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## THE RELATIONS OF GYNECOLOGY TO GENERAL SURGERY, PAST AND PRESENT\*

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DETROIT

The following more or less desultory and somewhat reminiscent remarks, on which I ask your kind indulgence, are given not for any exact historical value which they may contain, but more as a sort of reminder, lest we forget.

As I began the study of medicine while the development of the science of gynecology as a specialty was in its infancy, and that of abdominal surgery practically in the stage of incubation, and as I have had the opportunity of over forty years of observation, as a physician, to note the many brilliant achievements not only of the fathers of our specialty, but also of many of their successors, and to observe as well, during this time, the relative and comparative running capacity (to use a sporting term) between the gynecologist and the general surgeon, it would seem well in this day of Prussianistic surgery that I should consider a few of the alphas of success, and perhaps to attempt a little in the line of prognostication regarding the trend of surgical thought and practice toward the omega of relationship between the gynecologist and the surgeon.

My early professional training was conducted in the surgical atmosphere surrounding such men as J. Marion Sims, Thomas Addis Emmett, T. Gaillard Thomas, Willard Parker, T. M. Markoe, James R. Wood, Lewis A. Sayre, and others of lesser note in this country, and Schroeder, Martin and Langenbeck of Berlin, Billroth of Vienna, and Tait of England. Having come into personal contact, as a pupil, with some of these early masters, I can realize, after this lapse of time, how profoundly their influence has tended to shape the destinies of the present.

In any discussion of this or kindred subjects, we must not forget to consider certain of Nature's laws—those silent, ever active, immutable forces. These well known and generally accepted principles which automatically govern the development of the various species in the animal kingdom, which we are taught to term evolution, survival of the fittest, struggle for existence, etc., proceed with their accustomed steam-roller efficiency in other affairs of the genus *Homo* beside that which pertains to the development of the species.

The twentieth century is ushering in a period of kaleidoscopic changes, of Aladdin-like transforma-

tions in everything pertaining to the activities of man. Science, the arts, business, society, finance, methods of warfare—all are feeling the jolts of the erratic and rapid pace of this great evolutionary present-day thrust. We are living in a new world in which habits and customs, venerated by centuries of usage, are dropped without ceremony and without apparent effort or regret, and the new is blithely taken on, all in the name of progress. The horse bids fair, soon, to become extinct as a domestic animal, perhaps to revert to the wild state of his ancestors, and be captured and exhibited by future generations of man, as a curiosity, along with the gnu, zebra and giraffe.

The air has been conquered and space annihilated on land, in and on the water and in the air; previously impregnable fortresses and strongholds are now quickly wiped out by the touch of science. The once preposterous, imaginary creations of Jules Verne, considered only as romantic and interesting fiction, are now materialized, and the resultant steel monsters threaten the destruction of a world's commerce. Government of the most autocratic form, founded on centuries of despotic power, now vanishes in a night, to be swiftly and peacefully succeeded by liberal democracy.

In finance the numbers soar higher and higher until the common consideration of the most fabulous sums ceases to awe the beholder. Efficiency is now the watchword of education. In mechanics, handwork is replaced by the machine-made. Everything is manufactured in great numbers, with duplicate interchangeable parts. Similar kinds of manufacturing business are combined under one head, resulting in more economic production and better goods. This results in small business remaining small or going to the wall. The same spirit of big business is permeating the medical profession, as witness the elimination of the family doctor and the advent of the "group medicine" idea. Especially is this change true of the practice of surgery. A German physician, on visiting one of our greatest surgical centers, characterized it as *eine grosse chirurgische Fabrik*. Truly a surgical factory—a factory in which the product is turned out in immense quantity and also of good quality.

### PLACE OF THE GYNECOLOGIST IN SURGERY

Is it not time that we ask what place, if any, the gynecologist has, or will have, in the near future, in the field of surgery, and will these various surgical manufacturing industries that are endeavoring to emulate the *Fabrik* spoken of by the German physician have a place for the woman's doctor, or will the general surgeon be the whole "factory"? The general surgeon is, octopus-like, progressively absorbing more and more of the surgical specialties: As soon as one is perfected, he takes it over, and this policy of adap-

\* Chairman's address, read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

tation will no doubt continue. The tonsils and adenoids, the pleural cavity, the perineum and cervix, the uterus and adnexa are now his. The abdomen and pelvis were presented to him by the gynecologic pioneers, and were quickly absorbed as soon as their operative technic was perfected. While in his abdominal work he may now be said to have "arrived," his gynecologic efforts frequently exhibit a hesitant and unfamiliar technic.

What did the general surgeon of the time of Sims, Emmett, Thomas and Tait know, or even care, about gynecology? Gynecology was carefully avoided by the surgeons of that day, and its practice outside of the recognized medical centers was usually relegated to the family physician, whose greatest pride was often manifested by the ability to introduce a bivalve speculum, and whose therapeutics began and ended in the use of tincture of iodine and the glycerin tampon.

This certainly was the gynecologic status in a general hospital of which I was house physician and superintendent for three and a half years of my early professional life, and from my knowledge of other hospitals of that time, I think the picture is not overdrawn.

From this work, which the surgeon of that day scorned, the gynecologist built up and perfected the system of surgery of the female genitalia, and from that upward, progressively, the surgery of the pelvic and abdominal cavities, which forms not only the basis but the whole superstructure of that work today.

The gynecologist was the pioneer in all of this great surgical specialty evolution. The general surgeon was his follower. Whether he shall now become, in turn, the master and the gynecologist the follower (or possibly only an onlooker) will no doubt be relentlessly determined by the before-mentioned natural laws.

The hospital previously referred to (Harper Hospital of Detroit) now grinds out an average of over thirty surgical operations a day. Comparative statistics from its records are interesting as illustrating the point just made. During the year 1897 (a year taken at random, twenty years ago) 709 operations, of which 360 were abdominal sections, were performed by gynecologists and general surgeons. Of the abdominal sections, 304 were made by gynecologists and 56 by general surgeons—about 84 per cent. for the gynecologists and 16 per cent. for the general surgeons. The same statistics for the year ending Dec. 31, 1916, are given in the accompanying tabulation.

#### OPERATIONS AT HARPER HOSPITAL IN 1916

	No.	Per Cent.
Surgical operations made by general surgeons and gynecologists	4,412	....
Abdominal sections	2,652	....
Made by gynecologists	384	14.5
Made by general surgeons	2,268	85.5

It will thus be seen that in the abdominal work the tables have been completely turned during the last twenty years. It will also be noted, if this exhibit is a fair average of the general surgeon's work everywhere, that he is now doing more abdominal work than all of his other work combined, so that if the average of abdominal work over general surgery continues to increase for the next twenty years as it has for the last two decades, it requires little mathematical calculation to figure the general surgeon out of everything but his abdominal work. Another of Nature's laws to be vindicated, perhaps!

If the gynecologist is thus shown to be no longer the predominating factor in abdominal surgery, what will be his position in the evolutionary processes twenty years hence? Will he pick up the bones cast aside by the general surgeon, in his lust for the peritoneum, and go on his way rejoicing, himself in turn becoming a general surgeon or will he be driven into the vast and prolific field of obstetrics—untouched, as yet, by the tentacles of the octopus?

For this popularizing of the operation of abdominal section with its present-day success, attending the work of many surgeons, the general adoption of two essentials in technic is responsible, in my opinion. I refer to asepsis, and treatment of the pedicle by the absorbable ligature. From the period of Lister's first teaching that it was something pathogenic that entered the peritoneal cavity through the wound during the operation, and not trauma of the peritoneum, which caused postoperative peritonitis, up to the finished evolution of the present method of absolute cleanliness and asepticism, the road has not been smooth and unobstructed, as we all know. Those of us who have operated in a room foggy with phenol spray, and used strong antiseptics to kill the germs on the instruments, hands and dressings, those who used enormously strong silk ligatures, which in some cases were left long, with the wound open, so that the knot could be withdrawn when the stump of the pedicle sloughed, those who used horrible clamps to get away from the ligature, and saw patients die, or struggle through a weary convalescence, can best appreciate the standard methods of today—the methods which make it possible for the general surgeon to do this work as commonly as the more ordinary operations of the past. It seems but a short and natural step from Ephraim McDowell's buckskin ligature, used in the first ovariectomy, to the catgut of today, but it took a long time, much experimentation and the cost of many lives to learn this one simple detail of technic.

#### THE DEVELOPMENT OF ABDOMINAL SURGERY

In the foundation of the development of the operation of abdominal section, humanity and the medical profession are greatly indebted to a gynecologist. Lawson Tait, though much maligned and criticized by the surgeons of his day, not only threw brilliant light on the pathology of the pelvic organs, but also contributed a technic that is not only practical today, but has made possible other surgical procedures within the peritoneal cavity. I believe his success was largely owing to boldness in attacking adhesions, especially those occurring in connection with pyosalpinx, the pathology of which he was the first to elucidate clearly. To illustrate the uncertain attitude of surgeons in respect to pelvic adhesions: At about the year 1890, finding my pelvic work hampered by a fear of these adhesions, I asked a well-known gynecologist how he treated them. He said if he could not break them up by the force exerted, by spreading apart the index and middle fingers, he let them alone. Shortly after this time I visited Mr. Tait in Birmingham, and while assisting at a difficult salpingectomy I asked him the same question. His answer was quite different and well worth the cost of the European trip. He said: "A man without a good forearm better not undertake it."

In my opinion Tait did much to popularize the split-flap method of perineorrhaphy, which has now, justly, almost completely supplanted that of superfi-

cial denudation. Tait, like most pioneers, was wont to go straight to the root of things. He paid little attention to what he considered unessential details—especially in the matter of cosmetic effects—passing them over with apparent unconcern, and aiming only at the solution of the fundamental surgical problems. His perineorrhaphy technic was unique and startling. He would proceed to the bedside of the patient who was already anesthetized and across the bed in the lithotomy position; then, sitting sidewise on a low ottoman by the bedside, a bunch of silkworm-gut sutures placed conveniently in his mouth (!) Sims angular scissors in one hand and a fully curved handled needle in the other, he operated practically without assistance, in from five to seven minutes' time. No painstaking dissection was made. From three to five deep incisions (according to second or third degree of rupture) with the sharp pointed scissors sufficed to lay open the tissues in the direction of the ruptured and retracted muscles and fascia; then with the other hand the large needle was passed, and the suture taken from the mouth and threaded with the hand holding the scissors. The sutures were placed so as to include all the tissues but the skin margins, which were left without further suturing.

While the technic described would offer much to criticize (although the method allowed good drainage in the event of very probable sepsis) the simplicity and effectiveness of the operation were evident at a glance. By it the ruptured and retracted tissues were reached and reunited, which made the demonstration a graphic revelation in surgical mechanics that left no doubt in the mind of the observer of the value of its fundamental principle.

Sims' operation for vesicovaginal fistula was an epoch-making procedure, as it probably had more influence than any other in placing the specialty of gynecology on a firm foundation. The technic as taught by Sims was at once accepted in this country and in Europe.

Not so readily, however, was Emmett's operation of trachelorrhaphy accepted abroad. While the pathology of the lacerated cervix uteri as taught by Emmett was quickly adopted, as was the operation in this country, it was amazing how long a time it took the surgeons of Europe to accept this valuable contribution to pathology and surgery.

I did a trachelorrhaphy, according to Emmett's method, in 1878, and yet, while pursuing my studies abroad during the years of 1879-1880, I found Martin of Berlin doing the Schroeder cervical amputation for lacerated cervix, and in London I saw a large ward full of women, all being treated for the same trouble, termed ulceration and degeneration of the cervix, by the application of potassium hydroxid.

The general surgeons of the time of Sims, Emmett and Thomas, many of whose names are now looked on as beacon lights of the profession, knew nothing, comparatively, of gynecologic surgery. Engrossed in their own absorbing and developmental work, they looked at first with amused curiosity at the achievements of the gynecologist.

The general surgeons of that day rarely undertook intra-abdominal work, and when they did it was usually in cases of far advanced ovarian cystomas. While otherwise skilful operators, they often presented sorry spectacles of surgical impotence in operations involving the abdominal cavity. They exemplified

unpreparedness, and while more dramatic, were less seriously accurate than their brothers of today.

Those of us who had the good fortune to be under the tutelage of some of those really great men can appreciate the truth of this observation. Think of the clinic of the late James R. Wood being used to demonstrate an abdominal section! He was familiarly and affectionately known as "Jimmy" Wood, and his clinic was termed "the matinee." His methods were the epitome of those of the great surgeons of that day. Rapidity and accuracy we admit were there, but above all was the spirit of dash and theatrical display that seemed to form a necessary part of the equipment of the great surgeon.

The gynecologist took himself more seriously, as his manifest destiny demanded, as he was the instrument being prepared for the accomplishment of the great surgical victories over the pathology of the pelvis and abdomen. Such a destiny could be achieved only by the serious-minded and prayerful. Also the plastic work of the vagina and cervix, the repairing of vesical and rectal fistulas, shortening of the round ligament, and other work approaching in delicacy the surgery of the eye offered no opportunity for theatricals.

From the pathology of the perineum, vagina and uterus it would seem but a step, to be quickly taken, to that of the fallopian tubes and ovaries; but owing to the dangers attending the invasion of the peritoneal cavity, this advance was not possible in any practical way until the principle of asepticism became known. Tait then boldly entered this new field with its immense possibilities, this previously unexplored region, whose gonococcus-infected tubes and ovaries were destroying the health, happiness and lives of untold numbers of women.

The younger generation in the profession, who have grown up in the atmosphere of modern pathology, can with difficulty realize the value of the boon to woman-kind that followed the discovery of the etiology of the pus tube.

Old textbooks on gynecology, written from thirty-five to forty years ago, treat voluminously of pelvic cellulitis, but not at all of pyosalpinx. The treatment was practically by the use of the hot vaginal douche. It is well occasionally to take a retrospective view that we may better appreciate the advantages of the present.

Ectopic pregnancy, also, was not well understood until after the advent of aseptic surgery. Pelvic hematocele was discussed at length in the same textbooks, and extra-uterine pregnancy was passed over with little more than mention of its rarity. Tait's brilliant work elucidated this subject. As early as 1876 he advised operation in such cases.

The modern aggressive surgery of the vermiform appendix began soon after the latter date, and here is also seen the influence of Tait and his followers, many of the latter, like the late lamented Joseph Price, carrying on the work with great energy in this country.

While Willard Parker of New York advocated and practiced the drainage of appendical abscesses as early as 1867, and reported a number of successful cases, and while many others were working along the same lines, especially in this country, it is again largely to Tait's wonderful pathologic insight, surgical skill and incisive boldness that we must credit much of the present successful operation of appen-

dectomy. It was in 1881 that he uttered the startling dictum of abdominal section for all cases of peritonitis from whatever cause occurring.

This seemed radical, a far cry from the heroic opium treatment of Alonzo Clark and his followers, which was in full swing as late as 1875; but the light was just commencing to be turned on the pathology of this time-obscured *terra incognita*—the peritoneal cavity—and the commanding personality of a Tait was necessary to push home the new truths in a clear and forceful manner.

As regards extra-uterine pregnancy, Strahan,<sup>1</sup> writing in 1889, said that Lawson Tait had had more experience of such cases than any man living and more than any man who ever lived. Tait had then reported seventy-six cases, and had published a brochure<sup>2</sup> which embraces practically the views which are held on the subject at the present time. Following the lead of these pioneers in gynecology and abdominal surgery, we find the names of many surgeons of brilliant attainments whose wonderful skill in diagnosis and technic are marvels of scientific acumen. But the old pathfinders are gone, it is hoped to their much merited reward. Many of their immediate followers who pushed the work initiated by these early discoveries to a successful fruition have also passed to the other side, but their work has resulted in such a standardization of the original fundamental principles pertaining to pelvic and abdominal pathology and surgical technic that these once seemingly impossible and unapproachable problems are now open to successful solution, by the skilful and conscientious surgeon. And right here lies the danger to the public. Skilful surgeons may not all be conscientious; conscientious surgeons may not all be skilful.

#### DEVELOPMENT OF THE SPECIALIST

The present day free dissemination of knowledge by innumerable, lavishly illustrated textbooks results in the ruination of many good embryo internists in fashioning mediocre surgeons. The lure of the knife is an *ignis fatuus* to many would-be surgeons. It all looks too easy and simple, on paper. Self-styled surgeons have been made too quickly in this country, and when time and experience have turned out a few good ones from this number, it has been at a stupendous cost of health and life to the public.

Much good surgical timber is spoiled by the spreading out of endeavor over too wide a territory, when concentration over a much smaller area would mean success. Preeminence has rarely been achieved by the former process, and it will ever be thus until those evolutionary processes of Nature produce the superman. With the younger generation of surgeons it would seem as though some of them believed the era of the superman had arrived. The pendulum is certainly swinging in the direction of all varieties of surgery for the general surgeon, and this will no doubt go on until the spreading out process will become so thin a surgical veneer as to determine the reverse swing of the pendulum.

Will the specialist, then, come into his own by a sort of process of vicious circle action, engendered by the rapacity of the octopus, or is this simply an evolutionary process of Nature, who, in her wisdom, is working out a higher and more dignified and more

impregnable position for the specialist? We may be sure that, at this period of medical history, with its continuously higher educational requirements, the law of the survival of the fittest will determine the destiny of all concerned in this contest.

The influence of the American College of Surgeons will soon be felt in this direction in its efforts at the standardization of surgery and surgeons. This field could be possibly still farther broadened, and the beneficent usefulness of the College enhanced, by extending such standardization to the surgical specialties. It would seem that the power of arbitration so exercised would fill a long felt want in the elimination of those with little or no qualifications for the work in which they propose to specialize. The demand for the best surgery is soon to be made by both the physician and the people, as they are awakening to the fact that the performance of a great multiplicity of operations of all kinds by a surgeon does not necessarily constitute him a skilful operator or a person of sound judgment.

To make the specialist of the future, many of the short cuts now taken so easily toward the goal will be closed, and only that road—the one containing all the “jumps”—which leads to the greatest proficiency will be left open. The future surgical specialist will not be a person of narrow medical education, professing or knowing nothing outside of his chosen field. He will be a doctor of broad medical and surgical knowledge, of which his chosen specialty will be as the keystone of an arch, placed last, holding all and held by all.

The prospective specialist, after receiving his medical degree, should be required to take a hospital course in internal medicine, in which he must become proficient, and especially so in differential diagnosis. This will be his most valuable preparation for future like work, although it is now usually looked on as drudgery, to be avoided if possible, by the candidate for the hoped-for surgical distinction. It is here he will learn those points of diagnosis which will save him from making many operative blunders; such, for instance, as taking out appendixes because of pain caused by a spastic cecum, stone or “gravel” in the right ureter, or by pneumonia—mistakes made too frequently at the present day. He will then be prepared to take the hospital course in surgery, which should be general surgery, in the broadest sense of the term, as in my opinion it will be only the operator who has been well grounded in all of the principles and practices of general surgery who should be allowed to attempt a surgical specialty of any kind. The latter should be looked on as a sort of postgraduate professional accomplishment, to be attained by merit, as a soldier wins his spurs. After the course in general surgery he will be prepared to begin the serious study of his chosen specialty. This should be under the direction of, and while acting as the assistant to, a surgeon practicing such specialty. Such a term, consisting largely of practical assistance in operations, should extend over at least one year.

A specialist commencing his life work after such preparation would command respect, and the lives of the public would not be endangered, as at present, by the ignorant and venal self-seeker.

#### SUMMARY

I believe that the gynecologist and abdominal surgeon, as a specialist, has seen and passed the zenith

1. Strahan: Diagnosis and Treatment of Extra-Uterine Pregnancy.  
2. Tait: Scheme of Ectopic Gestation in Tubo-Ovarian Tract, Lancet, London, Sept. 1, 1888.

of his activity, under present conditions; that the future promises a still greater position than that enjoyed in the past, but that it must be attained by means of a broader education and through the medium of general surgery of the highest order and broadest understanding. I believe that the general surgeon of today is doing the major part of the abdominal and pelvic work because he is a better general surgeon than the gynecologist. It is this broad understanding of surgical problems in general that begets confidence, and confidence begets patients, and patients beget patients!

The surgical millenium has not yet arrived, but when it does the lion and the lamb will be seen lying down together, side by side, and not the one in the relation of nutritive pabulum to the digestive processes of the other.

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## REPORT OF STUDIES CONCERNING ACUTE LOBAR PNEUMONIA \*

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Four years ago, before this section, I discussed the question of the treatment of pneumonia by means of specific serum, and gave the results of the treatment of a few cases by this method. (During the period which has elapsed since then, the study of this form of treatment has been continued, further experience has been obtained and certain new facts elicited, and today I desire to report the progress that has been made and to discuss certain practical questions relating to this form of therapy.) At that time the type of pneumococci causing the infection had been determined in only seventy-nine cases. We have now determined the type of infecting organism in over 500 cases in the Hospital of the Rockefeller Institute alone, and the method of determination of type is now being done as a routine procedure in a large number of hospitals and by several state and city boards of health.

Judging from our own experience, about one third of the cases of pneumonia are due to infection with Type I pneumococci, one third to Type II pneumococci, 10 to 15 per cent. to Type III pneumococci, and the remainder are due to infection with pneumococci belonging in the IV group. In small series of cases the relative numbers of cases due to the different types will, of course, vary, and they may vary somewhat in different cities and in different years. Our own figures from year to year, however, have been fairly consistent, and the results obtained by others have not varied widely from those stated. The observations which have now been made concerning mortality indicate that the cases due to Type I and Type II are of average severity, the mortality being from 25 to 30 per cent.; those due to Type III are severe, one half or more of the patients dying, while the cases due to organisms of Group IV are milder and the mortality is usually not more than 10 to 15 per cent.

These observations in regard to severity of the cases due to the different types of infection have proved of great value in prognosis. When the knowledge thus

gained is combined with the knowledge obtained by blood culture, and by testing the urine for precipitable substance, we have a great deal of information regarding the probable outcome in the individual case. In the cases due to the more serious types of infection, a high grade of blood infection as shown by the number of colonies per cubic centimeter in the blood plates is of very bad omen. A heavy precipitin reaction in the urine also indicates a probable bad outcome, as Dochez and Avery have shown. These signs may already be present when the patient's condition is relatively good as indicated by ordinary clinical observations and tests. These facts have been of considerable importance in the past and will undoubtedly be of still greater value in the future in judging of the efficacy of therapeutic procedures.

At the time my previous paper on serum therapy was read, only a small number of cases due to Type II infection had been treated with serum, and no evidence could be presented which was of much importance in indicating its value. Further studies have not shown that this serum as now prepared and applied is of great value in the treatment of these cases. In the cases so far treated, no constant technic has been applied, as we have been earnestly searching for modifications of the method which would increase the value of the serum. Judging from the results in the individual cases so far treated, however, no definite marked modification in the course of the disease or in the mortality in this class of cases has been obtained. Nor has it been possible so far to modify the method of immunization in horses so as to obtain a more active serum.

As regards the serum treatment of cases due to Type I infection, however, further observations have confirmed the results obtained in the previous small series of cases, and the evidence now seems quite convincing that immune serum, rightly employed, in this form of infection is of distinct value, and by its use the mortality in patients infected with this type of pneumococci may be materially reduced. Up to the present 105 cases of this type have been treated with serum in the Hospital of the Rockefeller Institute alone, and of these, ninety-seven patients have recovered and eight have died. Of the eight fatal cases, three were treated only a few hours before death, late in the disease; one patient died on the sixteenth day of pulmonary embolism; one died on the fifty-fourth day, with a general streptococcus infection, following empyema; one at necropsy was found to have tuberculosis involving both lungs, with only a small area of pneumonia involving a part of one lobe. This leaves but two cases in which treatment may be said to have been at all adequately carried out, or in which any form of specific treatment could be expected to be of any value and these were treated late in the disease. One of these two patients died on the sixth day, after treatment on the fifth and sixth days, and one lived until the twelve day, treatment having been undertaken only on the seventh day. This patient had an extremely severe infection at the time of admission, blood cultures showing 300 colonies per cubic centimeter. In spite of this severe septicemia, the blood culture became negative, but the involvement was extensive, and in spite of treatment with massive doses of serum, he died on the twelfth day. Of thirty-five patients treated during the past winter only two have died.

\* From the Hospital of the Rockefeller Institute for Medical Research.

\* Read before the Section on Practice of Medicine at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.