THE PROGRESS OF SURGERY.*

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Standing on the threshold of the twentieth century, and looking with the eyes of hope at the future of our noble profession, let us remember that the splendid progress of the past fifteen years has been made possible only by the solid foundation builded by those whose hands have laid down their scalpels forever; who watch us now from the great unknown, let us hope, in our feeble struggles to attain perfection in our art. These surgeons who upheld the profession in the long past struggled against a series of obstacles, and with a succession of handicaps that are appalling to contemplate at the present day. They had no method of controlling hemorrhage save by the cautery or direct pressure. They were compelled to operate without anesthesia. Their knowledge of anatomy was as limited as one would expect from the strenuous opposition offered to human body dissection. They knew nothing of infection as applied to surgical wounds. They were powerless to follow by the perfect microscopes, now at our command, the tissue-changes incident to growth, repair, death and morbid change in living tissue. In the face of such appalling conditions, who of us would have accomplished more than they?

In scanning the work of the past, three strongly marked epochs have been pointed out by medical historians. Prior to 1552, or until within 350 years, there was almost no progress in surgical art. At this date Ambroise Paré, then a barber, used ligatures for tying vessels and controlling hemorrhages, instead of the cautery, as his predecessors had done. This enabled the surgeon to work boldly, and beyond the former limits of his craft. He cut more freely, he feared fatal hemorrhage less, and has been increasing the usefulness of Ambroise Paré's invention by new modifications of the ligature, up to the present year, when the formalin preparation of catgut and kangaroo tendon has enabled him to do plastic work in hernia, and indeed, all kinds of surgery of finer grade of manual work, with an ease and a certainty of cure heretofore not to be hoped for.

The second epoch in the progress of surgery was marked 300 years later and only forty-three years ago, when, in 1846, Morton, the Boston dentist, gave to the world the ether anesthesia, and one year later the discovery of chloroform rounded out the measure of this great boon to mankind, and "opened wide the throttle" for the surging advances of operative procedure.

The third epoch was ushered in by Pasteur, in 1856, when he discovered and proved that fermentation could occur only as a result of the presence of certain micro-organisms, some of which he isolated and fully described. It was fully completed by Sir Joseph Lister, who in 1867 gave to the world his theory of wound infection and elaborated the antiseptic methods of wound dressing. Nothing was now lacking. Hemorrhage, the dread of all conscientious surgeons, was conquered, pain was banished and quiet insured; inflammation and suppuration were held in the grasp of the surgeon's strong hand, and eliminated at his will.

Progress in surgery may be measured along these three lines. Our diagnostic skill, to be sure, is increasing, but only in connection with the splendid work, even better than our own, coming from the purely medical branch of our profession—the internal medicine men.

New routes of attack in special cases have been devised and perfected, many of them by the gynecologist—who is a surgeon first, and a specialist afterward, and who has solved many of our most vexing problems, laying them as free offerings upon the common altar of professional attainment—but for all these, we may yet, as surgeons, measure our successes, measure our advancement, control our death-rate and raise the percentage of perfect cures by observations along these three lines: 1, the ligature and suture; 2, the anesthetic; 3, the technic as ushered in by Lister and simplified by the many who have followed him.

LIGATURES AND SUTURES.

The profession is coming away from silk more and more, as catgut is perfected. The preparation of this material by the cumol process and by the formalin process, with or without chromicization, makes a suture so strong, so flexible, so surely and certainly sterile, that we are with one accord dropping all else. The use of silver wire in infected regions and for certain plastic work is still much in vogue and to be recommended. The silkworm gut is likewise a fixture under some conditions. In true surgical work, however, in aseptic surroundings and where perfect results are hoped for, catgut has no rival. The use of kangaroo tendon and allied animal sutures in such work as the repair of hernia and ruptured peritoneum has become general. Under its beneficent influence the ratio of perfect cures of hernia has so risen that it is rare indeed, to find an advocate of any other material for use in the union of the more powerful structures to be approximated and held in hernial operation.

Anesthetics.—Perhaps the most notable progress in the art of anesthesia rests in the application of nitrous oxid—"laughing gas"—to general and prolonged narcosis. Children, and patients who have recently filled their stomachs, patients known to suffer badly from the after-nausea of chloroform, or whose lungs and kidneys are too badly damaged to permit ether as an anesthetic may be anesthetized by this means quickly and with satisfaction. I have seen Dr. Bennett, formerly of Kansas City, now of the New York Hospital, keep a patient under anesthesia by this agent for half an hour at a time, without bad result, and to the operator's satisfaction. As an adjuvant to ether it is used, on account of its rapidity and its effect in the beginning of the anesthesia, to be followed later by ether, as a less expensive and more permanent agent. Ether, in the old, old controversy between ether and chloroform, still continues to win its way to the front. There can be no doubt in my own mind as to its increased safety and if it were as easily used as chloroform, and if it once acquired its deserved popularity with the mass of physicians, chloroform would be still less often employed than is the case at present. Deaths from chloroform due to paralysis of the heart are still quite common and comparatively unavoidable.

Technic.—As regards technic, the third line along which our progress may be estimated, the energy of the surgical world is now directed to the margin between the ideal death-rate of 3 per cent. and the actual one of 15 per cent. to 20 per cent. The profession have emphasized in the past year that asepsis and not antiseptics is the proper safeguard for the patient, and the latter is used only as a handmaid, so to speak, to the former—a stepping-stone by which it may be reached. The normal salt solution, sterile and non-irritating, has supplanted the bichlorid or carbolic solution as an irrigating material, and for cleansing the hands during the opera-

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tion. The autoclave with its tremendous sterilizing power renders it unnecessary to soak towels and instruments in antiseptic fluids. The rubber glove is a permanent innovation. So much is it esteemed that a prominent eastern hospital, finding after 587 hernial operations, 15 cases of suppuration, passed a resolution requiring all operators to wear sterilized rubber gloves when operating, in order to eliminate even this small number of unfavorable cases. This notable innovation is the only exception to simplicity in technic. In all other directions the tendency has been to use less and less paraphernalia in the operating-room and to rigidly limit the number of separate chances for contamination, offered by assistants.

In regard to the cleansing of the hands, I cannot do better than quote Eastman of Indianapolis, Wm. Pryor of New York and others, whose statements coincide entirely with my own experience:

"The greatest objection to any chemical sterilization of the hands and field of operation lies in the probable neglect of that greater virtue which lies in soft water, soft soap and softened elbow grease by much trituration of microbes. Cleaning nails, five minutes of scrubbing; cleaning nails again, five minutes' more scrubbing; then a teaspoonful of powdered chlorid of lime, until the heat of the lime begins to lessen; then sal soda until the hands are cooled; then immersing in alcohol. I have lost faith in the permanganate and oxalic acid. It leaves an acid on the hands last, the lime and soda an alkali last, and the hands that are in the abdomen every day and several times a day will tolerate the lime and soda, whereas the potash and oxalic acid have proven, in my work, very hard upon the skin; and, further, bacteriologic investigation by able eastern surgeons, as well as in our own laboratory, has shown a decided preference for the free chlorin produced by lime and soda."¹

Before closing this report, I wish to speak of some of the surgical procedures that have been to some extent abandoned.

Foremost among them stands the spaying of women—the removal of the ovaries for pelvic pain or because of disease of other structures. The rules of radical destruction that apply to an inflamed appendix do not apply at all to the case of female ovary. Its functions are vital to the welfare, physical and mental, of the woman, and are kept up long after grave changes occur in the connective-tissue portion of its structure. It has been settled that it is better left in situ, even after extensive plastic operations and after resection or removal of the tubes. The appendix is a useless appendage—the ovary a potent and active organ. That its exact manner of influence is not known does not render that influence less powerful upon the physical and mental welfare of the patient. The protest against the wholesale removal of these organs long ago came from the better gynecologists, was echoed by the attentive practitioner of general medicine and now comes from the laity, who see the baneful consequences. While there are still operators so blind to the light of modern pathology, so intent upon "doing something" and that something an easy one, as to perform ovariectomy for pelvic pain in young women, these are rightly denounced as little short of criminal in their disregard of modern views and the lessons of experience so well taught, and at such a bitter cost, by the records of the past decade.

Another operation practically abandoned is that of trephining and craniectomy for epilepsy and idiocy. The results have been so poor, so meager, so bare of

permanent good as to leave us but little choice in the matter—operation should not be advised. These cases belong to the asylum, to the man who can educate the few remaining nerve-cells, who can conserve the little remaining nervous energy and make of these patients useful things—automatons it may be, but self-sustaining and often more. To operate upon these is bad; to exact money for it seems worse. There are indeed a few exceptions to this rule—a very few. The greater part of these cases lie out of the sphere of the surgeon.

It is a pleasure to turn from this picture to the positive grounds fixed by the experience of the year in appendicitis. There is no recession of the surgeon on this line. Operation is imperative, is the only cure, and the earlier done the more certain are the results. Again I would say, as I have said in the past, and as many and better surgeons have said: The contraindications for operation are only a patient too weak or too shocked to bear operation and an operator incapable of doing it. In orthopedic surgery, too, the year has seen great things. Improved methods of treating bone disease; sharper lines of distinction between tubercular and other forms of bone necrosis; improved orthopedic appliances and a broader field of usefulness for the surgeon who would relieve the crippled and the deformed. The conscientious surgeon has reason to be proud of his art, to believe in himself and in the future of his profession.

PROFESSIONAL SECRECY.

ITS LEGAL ASPECTS.

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The ethics as well as the universal custom of the medical profession protect the secrets of the patient from disclosure; the confidence which the relation of physician and surgeon inspires is seldom betrayed. The law, nevertheless, frequently unseals the lips of the physician, and compels him to divulge information which, but for the voice of authority, might never have been disclosed. In the absence of express statutory prohibition, the physician or surgeon may be either permitted or compelled, against the objection of his patient, to testify as to any information concerning the latter's physical or mental condition acquired in a professional capacity, regardless of the nature of the information or the feelings of the patient, for the common law recognized no distinction between professional and ordinary information, at least as far as physician and patient were concerned. Under that system the patient did not enjoy the privileges of the client. The secrets of the latter were sacred and inviolable. If the same protection was not extended to the patient the reason may perhaps be found in the fact that until the last and perhaps the present century, medicine can hardly be spoken of as a profession. The books speak of "physic," and the term is still found upon some of our statute books. The physician shared the fate of the ordinary witness. Neither public policy, the interests of society, nor the confidential character of the information were, to the minds of judges, sufficient inducement to warrant any distinction between professional and non-professional communications. Either plaintiff or defendant might drag from the unwilling physician evidence seldom divulged except to physician or priest. But for the protecting seal of modern statutes, the physician might be compelled to disgrace his patient; it would not be safe to consult a physician. From time immemorial the law, both written and unwritten has closed the mouth of the attorney as to the secrets of his client.

¹ Eastman: West. Med. Review, Jan. 15, 1898, p. 6.