

CURRENT PROGRESS IN SURGERY

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IMAGINE a perfectly healthy man losing in an instant, through a blow on the head, all power of intelligent speech, all possibility of articulate or written expression, yet obviously preserving his personality and his powers of memory and reason. Consider the frightful plight of such an unfortunate person. What shall we say of a profession which, by the exercise of its art, can restore him to health?

The following brief history well illustrates what may be accomplished to-day. A German painter, about forty years old, was struck on the right side of his head, receiving a fracture of the skull. After operation, recovery followed in a few weeks; but the man was unable to speak or write. By drawings and diagrams, however, he showed that he understood ordinary conversation, and was aware of his surroundings. The German word *alles* was the only one that he could utter, and with this word he answered any question which was asked him. From observations usual in such cases it was determined that the injury causing his disability was not in the neighborhood of the fracture, but was in the brain at a point under the left, or unbroken, side of the cranium. An operation for the exploration of the region known as the "speech-center" was performed, the damaged place easily found and treated. During the convalescence, when the patient was learning to talk, the experiment was made of teaching the man English, of which he had known comparatively little, and avoiding German, his native tongue. A number of weeks after the operation he was speaking acceptable English, but no German.

DIAGNOSIS IN SURGERY

EXPLORATORY operations are rapidly diminishing with the increasing facility with

which we employ both new and old diagnostic aids.

Killian, a surgeon of Freiburg, Germany, has devised a tube and electric light for the exploration of the air-passages of the chest even far into the lung, and this without any cutting operation. Through this instrument delicate forceps may be manipulated, and objects which have been accidentally inhaled may be extracted. Some of us, no doubt, recall the sad case of the Rev. G. W. Bothwell of Brooklyn, who, while holding a small cork between his teeth, was moved to laughter by a little child, and drew the object into his chest. The unfortunate man lingered for many days, but finally died of pneumonia. The extraction of such an object with the bronchoscope would to-day be a matter of practical certainty.

X-RAYS

THE X-rays are of greater and greater value to us. In the matter of kidney stone, for example, we can now say with certainty that there is *no* stone present, whereas we formerly could pin our faith only on a positive demonstration. Many an innocent vermiform appendix has been removed when the true offender was a stone in the canal which leads from the kidney.

In spite of the enormous good accomplished by the X-rays, it may be well to say a word of warning. When an arm or a leg is broken, the patient demands a painless recovery and a good result as to usefulness and appearance. In the vast majority of instances surgeons for thousands of years have been accomplishing this, especially in fractures of the long bones. The X-ray, however, has taught us that many of these cures are not necessarily accompanied by absolute perfection

in the position of the bones. The patient, who without the radiograph would have gone on his way praising his surgeon, becomes dissatisfied when he sees the shadow picture of what looks like a badly set bone.

ANESTHESIA

AFTER the discovery of anesthetics, rapidity in operating gave way to a deliberateness conducive to accuracy, but not always to the safety of the patient. Once more we are learning that speed without haste is a life-saving factor, and instead of the tremendously long sittings, four and even six hours at a time, there are few operations which demand more than one hour and a half, the majority falling far below this limit. Aside from the dangers incident to the prolonging of surgical procedures, we must recognize that anesthetic drugs are poisons, and that their dosage and administration require skill and experience. Even in an emergency it is often worth while to secure the services of a skilled anesthetist at the expense of precious moments.

The various forms of local anesthetization are still practised with satisfaction and with ever-increasing breadth of application. A single example will suffice. When through cancerous or other disease the esophagus becomes so narrowed that swallowing is impossible, the patient is in danger of starving to death, and it is necessary to make a permanent opening into the stomach to nourish him with liquid food poured in through a tube. Life may be tolerable and useful and long under these conditions. The operation when performed under ether is frequently followed by fatal pneumonia, when by the hypodermatic injection of cocaine or some similar drug, perfect consciousness is preserved without such danger. Surely humanity has to be grateful for this invaluable boon, the discovery of Dr. Carl Koller of New York.

The injection of drugs into the spinal canal was demonstrated many years ago by Dr. J. Leonard Corning. Although useful in a very limited field of operative work, the method is still to be classed as dangerous and insufficiently tested. On the whole, the narcotic sleep as originally induced by the inhalation of nitrous oxid (laughing-gas) or the vapor of purified

sulphuric ether is so safe when administered by an expert that little is left to be desired.

SURGERY OF THE CHEST

THE heart, the lungs, and the other organs lying within the chest have long been regarded as forbidden ground. To be sure, when the drainage of abscesses has been demanded, it has been done with some success even in this region; but the invasion of the territory for any other reason has been very rarely undertaken by the boldest surgeons, and even then with extremely few recoveries. The wide incision of one side of the chest is a dangerous procedure, while the simultaneous opening into both sides means virtually immediate death from collapse of the lungs. Sauerbruch of Breslau elaborated a plan by which the patient's body, the operator, and his assistants, were all inside an air-tight cabinet, while the head of the patient and the anesthetist were outside. The cabinet was supplied with pumping machinery so that the atmospheric pressure was just a little less than that of the surrounding room, the surgeon and his assistants working in slightly rarified air. The lungs of the patient were thus kept from collapsing, and one or both pleural cavities could be opened safely. It was hoped that operations upon what may be called the forbidden organs could now be performed, such, for example, as the removal of growths situated at the upper end of the stomach. Thus far no human being has been cured of a growth in this region, though opening the chest for operations upon the lung, such as the closing of bullet-wounds, has been completely successful, and it has been demonstrated that the dawn of intrathoracic surgery is surely breaking.

Meltzer and Auer, working in the Rockefeller Institute, have made the astonishing discovery that with a simple apparatus animal life may be maintained in anesthesia for hours without breathing, the functions of the heart and other organs going on normally. In ordinary ether sleep the breathing must continue regularly and, even though the patient is totally unconscious, the slightest interference with his air-supply causes immediate symptoms of impending suffocation. The subjects under anesthesia by Meltzer's

method suffer *no distress whatever*, and quickly recover when the anesthetic is withdrawn. Dr. Alexis Carrel modified the apparatus, and uses it at present in his operations upon the thoracic cavity. As in all surgery the tendency is from the complex to the simpler method, so in all probability the intricate cabinets referred to above will be completely supplanted by this simplified device, and tumors of the lung, abscesses of the lung, aneurisms of the large arteries of the chest, injuries of the heart, cancers of the esophagus and of the upper end of the stomach, will cease to be a reproach to the surgeon.

SURGERY OF THE BLOOD-VESSELS

UNTIL very recent years the only surgical operations which could be performed upon the blood-vessels were those which, by checking the circulation, caused clotting of the blood. These operations were done either to stop hemorrhage or to cut off the blood current from a diseased or damaged artery or vein. For example, aneurism, which is a dilatation of a part of an artery, was treated either by tying the vessels leading to or from the dilatation, or by inserting wire or some other foreign substance into the sac through a hollow needle. Rudolph Matas of New Orleans discovered that the blood stream having been temporarily stopped by means of a clamp or light ligature, the aneurism might then be cut open and its walls brought together with needle and catgut in such a way as to leave a channel of normal size, the remaining part of the aneurismal cavity being obliterated by the stitching. Murphy of Chicago and a few other surgeons devised means for the closure of accidental wounds of arteries without causing the blood to coagulate, and even for the repair of arteries which had been divided. Should the main artery of a limb be severed through an accident, reestablishment of the circulation would now be possible instead of the almost certain gangrene of other days. It remained, however, for Carrel to discover how to unite completely divided arteries or veins so perfectly that there is not the slightest impediment to the circulation. He has also shown that pieces of blood-vessel kept in cold storage for many days could be interposed between the ends of divided

vessels, and that the cold-storage vessel would soon act like a normal one. It is now even possible to transplant entire organs, such, for example, as the kidney, uniting artery to artery and vein to vein so that the transplanted part lives and performs its natural functions.

Crile of Cleveland experimented with a view to the direct transfusion of blood from one person to another, and the result has been a tremendous revival of an operation which, on account of its peril, had become obsolete. Transfusion as now performed, thanks to experimental surgery and laboratory research, is safe enough to warrant its employment in all suitable cases. Probably the usual cause of failure and of death in these experiments, from the days of the ancient Egyptians until the present time, was the clotting of the blood in the vessels. Investigation has shown that blood is an extremely complex substance, and that it differs greatly not only in different species, but also in individuals of the same species. Neither sex, family, nor so-called blood-relationship is a guarantee that the blood of two persons will safely mix, hence it is necessary to prove experimentally that the blood of the would-be donor will neither clot nor otherwise injure that of the patient. In a recent case there were eighteen men who answered an advertisement, and of this number only three possessed blood of the necessary qualities, and only one was of such physique as to make him a suitable subject. There is nothing more dramatic in surgery than a transfusion of blood—to see the patient take on the rosy hue of health, waken out of his lethargy, show an immediate live interest in his surroundings, and actually recover under the eye of the operator. In adults we must not permit the amount transfused to equal the normal for fear of suddenly overtaxing the heart, but in the case of young children who have had severe hemorrhages there may be complete recovery *without a period of convalescence*, so that at the termination of the operation the patient is *well*.

SURGERY OF THE THYROID BODY

A FEW months ago a man presented himself for relief at one of our hospitals whose face struck one immediately as the very picture of fear and intense nervousness.

He was greatly emaciated, his eyes were bulging from their sockets, his limbs trembled, and on close inspection the arteries in his head and neck could be seen rapidly and violently pulsating. For weeks this man had hardly slept; he had a feeling of apprehension, and was constantly in a condition resembling that which is felt immediately after a great fright. The medical reader of this description will at once recognize the disease. The symptoms and appearances are caused by an acute poisoning resulting from the overactivity of a gland shaped like the letter H which lies on each side of the windpipe, to which the crossbar of the H is closely adherent. On examining the patient, the gland could be plainly observed, and while not so prominent as it usually is in this disease, it was sufficiently so to complete the clinical picture. The malady is known as Graves' or Basedow's disease. Later writers have given it the better and more descriptive name of hyperthyroidism. Principally owing to the work of Theodore Kocher of Berne, Switzerland, the operation for the removal of the diseased thyroid has been placed upon a safe footing. The patient whose case has just been described was operated upon by the removal of half of the gland. The progress of his recovery was most interesting. His pulse of 160 became normal; the nervousness, wakefulness, and tremor vanished; in a few weeks there was a gain of many pounds in weight, and even the bulging of the eyes, usually the most stubborn symptom to yield, had entirely disappeared.

SURGERY OF THE BONES AND JOINTS

LAST year marked a great advance in what is called plastic surgery of bones and joints. At the German Surgical Congress, E. Lexer reported a number of cases in which a large defect left after the removal of a section of bone for cancerous growth was completely filled and bridged by the implantation of a piece of healthy bone from another person. It was naturally necessary for the patient to wait until an amputation made it possible to obtain the requisite material. A large section of a right leg was implanted into a corresponding defect of the left leg of another person, with an excellent result. The same surgeon has restored a nose, bridge and all, by first transplanting a

piece of thigh bone under the skin of the forearm, and when it had grown fast, transferring the bone with its overlying skin to the place where the patient's nose had been. Even more marvelous than this is the almost undreamed of possibility of the transplantation from one person to another of a complete knee joint, with its bones and ligaments. This has been performed in two cases with results which, while not absolutely perfect, give great promise for the future of work of this character.

Surgical operations are undertaken to save life or to render it more tolerable. If these conditions are not fulfilled, we must record a failure, no matter how brilliant the conception of the plan or how skilful its performance. The rapid development of surgery since the coming of anesthetics and antiseptics is still progressing. So many and so great, indeed, have been the recent achievements in all the ways and byways of the science and the art, that it has been impossible here to attempt more than short excursions along a very few of the main thoroughfares. The record of a single month is so enormous that no one mind can grasp more than a few of its multitudinous details. While it is true that certain facts and principles supposed to be new are merely rediscoveries, yet the genuine advances prove that, after all, there are many new things under the sun, and these new things, together with new applications of the old ones, form combinations which are brilliant and endless.

POSTSCRIPT

FEBRUARY 21, 1910, at Mount Sinai Hospital the writer performed the first operation ever attempted in a human being with the aid of Meltzer's intratracheal anesthesia. (See page 874.) The apparatus was an improved modification devised by Dr. C. A. Elsberg who managed the etherization on this occasion. The patient was a man forty-five years old and the operation was an exploration of the right chest through a large incision. In this instance it was not necessary to check the respiratory movements, but breathing was remarkably quiet and it was possible with great ease and accuracy to inflate or to collapse the lungs. One week after the operation convalescence appeared to be assured.

MODJESKA'S MEMOIRS

THE RECORD OF A ROMANTIC CAREER

V—SUCCESS IN LONDON

BY HELENA MODJESKA

AN INTRODUCTION TO LONDON SOCIETY

IN January, 1880, my husband went to London to see the theatrical managers about an opening for me. He could do little in the matter, for the managers refused to go into transactions before seeing my work, but he made several valuable acquaintances.

The first person who called on us when, a month later, we reached London, was Mr. Hamilton Aïdé, whom my husband had met on his previous visit. Every one in the eighties knew Mr. Aïdé, and I do not need to describe that ever-youthful man, a friend and patron of artists, an artist himself, and a dilettante in letters. He at once arranged a reception for us in his handsome rooms, and asked me if I should like to recite before his guests, who were mostly literary men and women, artists, and society people. I told him that I had never recited in English, and informed him of my theory about recitations in a foreign language.

"Do you recite in Polish?" he asked.

"Of course I do," was my reply, and I promised to recite my favorite poem, "Hagar in the Desert," by Ujejski.

When we entered the reception-room, I experienced for the first time in my life that most unpleasant sensation of being observed as an interesting object of curiosity. Against all rules of good breeding and politeness, they looked me over from head to foot with their lorgnettes, and their supercilious smile was wholly irritating. After a short musical program I was asked to recite, and, to my surprise I saw the same ladies who had looked me over drop their lorgnettes in their laps and wipe their eyes. "What made them

cry?" I asked myself, since they did not understand a word of my recitation. Was it because, moved by the inflections of my own voice, I really felt the intensity of that ancient tragedy?

A RECEPTION AT LORD TENNYSON'S

AMONG Mr. Aïdé's guests we met Lionel Tennyson and his exquisite wife, and a few days later we received an invitation to an evening reception at Alfred Tennyson's house.

My heart was beating fast when I entered the presence of the great man, and I could say but little when he greeted me with a cordial, strong grasp of his hand. I was looking for the hostess; he guessed my thought, and led me to the other end of the room, where a delicate-looking, sweet woman lay on her back on a narrow couch. There was something so appealing and touching in her frail person that when she extended her hand to me, I instinctively knelt down beside her couch, as I would at the bedside of some dear, sick friend. I saw her smooth cheeks blush faintly, and I rose instantly, remembering that anything demonstrative was regarded as out of place among English people. I said faintly, "Pardon me," and accepted Mr. Lionel's chair, which he had placed for me near his mother's couch.

There were many distinguished persons in the room: Frederick Locker, Dean Stanley, John Everett Millais, the great artist, who invited us to his studio; and several others belonging to the aristocratic or diplomatic world. Hallam Tennyson, the elder son, was also present. He helped his father in receiving the guests, and seemed altogether to be his right hand.