

taken off the ureters, and this we find has been recommended by Routh.¹⁹ In a case in which he adopted it convulsions at once ceased, owing to pressure being removed from the kidneys. Grailly Hewitt, too,²⁰ "had observed good results from placing the patient so as to take off the pressure of the uterus from the spinal region."

The conclusions arrived at are: 1. Eclampsia is due to retention in the blood of all the substances which should be excreted by the kidneys. 2. This retention may be due to obstruction to the outflow of urine. 3. Eclampsia in the early months of pregnancy may be caused by retroversion of the gravid uterus causing obstruction to the outflow of urine by pressing on the urethra, or by retroflexion of the uterus causing kinking of the ureters. 4. Eclampsia during the later months can be caused by pressure of the gravid uterus on the ureters at the pelvic brim. 5. Eclampsia during labour can be caused by pressure of the foetal head on the ureters and on the urethra. This is especially likely to happen (*a*) in primiparæ, (*b*) in cases of twins, (*c*) in cases of contracted pelvis and (*d*) when the foetal head is large. 6. There is an additional factor besides pressure, which is the urine secreted by the foetus, which, passing into the maternal circulation, throws an increased amount of work on the kidneys.

Bedford.

ENTERIC FEVER; LEFT HEMIPLEGIA; RECOVERY.

By G. P. NEWBOLT, F.R.C.S. Eng.

THE following case may, I think, prove interesting to the readers of THE LANCET, a similar case having been recorded on April 23rd, 1892.

A. M—, aged twenty-one, fireman on a locomotive, came to my surgery on Sept. 30th, 1891, complaining of severe headache, vomiting and malaise. I ordered him to bed, and saw him again on Oct. 2nd. I then suspected enteric fever, and had him removed to the hospital at Ellesmere Port. He was a weakly-looking man of small stature, and never had suffered from any severe illness. His temperature at noon was 103°; pulse 100; skin dry and hot; bowels relaxed, the motion being fetid and of a pea-soup nature; abdomen full, but not tender; tongue foul and covered with white fur; heart sounds normal. He had been ill for ten days altogether. His pulse being soft and easily compressible, he was put on half an ounce of whisky every four hours.—Oct. 6th: Spots came out, and were well marked over the abdomen.—8th: The patient has a troublesome cough, and there is some congestion of both lungs at their bases. Bowels very loose; sordes on teeth and lips; expression of patient rather anxious. Spleen can be made out. Respiration 24; pulse 120; temperature 105.2° last night. No pain on pressure in abdomen. From this date until Oct. 19th he did well, his temperature on the morning of that day having dropped to 99°. The patient took his nourishment well, and his bowels were not so relaxed. He then relapsed.—23rd: Not so well. Diarrhoea more troublesome again, and temperature rising steadily.—26th: Evening temperature 105.5°, pulse 120. Bowels very loose; he was much exhausted. The whisky was increased to half an ounce every two hours.—Nov. 3rd: During the last week the temperature has never fallen below 101°. Bowels not quite so loose. He takes nourishment fairly well. Pulse very soft and dicrotic. He does not cough much; has slight frothy expectoration; the spleen is felt under the border of the ribs.—6th: Very little change. The temperature keeps up, and the patient is very low and delirious; he hardly recognises anyone, and passes his motions and urine under him.—8th: He seems almost moribund, but swallows fairly well; diarrhoea less. Is put on half an ounce of whisky every hour; beef-tea and milk *ad lib*.—10th: On visiting him I found that there was loss of power in the left arm and leg. He cannot speak plainly, and does not protrude his tongue quite straight; the right eyelid drops and he does not swallow so well. He seems to know when spoken to. Temperature at 6 A.M. was 98.6°; at 6 P.M. it was 102°.—11th: A slight fall in the temperature. The patient is in much the same condition and can just manage to swallow.—13th: Slight hæmorrhage from the bowels; given an enema of

turpentine and opium.—16th: There have been several small hæmorrhages. Temperature is lower and the patient swallows better and is more conscious.—17th: Temperature is from normal to subnormal; the patient is very collapsed, but is improving and takes his nourishment better; pulse 120; tongue cleaner; diarrhoea less; is very delirious at night. Takes egg and milk and half an ounce of whisky every three hours.—23rd: Left arm quite useless; no grasp; leg cold and immobile; protrudes tongue to the left; cannot whistle or close right eye completely; mouth remains partially open; can articulate and is much more sensible. There is loss of sensation in arm and leg.—30th: Power returning in leg, and he complains of pain in the limb; he can flex the limb and thus raise the knee from the bed. The arm is still almost useless.—Dec. 4th: He is steadily improving. Paralysis is disappearing. Is allowed some solid food. There has been no diarrhoea for a fortnight and no rise of temperature.—10th: Was allowed to leave the hospital. Can get along with crutches for a short distance, but is still very peculiar in his manner and restless at night.—Jan. 28th, 1892: Looks very well and is getting fat. Paralysis disappearing.—Feb. 15th: Can whistle and close the eye and mouth almost perfectly. The grasp of the left hand is not very good, but the arm has not wasted. Sensation is perfect. The peroneal muscles of the leg are wasted and painful, giving rise to a slight amount of talipes varus, which makes him walk in an awkward fashion, and he drags the leg.—22nd: He started work, and says he feels perfectly well. The leg is in much the same condition. There is still much loss of power in the arm.

I imagine the cause of the hemiplegia in this case to be due either to blocking of one of the cerebral arteries with a portion of a clot from the heart, due to the low condition into which the patient had passed, or by thrombosis *in situ*. I never for a moment expected the man to recover. The case was one in an epidemic occurring in this district during the autumn of 1891.

Ellesmere Port, near Chester.

REMARKS ON BURNS AND SCALDS.

By FRANK GRANGE, M.D. LOND., D.P.H. CAMB., M.R.C.S.,
LATE ONE OF THE HOUSE SURGEONS TO THE BLACKBURN AND
EAST LANCASHIRE INFIRMARY.

I HAVE to thank the surgical staff of the Blackburn Infirmary for the use of cases having reference to the above subject.

Apart from special occupations the season of the year for burns appears to be on the wane,¹ for of 120 in-patient cases 62 per cent., and of a still larger number of slight burns two-thirds, were found to occur in the six winter months. At the above institution, with an average of about 8 fatal cases yearly, four inquests on burns were held between Christmas Day and the end of January last, all of which were unconnected with special "employment" and three of them were "fireplace" accidents. Thus one man gave a history of alcoholic sleep over the fire as the cause. This connexion of burns with the "winter fireside" is made more prominent when these are contrasted with "scalds," for of 80 of the latter an equal number occurred in the summer and winter months, a reference to the uniform demand of the culinary art throughout the year being an obvious explanation. Out of 146 unselected cases of slight and severe burns and scalds (over ten years of age) there were nearly twice as many males as females. This is due to the fact that "occupation"—e.g., "mining"—accidents are included, the severe cases being proportionately more common in males. Out of 32 deaths, 12, or more than one-third, were under six years of age, and 8, or about one-fourth, were between six and twenty-one years of age, more than a third being after the twenty-first year ("occupation" burns not being excluded). Of 34 deaths, 10, or not quite a third, occurred in the first twenty-four hours after the accident; one-half of these were under the age of five years, the remaining accidents being exceptionally severe; 16, or not quite half of these cases, died within forty-eight hours; 10, or not a third, died between the second and fourteenth day. One patient died on the eightieth day. It is an important point that in cases fatal between the second and fourteenth day, while in adults and older children pulmonary symptoms and post-mortem

¹⁹ Ibid., vol. i. 1886, p. 496.

²⁰ Ibid., vol. ii. 1886, p. 1335.

¹ This was written in March.

signs are as a rule prominent, in younger children nervous symptoms, such as delirium, convulsions, and in a boy of six years tetanus, are common and have sometimes correspondingly suggestive post-mortem signs. For instance, in 2 recent fatal cases with cerebral symptoms a yellowish-grey fibrinous (?) ante-mortem clot occupied the longitudinal sinus at the necropsy. The great prognostic import of extent of surface involved, pre-eminently in young people, has long been insisted on. A writer in the "International Encyclopedia of Surgery" allows that "if one-half or even one-third of the surface has been burned or scalded death is inevitable." Mr. Bryant says: "When more than half the surface of the body is injured a fatal result generally takes place, and in the young and old all burns and scalds of any extent are serious." By carefully dividing the surface of the body as nearly as possible into proportional fractional parts and then by calculation from measurement and visual judgment of recent cases of burn or scald post mortem an approximate result of some prognostic value should be obtained.

I beg to acknowledge the critical judgment of the senior house surgeon, Dr. Wheatley, and a few professional friends in suggesting the following as a rough estimate only of the proportionate surface areas of the body. Taking the arms as together equal to 2, we have: Arms = 2; legs = $\frac{1}{2}$; trunk = $\frac{1}{2}$; head and neck = 1. I have applied the above method and figures to four recent cases of deaths from burns.

The first case, a well-nourished boy of two years, was admitted on Dec. 22nd last, with burn from the first to fourth degrees of the following approximate extent: Half of left abdomen to angles of ribs and loins; half of left leg and less than one-fourth of both arms. From these proportions it may be calculated that not one-seventh part of the surface was involved, and yet the boy died in sixteen hours after the accident, notwithstanding stimulant treatment. It should be mentioned, however, that the effect of a warm bath was probably injurious.

In the second case, a healthy boy of eight years was burnt by a coal falling from the fire. Approximately one-fourth (upper part) of both legs, one-eighth of right arm, three-eighths of the whole trunk from the first to fourth degrees, and the genitals were involved. A convulsion of the face and arm, unconsciousness and pyrexia to 102.5° occurred on the second day, and he died on the fourth day. The necropsy showed a fibrinous, presumably ante-mortem, clot in the longitudinal sinus. It may be calculated from the above that less than one-fourth of the surface of the body was here involved.

The third case was that of a healthy child of about five years, admitted on Jan. 17th with about a quarter of the right abdominal surface and two-thirds of the right thorax, with corresponding back and rather more than half of the right upper extremity involved. There was also a slight burn over the right ear and corresponding part of the face. Death occurred on Jan. 18th. It may be calculated that probably not more than one-fourth of the entire surface of the body was involved.

The fourth case was that of a man aged twenty-four years, whose left hand and forearm were burned to the fifth degree, the upper arm and two-thirds of left side of thorax to the third and fourth degrees, while the right arm had a slight burn on it when admitted. This patient died in the fourth week after the accident. Disintegration of the stomach was found at the post-mortem examination, but no duodenal ulcer. In this case we may compute that probably not one-sixth of the surface of the body was involved.

From the foregoing remarks the following conclusions are suggested:—1. That burns to the third and fourth degrees are frequently fatal when not a fourth of the entire surface is involved. They are probably often fatal in young children when not a seventh of the entire surface is affected. 2. That since "shock" appears to be such an important factor in these results—even when death occurs after the second day—the "warm bath" treatment recommended by authorities is in the case of those unused to baths distinctly contra-indicated during the first forty-eight hours as tending to increase the shock. This applies especially to children. 3. That the great proportionate fatality in children may be partly explained by the fact that in them the shock to the nervous system falling largely on the medullary and emotional centres expends itself on parts essentially organic and of vital importance, which parts are in no way reinforced, as in adult life, by the later yet less vital (?) cortical controlling centres.

Southampton.

HEPATIC ABSCESS.

By G. HARRISON YOUNGE, F.R.C.S.I.,
SURGEON-CAPTAIN, ARMY MEDICAL STAFF.

IN THE LANCET of July 25th, 1891, under the above title, there is an article by Surgeon-Captain W. A. Morris, in which he dissents from the now universally accepted rule that we should treat abscesses of the liver on exactly the same lines as we treat collections of pus in any other organ or tissue of the body. It is to be regretted that Surgeon-Captain Morris did not state more fully his reasons for objecting to what is now an established rule of surgery. No one who has a practical knowledge of hepatic abscess will dispute his statement that "it is by no means easy, except in very few cases, to absolutely detect the presence of liver abscess, much less its locality." Difficulty in detecting any given disease is not, however, a valid reason for declining to operate when it has been recognised. Experience in India has taught me that almost the only chance of saving the life of a patient who is suffering from an abscess of the liver lies in opening the abscess freely, and draining it thoroughly. The arguments in favour of this line of treatment are overwhelming. When pus has once formed in the liver it increases, at least in India, with startling rapidity. An abscess which contains but an ounce or two of pus may in a fortnight involve almost the entire liver. By operating early we prevent such an untoward result; while, at the same time, we operate on tissues that have not been undermined, and before the constitution has been damaged by septic absorption. If the operation is deferred until fluctuation becomes evident, and the constitutional symptoms well-marked, a large amount of the liver substance will be destroyed, and this must of necessity prolong the process of cicatrization, even if does not render recovery impossible. Delay in operating also exposes the patient to the risks of hectic fever and perhaps pyæmia. If an expectant plan of treatment is adopted the abscess may burst into the pericardium or peritoneum, either of which events would be immediately fatal. Even when an abscess is discharged through the lung, which was formerly regarded as the most favourable route for its evacuation, recovery only takes place after prolonged suppuration and considerable destruction of the lung tissue, which will leave the patient's constitution more or less damaged for life.

While stationed in India I invariably adopted the following line of treatment and can most strongly recommend it. As soon as an abscess was suspected the patient was at once placed under chloroform and the liver explored with the smallest sized needle of an aspirator. Before being used the needle was always allowed to stand for some time in strong carbolic lotion. A small puncture having been made through the skin with a bistoury over the suspected site of the abscess, the index finger of the right hand was placed over the thick end of the needle, and it was taken up in such a way that it remained full of carbolic lotion. The needle was then passed into the liver through the puncture made with the bistoury. If pus was not detected the needle was withdrawn and inserted in another situation. The liver was thus carefully explored in different directions until either an abscess was detected or until it was evident that such did not exist. If pus was found the exploring needle was at once withdrawn and an incision made along its track down to the liver. A bistoury was passed along the track of the needle until it entered the cavity of the abscess. The bistoury was then withdrawn and the opening enlarged to about an inch by Hilton's method, so as to avoid all danger of hæmorrhage. When the dressing forceps were withdrawn a drainage-tube was inserted and the abscess cavity syringed out with carbolic lotion (1 in 50). The greatest care was of course always taken in dressing the operation wounds, so as to keep them thoroughly aseptic. While any discharge continued the abscess cavity was syringed out at least twice daily and the drainage-tube was never removed until all discharge had ceased for some days, as otherwise it was found that the abscess was certain to refill.

When an abscess can be opened posteriorly a single opening is usually all that is required. When, however, it has to be opened anteriorly perfect drainage is impossible through a single opening. If such only is made pus is certain to accumulate in the abscess cavity, and to cause hectic fever