ADVANCES IN SURGERY.*

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The history of the evolution of surgery is divided into three distinct epochs.

The first, which has been termed the primitive era, extended over the centuries from the beginning of man's first crude efforts to the discovery of anaesthesia.

Surgical progress in this age was so slow that its developmental periods in many instances covered hundreds of years. As in many other branches of human endeavor, there was in the primitive era a spirit of complacency and a sense of satisfaction with things as they were. The spirit of the time is most strikingly illustrated by Ambroise Pare, who states in his volume on surgery, published in 1579:

"For God is my witness and all men know that I have labored fifty years with all care and pains in the illustration and amplification of surgery; and that I have so certainly touched the work whereat I aimed that antiquity may seem to have nothing wherein it may exceed us beyond the glory of invention nor posterity anything left but a certain small hope to add some things."

The sluggishness of surgical progress during this period is evidenced by the fact that this work of Pare's was for over one hundred years a standard and that it was not until seventy years after its first publication in Paris that it was translated and used in England.

It is true that in the later part of this period an adventurous operator would occasionally invade a body cavity or attack a large vessel, but such work was limited to a very few men. Major operations as we now know them were more or less accidental; the greater portion of the surgery of the time was limited to what we now consider elementary work.

We cannot but feel, however, a deep reverence and a profound respect for the sur-

geons of the primitive age. While their greatest works may seem to us in the light of the present, inconsequential, inadequate, crude and oftentimes radically wrong in theory and practice, yet in view of the conditions under which they worked, the obstacles, both mental and material, which hindered them, the utter lack of operative facilities and, above all, the ever-present terror of sepsis, it seems that, comparatively, the accomplishments of the elder surgeons were in many instances as brilliant as the achievements of the surgeon of today who works with every conceivable aid at his command.

Such surgeons as Pare, John Hunter and Astley Cooper still have something to teach us. Before anaesthesia every operation was an anatomic dissection. So far as it went, the actual operative technic of the so-called primitive surgeon was perfect. The minute nicety and the painstaking care of his work was a necessity. Without anaesthesia, without antiseptics and without asepsis an operation upon a struggling patient involved a precision of technical skill and an exactitude of anatomical knowledge not always seen even in the greatest of our most modern clinics.

If we consider for a moment the surgical technic of the pre-antiseptic era, we may readily understand why the surgeon of that time looked upon the accidental or deliberate opening of the peritoneum with dread and horror; why plastic and reparative work was so uniformly unsuccessful; why the surgery of the brain, the spinal cord, the joints, the lungs, the kidneys and indeed all viscera was practically a closed book.

"Let us suppose an amputation above the elbow, and the operator the best surgeon in the Civil War. The arm was not specially prepared except that it would be cleaned of its

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coarse dirt arising from the accident, but that would be all. The instruments were taken out of an ordinary case and placed on a table, and during the operation were frequently placed upon the patient's clothing. If the instruments or sponges fell upon the floor, they would be picked up, dipped in water, and then used with innocent equanimity. The sponges, washed and dried from the last operation, were simply thrown into a basin of ordinary water. The hands of the surgeon were as clean as a gentleman would always keep his hands. The amputation having been done, the arteries were tied with silk threads, one end of each being left long. These ends were left hanging out of the wound at any convenient place. The flaps were sewed with wire or silk. In threading the needle, the thread would often be shaped into a point by the lips or would be rolled between septic fingers. At the end of twenty-four or forty-eight hours a "surgical" fever would set in. After a week or ten days the surgeon would pull gently on each silk ligature to see if it had rotted loose from the blood vessel and could be removed. Very rarely indeed would a wound heal without suppuration. If it did, it always excited remark and would be accounted a surgical triumph. Grave complications, such as abscess, erysipelas and gangrene were fertile sources of danger and very often of death; while secondary hemorrhage—that is hemorrhage following premature rotting of the ligatures on the blood vessels—was always a possible and frequently an actual and formidable danger to life. A serious operation from which the patient recovered in less than a month was a remarkable case." (Keen.)

Such technic was not the exception but the rule in all surgical procedures. One glance at the technic of the sixties would cause our modern operating room nurses to die of horror on the spot.

The discovery of anaesthesia and its first use by Dr. Crawford Long, of Georgia, in 1842, and the subsequent public exploitation

of the use of sulphuric ether by Morton and Warren at the Massachusetts General Hospital, in October, 1846, marks the commencement of the second or formative period in surgical evolution.

The formative period covered forty years and was characterized by:

"Two discoveries which revolutionized the practice of surgery—anaesthesia and antiseptics. The first abolished pain as a disturbing element during operative procedures and the second prevented suppuration during the healing process; together they effected a painless operation and healing of the wound by first intention—results hitherto sought in vain by the elder surgeons. These discoveries swept away the long established metes and bounds of the field of operative surgery and made it as limitless as are the diseases and injuries of the human body and man's desire to relieve them." (Stephen Smith.)

Modern surgery had its true beginning in 1865.

"When Joseph Lister published the result of his experiments and established the 'Germ Theory of Disease.' In 1858 Pasteur announced to the world that fermentation and putrefaction are due to the action of living micro-organisms and are therefore living processes. Up to this time inflammation and suppuration had been considered necessary accompaniments of a wound. Lister reasoned that if putrefaction and fermentation were due to the presence of germs and could be prevented by their exclusion, suppuration must be due to their presence and could be prevented by their exclusion. He demonstrated by experiment that a wound made in clean skin by clean hands and instruments and protected by clean dressings, would heal by first intention. The application of the germ theory has revolutionized the practice of medicine and surgery and has added thousands of years to human life. It has made possible the prevention and suppression of many epidemics

and has changed hospitals from pest houses to houses of refuge." (Moore.)

The deliberate invasion of the abdominal cavity began during the formative period with operations for drainage of abscess of the vermiform appendix. This was first done by Hancock, of London, in 1848, and a few years later by Willard Parker, of New York. Parker's work was copied and exemplified by various operators after the discovery and application of antiseptics with a reduction in the operative mortality of appendicial abscess from 40 per cent in 1848 to 15 per cent in 1882. The removal of the appendix itself was first planned and executed by Morton, of Philadelphia, in 1887. In this period, men in various parts of the world began conducting experimental surgery upon the lower animals and applying their findings to the human. Simon's pioneer work upon the kidneys, Gross' work upon the repair of intestinal wounds, Ferrier's classic studies of the brains of monkeys and dogs and many others paved the way for our modern attainments. Even a glance at surgical development should convince any semi-sane antivivisectionist that the surgery of today rests upon a foundation of anatomic and pathologic knowledge, anaesthesia, antiseptics and animal experimentation. The lives of a few animals have helped to relieve immeasurable human suffering and have added countless years to human life in the working out not only of the beginnings, but the refinements of surgical technic alone.

The formative period ends and the modern or practical period in surgical history begins in the late eighties with the epoch-making memoirs of two Americans. Fitz, of Boston, and McBurney, of New York. Fitz's paper on "Perforative Inflammation of the Vermiform Appendix" settled many perplexing questions as to the propriety and safety of the deliberate invasion of the abdomen.

"The time was ripe, the man appeared, and surgeons needing but the assurance of safety gratefully accepted this transfer from the

domain of internal medicine and began with alacrity to develop the operative procedure." (Kelly.)

McBurney's critical review and his conclusions mark the commencement of modern surgical practice. Howard Kelly has said of Willard Parker's work and its influence that "from the date of his teaching operative treatment of appendicitis began an evolution which ended in the revolution of surgery."

From that time surgery has progressed with leaps and bounds. Greater advances have been made in the past twenty-five years than in all the centuries from Galen to Parker. When we speak of recent "Advances in Surgery" we may cover almost the entire realm of surgical procedure and we are yet advancing so rapidly that surgical progress may be noted almost from day to day.

It is therefore within my province to touch but lightly upon a very limited part of our most modern surgical knowledge and practice.

SURGERY OF THE CHEST.

Intra-thoracic surgery has been until recently almost an untouched field, because of the great danger from collapse of the lung as soon as the pleural cavity is opened.

Heretofore, successful operations within the thorax have been practically confined to inflammatory and suppurative diseases of the pleura, or, rarely, abscess or gangrene of the lung itself where there is usually a wall of limiting adhesions which prevents a complete pneumo-thorax.

A complete collapse of one lung, while not necessarily fatal, always produces more or less circulatory and respiratory embarrassment. When both pleural cavities are freely opened, the result is almost always fatal.

To obviate these grave complications, a vast amount of experimental work has been done upon animals. Two lines of research have been followed; the first, that of negative pressure, or reduction of the atmospheric pressure on the exterior of the lung at the moment of oper-

ation, and, second, that of positive pressure, or increase of pressure within the lung itself.

Work upon negative pressure has resulted in the invention of many ingenious chambers and cabinets from which air may be exhausted to any desired pressure.

Most brilliant intra-thoracic work has been done under negative pressure, yet an efficient apparatus is so unwieldy and so costly, so difficult to operate satisfactorily and the surgeon and assistants are so encumbered and handicapped by having to work in a reduced air pressure that this procedure probably will never become universally valuable.

Of many more or less satisfactory devices, the intra-tracheal positive pressure anaesthesia of Elsberg is productive of most brilliant results and will revolutionize not only the surgery of the chest, but of the heart as well. In Elsberg's method the patient is first etherized in the usual manner, after which the anaesthetic is continued by forcing warm air and ether vapor through a tube which has been passed through the larynx into the trachea. The differential pressure and the amount and proportion of the anaesthetic vapor are under perfect control. Respiratory movements are practically suspended during the administration, and this is an important factor in delicate intra-thoracic operations. With the Elsberg method operations are being done upon the pleura, the bronchi, the lung, upon the thoracic portion of the esophagus and other structures of the mediastinal spaces.

Operations for the removal of diseased areas in pulmonary tuberculosis are receiving serious consideration, and, indeed, such operations are already being reported.

WOUNDS OF THE HEART.

In the non-operative or expectant treatment of wounds of the heart but 15 per cent of cases recover and it is probable that among these neither auricles nor ventricles were seriously injured. The operative treatment of heart wounds shows seventy-one recoveries and 106 deaths out of a total of 177 cases reported.

Therefore there is a 25 per cent greater chance for recovery by an open operation and suture than by the policy of non-interference. Three-fourths of all heart wounds are associated with wounds of the pleura, hence an additional opening in the pleura is not added danger. In these cases positive pressure anaesthesia is destined to play an important role. Danger from opening the pleura sufficiently for quick and thorough operative work may be disregarded. The long lateral intercostal incision and separation of the ribs with the Mikulicz rib spreader affords a splendid operative field and has the added advantage that an air-tight wound may be secured by peri-costal suture.

Positive pressure anaesthesia is valuable in these cases in that it controls respiration, regulates to a certain extent the heart beat, and is particularly valuable in that it re-inflates the lungs after air-tight closure of the pleural cavity.

SURGERY OF BLOOD VESSELS.

In the development of the surgery of blood vessels, the work of Carrel stands out as one of the marvels of the age.

With Carrel's method of end to end union, large and small vessels can be re-united after division, pieces of arteries and veins can be transplanted into defects in other arteries and veins to take on perfect function, whole organs, such as the kidney and the thyroid, can be transplanted from one animal to another, and, indeed, whole limbs can be transferred and grafted. Carrel's work has added a new chapter to the surgery of aneurism and blood vessel injury and seems destined to further revolutionize surgery in that eventually we may remove diseased organs and replace them with healthy ones, and that we may at no far distant time replace diseased or missing limbs and restore complete function.

"The utilization of apparently dead or at least of only potentially living tissue in the various methods of grafting or transplantation is today a part of the surgeon's work. The methods are themselves a transplantation of

experiences gained by work in the vegetable kingdom. What wonder that the marvels revealed in the one department should have incited work along parallel lines in the other? That fruit and flowers of one kind may be made to grow on a tree of a very different kind excites but a small part of the astonishment it deserves, mainly because it is now a common occurrence, though properly regarded it might seem a miracle.

"Without violating the proper scientific use of the imagination, one may fancy something like the following: Let a healthy young criminal meet accidental or instantaneous death. It would be possible to use no inconsiderable portion of the body for grafting or other justifiable surgical procedures. The arteries and nerves could be used, both in the fresh state and the former even after preservation, for suitable transplantation or repair work on the vascular and nervous systems of a considerable number of other people. So also could the thyroid, the cornea and especially the bones. All the teeth, if healthy, could be reimplanted. With the bones, ribs especially, plastic operations—particularly on the noses—of fifty people could be made. And then the exterior of the body could be made to furnish an almost inexhaustible supply of epidermis for Thiersch grafts, which latter material need not be used in the fresh state, but could be preserved and made available some days or even weeks later. Portions of the ureters or some other portion of the remains might be used for some unusual purpose. Then what extractives might be prepared from other parts of the body, pituitary, adrenals, bone marrow, etc.? The tendons might also be prepared for sutures.

"But the possible limit is not yet reached, since with each kidney might be carried out experiments like those feats of physiologic jugglery such as Carrel has shown us, by implanting one, say in the neck, connecting up the renal with the carotid artery and the renal vein with the jugular, while some receptacle

would have to be provided as a terminal for the ureter.

"This is, after all, not a fantastic dream, nor such an extreme picture as would at first appear, since every organ or tissue above mentioned—and more—has been used as indicated and with success." (Park.)

CANCER OF THE BREAST.

The complete Halsted operation offers the only hope for cure of cancer of the breast and there are but 20 per cent of cures from operations undertaken after the axillary glands are involved. On the other hand, there are 70 per cent to 80 per cent of cures from operation in the early stages of the disease.

With this difference of mortality in view, is further evidence necessary to impress the fact that physicians should not delay operation upon their cases of breast tumor until they have confirmed a suspicious diagnosis by the presence of enlarged axillary glands?

"The laity should know that every tumor of the breast is a pathologic process, that absolutely nothing can be gained by expectant treatment and that in almost every instance delay lessens the chance of cure." (Beckman.)

SURGERY IN BRIGHT'S DISEASE.

There is a field of surgery in Bright's disease which has been slow in developing, though most remarkable results, have been and are being obtained from operative work.

Edebohls and Ferguson, working independently, developed a safe and comparatively simple and easy operative measure, that of the removal of the fibrous capsule of the kidney in the chronic type of nephritis, for the relief of pressure and to provide for the expansion of chronically inflamed and compressed kidney tissue.

Many apparently cured cases of undoubted Bright's have been followed for periods of from five to thirteen years with no recurrence of the disease and with no evidence of having had such disease. Aside from the practical value of this pioneer work which has been left

to future workers to develop to its fullest degree of usefulness, both Edebohls and Ferguson have left to the younger generation a priceless heritage in their example of fearlessness, unswerving determination, deliberate, careful and scientific work in the face of adverse criticism and even ridicule.

BONES AND JOINTS.

With strict asepsis we now approach the bones and joints with impunity, but the operative technic must be perfect and to this end the work must be done instrumentally, so far as possible, even the gloved fingers entering the wound only when absolutely necessary and then protected by sterile gauze.

Progress in the surgery of joints has made wonderful strides. Murphy's operations for providing motion in joints which have been apparently hopelessly stiffened by disease, injury or necessary operation, has opened a marvelous field for surgical usefulness. Bones are being transplanted to fill the gaps and defects in other bones; hopeless deformities and un-united fractures are being straightened and secured.

Excellent results are being obtained by the open treatment of new fractures. This method has been particularly satisfactory in fractures of the long bones and is peculiarly applicable to old fractures, deformities and to un-united fractures which have heretofore been considered hopeless. Many enthusiastic advocates are asserting that open operation should be done in all cases. There seems no doubt but that open operation and wiring or plating should be done in every case of fracture of the femur above the middle third. In such cases it is almost impossible to tell when the apposition is accurate and it is utterly impossible to tell whether or not there is a bundle of union-preventing muscle or fascia between the bone ends.

"As each fracture patient presents himself, the question as to whether his interests are best guarded by conservative treatment or operation must be answered by the individual

surgeon on the basis of his clinical experience and knowledge of recorded cases. In certain instances, as, for instance, compound fracture, where reduction and retention are both difficult, fractures with interposition of soft parts, fracture with such displacement as to make union uncertain, deformity assured and function imperfect, the need for operation is obvious. In other instances where satisfactory reduction is obtainable by manipulation with or without anaesthesia, and this reduction can be maintained by splints and bandages, operation will be suggested only by a limited number of enthusiasts who regard a cure without cutting as a reproach to the surgical profession." (Edward Martin.)

GOITER.

The simple types of goiter appear at the present time to be considered surgical only for cosmetic reasons, and when there is need for relief from annoying or dangerous pressure.

Hyperthyroidism, however, commonly known as exophthalmic goiter or Graves' disease, is a true systemic "toxemia, the result of the absorption of the products of the hyperactive thyroid," (McCarthy) is a cause of death in 15 per cent of cases and often incapacitates the individual for long periods of time. It has been abundantly demonstrated that some form of surgical intervention for reduction of gland secretion offers the only cure for this condition, though occasionally cases do recover under medical treatment.

The present operative mortality for all cases, young and old, mild and severe, is less than 4 per cent, with 70 per cent of positive cures and the balance more or less improved. The best results and the lowest operative mortality are obtained when cases are admitted to operation in the early stages. It is unfortunate that the condition should have been designated as exophthalmic goiter, since the exophthalmus or protrusion of the eyes is often one of the last symptoms to appear and patients are often treated for months for stomach and bowel dis-

turbance, or for heart trouble because of a rapid pulse. Since the disease is surgical and since conservative and essentially safe measures, such as tying off of one or both superior thyroid arteries or the removal of one lobe of the gland may be sufficient to arrest the disease in its early stages, the importance of early diagnosis and early surgical intervention cannot be too strongly emphasized.

"The present low mortality has resulted less from an increase of operative skill than from a selection of time for operation with reference to the activity or severity of the condition." (Mayo.)

HERNIA.

No man subject to the discomfort, disadvantages and inconveniences of truss wearing for rupture or hernia but will concede the manifold advantages of a sound, strong abdominal wall and yet unaccountably thousands of people seem content to go handicapped through life when surgical relief is almost an absolute certainty.

Nearly one-third of all hernias begin in childhood. In addition to the annoyance and inconvenience of truss-wearing by children, the constant source of anxiety and watchful care on the part of the mother, the oftentimes housing of the children when he should be playing outdoors for fear a truss will slip or the hernia come down, there is to be added the actual danger of intestinal strangulation and the fact that the longer a truss is worn, the more difficult is an operative procedure and because of actual atrophy of the muscle from truss pressure the greater the percentage of relapses after repair.

Any hernia in a child which persists in spite of proper mechanical support after the age of four is incurable by mechanical means and should be immediately repaired. The earlier the repair the greater chance for cure and the less the danger.

The operative mortality for hernial operations in children is practically nothing—less than one-quarter of 1 per cent—and the per-

centage of operative failures in all types of cases in children is less than one-half of 1 per cent.

In all classes of cases the operative failures in adults is from combined statistics approximately $3\frac{1}{2}$ per cent, with an operative mortality of less than 1 per cent.

ABDOMEN.

Chronic indigestion and dyspepsia are now known not to be true functional diseases, but in a great majority of cases are symptoms only. When there is repeated dyspepsia, so-called, with pain, distension, gas formation, varied by more or less acute attacks of indigestion, there is something wrong with the abdominal mechanism and in ninety in every one hundred cases there is some irritated condition of the appendix or gall bladder, or ulcer in the stomach, or duodenum, which calls for surgical relief before an acute suppurative condition, a perforation or peritonitis renders even surgical relief desperate, if not hopeless.

ULCER AND CANCER OF THE STOMACH.

Deaver classes gastric ulcer as an alarmingly serious disease. It is much more prevalent than is generally believed and has a direct mortality of at least 20 per cent, 5 per cent from hemorrhage which may come on at any time and 15 per cent from perforation. This mortality is for ulcer itself, but we must also consider the possibility of cancerous development. The accumulated experience of the world's greatest clinics emphasizes the fact that gastric ulcer is the pre-cancerous lesion in at least 75 per cent of all cases of cancer of the stomach; further, that operation for gastric cancer does not prolong life more than three years in the most favorable cases, and, further:

"Eighty per cent of all cases of cancer of the stomach give a history of definite gastric symptoms of over one year, many of from five to twenty years, the large percentage of them two and three years." (Bloodgood.)

Long enough for a careful diagnostician to make his diagnosis and give his patient a

chance for life by providing early surgical intervention.

"Physicians have learned to make their patients so comfortable that they are apt when they get an early cancerian ulcer, to carry it along from the operable period to the inoperable one in comparative comfort. I am certain that less harm would be done by the surgeon who, with good technic, may open the abdomen a little too frequently, than by the physician who delays operative intervention in ulcer and cancer." (Bloodgood.)

"Where the symptoms of open ulcer are not relieved after energetic medical treatment lasting for several weeks or where the disease recurs more than once after being temporarily checked, in such patient some more radical treatment is required than medicine today affords." (Deaver.)

"The ability of a surgeon to treat malignant diseases satisfactorily depends more upon the early diagnosis of the trouble than upon any other factor." (Judd.)

APPENDICITIS.

Medically treated, 40 per cent of all cases of appendicitis will be entirely cured. Forty per cent of all cases will clear up temporarily but will recur, and 20 per cent of all cases will go on to rupture, peritonitis and death.

An appendix once inflamed may be compared to a dynamite cartridge which may or may not explode. Appendicitis is one of the most treacherous of diseases and one whose progress and ending no man can possibly predict.

The operative mortality in clean cases of appendicitis is less than 1 per cent. It is not over 2 per cent in early operation in all classes of cases. Hence, since 20 per cent of all medically treated cases die of the disease sooner or later, there is a balance of 18 per cent in favor of surgical treatment. The greatest safety lies in the removal of the appendix as soon as a diagnosis of appendicitis is made.

OCHSNER'S TREATMENT FOR APPENDICITIS.

Ochsner believes in operating upon every

case of appendicitis at one time or another. In a certain class of cases he believes in carrying them through until there is a localization of inflammation and until the patient is in the most favorable condition. This treatment has been seized upon as medical cure for appendicitis and regarding this, I quote Stuart McGuire, of Richmond, who says that:

"Ochsner's teaching has caused the death of more patients with appendicitis than his personal ability as operator has enabled him to save, and this is not because his teaching is wrong, but because it has been misunderstood and his treatment misapplied. It would be better for the profession and for the public if his teaching had never been disseminated. It has been the excuse for procrastination which has filled many an untimely grave."

CONCLUSION.

In general there is a growing tendency to educate the public to the necessity of surgical intervention in the early stages of many diseases, not to consider surgery a last and often hopeless resort, but to have recourse to surgery at a time when it offers the greatest hope for the saving of life or the restoration of health.

"Studies of immediate and late results demonstrate that operative mortality is greater in the late period, the post-operative complications and period of disability greater than when the operation is performed in the early stage." (Bloodgood.)

Greater stress should be laid upon diagnosis, especially early diagnosis and above all early diagnosis in malignant conditions. The physician should cast out of his mind the old textbook pictures of disease in its advanced, so-called typical stage, and should get the early picture. With a choice of a wealth of modern text-books, with a selection of good medical journals, with opportunities for post-graduate study and attendance upon the medical and surgical clinics, and, above all, the opportunity to utilize the excellent laboratory and diagnostic facilities afforded by our efficient State

Board of Health, any man may know the early picture of disease and may make an early and correct diagnosis in a great majority of cases. The profession should be brought to a full realization and the laity should be taught that the medical man who studies his case, who makes a clean-cut diagnosis, who determines the necessity for an operation and assumes the responsibility of advising operative measures is deserving of and should be given adequate compensation.

No less an authority than one of the world's greatest surgeons, the President of the American Medical Association, Dr. John B. Murphy, of Chicago, said before the Clinical Congress of Surgeons in Philadelphia that the medical man who brings a case of acute or internal disease to the surgeons' operating table, bearing the responsibility of diagnosis, decision between operative or non-operative treatment and in the final analysis the ultimate burden of blame for a possible operative failure should be paid for his share of the work as much as the surgeon receives for his. But the charge should be made openly and honestly.

Surgical technic has developed rapidly and steadily. It has outrun diagnosis, it has outdistanced post-operative treatment; it has

"Reached such a state of perfection that we are in danger of thinking, as did Ambrose Pare, that there are but few things that posterity can add. This is a dangerous attitude, because a belief that we have arrived at the

acme of human perfection will surely prevent progress. The great benefits vouchsafed mankind through the gospel of cleanliness are not without alloy. The fact that such wonderful things can be done through a clean wound has led to the doing of many unwarrantable things. There is too much of a tendency among young members of the profession to believe that technic is all there is of surgery, and that as soon as a man can secure healing by first intention, he is a surgeon. There is decidedly too great a tendency to make a diagnosis with the knife. Operations are a very necessary part of surgery, but it is more important to decide when and when not to operate. It sometimes requires more courage to decide not to operate than to operate. The surgeon should always be bold but conservative, for conservatism is the greatest attribute of a good surgeon. The conservative surgeon will operate only when he believes that an operation is the treatment most likely to save the life of his patient or restore him to health." (Moore.)

Conservatism in its truest sense means restoration or preservation of health and functions, or the saving of life. It does not mean the refusal to operate when an operation is indicated, nor does it mean work but partly done, nor the leaving in place of non-functioning or slightly diseased organs or parts of organs solely for the sake of leaving them.

The surgeon's knife in its most radical work is often the greatest of conservative agents.

TYPHOID FEVER IN TAMPA, FLORIDA.*

STUDIES ON AN OUTBREAK OF TYPHOID FEVER AND AMOEBIC DYSENTERY.

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During the early spring months of 1911, just before and just after the closing of the Bellevue Hotel at Bellair, some ten of the guests of that hotel developed typhoid fever,

among them Dr. Murphy of Chicago. Whereupon the management engaged the services of Drs. Jordan and Irons, of Chicago, to make an investigation of the trouble.

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