Address.

SOME ABUSES IN SURGICAL PRACTICE.*

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THE custom of having a formal oration at the annual meeting of the Massachusetts Medical Society was instituted in 1804, and on only six occasions since then, has its orator failed to deliver his message of hope and reminiscence.

The list of subjects embraces almost all the questions which have perplexed and agitated the medical world during these 100 years and in the list of orators are to be found, the names of those who upheld and advanced the professional standards of this Society during the 19th century,—the Warrens, Bigelows, Jacksons, Shattucks, Holmes, Homans, and many other equally eminent exponents of medical education and practice. For the privilege of being enrolled in such distinguished company, I am deeply grateful, and desire to express my appreciation of the honor you have conferred upon me.

In the earlier orations, it was customary to refer at the beginning to those Fellows who had fallen from the ranks during the year, whose memories were thus affectionately recalled, and whose services in the cause of humanity appropriately recorded. So long as the membership of the Society was small, and intimate mutual acquaintance and friendships existed, such a custom possessed a sincerity and a value that the growth in numbers made obviously impossible.

I think, however, that we should do well even now, to pause occasionally in the midst of the increasingly absorbing activities of our daily life, to testify to our grateful appreciation of the memories of those of our Fellows who have ceased to labor, but whose good works and faithful service are a constant inspiration and stimulus for us who have the burden still to carry.

I think you will pardon me, if I refer but for a moment, to two particularly distinguished and beloved Fellows of this Society who were with us a year ago, but whose faces we miss today. Seldom are we called upon to mourn two such men as Maurice Howe Richardson and Arthur Tracy Cabot, in a single year. Two years ago, Dr. Richardson delivered the annual oration before this Society, and for more than thirty years he had been a frequent and valued contributor to our Society proceedings.

His inspiring presence, and the simple, sincere, and absolutely frank manner in which he gave the results of his observations and his extraordinary experience, gave to all that he said, an authority and a charm, that made him a most welcome guest at medical gatherings all over the country. It would be hard to say whether we loved him most as teacher, hospital chief, operator, consultant or friend; association with him in any capacity was a pleasure and an inspiration which those who were favored with it can never forget.

Dr. Cabot, too, was long a faithful and effective worker in behalf of this Society, and of the ideals for which it stands, serving as its President during 1904 and 1905. A distinguished surgeon, a man of broad culture, interested in art, letters and education, to all of which he rendered substantial service, he touched life on many sides, to the advantage and honor of them all.

In the midst of an active professional life, devoted chiefly to surgery, he found time to give us an example of devotion to great questions of public health and the prevention of disease, which is worthy of the best traditions of the scholar in medicine.

One feature of these two lives, as they touched each other, should not be overlooked. Starting in practice at the same time, and in the same community, attached to the same hospital, and devoted to the same line of practice, they continued through life, an intimate friendship and mutual confidence and esteem, which was never marred by any of the jealousies and quarrels that have so often impressed the history of medicine. They have given us an example of that kind of professional comradeship which we all admire, but so often fail to live up to, and have taught us that in medicine, at least among the really great, envy and jealousy have no place.

Among the earlier orations delivered before this Society, there was one that has always been of especial interest to me, which I have read and re-read many times, and which is I think, worthy a place among the classics of our medical literature. The orator was Dr. Jacob Bigelow,[1] and the subject was "Self Limited Diseases." It was delivered at the annual meeting in 1835, and was a calm, logical, and very powerful arraignment of the prevailing practice of over-medication, and of the unreasonable faith which the profession of that day seemed to have, in the efficacy of drugs as a means of altering the natural course of many of the diseases that then were, and still are, common in New England.

He defined a self-limited disease as "one which receives limits from its own nature, and not from foreign influences; one which, after it has obtained a foothold in the system, cannot, in the present state of our knowledge, be eradicated or abridged by art; but to which there is due a certain succession of processes to be completed in a certain time—which time and processes may vary with the constitution and condition of the patient, and may tend to death or recovery, and are not known to be shortened or greatly changed by medical treatment."

Then he proceeded to show that these self-limited diseases fell under three heads:—"the simple, in which the disease observes a continuous time, and mostly a definite seat, such as the

* The Annual Discourse delivered at the meeting of The Massachusetts Medical Society, June 11, 1913.

eruptive fevers for example; the paroxysmal, in which the disease, having apparently disappeared, returns at its own periods, like epilepsy, angina pectoris and asthma; and the metastatic, in which the disease undergoes metastasis or spontaneous change of place, like mumps, gonorrhea and acute articular rheumatism.

The prevailing practice then was to treat all of these with the so-called shot gun prescriptions, which were popular in those days; to claim the cures to be the result of the treatment, and the deaths, to be the hand of God. "A charm," he says, "is popularly attached to what is called an active, bold, or heroic practice, and a corresponding reproach awaits the opposite course, which is cautious, palliative and expectant."

And he concludes his masterly argument against over-zealous interference by saying, "that the longer and the more philosophically we contemplate this subject, the more obvious it will appear, that the physician is but the minister and servant of nature; that in cases like those which have been engaging our consideration, we can do little more than follow in the train of disease, and endeavor to aid nature in her salutary intentions, and to remove obstacles from her path."

All this sounds very natural, almost commonplace today, but it was revolutionary then. The days of our confidence in the efficacy of drugs and of over-medication, are happily long since passed. But I have often felt in considerable doubt as to whether there were not other directions in which we, at the present time, have not failed to put enough confidence in the healing powers of nature, and were not still putting too much faith in the power of our own hands; that it was pertinent for us to inquire, even if there is no over-medication in medicine, is there no over-interference in the practice of surgery?

In no department of our profession have we witnessed such wonderful and such beneficent progress, since the days of Jacob Bigelow, as in the department of surgery. The discovery of anesthesia, with the more recent introduction of new anesthetic agents, and new methods of administration, which have rendered anesthesia safer and more effective, banished pain, and made careful, deliberate and accurate dissection of the living body possible,—the discovery of asepsis, which robbed the period of convalescence of its greatest terrors, laid bare the secrets of visceral pathology in the living, and made the cavities of the body as accessible to surgery as the surface,—and animal experimentation, which by making it possible for us to test the effect of many surgical procedures before applying them to man, has been of incalculable benefit in helping us to develop a safe and efficient surgical technic, and has been the means of discovering the value of serum therapy, one of the most important discoveries ever made for the prevention of disease, as well as for its relief,—all of these, anesthesia, asepsis, and animal experimentation, have been the important determining factors in the extraordinary development and growth of modern surgery, the history of which has been a source of the greatest pride and satisfaction to every friend of our profession, as its progress has been of incalculable benefit to humanity. It is much pleasanter to record the triumphs of modern surgery than to criticize its abuses; and the temptation to dwell upon its achievements, and especially the achievements of American surgery, is particularly strong.

But although we may very properly treat with contempt, such criticisms as are contained in Bernard Shaw's "Doctor's Dilemma," which reflects the depths of pessimism, and is simply ill-natured, unfounded abuse, is it not worth while occasionally to pause in so uninterrupted a triumphal march to see that the camp followers and retainers, who always follow in the train of a victorious army, are kept in their proper places, and that the fruits of the victory are not lost through the excesses of the victors?

The glamor of surgery, its directness of attack, and its tangible results make it particularly attractive to all medical students, and inspire the majority of them with an ambition to practice it. Surgery, too, occupies by far the larger part of our hospital equipment, and has led to the establishment of numerous small community hospitals, which are chiefly surgical, one of the most obvious results of which has been that the local practitioner feels obliged to undertake surgery, just as he feels obliged to undertake obstetrics in order to protect and develop his general practice.

Sir Patrick Cullen's observation, "that chloroform has done a lot of harm, it has enabled every fool to become a surgeon," has become still less an exaggeration of the truth since the discovery of asepsis.

Now, while the evolution of medical practice has been in the direction of greater simplicity, less dependence upon drugs, and less meddlesome interference with nature, the resort to surgery has appealed more strongly than ever, to the progressive, reforming spirit of our generation, and active interference has been invoked for the relief of all sorts of disorders, both functional and organic, in many cases with but little justification, and it has been freely practised by men whose training and opportunities for the observation and interpretation of living pathology have been far from adequate.

Until within a few years surgical interference was employed chiefly for the relief of the accidents and emergencies of life, and operations were but a small part of the surgeon's duty, strictly limited to cases of absolute necessity.

It is perhaps entirely natural, therefore, that with the removal of the restraints imposed by pain and septic inflammation, and the demonstration of the safety and practicability of operation, we should find ourselves carried to the opposite extreme, operating often when our interference is ill-timed and unnecessary.

Having demonstrated our ability to open and explore all the cavities of the body, to remove

much that they contain, and to rearrange more, without imperilling life, it seems to me that our efforts should be directed now, with still greater energy, to determining the limits within which our interference is necessary and desirable.

In connection with such great gatherings as the Surgical Congress, held in New York last autumn, I think we should be particularly careful not to permit ourselves to be so carried away by the number and variety of operations, and the wonderful exhibition of surgical prowess, as to lose sight of what is after all, the only justification for surgical interference at all, viz., the relief of suffering, with as little danger, distress and mutilation as possible.

Then, too, we must never overlook the effect of such clinics on the ambitions of untrained men,—men who are dazzled by the brilliancy of the achievements and are tempted to imitate them, but who have not had the training or experience to qualify them to discriminate between the time when such operations are useful and proper, from the time when they are unnecessary and improper.

The most significant and important results of that Congress, as it seems to me, were the recognition of the fact that major surgical operations are being advised and undertaken by men with little or no surgical experience, and the call for some action on the part of the profession to safeguard the science of surgery and the public from the practice of untrained and incompetent men.

The ability to do major surgical operations, and to get by with them, to use a slang expression, because the wounds heal perfectly, is, I think, a serious menace, not only to the public, but to surgery itself; and we look forward with great interest and hope, to the efforts of the new College of Surgery, conceived in New York last October, and born in Washington last month, so to standardize the requirements for the practice of surgery as to discredit, and as far as possible eliminate, the incompetent.

But it is not altogether to the abuses that are incident to incompetency, important and glaring as these are, that I wish particularly to direct your attention. In an article on "Conservatism in Surgery," by Dr. James E. Moore,[2] one of the most distinguished surgeons of the Northwest, "surgeons are divided into three classes, the conservative, the radical, and the progressive."

"The conservative is the man who treats empyema medically or with the aspirator, who temporizes with tumors of the breast until their malignancy is established beyond a doubt, and the chances for a thorough excision are lost; who waits for the development of a tumor in acute inflammation of the appendix; who waits in cases of intestinal obstruction until operation is almost hopeless, and by a general policy of delay and attempted palliation fails to grasp the opportunity for safe and successful interference."

The type is now chiefly of historical interest, so completely has it disappeared in the rise of the radical surgeon, who is described by Dr. Moore as one "who frequently performs unnecessary, and even unwarrantable operations," does gastro-enterostomy, "when stenosis did not exist, or when the operation could not rationally be expected to do any good," anchors a floating kidney, "when, because of a general ptosis of the abdominal organs, there is no possibility of relief"; "removes the appendix for insufficient reasons, because it is such a common offender that people are very ready to accept a diagnosis of appendicitis on a very small array of symptoms," and so on through the list.

This type is, it seems to me, unfortunately too common, and judging from my own observation, is still increasing. Moore very properly adds, "that some operations should be radical, but no surgeon should be so." The safe, sane, well-balanced surgeon, who holds his course between these two extremes, he calls the progressive,—a title that is well enough if you can forget the ordinary modern use of the term in politics and religion.

It is the increasing influence of the radical that prompted Dr. Richardson[3] to say, "that there is a tendency quite prevalent among surgeons to make light of surgical operations. I cannot but regard this as an evil, for all surgical operations, no matter how apparently trivial, are attended by possible difficulties and dangers which should always be taken justly into account in discussing their pros and cons."

This tendency to make light of operations is still further illustrated by the closing sentence of a most interesting and valuable paper by Bloodgood,[4] on "Medical Aspects of Surgical Diseases, or Preventative Surgery," in which he asks the question, "Why should not surgery interfere in the least dangerous period, even if it interferes now and then unnecessarily?"

A question which is, I think, sufficiently answered in an earlier sentence of the same address, in which he says, "Appendectomy in doubtful acute attacks, and in the free interval after such attacks, has been too often performed when the real trouble was gastric or duodenal ulcer, gall stones, renal colic, ptosis of the colon, pericolitis, or pelvic lesions, or in some cases, the abdominal symptoms of tuberculosis or pernicious anemia," and he might well have added, in some cases when there was no demonstrable lesion at all. When he concludes that "this over-zealousness in appendectomy has practically done little harm," I cannot follow him.

Of course it has done, and can do, little harm in his hands, because he would make such mistakes only when the most careful history taking and physical examination made them unavoidable, but to preach such doctrine to the average operating surgeon throughout the country, seems to me hardly fair to those who put their health and their lives in our hands.

If we look back over the history of modern surgery, we shall find many procedures which we once believed to be sound and beneficial,

which have since been entirely abandoned or greatly limited and modified in later practice, and more that are still in vogue, whose limitations we are just beginning to appreciate.

When the danger of peritonitis was removed, and the safety of opening the abdominal cavity demonstrated, one of the first popular procedures was Battey's operation, or the removal of the normal ovaries for the relief of pelvic pain, and although this has long since been given up, every hospital pathologist can testify to the number of practically normal uterine appendages that are sent to his laboratory as examples of chronic ovaritis, and every surgeon has felt the disappointment that has followed when their removal has failed to give the hoped-for relief, and the family physician has found himself after the operation up against the same old problems.

Then our attention was diverted to the Fallopian tubes, and the presence of a few adhesions and a little dilatation has led to their removal with as little satisfaction to patient and physician. Please remember that I am not speaking of those cases in which marked anatomical changes are found, and where unspeakable relief has followed the removal of seriously diseased appendages, but of those in which no gross lesions could be detected upon examination, yet operation was undertaken because there seemed to be nothing else to do, and no adequate cause was disclosed by the pathologist's report.

Then think how few years it is since the repair of the cervix uteri was regarded as a most important step in the cure of a great variety of disorders of supposed reflex origin, without much regard to the extent of the tear or to the presence of eversion or erosion. It was an almost unlimited field, and for years it was thoroughly exploited, but we have learned now that it has very definite and obvious limitations within which it is still a most useful and necessary procedure. Much the same can be said about the operation for the correction of backward displacements of the uterus.

Its value in cases where definite symptoms exist directly traceable to the displacement is, and probably always will be unquestioned, but that it should be undertaken whenever in the course of a thorough physical examination the uterus is found retroverted or retroflexed, seems absurd, not because any of the procedures for correcting the displacement are dangerous, but because in default of positive indications, confirmed if possible, and it generally is possible by a preliminary mechanical replacement, they seem to be a needless meddlesome sort of interference.

Yet because it is safe, simple, and gratifies the passion for doing something, or having something done, it is frequently employed when the symptoms and the displacement can have no possible relation.

Leaving the pelvis, we come to the question of appendicitis,—perhaps the most popular operation of modern times, with the laity as well as with the profession. In the first place, let me state as emphatically as possible, that I stand squarely with those who believe that in acute appendicitis operation should be done as soon as the diagnosis is clear—preferably within the first 24 or 48 hours; that with a history of one or more well defined attacks the removal of the appendix is desirable on account of the probability of recurrence, and that in many cases of chronic abdominal distress, if there is local pain or tenderness, with or without muscular spasm, its removal is justifiable on suspicion.

But although trying to be as careful as possible in diagnosis, I have many times operated when the subsequent history, or the condition of the removed appendix demonstrated the error of having operated at all; sometimes when I have yielded to the importunities of the family physician, or of the patient himself, and sometimes when my own judgment was at fault; and I think that if the pathologist of any of our large hospitals would compile the results of the examinations of the appendices sent to his laboratory during a year he would be the only one not surprised at the large percentage of practically normal specimens.

In how great a number of the cases of chronic abdominal distress which present themselves at our large surgical clinics do we find that the appendix has already been removed, but without relief; and how often do we find that adhesions, hernia or infection have made the patient even worse off than before?

My own feeling is that we need to exercise far greater care than we do, in making the differential diagnosis in cases of appendicitis,—that no one should operate for a simple appendicitis who is not sufficiently trained by experience, and by his observation of living pathology, to be able to detect the rarer and more complicated conditions, for which appendicitis may be mistaken. Hasty snap-shot diagnoses have certainly led to much ill-advised and unnecessary opening.

In the surgery of the gall bladder, operations are still far too common, in which the expected gall stones cannot be found or an ulcer of the duodenum is overlooked and in which the drainage of the gall bladder is, therefore quite superfluous.

The complexity of the anatomical relations in this region make accurate diagnosis, even after exposure of the field, much more difficult than in the region of the appendix, but this is of small comfort to the victim of an unnecessary operation, or of an unrecognized but troublesome duodenal ulcer.

In considering these surgical abuses and the limitations they ought to impose on surgical practice, the history of the operation of gastro-enterostomy is, I think, particularly significant. As a means of curing all sorts of intractable dyspepsias, as was for a time confidently expected,

and as it is still far too commonly practiced, it has proved to be most disappointing, but as a means of relieving pyloric obstruction, or as an adjunct to pyloric resection, its results are exceedingly gratifying. Its limitations are, however, not even yet as generally recognized and accepted as they ought to be, and when disregarded they lead to some of the most deplorable illustrations of unnecessary and misdirected surgical interference.

Movable kidney has been another easy mark for the over-zealous surgeon. It may give rise to severe and serious local discomfort, as in the occurrence of Dietl's crises, and its fixation in correct position may then be accomplished with great relief, but it is far more commonly a part of a general visceral ptosis, the discomfort from which is not at all removed by a simple nephopexy.

All of these are useful and necessary operations but they illustrate, it seems to me, certain abuses which have gradually, and perhaps naturally, crept into the practice of surgery, abuses which are not the result of incompetency, but are due sometimes to a faulty interpretation of a case history, more often to over-confidence in the benefits to be derived from mechanical interference and an unrestrained enthusiasm for doing something tangible and heroic.

It is not a sufficient answer to say that these operations are devoid of danger, and of post-operative complications—they are reasonably so, it is true, in the hands of trained experts, but they are not absolutely so, by any means, in the hands of the average operator throughout the country, and even when performed by experts there are "Certain Unavoidable Calamities Following Surgical Operations," as was pointed out by Dr. Richardson[5] in a paper before the American Surgical Association in 1904, such as hemorrhage, thrombosis, embolism, and suppression of urine. I have never had a death from suppression of urine except when its possibility was anticipated, but I have had unexpectedly fatal results from hemorrhage and embolism.

If I should permit my son to be operated on for a mere suspicion of some chronic inflammatory trouble about the appendix, and one of these accidents should occur, I hope I should have the grace to forgive, but I never should be able to forget, the tragedy of his death, and if the event of the operation should prove my mere suspicions unfounded, I am sure that I should never forgive myself for the sacrifice of his life.

I do not conceive that a surgeon's duty to his own son is any different from his duty to somebody else's son. I realize fully the responsibility which he is obliged to accept whenever he recommends operation, and I would not by any means have him shirk it; but I do insist that he should not undertake such operations as I have been discussing, lightly or without having carefully balanced the patient's present disability and suffering, its probable course if not operated on, and the accuracy of his diagnosis, against the dangers which are inherent in every surgical procedure.

But it is not at all necessary to have a fatal result to be brought in contact with the limitations and abuse of surgery. Consider for a moment the cases, and they are numerous enough in the experience of every one of us, I know they are in mine, and I do not believe my experience in this respect differs much from that of others similarly situated,—the cases in which, after operation, the relief is not permanent, is not even transient,—where the only result is the substitution of one form of complaint or disability for another, that large class of cases in which we find no very definite physical signs, no clearly defined pathology, but many and distressing subjective symptoms. And after the failure to relieve by operation we explain it by saying that the patient is a neurotic or a neurasthenic and that she belongs in the category of those who were so well described by Cheever, "as satisfied only when their pocketbook and their pelvis were both empty." But the point which I want to make is, shouldn't we have known that the patient belonged to that class, and if belonging to that class explains and excuses the failure of the operation, are there not some very obvious limitations to be applied to the practice of surgery in that class of patients, and ought they not to be recognized and applied before, not after, the operation?

Now let us look for a moment at the surgery of malignant disease, which presents a different problem. It must always be an open question how far operations are worth while which involve a serious deformity, like extirpation of the tongue and larynx, or resection of the esophagus, or permanent colostomy.

If we could reasonably expect as a result of these procedures a considerable prolongation of enjoyable life, or less suffering from the recurrence than from the original disease, there could be no question of their desirability or of our duty to urge their performance.

But in my own experience and observation such unfortunates usually eke out a short and very uncomfortable career, and the progress of the recurrent disease is quite as distressing as that of the original. Much the same can be said of the late operations for malignant disease wherever situated. It is perfectly true that thorough extirpation offers the only means of relief in malignant disease, but it is equally true, that to be effective at all, it must be applied early.

Bloodgood[5] has pointed out with especial force, the possibility of recognizing the precancerous stage of malignant disease in the stomach and elsewhere, and the false conservatism that permits a recognized ulcer or tumor to pass from the benign into the malignant stage, cannot be too strongly condemned. At the same time, I believe that we should be brave enough

to refrain from the mutilation and suffering caused by too late and hopeless operations.

Graves' disease is another illustration of the excesses into which our surgical enthusiasms are apt to lead us. We should all agree that in the early stages many of these cases recover a reasonable degree of health under appropriate medical and hygienic treatment, and that in the late stages of the disease, operative treatment is often unsatisfactory and even dangerous.

But that early operation would result in greater assurance of permanent benefit to a greater number than if it were confined to those who failed to respond to a reasonable trial of palliative treatment is by no means proven. Of course it would be safer, and the period of convalescence much shorter, than when the operation is delayed too long, but is it necessary—is it indicated?

Knowing that so many cases when taken early yield to less severe measures, it seems to me that such measures should have a reasonable trial, ever keeping in mind that failure to respond promptly should lead to their abandonment in favor of operation without any unnecessary delay.

I will simply mention the exploratory incision for diagnostic purposes, because the possibility of its abuse is too obvious, and illustrations too common to require further comment.

Now although all of the operations which I have referred to have their proper place, and are often imperatively demanded, the diseases for the relief of which they are undertaken are by no means always fatal or even permanently disabling under less heroic treatment. Just how large a proportion would recover under medical care has never been accurately determined, and until we have some definite statistics bearing on this point, our discussion must be based very largely upon the unsatisfactory and unscientific data supplied by personal experience and impressions.

It is equally difficult to get at the proportion of operative failures, failures not because of mortality but because the symptoms for which the operation was undertaken were not relieved.

Some quite significant figures were quoted in a paper which was read by Dr. Dwight,[7] before this Society two years ago, on "The Prevalence of Circulatory Diseases in New England," and they are of special value because compiled without any reference to the subject which we are discussing.

They were taken from the census reports, and show the changes that had taken place between 1900 and 1908, in the relative frequency of the more common diseases, tabulated as causes of death per 100,000 of the population.

They showed that in the preventable and infectious diseases, except scarlet fever, there was a very marked diminution, as illustrated by this death-rate; that in the circulatory diseases, except pericarditis, there was an almost equally marked increase.

In the group of "All Other Diseases" there was, of course, no such uniformity, but the significance lies in the fact that appendicitis, biliary calculi, ulcer of the stomach, intestinal obstruction and hernia, diseases in which surgical interference has been particularly active, all present a slightly increased mortality per 100,000 of the population. The increase in the number of operations during this period, must have been very large, and yet the statistical results fail to indicate the degree of improvement which the more radical operators would have us believe should follow more radical and more frequent interference.

Although all of the illustrations thus far referred to have been taken from the domain of general surgery, the different specialties are by no means exempt from the same tendency to operative excesses. Witness the muscle cutting operations of the oculists, the removal of tonsils and adenoids by the laryngologist, of nasal spurs by the rhinologist, and the extraordinary increase in the number of mastoid operations by the otologist,—all of these, like the others, are eminently useful and necessary procedures, but the indications for their performance are easily exaggerated by the enthusiasm and zeal of an impatient attendant.

I shall not weary you with any further illustrations, but shall be quite content if I have been able to convey to you the lesson which Jacob Bigelow's talk on "Self Limited Diseases" suggests to me, viz., that we should be careful not to put too much confidence in the work of our own hands. In thus recalling the faith of the fathers in Nature, I must disclaim again any desire to pose as a reactionist, or even as an ultra conservative. It is the glory of surgery that it is able to

> Rally the scattered
> Causes and that line
> Which nature twists
> Be able to untwine.

And no one can measure the benefit to humanity of the growth and expansion of surgical practice. Nor would anyone for a moment wish to do anything but encourage and applaud the pioneer work in surgery which is being carried on in our great laboratories and hospitals.

But as applied to the every day practice of the average operator, it must be acknowledged that surgical interference should be undertaken only after a most careful and thorough study of the conditions for which relief is sought, of the methods which may be employed to secure it, and by men whose training and experience qualify them to meet intelligently the dangers and complications that may be encountered.

We should not fail to recognize the fact that all of these surgical operations are definitely limited in usefulness and applicability, and that

disregard of these natural limitations constitutes a serious abuse of what is a perfectly legitimate means of relief when properly indicated.

It seems to me that the purely mechanical side of surgery has been receiving far too large a share of our attention, for we are not merely mechanics or carpenters. We must not forget that "any operation which does not better the condition of the patient must be regarded as a therapeutic error,"[8] and that to possess a sound judgment as to the indications and counter-indications for operations, based upon a careful and thorough knowledge of the natural history of disease and of surgical pathology, is far more important and valuable than the acquirement of mere mechanical skill.

In no department of human life are new methods more eagerly grasped at and tried out than in medicine and surgery, and the discovery that the cavities of the human body can be safely explored and their contents removed or re-arranged has very much overshadowed our interest in surgery as a science, and very much over-stimulated our enthusiasm for its practice as an art.

But all this will be changed. The only question is how, and by whom, the change shall be brought about. Shall it be slowly and gradually, by the natural processes of evolution; shall it be forced upon us by a popular demand for the safeguarding of surgical practice; or shall it be accomplished by the efforts of the profession itself to secure a more thorough preliminary training and adequate hospital apprenticeship for all students who are intending to engage in the practice of surgery?

I believe that it can be done best, and that it will be done, by the profession coöperating with the professional school, and I am equally convinced that when the change is made, and the science and art of surgery are brought into proper perspective, much of our over-interference will seem as absurd to our successors, as the over-medication of our fathers in the earlier part of the 19th century seems to us.

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Original Articles.

THE STUDY OF THE CAUSES OF JUVENILE DELINQUENCY.*

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SINCE the establishment of juvenile courts, a little over ten years ago, there has come an awakened interest in the causes of juvenile delinquency. In connection with the juvenile court of Chicago, four years ago, a Psychopathic Institute was established under the direction of Dr. William Healy, in which over a thousand of the repeated offenders have been studied. The purpose of this paper is to state briefly the methods used at the Psychopathic Institute, and to show some of the results of the study.

As statistics show that a large percentage of criminals commit their first offence long before their majority, it was thought advisable to begin the study of causative factors before the end of adolescence, both for the advantage of studying them in their beginnings, and that the prognosis might be the more favorable. For this reason study was begun in the juvenile instead of in the municipal court.

The routine study of each patient includes a physical and mental examination, and the ascertainment of many facts about developmental, family and social history from relatives, officers and others. In the physical examination such factors as eyesight, hearing, and nose and throat conditions are given prominence. If there is a question of hysteria, the physical stigmata are carefully looked for. Every physical factor is considered which could possibly effect the present situation of the individual. In the mental examination, Dr. Healy uses his own set of tests, supplemented by Binet in those cases where the mental age appears to be below twelve, or in any other case where it is indicated. Besides these, there are additional tests which are used as required.

In the study of the mentality, the factors which have been sought are: (1) results of formal education, always taking into consideration their advantages; (2), the estimate of native ability aside from formal education; and (3), the natural tendencies and interests of the individual, which may help in the solution as well as the understanding of the problem. The following is a tentative classification[1] of different mental conditions found, which has been adopted for the sake of convenience:—

"(*a*) Considerably above ordinary in ability and information—the latter estimated with reference to age and social advantages.

"(*b*) Ordinary in ability and information—the latter estimated with reference to age and social advantages.

* Read before the New England Hospital Medical Society, March 19, 1913.