SURGERY 1900-1950

BY

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It must be understood that I have no hopes that these lines give more than a bare outline of the advance of surgery during the past fifty years. Life is too colourful, too many-sided, and too rich to allow itself to be pictured in a few words or for anyone to catch the likeness of an age in a few happy sentences. Samuel Maitland once said of the writing of history that its essential matter was not what happened but what people said and thought about it, and in our time Toynbee holds that facts never speak for themselves, ideas being the machine-tools of the mind, the clues of motive and of action. So, in attempting to attach values to the progress of surgery during the first half of the present century it should be the scientific theories, the applications of discoveries, and the humanistic concepts proper to them to which we should most attend. And since they all emanated from people it is impossible to avoid making this story largely that of individuals.

Everyone is so well aware of what are the surgical activities of to-day that these need no detailed advertisement, and indeed so great are they that the history of each separate branch of surgery in this period of survey would make a sizeable book. And in writing these words, "in each branch" of surgery, the idea comes to mind that it might be more worth while to look back at what was happening fifty years ago than to attempt a comprehensive description of what is happening now, a review that would fail to do either justice or honour unless it were undertaken by a whole brotherhood of particular specialists. We should together be able to say that the years 1900-1950 were characterized by a great advance in certainty, in assurance, and in understanding of the natural history of pathological entities.

Once the prejudices against operation had been overcome (and important objections came from estimable people within the ranks of the profession—notably in thyroid diseases) it became possible to observe disease processes in their early stages before the development of those complications that formerly brought them to the post-mortem room. Moynihan, of course, summed this up in one of his popular phrases, "the pathology of the living." Again, one of this master's dicta, "We have made surgery safe for the patient, we must make the patient safe for surgery," would almost suffice as a motto for the age. But the times when persons believed that verbal felicities could either solve serious issues or unravel a scientific uncertainty are past; the spell-binders are gone.

These great men of the past—Moynihan, Murphy, the Mayo brothers, and George Crile, and some of the Continental leaders, about whom it is impossible to write without almost Dickensian hints of caricature in spite of the intense seriousness of their purpose—have few if any counterparts among the more serious and less flamboyant figures of to-day. Notwithstanding, the conception that surgical therapy consisted in a great deal more than the actual operation itself has been one that this century invented, with emphasis on post-operative care (and here I must recall the beautiful work of W. Pasteur (1913) on acute lung collapse after abdominal operations) and then, later, on preoperative. Moynihan, who was despite his conceits a very great man, had much to do with both of these advances, as has just been said.

Surgery Fifty Years Ago

Let us, however, return to our purpose and look at surgery as it was fifty years ago. A man surveying the previous fifty years at the end of 1899 must necessarily have found it an intensely exciting period to look back upon, more so in most respects than our own. There is not much that we do to-day that surgeons were not doing then; we do things better and more often, technical inventions allow us to be more venturesome, more exact, and more successful, we have new aids that they were denied. But since the 1880's something almost magical had happened, the release by Lister's work of surgery from the bondage of wound infection. The speed with which the new principles were applied derived from the fact that the surgical world already knew what it ought to do, and had been impatient to take advantage of safety when it came. I imagine that if anyone were given the choice of the most fertile fifty-year period the best would be 1880-1930.

The first successful gastrectomy had already been done in 1875, the first successful gastrectomy by Billroth in 1881, Mikulicz first sutured a perforated gastric ulcer, whilst posterior gastro-enterostomy had been introduced by von Hacker in 1885. The Murphy button had been invented in 1892, the Robson bobbin the same year. In 1903 total gastrectomy had already been done 16 times and with 10 recoveries, as Moynihan recorded in his description of his own first and unsuccessful case. Surgery was therefore well under way. Lawson Tait had done the first successful cholecystotomy in 1879, a fact remarked on by D'Arcy Power (1913) in his review of his own series of 73 cases between 1900 and 1912, but in 1908 Kehr had already collected 2,494 gall-bladder operations, many of them having been operated upon before 1900.

The only real difference in the statistics now is the great increase in numbers and the low mortality brought about by better diagnosis and earlier operation. Bland-Sutton recalled a successful splenectomy of his own done in 1895 and remarked on the improvements in the choice of cases for splenectomy, which he dated from 1890. Mayo Robson in 1903 could already review a personal series of 2,000 abdominal operations over a thirty-year period. He had 600 operations on the gall-bladder to his credit and had taken stones out of the common duct in 150, in the last 50 with a mortality of only 1.5%. He had performed 103 posterior gastro-enterostomies, with 3.8% of deaths. Mayo Robson mentions W. W. Keen's collected series of 20 cases of partial hepatectomy with two deaths, and Sir Henry Morris's 34 nephro-lithotomies with 33 recoveries. Robson himself had removed the kidney 112 times since 1892 with three deaths. In the pelvis, following on the lead given by Clay, of Manchester, in the 1840's, ovariectomy became so safe that Lawson Tait in 1885 had 139 cases without a death. The ruptured bladder had been sewn up, with recovery of the patient, by Sir William MacCormack, whilst Sir William Macewen and Sir Victor Horsley had already shown that notable successes were to be won even in the difficult terrain of the central nervous system. We have in fact to this day hard work to equal Macewen's results in brain abscesses.

The Great Wars

It would be fair comment to say that surgery had already advanced on a wide front and at great speed when the nineteenth century closed with the death of Sir James Paget. The practice of asepsis championed by von Bergmann was beginning more generally to supersede the strict Listerian ritual, and the prevention of wound infection had

reached a high enough level of efficiency at the outbreak of the first world war for surgeons to be able to look forward to the surgery of battle casualties with great confidence. How utterly their expectations were upset is now an old story. An aseptic technique went no further than the avoidance of implantation of new contaminants into wounds already deeply mired. The surgeon's pride was quickly humbled and he was soon listening with eagerness to anything that bacteriologists such as Sir Almroth Wright, Sir Alexander Fleming, and Leonard Colebrook could tell him not only about germs but about antiseptics. It was clear that experience in civilian practice had unfitted surgery for the case of grossly infected wounds, and we had to turn back in our tracks to Listerian principles.

The second world war at last found us with improved bacteriostatics and especially with the antibiotics that mankind so far had lacked, the latter because of the inspired observations of Fleming and the ingenuity and determination of Florey. This time there was in the end a different tale to tell, one in which only the first few chapters have been written, for the quest is not yet over. But that we have progressed so far as we undoubtedly have in the arrest of pyogenic processes is something of which all branches of medicine can be proud; the surgeon because, although he owes the new substances to others, their correct application remains his own proper work.

The occurrence within the last fifty years of the two most far-reaching wars that mankind has had to fight is of course this century's most important feature. In the South African War, still unfinished at the beginning of the century, the debonair figure of Sir Frederick Treves (so well depicted in the famous "Spy" cartoon) typifying the age—confident, trim, competent, adventurous, relatively wealthy, and extremely independent, doing what he could for the wounded in an Army that found the difficulties of Spion Kop and the Tugela River beyond both its experience and its expectation. But, like the Franco-German War thirty years before it, its surgical lessons, unlike its epidemiological, did not deeply impress practice.

Out of the two cataclysms that followed came very definite and permanent profits to offset a fraction of the misery and losses that they inflicted on mankind. The problems of infection have been mentioned, but there were many other gains: the institution of blood transfusion as a matter of vital and everyday consequence, a new insight into the intricacies of surgical shock, the care of fractures as a matter for trained specialists, and, perhaps above all, the value of team-work and the formation of teams embracing not only the actual operations but the treatment and management of disease generally. So firmly had team-work been established in the twenty years between the two great wars that the second found us not only materially but intellectually vastly better equipped to meet the even greater challenge. How well it was in fact faced and dealt with not only by the Services but by the E.M.S. of the Ministry of Health is a subject of such recent memory as to require no comment; the "Medical Histories of the War" when they appear will set it all on orderly record.

The Age of Specialism

The mention of team-work brings to the forefront something else, something that has been, as a generalization, a most characteristic feature of the past fifty years—the rise of the surgical specialisms. It has been those that have most sharply pointed the team spirit. If the period has to have proper names one would be the "Age of Specialism," but since specialization has been the natural

outcome of increased knowledge and of surgical skills it will be remembered as no more than the first half-century of something permanent. Most of those who deplore this alteration, this production of branches by a growing trunk, have nevertheless realized its inevitability. But it will do no harm to recall that the necessity for specialization was already clear to some as far back as the 1890's.

In his 1895 Address in Surgery at the Annual Meeting of the British Medical Association, Jonathan Hutchinson strongly urged it. He made a review of the expansion of surgical activities since the 1850's, when, he said, one operating day a week sufficed for most of the great hospitals of London. Even in the 1900's the same room frequently did duty as both lecture hall and operating theatre. In company with Spencer Wells he had published in statistical reports in the *Medical Times and Gazette* each three months during 1856-1858 the operations and their results in London's important hospitals. The commonest operations had been for amputation, for breast tumours, and for strangulated hernia, of which last over 50% died. In addition, in a three-months period, of 13 lithotomies 3 died, and of 6 lithotrities 2 died. Arterial ligatures were relatively rare (in contrast with the popular idea of those times now). But in 1857 Erichsen had successfully removed a ruptured internal semilunar cartilage, and Fergusson not only excising upper jaws but fashioning new noses.

During forty years not only had the mortality of all operations fallen in a most encouraging way but the rarities had become commonplaces of everyday performance. Success rather than failure had become statistically probable. But how was a man to keep pace with the new development, to be equally skilled in everything? It was clear to Hutchinson that he could not pretend to be—what was more, that it would be wrong to make that pretence. As an illustration he took the treatment of stone in the bladder. He had, he said, been very successful with cystotomy for this condition, but of late years some surgeons had acquired great dexterity at crushing stones and washing out the fragments (Bigelow's litholapaxy). His own attempts at the new operation did not satisfy him, so he handed future cases over to a colleague adept at the new practice. He then made a remark which is as ingenuous and as sincere and as wise as any saint's—"I assure you that I regard the results of my practice in this department ever since I ceased to operate with my own hands with the utmost satisfaction and pride." The Victorians were not wrongly called great! For that is the statement of a great man, and it epitomizes the basic necessity for specialization.

The plea in reverse was also given by Hutchinson by his recalling a certain Mr. Gutteridge, of Birmingham, who claimed that he ought to be made "Lithotrotist to Great Britain" for the sublime reason that he performed the operation better than anybody else. How many of us have sheltered Mr. Gutteridge's ghost in our hearts for brief periods until some disaster shattered our pride? But it is not only because so many operations are done much better by the few but because they are done so much worse by the many that specialism has taken root.

Some special hospitals had already come into being in Hutchinson's day, chiefly in London, but many were in the Provinces. They were for diseases of the eye and ear, for obstetrics and gynaecology (with a now old-fashioned distinction between the obstetric physician and the gynaecological surgeon), for nervous diseases, for chest and heart affections, and for skin and venereal disease. Great though their contributions have been and still are, we would to-day rather see them not only as part and parcel

of general hospitals but on the same site, a commonwealth sharing staff and exchanging opinions in daily communion.

Abdominal Surgery

The specialisms within the corpus of what had hitherto been general surgery were more crisply defined in the second half of our fifty-year period than they were in the earlier years. Before the first world war and just after it British surgery was much influenced by trends which might or might not survive, inspired by individuals. Notable among these were the work and personality of Arbuthnot Lane. He had brought asepsis, especially in the plating of fractures, to a singularly high pitch, having developed a "no touch" technique in which nothing but the instruments were put in the wound. Lane was an ingenious, inventive man, as his work generally showed, not least in his explanation of the effect of skeletal stresses on bone shape and formation. When he carried this into the abdomen and pointed to the peritoneal bands and folds as protections against gravity which often overdid their purpose and caused chronic obstruction, reason outran common sense.

"Intestinal stasis" was held to be the clue to the cause of many diseases and the explanation of a horde of abdominal discomforts. This led to a riot of operating by and on neurotics either to divide bands, to remove colons, or to fix organs. It was the era of theoretical anatomy run mad whilst her sister physiology, who knew the answers, slept; they lay in neuromuscular mechanisms, as Cannon and Alvarez reminded a surgical world temporarily deaf. The Lane period in surgery would have delighted a Voltaire. Everyone was infected by it, but some had the disease much more lightly than others and were thereafter immune, and of it all Wilkie's duodenal ileus seems to be the sole but very uncommon survivor.

A notable sceptic to Lane's doctrines was Berkeley Moynihan, at his best in those years before an unparalleled worldly success had had time to spoil him. It was Moynihan with his gifts as a surgeon who first really created the specialism of abdominal, and especially of upper abdominal, surgery. Here was a man with all the qualities, intelligence, ambitions, devoted, indeed dedicated, to his art, extraordinarily dexterous as an operator, and persuasive to a degree. Under his leadership abdominal surgery fairly jumped ahead, and very considerable additions were made to knowledge of the earlier stages of visceral disease, "the pathology of the living." It was his boast that he had shown the way to make abdominal operating as safe as it could well be. There were critics who said that this had been an ill-service to mankind, encouraging useless and unnecessary operations. It cannot be doubted that to this day there are too many abdominal explorations, although the teaching centres have rid themselves of this pest. Diagnosis has become more certain thanks to the aids of biochemistry, radiographs, Graham's test, intravenous pyelography, and so forth, but not least a close study of the patient himself and of his body fluids.

Greater knowledge of the natural history of the ulcerative and infective processes of the gastro-intestinal tract has played a large part in redressing the balance. In fact, the part that applied physiology has played during the past few decades has been a powerful one. For instance, when the 1900's commenced, the recognition and operative treatment of appendicitis was a burning question, but the battle was soon won thanks to the brilliant teaching of Murphy, Treves, and others. Soon every young surgeon throughout the world was doing great service, but it remained for more recent years to invent the answers to

the complications of appendicitis, general peritonitis, and ileus in particular. Even more revolutionary has been the preliminary management of intestinal obstruction from whatever cause by continuous gastric suction, fluid replacement, and the care of blood chemistry balance. The study and prevention of dehydration have been a major step forward. A surgeon of fifty years ago would rub his eyes in surprise at the changes that have happened here, for in his day everyone was immediately and incontinently operated upon, but with only moderate success.

Physiology has intervened in a most gratifying way in all branches of surgery, a point on which too much emphasis could not be laid. Most of the great advances in the treatment of thyroid diseases have a biochemical basis, and it is due to this as much as to increased practice in operating that all surgical treatment has been brought to so high a pitch of perfection.

Although Moynihan was the key figure in advances in abdominal surgery they were pressed forward by others who were not his actual disciples but had the same interests. At one time D'Arcy Power was a leader in London, surgeons coming to Bart's as pupils to see his gastro-enterostomies. There were Rutherford Morison and particularly Grey Turner in Newcastle-upon-Tyne; Arthur Burgess, Garnett Wright, Rayner, and of course John Morley in Manchester; Thelwall Thomas and Kelly in Liverpool; the Barlings and Sampson in Birmingham; James Sherren, that great man H. L. Barnard, Lockwood, Rowlands, Sir Percy Sargent, Sir James Walton, Zachary Cope, H. J. Paterson, and Pannett in London. The provincial surgeons concentrated on abdominal surgery more than the London surgeons, but it was perhaps a matter of opportunity above everything, since the provincial centres tended to place a much greater material in few hands. Very high technical skill tended to be greater in the provinces (so the provinces thought, probably rightly).

Outside Influences

British surgery being part of a confederation in a scientific sense, it would be wrong to omit mention of other schools of surgery. Europe had as great an influence on British surgery until the first world war as had America, and in the last century it had a much greater. It was the German politicians who destroyed German and Austrian surgery. No one can look at the family tree of Viennese surgery published in Schönbauer's book (*Das medizinische Wien*, 1947) without a feeling of wonder that so many great men should have come from the Billroth (1829-1894) stem. There were von Eiselsberg, von Hacker, Czerny, Wölfler, Mikulicz, Wagner, Sauerbruch, Clairmont, Ranzi, and now Denk and Schönbauer. Apart from these were von Bergmann, the chief proponent of asepsis, Bier, Volckmann, and, later, Küttner, Payr, and the elder Rehn. In Switzerland were the Reverdins and Roux, whilst Kocher in Berne had a great effect on British surgery, possibly the greatest of all in the 1900's, partly because of his own intrinsic merits, which were very great, and partly through the advocacy of Harold Stiles, who translated his great textbook. Kocher was surely a great man, an experimenter as well as a surgeon. In Brussels was Depage, in France there were the great figures of Doyen, of Henri Hartmann, Quènu, Jaboulay, Duret, Delorme, Delbet, of Theodore Tuffier (whom some considered the best-balanced surgeon in Europe). More lately there was the rise of the Scandinavians and Dutch, Einer Kay in Stockholm, with Schomacker and Noordenbos in Holland. All of these men made notable contributions to surgery, and many of them genuine innovations.

Of the Americans we remember W. W. Keen and especially Halsted with the Baltimore school that rose from him in a way reminiscent indeed of Billroth's, so that there was until recently scarcely a chair of surgery of any importance not held by a Halsted pupil, the most notable being Harvey, Cushing. Besides there were the independents, J. B. Murphy, the Mayos, Howard Kelly, Hugh Hampton Young, and George Crile, not to mention others such as Jackson and Coffey, whose stars rose and fell with the now exploded mechanistic myths of visceroptosis, recalling the Curtis belt, that hall-mark of the psycho-neurotic.

All these and many more whose names ought to be included not only wielded influence but greatly influenced one another not only through the increase of surgical journals but through international meetings and personal visits. On the whole the Continental leaders adhered to the doctrine of the all-importance of the professor who was polyvalent in all branches. Specialisms were little encouraged, because so many of the surgical chiefs of staff came to believe that it would be a serious loss of prestige if they admitted that someone else could handle a case better than themselves. Often they did not permit their juniors to have independent opinions or to discuss the foundations of their own. From these dreadful dogmas British surgery has been happily free: the worst that could be said about ourselves is that some seem to have had the ideal of performing like gifted amateurs at a difficult sport, as "gentlemen" rather than "players." One must admit that the idea has some charm, but at cricket it is the performer who gets out if he is rash. Undoubtedly our own age has seen the rise of the professional, a change made inevitable by the economic suppression of elegance (and a great pity that is) and also by the actual pressure of the work itself, which now leaves little time not only for fal-lals but also, and that most unhappily, too little opportunity for the general cultural self-education so necessary to happy existence and one that should continue throughout life.

It was always a mystery to the visitor to the Continent in the 1920's and 1930's that its knowledge of British surgery was so meagre. Continental surgeons were "insular" stay-at-home more than were we, so the sound common sense and sympathy with the patient's feelings and hopes that have always dominated British medicine were not seen by them at the bedside and were not appreciated. But it has always seemed to me that the British surgeon had not been able to get published the monographs on particular diseases or on important fragments that seemed to be so much more easily accomplished by his French and German and Scandinavian brothers. We have not yet found a way to remedy this defect, surely a serious one. We write many good textbooks for students, but the Continent no more reads those than we theirs (for that matter they are not so strong as we in that line). We have expanded our journals considerably, especially those that deal with special subjects.

The foundation of the *British Journal of Surgery* in 1913 under the most able editorship of Hey Groves, of grateful memory, was a notable event in the history of British surgery. It remains without a superior anywhere under Sir Cecil Wakeley. Equally the formation of the Association of Surgeons with the object of forming a meeting ground for all kinds of surgeons was a step forward, though it meets too rarely to exert as much influence as it might; whilst the reform of the Royal College of Surgeons, which Jonathan Hutchinson had called "a Golgotha of skulls," has somewhat dimmed its light. Reforms started by

Moynihan but made really effective by the inspiration of Lord Webb-Johnson increasingly spread a beneficent influence, especially directed to the young entrant into surgery. It has added to its museums lively laboratories for active work. Another Moynihan creation and fine idea was the Empire Postgraduate Hospital at Hammer-smith, where Grey Turner devoted his life to the new idea.

The Surgical Specialisms

The first war found the great surgical triumvirate by degrees in power—Moynihan, Sir Robert Jones, and Sir Harold Stiles. As their aids were Sir Anthony Bowlby, Sir George Makins, and Sir Cuthbert Wallace, with Sir Charles Ballance and Sir William Thorburn in the Mediterranean. It was from their collective work, helped by a select number of ardent and skilful young men who then and later made names for themselves, that the considerable advances in surgery mentioned above came. Abdominal surgery crystallized out whilst orthopaedic became once for all an established specialism. This was largely due to the inspiration of Sir Robert Jones, a truly remarkable figure, a modest man of vision and in fact of genius. His band of disciples—Sir Thomas Fairbank, Aitken, R. C. Elmslie, Sir Harry Platt, Rowley Bristow, Gaythorne Girdlestone, T. P. McMurray, and Naughton Dunn—created this division of surgery under Robert Jones's benign fatherhood. Biochemical advances and improved midwifery quickly made much of old-fashioned orthopaedic treatment unnecessary and instead canalized its activity into the treatment of industrial wounds and fractures, so important a service to the community.

Another great specialism already born for some years at the time of the first world war was neurosurgery, and in its advance suction and diathermy, new in the 1920's, had a great influence. But although its technical advances have been enormous in this half-century in the hands of A. A. McConnell, Sir Hugh Cairns, Norman Dott, and others in Britain, not to mention their elders, Sir Victor Horsley, Cushing, Frazier, Sir Percy Sargent, Dandy, Sachs, and the unique Wilfred Trotter, the chief change has been in mental outlook, in the growing contributions of the surgeons to neuro-physiology. Gone are the days of "barber-surgery" at the command of physicians, and instead a partnership exists. The same is true of thoracic surgery, the triumphs of which have been many lately in the public eye, with such ingenuities as the surgery of congenital malformation of the great vessels, thanks to the work of Blalock, Crafoord, Brock, Sellors, Bryce, Allison, and many more. And here must surely be paid a tribute to Morriston Davies as a world leader in thoracic surgery. His unlucky disablement at the height of his youthful powers restricted the magnitude of the contribution that he would have made, though not his influence. Surgery's grateful thanks should also go to the lamented Tudor Edwards, on whom the mantle of Davies descended, and most nobly he wore it.

Anaesthesia

That surgery owes a great debt to anaesthesia and the skill of the chemists in providing vast improvements is very plain. The change has been not only in the agents and technique of anaesthesia but in the discovery of hypnotic agents for the pre- and post-operative sedation. The abdominal surgeon of to-day must be grateful indeed for the advantages that curare gives him, whilst much of present-day intrathoracic surgery would be quite impossible were it not for the ingenuity and skill of the anaesthetists. The cumbersome pressure-changes of earlier years are

indeed gone with the wind. In neurosurgery it is the same story, but it is the same story everywhere. It is a pleasure to record the indebtedness of surgeons to the anaesthetist whose understanding and expert partnership have won him a new respect and importance. It is right and proper that much of what has happened should have been of British origin, because for at least two generations we have led the world in this vital matter.

No record of the time would be complete without mention of urology, dominated in its middle period by Thomson-Walker, that master of endoscopy like his follower Macalpine. The surgery of the prostate alone would call for a long chapter, with biochemistry again to the fore in the case of carcinoma, the development of the cold-punch technique, and Hey's championing of prostatectomy for retention—all most important advances. Similarly, no more than a bare mention can be made of plastic surgery, a subject in which Britain has for long been in the world leadership under the guidance of Sir Harold Gillies and his coadjutors, T. P. Kilner and Sir Archibald McIndoe. In surgical pathology the work of Sampson Handley on breast carcinoma and the melanomas clarified the distinction between embolism and the process he named lymphatic permeation. This was an addition to knowledge of lasting value; comparable to it were the researches of Jamieson and Dobson on the visceral lymphatics. Nor should Sir Lenthal Cheate's microscopy of chronic interstitial mastitis and Paget's disease be overlooked.

Conclusion

Looking back over the foregoing there have been a hundred omissions of men who deserve our gratitude and thanks, whose quiet and unassuming work has fortified and held the lines of communications of the more glamorous few. For although we cannot do without the adventurers it is the solid body who do the work, who accept the good and quietly discard the valueless. These men whose worth is often realized only by their near colleagues do invaluable services to mankind. But there are other names who clamour for more description of their work; Wilfred Trotter, who was the greatest intellect of them all, but will not fit into any scheme, has hidden himself somewhere. Perhaps his advocacy of the treatment of malignant disease in a rational way and not as a purely anatomical exercise in formal excisions would have most interested a Paget or a Hutchinson or a Billroth.

Nor has Victor Horsley's part as an experimenter and innovator been given sufficient place. Nor, again, is A. E. Barker here to whom we owed the development of local analgesia in this country, a debt indeed. And so, too, Butlin and Makins, Ernest Miles and Lockhart Mummery are not in the list, though they should have been, as should A. H. Tubby, the author of the most comprehensive work on orthopaedics in English. And what of Sir Thomas Dunhill, to whom we owed the modern operation of thyroidectomy and improvements in the management of thyrotoxicosis—and of Joll and Morley, who contributed so largely to this subject? And of Keynes's work on thymus and thyroid? Also omitted is the surgery of the sympathetic nervous system in which Stopford and Telford, Gask and Paterson Ross and James Learmonth pioneered; and not least in the surgery of malignant disease, in the developmental period of radiotherapeutics, the names of Sir Ernest Rock Carling and Sir Stanford Cade deserve gratitude not only for their technical skill but for their common sense in matters that call for the utmost in balanced judgment, a commodity that single-minded enthusiasts often lack.

It would not be out of place in this *Journal* for a surgeon to lay some stress on the part that the general practitioner has played in passing on to his patients the new benefits that surgery could afford them. It is often to him as much as to the surgeon that a patient's thanks should be given for his cure. But the practitioner himself had to learn, and we should not forget the great student teachers, Russell Howard at the London, Reginald Vick at Bart's, Mitchiner at St. Thomas's, Julian Taylor at U.C.H., and a score of others in London and the provinces who would as soon be remembered for this work as for their other contributions to surgery.

So brief a précis of all that has happened, of all the knowledge that has accrued by the labours of all those who have devoted their lives to the various branches of surgery, is almost derisory in its baldness. A life-time of active work and rich result has sometimes had to be recorded by a name, and by no means all of these could be cast into the framework of a sentence. But readers know to whom the palms should be awarded and they will pay in reflection their own silent homage to those to whom it should be made. But this brief chronicle is already in danger of stretching itself too far; a line must willy-nilly be drawn across the page.

FIFTY YEARS OF MIDWIFERY

BY

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No span of fifty years has seen such great advances in midwifery as the first half of the present century. The principal milestones are the birth and growth of the idea of antenatal care, the discovery of vital fresh knowledge about the aetiology of puerperal infection, the discovery of the sulphonamides and penicillin, the notable improvement in the methods and results of caesarean section, and the increased facilities for and better understanding of blood transfusion. The conquest of "puerperal fever," for centuries the scourge of childbirth, would alone justify my opening claim, for it has transformed the maternal mortality tables of the Registrars-General. From this and other causes the maternal mortality has been falling more rapidly than the general mortality, and it looks as if in a few years the death rate of pregnant women—admittedly a selected class—would be less than that of non-pregnant women in the same age group. But while this achievement has been the greatest and the most spectacular, the growth of the idea of antenatal care has been the most pervasive influence, and has worked the most widespread changes in the obstetrical outlook.

The Idea of Antenatal Care

At the beginning of this century any special care deliberately devoted to the object of preserving the health of the expectant mother, of treating any unhealthy conditions during pregnancy, and of foreseeing and, if possible, forestalling dangers likely to arise in her labour, so as to bring her and her baby safely through, was virtually unknown. In that admirable standard textbook of the period, W. S. Playfair's *Science and Practice of Midwifery* (1898), there are several chapters on disease in pregnancy, but two paragraphs, mainly concerned with the control