

purulent discharges; but I was again advised to operate by the physicians, and the patient settled the difficulty by requiring relief from pain, and any chance of life which could be afforded to him.

"He improved in health immediately after the operation, and the wound healed readily. I saw him two years after. He looked very phthisical, but had been able to maintain himself by his trade. I have just heard (1866) that he was seen six months since, and looked no worse."

Strongly, most strongly indeed, would I urge these facts upon those who still deny the utility of excision of the os calcis as a standard operation; who would still rather sacrifice a foot which might thus be preserved, and restored to a state little inferior to one of perfection.

And equally desirous am I that all honour should be awarded to him who, by his judicious and skilful proceedings, first established an operation so creditable to British surgery upon a sure and firm basis, and who thus conferred so valuable a boon upon mankind in general. I therefore propose that henceforth excision of the os calcis should be designated by British surgeons "Greenhow's operation."

In this as in all other operations upon the foot, it is most important that the posterior as well as the anterior tibial artery should be preserved intact, if possible. When, therefore, we have reason to believe that the mischief is confined to the os calcis, the following procedure by Mr. Simon, in 1851, is the best. He made a longitudinal incision from above the heel to the centre of the sole of the foot; from this, a second, at right angles directly outwards round the external margin of the foot to its dorsum; the two cuts forming the outline of a rectangular flap. By reflecting this, he immediately exposed the whole of the outer surface of the bone and its connexions with the neighbouring bones. The os calcis easily turned out, as it was entirely necrosed, except at its cuboidal extremity, where a small portion was sound. Even the tendo Achillis was detached, with the periosteum. Unfortunately we have no information as to the after-history of this case, or whether the os calcis was regenerated, beyond the announcement that the boy recovered in two months.

The method recommended by Mr. T. Holmes is also very good. He makes two incisions at right angles down to the bone. One horizontal, on the supposed level of the junction between the astragalus and os calcis, starting at the inner border of the os calcis, dividing the tendo Achillis, and running forwards along the outside of the foot to midway between the heel and the projection of the fifth metatarsal bone, the situation, in fact, of the cubo-calcaneal joint. A second incision passes vertically across the sole of the foot, commencing near the anterior end of the first—that is to say, a little in front of the external malleolus, and terminating on the os calcis, near the inner edge. It was not prolonged into the grooved internal surface of the os calcis, in order not to wound the vessels. The flaps were then dissected back, and the joint between the calcis and cuboid opened.

#### ON THE

### USE OF CARBOLIC ACID IN BURNS.

By WILLIAM PIRRIE, F.R.S.E.,

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HAVING perused in the columns of THE LANCET Professor Lister's original communications on the use of Carbolic Acid; having also, on the 7th of August, at the meeting of the British Medical Association in Dublin, heard him read his paper on the advantages resulting from its employment in various surgical affections; and having, on my arrival at the Aberdeen Hospital on the following Sunday morning, been called to an extensive burn, just admitted,—it occurred to me that carbolic acid might be found as useful in burns as it has proved to have been in other cases.

The patient, Ann G—, a thin, delicate-looking girl, eleven years of age, about twenty minutes before admission into hospital, while sitting before a fire without any dress except a thin chemise, which extended as far up as her shoulders, got a quantity of hot water spilt over the upper part of her body. The whole of the left side of the face and neck, and also the whole of the back and left side of the body, as far down as the iliac crest, together with the left arm, were of a deep-red colour. On many parts, especially about the face, neck, and

shoulder, there were innumerable small vesicles (other parts were free from vesicles); and on the arm there were two bullæ, one about the size of a penny, the other a little larger. The burn was thus, evidently, partly of the first and partly of the second degree. The patient was affected with shivering; she complained of excessive pain; the pulse was extremely feeble, rapid, and irregular; and she was troubled with vomiting, which continued for two days. Two folds of surgeon's lint, dipped in a liniment of one part of carbolic acid to six parts of olive oil, were closely applied to the whole of the scalded surface, a double layer of tinfoil was placed above the lint, and the whole secured by means of a bandage. The air was thus completely excluded; and in ten minutes, the patient, much to my surprise, stated that she was free from pain. On the second day after the accident the skin was greatly improved, and the bullæ seemed withering away. On the twelfth day the skin was everywhere perfectly healed, the cuticle having been thrown off; and, although the case was watched with the utmost care, not a single drop of pus was discovered.

The sudden and perfect subsidence of pain, the withering of the bullæ, the complete healing of such an extent of scalded surface without the slightest suppuration, in a patient of feeble constitution and greatly depressed by shock, appear to me to show that carbolic acid is well deserving of trial in burns of the first and second degree. I have seen some scalds of less extent prove fatal, and I have seen many not so unpromising at first end in suppuration and ulceration of skin, and require months to heal.

For making clear the state of parts in the first and second degrees of burns, I have been in the habit of stating to our students that they are precisely the same as those which usually result from the application of a blister; the inflamed part, without separation of the cuticle, resembling the first, and the part covered by vesicles and bullæ resembling the second, degree of burn. This resemblance of the states of parts in blistered surfaces to those in the first and second degrees of burns suggested to me the desirableness of trying the effect of dressing a blistered surface with the above-mentioned liniment of carbolic acid and olive oil. This was done in the following case, which was carefully watched and recorded by Mr. Nicoll, one of the most talented of our students, who at the time was doing duty for our house-surgeon.

Helen W—, aged twenty-seven, was admitted under my care on the 27th of August, in consequence of an injury to her right hip-joint, caused by a heavy sack of meal having fallen upon her from a great height. Some subacute inflammatory action took place in the joint; and, after other treatment, a blister of the size of the hand was applied, on the 4th of September, to the outside of the hip, and allowed to remain for seven hours till vesication to a considerable extent was produced, when it was removed; the sensations of the patient and the condition of parts being precisely the same as in burns of the first and second degree. The blistered part was dressed in every respect as in the preceding case of burn, and in fifteen minutes the pain entirely ceased. On the morning of the 5th of September the blistered surface and bullæ presented the same appearance as on the removal of the blister; on the evening of the same day the smaller bullæ had begun to disappear. On the evening of the 6th the smaller bullæ were gone, and the larger greatly diminished; and on the evening of the 8th of September the parts were perfectly healed, no suppuration having taken place.

In both cases carbolic acid seemed to accelerate the subsidence of local symptoms, to procure rapid and perfect relief from pain, and to promote healing without suppuration. If in other cases of the same degrees of burn carbolic acid should be equally useful, it would be a great blessing in the treatment of these dangerous and painful injuries.

Although water may answer for diluting carbolic acid, when used for some purposes, oil must be preferable in cases of burns.

Union-street, Aberdeen, Oct. 22nd, 1867.

### HANGING AND STRANGULATION.

By I. MASSEY, M.D., F.R.C.S.,

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THE following are the particulars of two post-mortem examinations; one that of a man executed by hanging, the other that of a child strangled. They are, I think, of sufficient interest to warrant their publication.

The man was about thirty years of age, height 5 ft. 9 in., weight 12 st. 7 lb.; robust, healthy, and of good constitution; chest and muscular system well developed.

*Section cadaveris, four hours after death.*—Countenance swollen; lividity of the lips; indentations at the border of the tongue, indicating firm pressure against the teeth, but no mark of biting from protrusion between the teeth. Both pupils dilated, eyelids closed; a little frothy mucus issuing from the mouth; lividity of both ears. There was a well-defined and deep indentation going all round the neck, with the exception of an interruption from a point corresponding to the symphysis of the lower jaw to its angle on the left side; between these points no mark was visible, indicating the position of the noose of the cord. The general width of the mark was from half to three-quarters of an inch, being most marked on the right side of the neck as far as the anterior border of the trapezius muscle, less marked behind; colour of a tallowish hue along the course of the mark, intersected by lines of a purplish colour; much puckering of skin both at and above and below the mark; also a swelling of considerable size in the situation of the right sterno-mastoid muscle. Penis congested and moisture issuing from the orifice of the urethra; a couple of stains, apparently due to very slight seminal discharge, or prostatic secretion, were observed on the shirt.

*Chest.*—Body just warm. There was very marked flattening of the chest on each side of the sternum, especially from the first to the third ribs. There was a thick layer of fat in the integument. Black fluid blood escaped freely from the cut muscular structures of the parietes; there was considerable dark venous congestion. On removing the sternum and cartilages of the ribs, the lungs were not to be seen, and were found to occupy a very small space at the back part of the chest, resembling the contents of a foetal thorax; the pericardial sac alone being seen. The colour of the lungs was of a darker hue than natural, especially at the bases. On cutting out the lungs a quantity of black fluid blood flowed. The structure was healthy, but there was loss of crepitaney, and but very little air was contained in them.—*Heart:* The right auricle was gorged to the greatest state of distension with blood, and the inferior vena cava was in a like condition; on opening the auricle a great quantity of black fluid blood gushed out. The right ventricle also contained a large amount of blood of the same character; there was no blood-clot seen. The left auricle and ventricle were completely empty, the walls being tolerably thick. The liver was healthy, and contained black fluid blood.

*Neck.*—Along the course of the indentation the skin was thinned to the last degree, and semi-transparent, resembling parchment; when dissected off freely, there was slight extravasation of blood on the right side beneath the line where the rope had passed. The sterno-cleido-mastoid muscle of the right side was ruptured for one-half of its breadth, the ends being separated by retraction for nearly two inches; the fascia of the muscle, not being torn through, remained as an empty cylinder. There was extravasation of blood in the carotid sheath, but the coats of the internal jugular vein and common carotid artery were uninjured. The bones and cartilages of the larynx were whole, and no injury could be detected; but there was slight venous congestion of the laryngeal mucous membrane above the vocal cords.

The spine was not laid open to view, but after the larynx was removed the spine could be felt very plainly. The anterior arch of the atlas moved with the rotation of the head, their relative position being normal. No displacement or fracture of any of the vertebræ could be detected.

The structure of the brain was healthy. The vascular system appeared to be nearly empty; there was not any congestion (this might possibly be from the previous dissection of the chest). There was much cerebro-spinal fluid. The arachnoid membrane was semi-opaque in patches over the surface, but there were no roughness or adhesions.

The most remarkable feature in the above case was the great flattening of the chest, at once noticed on removing his shirt. The thoracic cavities were for the most part empty. The lungs occupied but a small part of their posterior chambers, being so condensed by the absence of air as to be but very slightly crepitant. The situation of the ligature mark shows that the rope must have been displaced before the drop fell; the pressure from the weight of the body falling on the right side tearing across the sterno-cleido-mastoid muscle, instead of in front directly on the windpipe. I have never seen such a condition of the chest and lungs after other executions I have witnessed.

The second case is that of a young woman who was seen by

a policeman about eleven in the morning standing near to a large river. She had a bundle, which, appearing heavy, excited the suspicions of the officer, and he requested to see what it was. She refused, but he, insisting upon examining it, found it to contain a full-grown female child and a piece of coal weighing nine pounds. They were folded in an old apron, tied round with two stay-laces, which had blood on them. She said it was her child and that she was single. She was two miles from home. It was afterwards discovered that she had given birth to a child during the previous night, no one being present. A coroner's inquest followed, and she was committed to the assizes for wilful murder.

*Post-mortem examination.*—Female child, full-grown; weight 6½ lbs., length 20 inches. Cord, not tied, six inches long; jagged at the end, apparently cut with dull scissors. Bloody discharge issuing from both mouth and nostrils; mouth open, tongue protruding between the lips. General lividity of the head and face. Surface of the body besmeared in patches with dry blood; it was covered with a layer of sebaceous matter; meconium at orifice of anus; the body had not been washed. There was considerable elongation of the occiput, as if born naturally.

*Neck.*—There was a well-defined indentation from a ligature all round the neck, about two lines in breadth, corresponding exactly to the width of the stay-laces with which the bundle was tied, linear marks of the threads of the tape being distinctly seen along the course of the mark. Dissecting back the integument, the line of indentation was distinctly seen, the skin being semi-transparent, very thin, and parchment-like. There was no extravasation of blood. The situation of the mark was immediately above the sternum and clavicles.

*Chest.*—The lungs filled the chest, indicating complete respiration; they were of a bright-red colour, weighing 12 dr. They floated in water; when cut into small pieces and squeezed and again put into water, they floated. They crepitated. When cut, and on being pressed, frothy bloody mucus escaped from the cut surfaces.

The heart contained black blood.

*Head.*—The whole venous system was loaded with black fluid blood, the sinuses being gorged.

The above formed the substance of the medical evidence given at the trial; and that the child was born alive; that it had a separate existence from the mother; that the death did not take place from natural causes, but from the effects of the ligature which had been placed round the neck—that it had died from strangulation; that the ligature mark could not have been caused by the navel-cord being twisted tightly round the neck. Not being able to swear positively that the ligature was applied after the entire birth of the child, but that I believed such to have been the case, the Judge ruled that the verdict must be "concealment of birth," and not wilful murder. Sentence, twelve months' imprisonment.

Some of the post-mortem appearances, taken singly, would not be opposed to death taking place from the natural results following a difficult labour; but taken collectively, with the mark on the neck, there could be no doubt of its having been caused by the ligature producing strangulation. Full respiration, and therefore an independent circulation, had been established. But the question to be determined was, whether the ligature was applied before the legal birth of the child—that is, before its entire separation from the mother. There was just a bare possibility of such having been the case, and the prisoner had the benefit of it.

Nottingham, Oct. 16th, 1867.

ON A

## NEW APPARATUS FOR THE TREATMENT OF FRACTURES OF THE LIMBS.

By CHRISTOPHER S. JEAFFRESON, Esq., M.R.C.S.,

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In this age of invention and progress so many new pieces of useful mechanism are brought before the public which have but an ephemeral existence, that it requires not a little spirit and energy to start another, especially when it relates to such an oft-trodden field as the treatment of fractures. In advancing the present one, however, in the confidence of its success, I do not pretend to lay claim to any inventive genius, but