the alcohol from his system—in other words, slept off the effects of his intoxicating potions.*

Again, if we contrast the effects of belladonna and opium, we see that both affect primarily the nervous centres of the sensational consciousness; but that belladonna, on the one hand, causes blindness and dilatation of the pupil, from acting primarily on the nervous centres of the implantation of the optic nerves; while opium, on the other hand, causes contraction of the pupil, by exerting its influence on the centres in which the third pair of nerves is implanted. In a paper "On the Inhalation of Chloroform, its Anæsthetic Effects, and its Practical Uses", which was read before the Royal Medical and Chirurgical Society on April 22nd, 1851, and afterwards published in the *London Medical Gazette*, I have attempted to trace the order and sequence in the effects of the inhalation of the vapour upon the different nervous centres of the encephalon, and through them upon the sensational, perceptive, and intellectual phases of consciousness. The sensational consciousness is first obliterated. I have observed that, "while it is reasonable to infer that, in circulating with the blood through the encephalon, the presence of the chloroform, like that of any similar morbific agent, must more or less affect all the sensory feelings and psychical manifestations, it is nevertheless abundantly manifest that a kind of elective affinity exists, by virtue of which the vesicular matter of one centre of action becomes affected before that of another; for, during the the slow and gradual inhalation of the vapour, the function of sensation is suspended before that of intellectual action; the *consciousness of feeling* is obliterated, and consequently immunity from pain secured, before *intellectual consciousness* is totally abolished.

"The first few inhalations are attended with feelings which indicate disturbance in the action of the sensory ganglia, as 'singing in the ears, a sense of numbness, and tingling of the surface of the body, etc.,' but which are soon succeeded by a transient stage of more general excitement; of delirium in the hemispherical ganglia, for instance—as singing and incoherent talking, and of excited emotional impulses, and consensual movements in the sensory ganglia—as laughter and uncontrollable motorial actions; this is speedily followed by suspension of the function of sensation, *the consciousness of feeling*, while as yet some degree of intellectual activity remains. Sensorial impressions *from without* are no longer transmitted from the sensory ganglia to the cerebrum; but this 'suspension of ordinary sensational impressions, as in sleep, with persistent intellectual activity, is the typical characteristic of dreaming;' and dreams often occur. The commissural fibres between the cerebrum and these ganglia—*Reil's nerves of the internal senses*—being still in action, they transmit downwards the *residual intellectual activity* from the cerebrum to the sensory ganglia, and frequently give rise to manifestations which impress the mind of common observers with the belief of pain and suffering being felt under the knife of the surgeon, while in reality there are none.

"The function of the cerebrum, as the centre of intellectual action, is next suspended; a state of coma is induced, *a complete abolition of consciousness, reducing life to a series of automatic movements.* After this, the medulla oblongata and true spinal centres become involved, reflex action is stopped, and breathing by the ribs suspended. The ganglionic system is the last to be implicated; but, with the arrest of the peristaltic action of the heart, life ceases."

In all cases of blood-poisoning, it would appear that the sensory ganglia or nervous centres of the sensational consciousness become primarily affected, and before those of intellectual action or volitional power.

A true humoral pathology satisfactorily accounts for and fully explains the different varieties of toxic delirium and coma, and establishes the fact that, in such cases, the delirium and coma are but varying degrees of the same state; the latter being only an advanced stage of the former affection, a small dose of the narcotic causing functional disturbance in some of the faculties of the intellectual consciousness, and an over-dose paralysing and abolishing the action of them all.

In relation to this subject, it has been justly remarked of my friend, the late Dr. Snow, by Dr. Richardson, in his biographical notice, "that his generalisations and insights into the relations of allied phenomena mark the man of true power; and that his greatest deduction on these matters, and the proofs on which it is based, are to be found in his observations, where he explains that *the action of volatile narcotics is that of arresting or limiting those combinations between the oxygen of the arterial blood and the tissues of the body, which are essential to sensation, volition, intellectual action, and all the animal functions;* for he demonstrated that these substances (volatile narcotics) modify, and, in large quantities, arrest the animal and mental functions, in the same way and by the same power as that by which they modify and arrest combustion—the slow oxidation of phosphorus, and other kinds of oxidation, unconnected with the living body, when they (the narcotics) are mixed with the atmospheric air."

[*To be continued.*]

* The physiological action of alcohol has been the subject of much discussion; and, on this point, the experimental researches of Dr. Edward Smith are interesting and important. The value, indeed, of alcohol, as a therapeutical agent, in some cases of delirium, and in certain forms of exhausting disease, cannot be questioned, and the claim of *good wine*, to be *the milk of old age*, admits of as little dispute. It is against its abuse and its improper exhibition, whether as a *viande* or a medicine, that we have to protest and contend. Like chloroform, ether, and amyline, alcohol acts directly and primarily on the nervous centres. The recent experimental researches of MM. Lallemand, Perrin, and Duroy, have determined the true nature of its action, on the animal organism, to be that of a *local excitant* to the tissues, and that it is a *non-assimilable substance.* Ingested alcohol is absorbed; on entering the current of the circulation, it pervades all the tissues; by virtue of a kind of elective affinity, it accumulates in the nervous centres of the brain and the liver, but it is eliminated again as alcohol from the system by the lungs and the skin, but chiefly by the kidneys. In a few minutes after ingestion, its presence may be detected as exhaled with the breath from the lungs. Its accumulation in the nervous centres of the brain and the liver is in accordance with the well known pathogenic influence which alcohol exerts in certain constitutional and organic diseases of the liver and brain. MM. Lallemand, Perrin, and Duroy, in the course of their researches, made the unexpected discovery, that the blood did not contain the largest amount of the alcohol absorbed. On the contrary, they found, in the same animal, that, where the proportion of alcohol was in the blood, it was 1.48 in the liver, and 1.75 in the brain, but there was scarcely a trace to be found of it in the muscles. (*Vide* M. Rayer's report of the work of MM. Lallemand, Perrin, and Duroy, presented to the French Academy, and for which a prize was awarded, as quoted, in the BRITISH MEDICAL JOURNAL, February 8th, 1862.)

TEN YEARS OF OPERATIVE SURGERY IN THE PROVINCES.

By AUGUSTIN PRICHARD, Esq., Surgeon, Clifton, Bristol.

VI—ORTHOPÆDIC AND AUTOPLASTIC OPERATIONS.

[*Continued from page* 306.]

Autoplastic Operations. In the great majority of the following cases, the cause of the deformity which the operation was intended to remedy was the loss of skin from a burn.

CASE DCLXVII. R. P., aged 17, with contracted elbow. He burnt the anterior part of his arm as a child, and the result was a large web of cicatrix extending from just below the shoulder joint to the lower part of the forearm. He could extend his forearm so that the elbow made an angle of 90°. The new tissue was so wide that I did not divide it at once, but made a hole through it, and after dissecting up a long flap from the

outer part of the forearm, I passed it through the aperture I had made, and attached it to the edge of the hole by many sutures. There was hæmorrhage from the bend of the elbow, requiring one or two ligatures.

The flap united in a great part of its extent; and when it became tolerably adherent I divided the rest of the limb, and it healed satisfactorily. The boy could extend his elbow-joint when he went out to an angle of 135°; and as the flap was stretching favourably, there was every prospect of further improvement.

CASE DCLXVIII. S. M., aged 8, was admitted with a firm cicatrix on the middle of the neck, reacting from the chest to the chin, and drawing down her lip; she had also a dense band at the bend of the elbow, which kept her forearm at an acute angle with the arm.

I operated first of all upon the neck; and after dividing the scar by a transverse incision, I took a long vertical flap from the chest, transferring it into a horizontal position. The vertical wound was brought together by three pins, and the flap attached in its new place by many separate sutures. In the evening, there was free hæmorrhage from the lower part of the new wound upon the chest, rendering it necessary to remove the two lower pins, and to tie two vessels, and she became very faint.

The point of the flap sloughed; but all the rest kept its vitality, and became firmly adherent to its new place.

About three weeks afterwards, I operated on her arm, much as in the last case, that is, by dividing the scar, and taking a vertical flap from the outer part of the forearm and laying it in the gap. The new wound was united by pins; the flap was fastened in its position by common sutures.

Immediately after the operation she was seized with a severe attack of acute rheumatism, involving the heart, and requiring much care and attention; but, notwithstanding this complication, the flap in the elbow lived, and became firmly attached, and she regained great power over her elbow-joint. When she went out she was still improving in every respect, and was greatly relieved of her deformities.*

CASE DCXLIX. J. P., aged 19, with eversion of the left lower eyelid from a scar of the cheek. After relieving the eyelid by the division of the cicatrix, I removed a vertical flap from the side of the face, and turned it into its new place; and brought the new wound together with twisted sutures, the flap being held by several points of interrupted sutures. The case did very well; but presented one peculiarity which I never saw in any other; viz., that the flap united firmly by its extremity, and the central portion of it died, leaving a small space, which had to heal by granulation. This I believe to have been due to my having been more careful in adapting accurately and firmly the point than the rest of the flap.

CASE DCLXX. M. H., aged 26, with complete ectropium of the right upper eyelid, from a burn which destroyed all the integument of the lid up to the brow; and when it healed, left the eyelashes and tarsal margin adherent at the edge of the orbit. The condition had only existed four months when I saw her; but it produced great inconvenience and annoyance on account of the deformity, and her inability to shut the eye, which was uninjured.

I dissected down the tarsal cartilage from its abnormal position, and then removed a long flap from the forehead parallel to the margin of the orbit, but considerably above it, and sewed it into its new place upon the raw surface of the lid. The cartilage had been so firmly attached above that it had become flattened; and when it was brought down and covered with its new integument, it not only did not fit to the globe of the eye, but projected in a very awkward way beyond the lower lid, being apparently much too large. I lessened the gap in the forehead by two sutures, but could not bring it well together. Two branches from the anterior temporal artery required ligatures.

The point of the flap in this case turned blue and black, and died; but the great part of it united well, and in five days the cartilage had adapted itself to the surface of the eye.

In a little more than a fortnight (sixteen days), the new lid had become firm, and looked well; and I then divided its root so as to leave the lid of the proper size, and returned the pedicle to the surface whence it was taken, and which was still granulating; for I had not been able to bring the sides of the wound in contact. It adhered well, and she went out very much improved in appearance, and able to open and shut her eye to a considerable degree.

CASE DCLXXI. J. T., aged 25, had received a severe blow upon the left side of the face with a winch-handle a year before I saw him. The effects of the injury had been sloughing of the integuments, with fracture of the superior maxillary bone, terminating in a scar of the cheek adherent to the bone, and great ectropium of the lower lid.

I first freed the lid by an incision parallel to the margin of the orbit running along the whole length, and then having cut a raw surface at the inner canthus, from whence the lid had been entirely dragged away by the scar, I brought the lid into place, and stretched it to the inner canthus. I then took a long flap from the cheek in a vertical direction, and inserted it in the horizontal wound with the aid of numerous sutures. Two pins with the twisted sutures brought the vertical wound together, but it was very tense.

The flap lived and united well; the lid was kept in its place; and the wound in the cheek healed readily. The external commissure of the eyelids was drawn too much outwards; but this was relieved when the pedicle of the flap had been divided, and the patient returned to Wales very much improved.

CASE DCLXXII. H. M., aged about 30, received an injury to his nose when a boy, which resulted in the entire loss of the septum, and flattening of the nasal bones, and from that time, without discharge or inconvenience, his nose had gradually lessened in size until it disappeared, having been apparently drawn in by suction during respiration. The alæ nasi were still attached to the superior maxillary bones, but the tip of the nose was drawn in, and the sides inverted, all of it being below the level of the cheeks.

As he had apparently lost no integuments, I agreed to operate; and he bore all my proceedings with the greatest firmness.

I slit up the nose on the left of the middle line, and separated and drew out the sides until I had loosened them thoroughly. This required a good deal of dissection, and careful clipping with a sharp scissors, but it was done satisfactorily; and I then filled up the cavity with a pledget of lint, and brought the sides of the nose over it, so as to make a respectable bridge to a fair sized organ, and introduced two pins. The immediate improvement in his appearance was very great. I removed the pins on the third and fourth days, and took out some of the lint, and for a time his condition was promising; but I was much disappointed to find the organ gradually decrease in size, until it collapsed as before, and was drawn again into the cavity more thoroughly than ever, for now it interfered with his respiration.

I tried all the means I could think of to dilate his nostrils, but in vain; and I lost sight of my patient for two years, when he reappeared in the same state, but anxious for another trial; and, after much discussion as to the best plan, I performed the following operation,

* This patient has recently been admitted again under the care of one of my colleagues, who operated upon the other side of the neck, but without success, as the flap sloughed entirely. Her arm has done very well.

his nose being entirely drawn in, but no integuments being actually lost. The columna nasi remained, but no septum existed.

I made a cut through the skin of the nose on each side of the columna upwards and inwards, so that the incision met at the lower point of the nasal bones, and thus bounded a narrow triangle, the apex of which was above, on the middle line, and the base below corresponding to the width of the columna. I then cut through his upper lip on each side of the middle line, isolating a portion of a quarter of an inch in width, and after separating the frænum a little, so as to free it thoroughly, I turned it up, and laying it over the columna and triangular piece of skin left in the middle line, fastened it between the sides of the nose, which I had previously loosened, by two long pins. The lip was also brought together by pins, and the improvement was very great.

The whole of it healed well and kept in place, and he went out better in appearance, and satisfied with the possession of a nose. The red mucous membrane of the lip soon became pale when it had been exposed to the air and light some weeks in its new position forming the tip of the nose. I have seen this patient recently, and his nose remains in a satisfactory state.

Case dclxxiii. J. B., with a dense scar on the lip and neck from a burn many years ago. He was very anxious to get it repaired; and I, therefore, operated upon him. After dividing the scar transversely, I took a vertical flap from the right side of the neck, and stitched it across by means of ten sutures, bringing together the new wound with pins. The flap was about two inches and a half in length, and fitted remarkably well. I applied some dressing over the wounds, and kept it gently bound round with a thick pad of cotton wool. There was very little bleeding, and the case promised well. He was very sick from the chloroform soon after he was taken back to the ward, and vomited and strained greatly; and when I examined his neck on the third day, I found three-quarters of the flap blue.

The greater part of the flap having sloughed, the wounds were dressed regularly; and they ultimately healed, leaving him much in his original condition, except that he could close his right eye, which he could not do before.

When all was healed, I operated on him again, taking a broader, and shorter, and more triangular flap, from the left side, to fill up another horizontal cut which I made through the cicatrix. The flap was very vascular; for it bled freely before it was fastened into its new place.

The same series of events followed this operation. He was very sick from the chloroform; and when I examined the neck, I found the greater part of the flap sloughing. The wounds healed readily as before; and he went away but little better than when he came.

Case dclxxiv. D. L., aged 27, burnt both his eyes with melted iron; the left long before I saw him, and the right but a few months before that time. The result was that his lids were adherent to the globes of the eyes; and he was unable to see to work, owing to the attachment of the scars to the corneæ. His right eye was sightless.

I operated without chloroform on the left eye, and separated the lid from the globe until he could turn his eye freely in every direction; and then, having cut a thin delicate flap from the lower lid and cheek, leaving it attached to the inner angle, I turned it over the edge of the lid, and stitched it into the raw surface below the cornea. The eye was closed over it, and a compress was applied.

The flap preserved its vitality, and adhered to its new place; and the result was, after it had been trimmed and its pedicle divided, that the cornea cleared considerably; and the patient, having recovered also the power of moving his eye freely, was enabled to return to his work. The piece of skin which I had transplanted into his eye had not been converted into mucous membrane when I saw this patient some months afterwards.

Case dclxxv. J. G., aged 26, had burnt his right eye four years before I saw him, and the lower lid, by its inner half, had become adherent to the globe of the eye, covering half the cornea. I treated this patient in the same way, by inserting a flap of skin between the lower lid and the globe, in the place of the cicatrix which I had divided, and I used three sutures for the purpose. In a fortnight, I divided the pedicle, and he went home. I saw him about three months afterwards, and he had in a great measure recovered his sight, and could move his eye freely in every direction.

Case dclxxvi. B. E., aged 27. This case resembles No. 674 so completely that no separate description need be given. He also burnt both his eyes at different times, destroying the right eye, and causing so much dimness of sight in the left eye from the scar between the lid and the cornea that he could not see to follow his occupation. I introduced a flap of skin to replace the lost conjunctiva, and it succeeded completely.

Case dclxxvii. B. C., aged 25, had burnt his right eye, causing adhesion of the two lids together by their inner third, and of both lids to the globe as far as the inner third of the cornea, constituting anchyloblepharon and symblepharon.

At the first operation, I divided the lids from one another, and introduced a suture to join the conjunctiva with the skin of the upper lid. The plan succeeded well; and when the parts had healed, I operated again to cure the symblepharon.

I first cleared the globe from the adherent lids by a quiet dissection, which lasted some time, and then I separated a flap of skin from the lower lid, leaving it attached internally at the canthus, and after sewing up the wound thus made, I turned the flap over the edge, and, by three points of suture, united it to the conjunctiva and margin of the lid, and by its apex to the depth of the wound between the lid and the globe.

On the second day, I removed the stitches from the outer wound; and on the third day, I removed the others, and the flap remained alive in its proper place. After a week's time, I divided the bridle which held the flap, and found that both the cut surfaces were vascular. The eye became stronger; and he went home much relieved in every way, and with better sight.

Case dclxxviii. J. C., aged 21, had also received a burn in the right eye, which produced adhesion between the lid and the sclerotic and cornea; and he could not see to work without tying up this eye. I operated as before; and after making a free division of the scar, took out a long narrow flap, leaving it attached at the inner canthus, and turned it over into the eye. I introduced two stitches in the new wound, and kept the flap between the lid and the globe with three fine sutures. Everything went on well; but before I had divided the pedicle, he went home, and it was not till about five weeks after the operation that I had an opportunity of seeing him. The eye was more moveable; but the sight was no better. I divided the pedicle; and he gradually improved, and went away satisfied with his appearance, and the state of his eye.

Case dclxxix. J. P., aged 21, burnt the right side of his neck in childhood, leaving a scar which produced a certain amount of contraction and deformity; but they were not excessive.

I divided the cicatrix at the posterior part, and introduced a flap taken vertically from the back of the neck. It fitted admirably without being stretched, and was kept in place by numerous sutures. The newly made wound was brought together with pins.

Three days vomiting and discomfort followed the operation (and the chloroform), and she became low and

weak. The flap seemed in a satisfactory state at first; but ulceration came on, and the attachments gave way, and it melted down until about half of it remained. With the aid of a lotion of sulphate of zinc, the wound granulated and healed up; the neck being a little, but not much, improved. After it had become quite sound, I operated again, and repeated my proceedings in the anterior part of the cicatrix, taking my flap from the front of the neck. The operation was very promising; but exactly a similar train of symptoms followed, and the result was that about half the flap survived. I was much disappointed with the result of the case; for although there was some improvement, it was not what I had expected.

Case dclxxx. E. M., aged 15, burnt her face as a child, and the result was opacity of the right eye, with eversion of the lower lid, so completely that it was really destroyed, and a dense scar occupied the cheek and nose, and she could scarcely open her mouth.

I removed the surface of the cicatrix when the skin and conjunctiva were in contact, and introduced a flap taken in a vertical direction from the cheek. It fitted remarkably well, and was kept in place by eight sutures, while the new wound was brought together by two pins. A good deal of blood oozed out afterwards, interfering with the union of the flap, nearly half of which turned blue and sloughed, but the wounds eventually healed. She went away in rather less than a month, being somewhat improved in appearance, and expressing herself as much relieved by the operation.

[*To be continued.*]

Transactions of Branches.

CAMBRIDGE AND HUNTINGDON BRANCH.

CASE OF EXTRAUTERINE FŒTATION, WITH A FATAL RESULT, ACCELERATED BY A POTION TAKEN WITH THE VIEW OF PRODUCING ABORTION.

By T. Walker, M.D., Peterborough.

[*Read July 10th*, 1861.]

On the morning of the 21st of June, 1860, I was requested by the superintendant of police to accompany him to a house, where I found on the bed where she had died, the body of a female. It lay on its left side, leaning over the edge of the bed, as if she had died in the act of vomiting. On the floor there was a quantity of glairy mucus, containing portions of black matter, which seemed to have flowed, either before or after death, from the mouth; and on examination, I found the lips and teeth stained of a dark colour; similar stains were found on cloths which she had apparently used to wipe her mouth, both in the room below, and in the bed-room where she died.

The bed appeared as if two persons had slept in it, and on the side on which she lay it was found, on removing the body, that, by means of folded clothes and blankets, the bed had been carefully prepared and guarded, as for an expected miscarriage or *accouchement*.

I was informed—and the after-inquiry before the coroner elicited the same facts—that she was a deserted wife, the mother of three children, her age about thirty-four; that for some months she had been living with a man, nominally a lodger in her house, but on terms, and under circumstances, which left no doubt of the existence of a criminal intercourse between them; that some weeks before she had expressed to a neighbour a suspicion that she was pregnant, and a wish that she knew how to get rid of her burden, as she feared that, if she did not, she and her children would be deprived of the relief she was then receiving from the guardians of the union.

I learnt that the day before, a gipsy woman, well known in this neighbourhood, had spent the greater part of the day alone with her, had left her house about half-past four o'clock in the afternoon; and that soon after the departure of Mrs. Jones, the gipsy, the deceased Mrs. Jeffray was seen by her neighbours vomiting, and they remarked that what she vomited looked black and stained the towels with which she wiped her mouth—which were shown to me—of a dark colour. About six o'clock her sickness had ceased; but up to eleven o'clock, when she was last seen by her neighbours, she continued to complain of pain in the back.

By the evidence of her paramour, it was shown at the inquest subsequently held on the body, that about twelve o'clock, when she was still complaining of pain, they went to bed together; that about two o'clock he fell asleep, but, waking about four o'clock, he found her dead at his back, and in the same position in which I found her.

Under an order from the coroner, and with the assistance of my friend, Mr. Pearce, I made a *post mortem* examination.

Externally we found a very slight appearance of bloody discharge about the vulva; but on vaginal examination, although the os uteri was patent, there was scarcely any coloured discharge in the passage.

On laying open the abdomen, there appeared a copious effusion of blood, partly fluid, partly coagulated, amounting in all to nearly five pints and four ounces, and contained chiefly in the lower abdominal and pelvic regions.

I need scarcely say our first impression on making this discovery was, that there had been some interference by instruments, and that this extensive internal hæmorrhage was the result of violence done to the uterus, and we were, therefore, the more careful in conducting our after-examination. We found the uterus in its normal situation, and of about the size indicating the tenth week of pregnancy The ovary on the left side was natural in position and appearance; but on the right side there was in front of the ovary a tumour of about the bulk of a moderately sized orange, on the upper surface of which was a laceration about an inch and a half long, through which protruded a soft spongy mass of coagulum, making it sufficiently apparent that from this rent had proceeded the fatal hæmorrhage. This rendered the nature of the case tolerably clear, as having been one of extrauterine fœtation, the right Fallopian tube being the nidus of the misplaced ovum, the walls of which being thin and tender had given way, either from the effect of the violent vomiting of the early part of the evening, or more probably from the effect of the uterine action induced by the potion taken with a view to its producing abortion, and which had continued all the evening and up to the probable time of her death.

Careful examination of the Fallopian tumour discovered, amid the vascular mass which formed its larger portion, the ovum, with its placenta and membranes, containing a fœtus, apparently about the seventh or eighth week. The uterus was lined by soft vascular tissue, simulating the decidua, but it contained no fœtus or other membrane. The rest of the abdominal viscera presented no appearance of disease, except that through the transparent coats of the upper portions of the small intestines the dark colour of the matters contained therein was visible, and that in consequence of the empty condition of their blood-vessels, they, as well as the liver and kidneys, were lighter in colour than usual.

The contents of the stomach, chiefly mucus, mixed with black flakes, resembled the fluid which I obtained from the floor of the room where she died, and gave sufficient evidence, on being tested, of the presence of iron and of hydrochloric acid, as did the black stains on the towels.