux is watery and almost continuous, dehydration is apparent, and the skin round the opening gets sore. But the capacity to absorb water is soon acquired, and the outflow takes the consistency of putty and is discharged at intervals that may be as long as four hours.

As soon as the patient's condition will justify a further operation the diseased colon is removed. It can usually be resected down to the lower part of the pelvic colon or even the pelvi-rectal junction in one stage, but no more need be done than the difficulties at the time and the reaction of the patient to operation will allow, the proximal end of the remaining colon being brought to the surface when the incision is closed, to form the start of the next stage. With the patient fit again after colectomy, restoration is undertaken if it is considered advisable when the disability and the gain to be attained are set against the difficulty and severity of the operation. When the lower half of the pelvic colon and the rectum have been spared, restoration implies no more than implanting the ileum in the stump of the pelvic colon, and is obviously the right course to be adopted. But since ulcerative colitis usually starts in the rectum and affects the rectum and pelvic colon more than any other part, excision of the rectum is necessary in most cases to eradicate the disease; it also seems an essential preliminary to satisfactory water absorption from the ileum. When the rectum has been excised, restoration of the normal means implantation of the distal ileum in the anal sphincter, and implies first a conservative excision of the rectum, which in the presence of ulceration and perirectal fibrosis may be almost impossible, and later a difficult dissection to reopen the old rectal bed and transfer to it the mobilized ileum.

Regional Enteritis

Crohn's disease, or regional ileitis, can lay as just a claim as any to be a new disease, for it was first described as an entity by Crohn, Ginzburg, and Oppenheimer in 1932. Single cases had been reported as rarities by previous observers, but these authors were able to study a series in Mount Sinai Hospital, and to establish the clinical and pathological features of the condition. Since their paper it has been shown that the changes peculiar to this infection are not limited to the lower ileum, but may occur higher, and even in the jejunum, so that regional enteritis is probably a better term than regional ileitis.

Regional enteritis is a non-specific granulomatous infection of unknown aetiology, progressing steadily and ultimately fatal unless treated surgically. The affected segment of bowel is thickened, rigid, and red or purple in colour. Its lumen is reduced usually to the diameter of a pencil or even smaller. On laparotomy the appearance is characteristic, the thickened rigid bowel, the sharp demarcation at each end of the affected segment, and the extensive involvement of the mesentery over the same area being unlike anything else. In microscopical section the wall of the intestine is seen to be almost entirely replaced by vascular granulation tissue, with large foreign-body giant cells, but all tests for the tubercle bacillus are negative.

Clinically Crohn's disease may be met with in many puzzling forms. Perhaps the most typical picture is that of a young man or woman who has been ailing for two or three years, losing weight steadily and showing obvious anaemia. During this period there have been attacks of cramp-like abdominal pain accompanied by mild diarrhoea and a moderate pyrexia. Other cases, progressing more rapidly, resemble subacute appendicitis; indeed, the differential diagnosis from recurrent appendicitis may be very difficult, for there is usually tenderness and often a lump in the right iliac fossa, and only occasionally can this be recognized as a tubular ileum,

because of the mesenteric oedema that obscures its outlines. Others develop spontaneous muco-cutaneous fistulae. In others, again, the symptoms of obstruction predominate. A barium meal will often solve the puzzle by showing a narrow rigid channel replacing the normal outline of the lower ileum.

The treatment of regional enteritis is essentially surgical. No spontaneous cures have been reported, and without operation fistulae appear or obstruction supervenes. Many patients are too ill to stand resection when they are first seen, and in them an anastomosis must be made between the ileum above the disease and the transverse colon in order to rest the affected segment and avert obstruction. A few so treated may regain their health without further operation, but Mixter has found that in the majority treated by excision alone the disease is not arrested, but continues to spread. Resection of the affected segment with as much as possible of its mesentery and at least two inches of healthy bowel above and below it must therefore be looked upon as the correct treatment, to be undertaken as a primary operation in those who are able to stand it and after exclusion in those who are gravely ill. Since the disease commonly affects the terminal ileum, resection usually implies removal of the caecum and ascending colon in addition. It is as yet too early to speak with any certainty about the permanence of cure. Berg had no recurrences in thirty-two resections among Crohn's cases, but others have seen them. Shearer and Jackson report two separate recurrences in the same patient, each following a wide resection.

Two Conditions for Surgical Advance

In discussing changes in surgery we must beware of accepting the view that change and progress are synonymous, that what is new is better than what went before, or even necessarily good. The study of diseases newly arrived or newly handed over to surgery provides us with interest, but our enthusiasms should be reserved for those changes, often very simple ones, that lead us to something better. If we consider any condition now treated by surgery and ask ourselves, "How can we improve the results we are getting to-day?" we can find two simple answers: first, by getting the disease at an earlier stage, before it has spread widely, before it has injured adjacent parts, before the patient is ill; secondly, by modifying our operation to give the best possible results. Both of these demand not genius, not brilliance or technical skill, but independent observation and constant hard work. Disease in its early days is betrayed by symptoms; signs belong to its later and less happy stages. By watching our patients carefully, by listening without prompting, by recording their story, however irrelevant it may appear at the time, and by comparing our notes with the exact knowledge brought to us later in the operating theatre, the laboratory bench, or the post-mortem room, we shall acquire a store of material from which we may be able to build new clinical pictures—pictures that we shall recognize when they come again, that may allow us to disentangle new diseases from the mixed class in which they are now hidden, and to recognize old ones at an earlier stage. I need only remind you that it was by such methods, nothing more dramatic, that Moynihan first drew the picture of duodenal ulcer, showed it to be not a rare disease but one of the commonest, and laid the foundation of a reputation that has seldom been equalled. By such methods my colleague Ryle has made contributions to clinical science that stand as models of accurate

observation, conscientious recording, and painstaking analysis.

An outstanding example of that careful study of results which allows an old operation to be remodelled, so that it is virtually a new one and certainly a better one, is provided by the work of Dukes and Gabriel in cancer of the rectum. Dukes's dissections have shown that the spread of this growth is entirely upward in hopeful cases, have laid the foundation for a safer and more satisfactory operation, and have justified the revival of conservation of the sphincters in high and early growths. Gabriel's careful study of results has shown that what the pathologist predicts does actually take place.

Problems for Solution

There are few problems that we cannot hope to resolve by inquiry along these two lines. We are all depressed by our results in cancer of the stomach. But if we can trace some clinical feature in the earliest phase of departure from health common to all those patients who later come with advanced growths, we may hope to get more in that very small group where radical resection is possible. If we can discover, by detailed microscopical dissection of the removed specimen, where the resections we now perform are not wide enough and learn by the study of post-mortem examinations where recurrences appear after operations that seemed hopeful at the time, we shall have knowledge that will enable us to modify and to extend our surgery in directions that will increase the proportion of cures.

Other growths will be brought within our reach by means no more spectacular. The first successful resection for cancer of the oesophagus was twenty-five years ago, but till 1936 the operation had only succeeded six times, and the mortality was within a decimal point of 100 per cent. Six months ago I saw three cases successfully treated by Garlock of New York, and two more by Woosky of Toronto—that is, five in one year by two surgeons. We may predict that the mortality of this operation, in the hands of expert surgeons, will be reduced below the present mortality in cancer of the stomach, and that the cure rate will be much higher, for oesophageal growths are of lower malignancy. We only need the clinical picture that will allow us to recognize the disease before obstruction appears.

Change is everywhere, and change is desirable, for change is life. Only when we are dead do our osteoblasts and osteoclasts cease their tireless moulding and rebuilding, and our skeletons remain a changeless memory of the shell that once held our sorrows, hopes, and fears. It is good to live in a period of change, to be concerned with the changes that are taking place in our art, to know that they are changes for the better, and to realize that among our fellow-countrymen and fellow-townsmen are names that will always be remembered as leaders of the advance.

At the annual meeting of the international committee of the campaign against charlatanism held during the Brussels Medical Congress on April 17, when Dr. Robert d'Ernst of Geneva was elected president, the following expressions of opinion were adopted: (1) The title of "doctor" before the surname should be exclusively reserved for doctors in medicine, surgery, and obstetrics. (2) The practice of physiotherapy should be reserved exclusively for qualified doctors. (3) Glasses should only be supplied by opticians on a doctor's prescription.