treatment of this disease. Intubation is an operation requiring so much delicacy and skill that its employment will be limited to those specially favored. Those who have not had special training or who are not unusually dextrous should never attempt intubation, but should resort to the older operation.

While there are some who have but little faith in tracheotomy and who question its utility, yet statistics prove conclusively its value as a life-saving operation. Recoveries from tracheotomy amount to about 26 per cent. In 1886 it was my pleasure to collect reports of 306 cases operated upon in Chicago with 58 recoveries, or 18.95 per cent. Agnew¹ (1878) reports 11,696 cases with recoveries amounting to 26.25 per cent.

Monti¹ (1884, Vienna) 12,736 cases with 26.8 per cent. of recoveries. Lovett¹ and Monroe, 21,853 cases performed in various parts of the world, with 28 per cent., while Mastin¹ has collected reports of 862 cases operated upon in the United States with recoveries amounting to 26 per cent.

It must be admitted, however, that individual operators often present a much larger percentage of recoveries. On the other hand, some meet with almost uniform failure, and their cases are never reported. Thus it has come to my knowledge that one operator has performed tracheotomy one hundred times with but one recovery, another fifty times with two recoveries, another twenty with one, another fourteen with none, and another eight with none, making a total of 212 cases with but four recoveries, or 1.88 per cent.

In operating the slow method is to be preferred when there is sufficient time; the tissues being carefully dissected and blood-vessels avoided or ligated. After the trachea has been opened all loosened membrane should be removed before the tracheotomy tube is inserted. The wound should be frequently dressed with antiseptics, and a pad of antiseptic gauze constantly worn over the tracheotomy tube. Feathers and brushes should not be introduced into the trachea, as is too frequently done. As little irritation should be produced as possible, and for the purpose of dissolving the sticky secretions that collect in the trachea and for exciting coughing by which to cause their expulsion, a warm alkaline solution should be employed instead, either by an atomizer or by pouring it directly into the tube. In case membrane is present below the tube, papyotin, tripsin or a saturated solution of pepsin may be employed for the purpose of dissolving it. The tube should be removed and cleansed as required, and it should be remembered that unremitting care and attention is the price of success.

SOFT-HANDED SONS OF TOIL.—This is the classification of our craftsmen according to Dr. Holmes.

¹ Cyclopædia of Diseases of Children, Vol. ii.

REPORT OF A CASE OF LEFT LATERAL HOMONYMOUS HEMIANOPSIA WITH A WOUND IN THE OCCIPITO PARIETAL REGION.

Read in the Section of Ophthalmology at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY ROBERT TILLEY, M.D.,
OF CHICAGO, ILL.

Cases of well-defined lateral homonymous hemianopsia must ever, in the nature of things, be rare; and such phenomena arising from a wound and uncomplicated with other symptoms, must, if possible, be still rarer. Of course, the impossibility in this case of demonstrating the actual abnormal state of the involved part of the brain detracts from its interest; but there are several questions which arise in connection with such a case which may be profitably passed in review. I will first report the case:

W. S., male, 21 years of age, came to the clinic at St. Luke's Hospital, Chicago; he had previously been to another institution in the city, but, as he was complaining of a noise in the ears, he was referred to the ear department and no observation seems to have been made of the eyes. He still complained of a noise in the head on the left side, but he complained also of the loss of the left half of vision of the left eye. He assured me that the right eye was "all right." I was examining, when I first saw him, the patients before some students of the Chicago Medical College, and after making a rough finger test of the field of vision of the left eye, and finding his statement relative to the loss of the left half of the left eye correct, I accepted his statement relative to the right eye, and discussed with the students the possible conditions which might bring about such a phenomenon; at the same time remarking that it seemed impossible for any pathological condition of the optic nerve or chiasm to produce such a clear cut vertical hemianopsia of one eye. The fundus was examined and nothing abnormal was found; no optic neuritis, no detachment, no atrophy, no choroiditis. The pupil was a little larger than its fellow on the right. No definite conclusion was reached that day as to the cause of the difficulty. On examining him next day with the perimeter, the observation was extended to the right eye and the patient was astonished to find that his right eye was affected in an exactly similar way. Whilst previously traces of syphilitic infection were vigorously sought for without result, attention was now immediately directed to the posterior part of the head. The following history was then obtained, in part from the patient and in part from his mother: at the close of January, or the early part of February, he was, when the worse for liquor, struck on the back of the head with a tin pail; he walked about a block to his home after receiving the

blow and when within a few steps of the door was found senseless several hours after the blow was inflicted. The mother reports that he was not fully conscious till nine or ten days after the injury; that the doctor called in said that the injury on the head was a scalp wound but that the skull might be injured beneath. No sutures were used for the wound.

There was no paralysis of any kind, no difficulty of speech, nothing abnormal noticed about sensations. The one thing that the mother noticed was that while in bed he seemed to reach out for things as though he could not see; after he was up he was constantly mistaking his way by going into one room when he intended to go into another. Questioned relative to the size of the left pupil, the mother and patient report that they have for several years previously noticed that the left pupil was at times larger than the right and that he had experienced and spoken of the noise in the left side of the head several years prior to the wound on the head.

Examination of the eyes showed the external appearance normal in every respect, except that the left pupil was larger than the right, movements of eyeball normal, pupillary reflexes normal, the left pupil a little sluggish, convergence normal. Accommodation good and binocular vision, as shown by stereoscope, good. V. R. E. $\frac{5}{8}$, 0.5 easily, L. E. $\frac{5}{12}$, 0.5 but has to focus a little nearer, he does not, however, accept minus lenses. He can read readily without inconvenience.

Ophthalmic examination.—The only abnormal condition in the fundus was a slight choroidal crescent in the infero-external segment of the O. D. more marked in the left than in the right eye. There was no optic neuritis in either eye. I looked on several occasions for this on account of the effort made by Drs. Edmonds and Lawford to explain the existence of optic neuritis in the various cerebral affections.¹

V. F.—The observations were made with a small shaded electric lamp in a dark room for the sensation of light, with the finger, and for the color red with the perimeter. The clearness and accuracy with which he recognized in the region to be indicated both the finger and the red object, and the total lack of evidence that he had any conception of its presence before that point, showed that the case was one of a well defined homonymous hemianopsia, the line of vision being practically vertical except in the immediate region of the point of fixation. The exhibition to you of the actual chart taken with a Steven's registering perimeter, will give you a more accurate idea of the field than any words can. It is illustrated by the diagram Fig 1. You see that the line is nearly vertical except about the fix-

tion point, where it extends gradually to about five degrees to the left of the median line. Several charts were taken at different intervals but they varied very slightly, the variations being rather in the periphery than in the central line.

To demonstrate the action of the iris a light was brought into the dark part of the field of vision, a dark card was placed vertically in front of the eye, so as to cover as accurately as possible the half of the pupil through which the left half of the retina received its light, and a small electric lamp suddenly illuminated, and the irides were always seen to contract on the appearance of the light. It was thus apparently demonstrated that the existing lesion was situated not in the optic tract but in the cortical region; and, as it involved the left half of the field of vision, the lesion should be found in the right cerebral hemisphere. The external wound on the head was located four inches and a half forward from the occipital protuberance, and the center of the wound was five-eighths of an inch to the right of the median line. The demonstrations were made in the presence of Dr. J. E. Owens, Senior Surgeon of St. Luke's Hospital, the internes, and some students. The patient was also seen by Drs. S. J. Jones and Moyer, and the whole examination was repeated in the presence of Dr. Church, of Chicago, Sunday, May 10. There existed no other manifest lesion. No difficulty in walking, no hyperæsthesia or anæsthesia. The only record of temperature that I have is 97.4° on March 27, and I regret that I have not repeated the observation.

At the latter part of March the question of operative measures for relief was suggested to the patient and his mother. After reflection he said: "I can now attend to my work, I can dance and play baseball—preferably at first base—and I will be satisfied with that."

I should add that although there was no syphilitic history, I kept him for a few weeks under mercurial treatment, and to my astonishment the previous existing difference in the pupils disappeared, so that I have not been able to observe it for about three weeks. There is, however, no difference in the general field of vision. The noise on the left side of the head referred to in the ears, is not so troublesome to him. There was nothing visible in the ear that would seem

¹ See Transactions Ophthalmological Society, Great Britain and Ireland, Vol. vii, 1887.

to account for the existence of the noise; and it must not be forgotten that it existed before the wound and before the hemianopsia.

The patient claims to have been previously troubled with a tape worm. I simply mention this in order to put before you all the possible factors which may enter into the phenomenon. It is not impossible that the difficulty may be caused by the presence of a cysticercus located in the right cuneus. As the hemianopsia came on, however, suddenly, it is very improbable. It must, however, be remembered that the patient was not himself aware of the presence of the difficulty in the right eye until it was demonstrated to him.

The question arises here: Is the phenomenon associated with the external wound found on the head? There is nothing suspicious about the wound itself. The scalp is freely movable over the bone. There is no tenderness on pressure or when percussed. The region of the wound is a little—say about half an inch—anterior to the commencement of the occipital lobe; it is located a little—five-eighths of an inch—to the right, favoring the theory of an injury to the right rather than the left cuneus, which is just what we should expect to establish the theory. That the lesion is not in the optic tract is probably proven by the pupillary reflex when the light is thrown upon the pupil from the blind half of the field of vision with the functional half protected with a dark card.

Supposing it to be proven, as far as any case can be proven under the circumstances, that the lesion is in the accepted cortical area for vision—the cuneus—is it caused by a depression of the inner plate of the skull or by an extravasation of blood? What is the best advice to give relative to operative measures? In expressing your judgment on this point, as I trust you will, let me ask you not to forget the relation of the longitudinal sinus to the cuneus and the possibility of getting along in life fairly well, especially when the loss of vision is on the left side. As the patient said, he could follow his work, play baseball and dance.

If it was thought wise to recommend an operation, the question of the time that had elapsed since the accident would necessarily cut some figure; but how much? In a consultation with Dr. J. E. Owens about two months after the receipt of wound an operation was recommended, in the expectation that the difficulty arose from a depression in the inner plate of the skull in the region of the cuneus, and that its elevation would result in a restoration of the lost vision.

With your indulgence, I will supplement this contribution with a few notes taken from a case in some respects very similar—in some respects very different—but the final result being as nearly alike as it is possible for two cases to be. The case that I refer to was published before the cortical centers had received such attention as they

now have, and the exact location of the injury is not as clearly indicated as it would be in any report of to-day. It was published in the *Irish Hospital Gazette*, Dublin, 1873:

Case of Compound Depressed Fracture of the Skull with Considerable Loss of Brain Substance and Extensive Laceration of the Longitudinal Sinus—Recovery—with Observations. By J. Stannus Hughes, M.D., F.R.C.S.I.

Feb. 5, J. O'B., 35 years. Struck on the back of the head with a heavy iron coal box whilst at work in the hold of a ship. On removing the hair an extensive depressed fracture of the skull implicating portions of the occipital and parietal bones was revealed. Patient was in a state of complete insensibility, but on the removal of the piece of depressed bone an alarming hæmorrhage from the longitudinal sinus set in; on which the patient, without assistance, sat up on the operating table and asked in a loud voice and in a rational manner, "What has happened? Who did it? Is my mother here?"

The several pieces of bone removed were as large as the palm of the hand. Patient recovered completely, as far as the external wound was concerned. But the interesting part is in the examination of the field of vision later.

Ophthalmic Examination by H. R. Swanzy.—The ophthalmic examination reveals no abnormality of any kind in either fundus oculi. The optic nerves, so far as they can be seen, are perfectly healthy. His central vision is nearly normal.

What he does suffer from is a lateral hemianopsia. The defect occupying the right hand side of the field of vision of each eye and dividing the field precisely in the perpendicular meridian, the fixation spot, however, having escaped.

This, of course, indicates some disturbance in the course or at the origin of the left optic tract. What the nature of that lesion may be I am not prepared to say; perhaps a disorganization of the nervous tissues due to an extravasation of blood, perhaps direct injury. Probably you yourself will be able to form the best conjecture on this point, being acquainted with the case from the commencement.

The report of A. H. Jacob and F. Wilson coincided with the above.

DR. JACKSON: I have within a few months, seen a case of hemiambyopia, with the divisions between the amblyopic portions of the field, as in Dr. Tilley's case. Within the amblyopic field a segment smaller than a quadrant, with indefinite outlines, which was absolutely blind. The reactions of the pupils were quite normal. The condition followed a gunshot wound of the occipital region of the opposite side.

DR. DE SCHWEINITZ described two cases of lateral hemianopsia, the result of gun-shot wound of the head; in one there had been chromatopsia. He thought the presence of cortical hemianopsia, without other symptoms, and in the absence of Wernicke's pupil symptom, practically located the lesion in the cuneus, and referred to the works of Temer, Monk and Seguin. The question of trephining should be decided by the amount of disadvantage and discomfort the patient experienced as well as the amount of good that would result. The intimate relation of a large, venous sinus to the trephine wound did not in itself con-

traindicate the operation, because it had been demonstrated that hæmorrhage from wounds, even of the lateral sinus, could be controlled with remarkable facility by packing.

A PLEA FOR THE GENERAL ADOPTION OF THE AXIS-TRACTION FORCEPS.

Read in the Section of Obstetrics and Diseases of Women at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY JOSEPH HOFFMAN, M.D.,
OF PHILADELPHIA.

In presenting any question concerning the forceps I am well aware that I am treading upon hackneyed ground. Without preface I shall hasten to the statement of my argument for the adoption of the axis-traction forceps. First of all, the use of the forceps is to be considered as an *obstetric procedure*, which before employment, is to be fully justified, both in the interests of the mother and of the child, entirely apart from the convenience or prejudice of the operator. The forceps are to be applied, neither because the mother demands them nor because they are a time-saving convenience for the obstetrician. Their use is strictly a logical one, and must be differentiated from every fallacy of apparent justification. The question has been asked, Can there be a too frequent use of the obstetric forceps? On the other hand, we hear continually of the "abuse" of the instrument. Now, if a part of the practicing obstetricians are in doubt as to whether they shall not use the forceps on every occasion where there is delay or other seeming cause, and if another portion give them only an occasional place in their application, the position of the two must be entirely different. If their application is for obstetric good and not for convenience, which must be conceded, they must save either mother or child, or both, from troubles or dangers she would otherwise undergo. Given a normal pelvis and a normal head and presentation, with normal application of forces, the labor has for its accidental factor the dilatation of its maternal soft parts. Now, if such dilatation, both perineal and cervical, is tardy, it is evident that an early application of the forceps must be accompanied with consequent injury to the maternal structures, while the injury to the child must, or should be small, under skillful application of the instrument. If now, on the other hand, there is free relaxation of all the soft parts and a deviated presentation, or a slight disproportion between the diameters of the foetal head and those of the pelvis, which uterine contraction and external manipulation have been unable to overcome, thereby prostrating the mother and interfering with the foetal circulation, the use of the obstetric forceps comes under consideration as a preservative measure,

and is directly advantageous, as it can be applied without force or forcible effects upon both mother and child. It is at this point that the general misconception of the use and intention of the forceps arises. Probably it is a teaching fault as well as a learning fault. Once let it be considered that the foetus in the pelvis is a foreign body like the aching tooth in the jaw, and we have the obstetric forceps and the old tooth-key, similar instruments of torture, both having force as the foundation of the ends they would attain. This idea, unfortunately, even if not confessed, is that followed out by too many obstetricians and obstetrical teachers, whose lectures must indorse, as a resultant of their ideas, pressure forceps, blades useful for leverage, and the like. It makes the forceps a lever or a tongs, with which to pull or pry by force, and loses sight of the principle that it must be for harmless application, the supplement of existing forces—to be used in their lines if they are normal, to restore them if abnormal, and to conserve or reinforce them if they are weak, and to substitute them if under certain conditions they are absent. Once accept and apply these principles and the abuse of the forceps ceases, even in cases where otherwise their application would be questionable. So far as the foetal head is concerned, in what light must the ordinary obstetrical forceps be considered? From a mechanical standpoint we must see that it works at a manifest disadvantage. Its adaptation to the foetal head is maintained, no matter what the resistance opposed by the maternal structures, by a maximum pressure at the extremity of the long arm of the lever composing the handles. If the resistance is small, the pressure is not less, but only shorter, owing to the speedy escape of the head, and expends itself to the disadvantage of the mother, in damage to the perineal floor. If this force is not applied the instruments slip, and damage both the foetal head and the maternal structures. If the resistance is great, the compressing force must be necessarily great to overcome it, while the contusing force upon the maternal structures is proportionate to the resultant of the force expended in the axis of the pelvis and that lost against the pubic bones. In the use of the ordinary forceps this ratio must exist; it is a mechanical necessity and must be overcome, if at all, by mechanical principal efficient according as they approach mechanical exactitude. With this approach to mechanics we must lose sight of all idea of violent force, of which much may be lost and compensated for by additional force. Considered from the standpoint of the foetus the force expended against the pubis is lost; considered from a maternal standpoint the force becomes harmful in its pressure effects, just as also the additional force by direct pressure upon the foetal head is harmful. It therefore appears that considered mechanically the ordinary obstetrical forceps is a