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CONSERVATIVE SURGERY, THEN AND NOW.

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I confess to much embarrassment in complying with Article VI. of the By-Laws: "The President shall deliver an annual address at each meeting of the Association." The example of my distinguished predecessor had raised the standard of the presidential address so high that I was thrown into confusion. Lord Nelson, on going into his famous sea fight, raised the signal, "England expects every man to do his duty." So every loyal member of this Association ought to find his pleasure in responding to the call of duty. Thus reflecting, I brought myself into a calmer state of mind and began to cast about to find how I might most properly comply with your mandate.

The richness of our programs urged me not to trench upon the privileges of the floor, and so I sought some topic of general interest that might not too greatly tax your patience. I shall beg your kind indulgence while I talk to you in, I confess, a rather desultory way on "Conservative Surgery, Then and Now."

I have long been dominated by the feeling that we have not fairly appraised the achievements of the past, but have rather lent too ready an ear to the alluring claims of novelty. Novelty has too often been confused with

progressiveness, and progressiveness has been used too often synonymously with aggressiveness. The aggressive surgeon who always feels sure he's right, then goes ahead, would do well to temper the enthusiasm born of the present brilliant achievements of surgery by giving reverent heed to the admonitions of the past.

A recent writer has published the following strictures upon hospital surgeons: "Modern aggressive surgery has made the hospital into a hotel for the temporary care of the vivisected. All that the surgeon cares for is a room for his patient to occupy during the three or four weeks she is recovering from his incisions. She may then go home and get well or lead a life of invalidism, as it happens. To cure his patient and restore her to a life of usefulness and happiness is not the modern surgeon's conception of duty." No fair-minded surgeon will indorse such unjust criticism, yet most of us are ready to admit that more conservatism is needed, and that the growing tendency to regard surgery in its totality as operative must be combated. While I do not agree with the distinguished President of the American Surgical Association when he said in his address last spring

that an operation was a confession of failure, I do believe that the surgeon who regards no case as worthy of consideration that does not offer an opportunity for the display of his surgical skill must be counted as not making the most of the brilliant advances in diagnosis and treatment of modern times. We have mostly emancipated ourselves of the superstitions of the past, but are we sure that we are not really retarding the advance of surgery by yielding too readily to the seductive arguments of radicalism? In the past did not enthusiasm sometimes outstrip reason and prudence? Witness the mania for blood-letting in France, whereby, under the influence of Broussais and his followers, no less than 41,000,000 leeches were imported into France in the single year of 1833, when people were bled lying down in order that they might not faint before sufficient blood had been withdrawn; and yet Broussais was called by some a Messiah of medicine. And was not he considered the most skillful surgeon who could do the most brilliant operation? In pre-anesthetic days time was a factor of the greatest importance; quickness was essential to the safety of the poor sufferer. Many unnecessary amputations of the last century are to be attributed to this, and the success of the great Liston over his opponents in the famous controversy over the value of the flap amputation of the hip well illustrates how a whole nation may blindly follow a great leader who has the courage of his convictions.

Yet men soon came to their senses and began to ask whither they were drifting. In the squabble over the best method of amputation the main question had been lost sight of—was amputation at all required? Could not life be saved and the limb also saved? When John Hunter asked: Might not, for the cure of popliteal aneurism, the artery be tied where amputation would cut it? And having answered it in the affirmative, put it into practice on a patient, was not the surgical world aghast for a time? Yet Hunter prevailed, and his prop-

osition was afterwards pronounced one of the great conceptions of surgery. Men began to think under the stimulus of John Hunter's brilliant work. But progress in conservative surgery was slow. Its dawn began with Sir Benjamin Brodie, as related by Sir William Fergusson, who introduced the expression conservative surgery into practice. In the *Medical Times and Gazette*, 1852, Sir William writes: "The grand object of surgery, properly so called, may be defined, aphoristically, to be the preservation of the greatest portion of the body at the smallest possible sacrifice." He relates: "In 1824 Sir Benjamin Brodie amputated a leg for painful disease in the lower end of the tibia of twelve years' duration, which had resisted all treatment." He was wise enough to examine the amputated leg and found an abscess of the size of a chestnut at the seat of pain. Three years later in a similar case he applied a trephine, evacuated the pus and cured his patient. She was still cured nineteen years later. Can any one say that the one operation was less curative, less radical, than the other? The amputation may have been more spectacular, but the other was more commendable in conception and result.

Such operations, said Fergusson, are to be classed "among the most brilliant of modern surgery." The observation of Sir Benjamin Brodie marked an epoch in bone surgery, and indeed in surgery in general. Excisions and resections of bones and joints took the place of amputation, and surgeons began to be distinguished more by the number of legs and arms saved than by their rapidity in amputation.

How far in advance of Sir Benjamin and Sir William is modern bone surgery, is well displayed in the admirable article of Nicholls, of Boston, on the "Pathology and Treatment of Osteomyelitis," read at the New Orleans meeting in 1903 of the American Medical Association. As the result of such thorough investigations surgeons are beginning to learn the value of timely diagnosis of the true cause

of the fever of osteomyelitis, which has parted company with rheumatism and typhoid fever, so long the cause of diagnostic stumbling.

Your President in 1899 said in his address that true conservatism versus radicalism was one of the important problems for the twentieth century to solve. Happily, safer anesthesia, saner asepsis and sounder instruction in surgical pathology and diagnosis are making often the most radical surgery the most conservative, and the most conservative surgery the most radical, if by radical we mean the thorough eradication of disease. The modern methods of diagnosis, including all sources of information, from the careful study of the history of a case and its clinical manifestations, ending with the investigation of the blood and the body secretions and evacuations and the illumination of the cavities and tissues with electric light and X-ray, have helped us to locate more definitely the seat of the pathologic process and to localize and restrict our operative attack.

In renal surgery, for example, conservative and radical surgery display most conspicuously their coincidence. Here results demonstrate that often the most conservative treatment is also the most radical. As witness of this, what could be more striking than that case of Bransford Lewis's, in which, by means of the styletted ureteral catheter and radiographic plates, he found three independent ureters, two of them healthy, the third showing gonococcal infection, the cause of a recurrent gonorrhea of five years' standing. Through the means mentioned the anatomic anomaly was demonstrated; the physiologic phenomenon of supplying three different urines by one individual was proved, and through medicated lavage of the infected ureter, the source of infection was removed and the patient permanently relieved." That stricture of the ureter giving rise to renal destruction, might not only be diagnosed by ureteral catheterization during life, but actually relieved by incision through the cystoscope or dilatation with

ureteral sounds, has been demonstrated over and over again. Notwithstanding these brilliant achievements of the cystoscope and ureteral catheter, we still hear the remarkable advice given to determine the relative value of two diseased kidneys by exploratory nephrotomy and renal palpation. Again, while we may make a diagnosis of renal or bladder stone by the symptoms and urinary examination alone, still the advantage of employing all aids of clearing up our diagnostic doubts is shown by the glaring blunders sometimes committed, which might have been prevented by resort to cystoscopic and radiographic investigation and other means of diagnostic precision.

The case reported by Seelig of an appendiceal coprolith with ureteral adhesion, which had caused ureteral obstruction, demonstrated by ureteral catheterization, and shown by the radiographic plate to be due to stone, the real nature of the case only being disclosed by laparotomy, does not in any sense detract from the value of ureteral exploration and radiographic diagnosis. These, like the findings of the microscope, are only data furnished us; the determination of their significance lies within the domain of our reason and judgment. The instruments did not lie; they were only (mute) witnesses of a pathologic process, which the use of the knife interpreted properly.

The glory of the present day surgery, then, rests primarily upon more accurate diagnosis, but the refinements of scientific investigation must always be subjected to the criticism of common sense. Douglas Powell well expressed the sentiment I have in mind when, in his recent lecture delivered before Guy's Hospital Physical Society, he said: "There never was a period when we could see so minutely into disease as we can now, and as time advances our vision will become still more penetrating. It behooves us the more to preserve the range and proportion of things lest this finer insight may but enable us 'with finer optics to inspect a mite, not comprehend the heav'n.'"

The brilliant and penetrating searchlights—microscopic, radiographic, ophthalmic, auro-laryngo-spectroscopic, sphygmographic, cardiographic, not to mention electrophonic and other methods—must be used with discretion and not a little forbearance." All the defects of which we become aware, he says, must not be taken too seriously, but all our data acquired from every source must be duly weighed and put into their proper diagnostic relation before any plan of treatment is laid out. Only thus, by placing the facts in proper relation, may we hope to get a picture in true perspective of the disease. Only thus may we realize the hope of the old Latin author, "*Felix qui potuit rerum cognoscere causas.*" Only thus may we select the most conservative, and in many cases the most radical, treatment for the case.

The establishment at Cambridge of a committee for the study of special diseases, composed partly of men engaged in practice and partly of those engaged in research, is an important step in the right direction, and this is an example, as Powell says, which our great hospitals might follow by the establishment of a research ward for the clinical investigation of chronic maladies, in order to bring into line all the technical and other factors of diagnosis and treatment, which must be comprehensible to the practicing physician before they can be considered of real value.

It is becoming more and more characteristic of the modern surgeon that, whilst recognizing the value of data furnished him by the laboratory, he will relentlessly subject them all to the test of reason, and will only decide upon his surgical therapeutics when, after a thorough study of all the facts, he has obtained a true perspective of the case. When he shall have done that he must realize that he is but the handmaid, not the master, of nature. He will become conscious that he is not to take the place of the *vis medicatrix naturæ*, but to assist. Without this *vis medicatrix* he can do nothing, for when we have made a wound, can we make it heal if the power of healing

is not there? He removes the cause of disease and closes the wound gently and reverently, doing no violence which might interfere with the full exercise of nature's power. Then he waits and watches in full confidence of the result, believing that nature is only uncertain and capricious when she is abnormal. When properly assisted back to her normal province she doeth all things well. We are the bunglers because we often do not understand her ways. We are emerging, as Robert Morris has remarked, from the pathologic into the physiologic era in surgery. The valuable discoveries of Metchnikoff and Wright of phagocytosis and opsonins have emphasized the necessity of conserving the natural resistance of the patient, on which Lister laid so much stress even before antiseptic gave place to aseptic surgery. The surgeon who respects the power of nature will do only the least needed to set nature right. He will become really a conservative surgeon, his first object being to save life, his second to leave his patient as nearly as possible in the image in which he was created. He will do as much as may be necessary but no more. He will be radical as may be required, not reckless, and hence conservative. He will take advantage of the factors of safety of the human machine, as Meltzer has pointed out, and will allow the therapeutics of self-repair to have, as far as possible, command of the situation. No better illustration of my meaning could be given of the true conservative surgery which saves life with the minimum effective interference than Murphy's management of general peritonitis from ruptured appendix, or that proposition of Cushing's, made last year at the meeting of this society, of subtemporal decompressive operations in the treatment of bursting fractures of the cranial base. Any procedure attended by so little risk that can reduce the mortality from grave cerebral traumatism from over 50 per cent to 13.1-3 per cent, as in Cushing's hands, must surely be placed among the conservative life-saving operations;

yet most of us have been satisfied with the do-nothing policy, content to let these unfortunates die victims of a policy of masterly inactivity. Happily, this and other life-saving procedures have removed many of the opprobria of surgery, and place the surgery of this age of medical enlightenment in such marked contrast with the practice of Aetius, of the sixteenth century, who was such a good Christian Scientist that he recommended one of the following formulas for the extraction of a bone from the throat: "Bone, as Jesus Christ caused Lazarus to come forth from the sepulchre, as Jonah came out of the whale's belly, come out of the throat;" or, "Bone, I conjure you, by Blaises, martyr and servant of Jesus Christ, come forth or go down."

Anesthesia and asepsis and improvements in surgical technique have made possible a modern surgery that would have been simply astounding to men of the time of Fergusson, Brodie, Liston and Syme. "No man," as Mumford has well said, "has reckoned the immeasurable saving of life, the incomputable relief of suffering, the opening of new surgical fields." So safe, under the protection of anesthesia and asepsis, has become our operative attack that "daring has become conservatism, rashness has become common sense." But in nothing will be more conspicuous the advance of the future than in the development of conservative surgery. When Hunter tied the superficial femoral artery he did a great act of conservative surgery, but when, under the protection of the Esmarch bandage, the modern surgeon enters boldly the aneurismal sac itself, searches for the feeding vessels and sutures their mouths after the technique of Matas, he does at once a radical and yet a more conservative operation than the Hunterian, because he imitates more closely nature's mode of cure. With the possibilities opened up by the marvelous work of Carrel, Guthrie and others in vascular surgery, no man can set a limit to the progress of the future in conservative surgery. The wonderful results

of Bier's hyperemia treatment, the great advance in stomach and intestinal surgery, the surgery of the heart and lungs and kidneys would seem now like a fairy tale to old Dupuytren, the Napoleon of French surgery, who, suffering from an empyema, refused operation, saying he would rather die by the hand of God than by the hand of man.

What is more striking than the shock-blocking effect of the intraneural or intraspinal injection of cocaine, or the rapid resuscitation by transfusion of blood of a patient dying of acute blood-loss? I will not weary you by enumeration of the many triumphs of modern surgery. One field is only partially tilled; much has been done, but much remains to do, for cancer yet remains the opprobrium of surgery. Here conservative surgery has small place. The only conservatism that avails is to have the general practitioner send the case in time. Taken early, we feel hopeful of a large percentage of cure, but the late cases are often beyond our aid.

The address of Crile before the surgical section of the American Medical Association last June aroused great enthusiasm and raised hope high that an early diagnostic test and a cure of cancer was about to be discovered in the hemolytic reaction of cancer serum and the prophylactic effects of transfusion of normal blood. Weil has recently, as a result of his own investigations along these lines, raised some doubt concerning the value of these tests, but Crile's work has been so painstaking and his promises hitherto so cautious that we shall not abandon hope. Surely this is one of the greatest problems pressing for solution, and the man or men who can find some means of staying the progress of this wholesale destroyer of human life will merit the gratitude of the human race.

I have not pretended, gentlemen, nor have I intended, to give in the foregoing remarks anything more than a mere cursory glance at past or present-day surgery. If I have in a feasible way but thrown out food for thought

I shall be content. The noblest study of mankind is man. Let us continue to try to prolong man's life till old age shall cut him down, and let us preserve him, so far as possible, in his God-like form. Let us do the least required of us as surgeons to accomplish the most. In these days of "wolfish hunger after knowledge" no limit may be placed upon the possibilities of the surgery of the future. Already many affections have been removed from the province of the internist to that of the surgeon, who now saves life or cures disability where death or chronic invalidism was the rule. No wonder, then, the surgeon is accused of *cacœthes operandi*. Enthusiasm must have some check. While no man may prescribe a limit to the development of operative technique, let us not forget that our patients have a right to demand of us the best result. We should strive to save life, but the minimum of damage should be our aim. If we make it a rule to find out everything possible about our patient before we operate, we shall operate only when necessary, and shall reduce our operative attack to the minimum,

doing the work thoroughly but quickly. Whilst we may aspire, as John Collins Warren remarks, "to add to modern skill the speed of a former generation," we must remember that speed, not haste, is what we need. Moynihan neatly expressed it when he said: "Speed should be the achievement, not the aim of the operator." With these precepts constantly in mind, the operator will seek only the good of his patient; not the enhancement of his own reputation.

By correctly estimating the powers of our patient, avoiding all officious meddling, doing well but quickly only what must be done, having, as Sir James Paget expressed it, "the courage to do little" when more would be harmful, having always in mind, first and foremost, the cure of our patient, we shall best serve mankind and preserve our art from stain. Now we see the dying words of Goethe being realized—"Mehr licht." Let this be our watchword:

"Strong in will,
To strive, to seek, to find and not to yield."