trace of a sella turcica, but a glandular body was found resting upon the body of the sphenoid as in 1; the size was approximately the same and the structure similar. No trace of the brain stem above the level of the medulla was present.

3. Small male anencephalic foetus about two-thirds the size of a normal full-time foetus. The eyes were very prominent, especially the right. The gland in this case was smaller; it corresponded in structure with that of 1 and 2, and its location was similar.

4. Male anencephalic foetus about the size of a normal full-time foetus. The eyes were prominent. There was a moderate amount of adipose tissue. The base of the skull was covered, as normally, with loose vascular connective tissue with a very thin superficial covering of neuroglial nervous tissue. Amongst the dark vascular tissue a tongue-like projection of neuroglial tissue, somewhat irregular in outline, projected from the superficial neuroglial layer in the direction of the glandular portion of the pituitary body, which was found in the usual position. The glandular portion showed the same structure on microscopic section as in the previous cases.

PURPURA TREATED BY INJECTION OF HUMAN BLOOD.

BY
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The unflinching success of the treatment of haemorrhage of the newborn by injection of parental blood suggested to me the use of the same method in purpura. The result has been most encouraging, and I venture to hope that in this method of treatment, applied at the very onset of the disease, we have a sure way of curing it.

I have injected 2 to 5 c.c.m. of blood, taken from the brachial cephalic vein, into the gluteal muscles. Clotting is prevented by sterilizing the syringe and needle in a solution of magnesium sulphate. I have used the method in four cases, with gratifying results in all, and in the very early cases (III and IV) with complete abortion of the attack.

CASE I.

S., a boy aged 4 years, had been ill some five weeks before I saw him, so that the improvement was not so startling as in the other cases, which I got early; but the parents maintain with confidence that the injections saved the child's life, and that is also my opinion.

He was taken with pains in the legs early in February, 1920, whilst out walking, so that on two successive days he had to be carried home. After his bath his legs were tender, and he cried when they were rubbed with the towel to dry them. Purpuric spots appeared, and there was swelling of the face. A fortnight later the child had severe colicky pains in the abdomen, especially at night, and melaena was noticed. Absolute anorexia supervened, leading to acidosis, which was relieved by rectal injections of Mellin's food. A daily wash out of the colon was prescribed as the stools were so foul. Once a bowel cast of mucus was passed, and this was followed by complete relief of the colic for four days. There was often melaena and frequently haematuria. Purpuric spots appeared regularly. The child was very ill, wasting, and listless.

On March 14th I gave the first injection of blood (paternal). A definite amelioration of the child's condition resulted. On March 27th the second injection of blood (maternal) was given. This again led to benefit, and by the end of April the patient was convalescent. In June all symptoms had disappeared, except that some purpuric spots appeared on the legs if the child did not take an afternoon rest.

CASE II.

C., a man aged 60 I had watched in the past in many attacks of subacute purpura, with visceral pains, which had yielded to horse serum administered by the mouth. On March 19th, 1922, he had had one week's epistaxis, and there was a subcutaneous haemorrhage on the right calf. One injection of blood (the son-in-law) resulted in cure.

On August 4th there was a subcutaneous haemorrhage on the leg, and a subconjunctival one too; the injection had the same good effect.

CASE III.

W., a girl aged 3, was brought to me on March 31st, 1922, by her mother with an extensive outbreak of purpuric spots on the buttocks, thighs, and legs. I gave maternal blood at once. On April 3rd a few spots appeared over the biceps of the arm. On April 7th there were a few on one leg and slight epistaxis. After this there was no further trouble.

CASE IV.

K. P., a girl aged 6, was brought to the surgery on September 6th, 1922, with purpuric spots on buttocks and legs (which had been present three days) and swelling of the right knee. There were pains in the knee and legs, and the temperature was 101°. Maternal blood was given at once. On September 8th there was a small haemorrhage on the left forearm. On September 9th paternal blood was administered. There were no further symptoms.

FURTHER NOTES ON TREATMENT OF EPILEPSY.

BY
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IN the BRITISH MEDICAL JOURNAL of October 9th, 1920, and again of October 1st, 1921, I published articles giving the results of the treatment of epilepsy by potassium bromide and borax after four and twelve months respectively. At the end of the second year's treatment I append the following notes on eighteen male cases, and I have chosen these because their history as regards fits, before treatment, is definitely known. I had hoped to quote twenty cases, but two died before the second year of treatment was completed—one of pulmonary tuberculosis and the other of cerebral haemorrhage. At *post-mortem* examination the first showed an interesting condition, which, I think, indicated that the epilepsy was traumatic. In the frontal region of the skull there was evidence of an old fracture, with a lump of callus on the inner table, which, pressing on the brain, had caused a cup-like depression in the latter. This patient had shown a reduction of 64 per cent. in the number of fits with one year's treatment. The second case was aged 72, and his record of fits was from 36 to 0 with one year's treatment.

I have divided the cases into two groups, according to the duration of their epilepsy.

Group I includes fifteen patients who have suffered from epilepsy for over twenty years, the shortest period being twenty-one years and the longest thirty-five years. Their ages range from 26 to 57 years. These fifteen patients totalled 1,886 fits in the year before treatment. At the end of the second year's treatment the total is 494—an average reduction of fully 72 per cent., the lowest individual reduction being 50 per cent. In this group the case of petit mal which I quoted in my last article is again worthy of mention. The year prior to treatment the patient had 404 fits; during the first year of treatment this was reduced to eighteen, and during the past year he has had three fits, the last being in September, 1921. This group, I think, demonstrates the value of persevering with the treatment in chronic epilepsy.

Group II consists of three cases—one of six years' duration, one of ten years' duration, and one of twelve years' duration, at the time treatment by bromide and borax was commenced. In these three cases the fits, a year prior to treatment, totalled 119. The total during the past year was seven. One of the cases, a man of 62 whose epilepsy was of ten years' duration before this treatment commenced, has had no fits since December, 1920, and after a residence of eight years in the institution was discharged as recovered in July, 1921. He has had no recurrence, and is now earning his own living. A second case has gone out on pass—he has had two fits during the past twelve months, the last being in March, 1922.

The changes to be noted in the condition of the patients are: (1) marked general mental improvement; (2) freedom from stupor after fits; (3) disappearance of irritability and quarrelsome tendencies—marked features of epileptics; (4) complete change of habits—patients formerly of degraded habits are now the reverse.

Numerous excellent results among other epileptic patients could be quoted, but I shall confine my notes to a few only. One case, a mental defective and typically epileptic, who formerly had attacks at regular intervals, has had no fits since August, 1921. The following case is nothing short of miraculous.

T. A., aged 17, used to be confined to bed, did not speak, did not appear to understand anything said to him, had many epileptic attacks both by day and night, had to be fed, was of degraded habits—in fact, could do nothing for himself, and was always in a state of stupor. Treatment was commenced in July, 1920, and he had, to begin with, half the adult dose. Very soon his fits were reduced in number and severity. He is now much improved, seldom has a fit, and is out of bed daily. His physical condition is good; he is bright in appearance, answers questions readily, shows a fair amount of intelligence considering his opportunities, assists in the work of the ward, and in appearance and behaviour is the very opposite of the typical epileptic.

Two young patients, aged 17 and 18 respectively, were sent here as epileptic, and have been treated accordingly. So far they have had no fits, and they have now been here one for seven months and the other for twenty months. Another patient, 16 years of age, was admitted last December. Up to

March of this year he had no fits, and was then discharged as recovered.

The following case I saw in private with Dr. McMillan of Shotts, and to him I am indebted for the history.

A. B., a female aged 21, began to have fits when she was 17, and they were becoming more severe and very frequent in spite of treatment with large doses of bromide. In December, 1920, she was put on bromide and borax, and has had no fits since. For the past three months she has taken no medicine, and has had no recurrence. This patient commenced with small doses of borax and bromide, which were gradually increased, and the combination which brought about the good result in her case was borax purificatus $7\frac{1}{2}$ grains, potassium bromide 5 grains, and Fowler's solution 2 minims, three times a day.

The treatment of the eighteen patients mentioned has been as follows. To begin with they were put on potassium bromide 10 grains, borax purificatus 5 grains, and Fowler's solution 2 minims, three times a day. The dose was gradually increased, and I found I obtained the best results with potassium bromide 15 grains, borax purificatus $7\frac{1}{2}$ grains, Fowler's solution 2 minims, three times daily, and this combination gave the results as stated in the above two groups. In addition the patients had a laxative at bedtime. At present I am trying different combinations of the two drugs from the above by way of experiment.

In conclusion, I may say that the continuous treatment has had no deleterious effect on the health of the patients, there have been no gastric or skin disturbances, and, in fact, the general physical condition has improved.

TRAUMA AND APPENDICITIS.

BY

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The following two cases, which have recently been under my care, raise some interesting points in regard to the etiology of appendicitis, and on that account may be worthy of putting on record.

CASE I.

A. S., aged 18, was playing football on September 30th, 1922, when, towards the end of the second half, he was charged and received a severe blow on the right side of the abdomen from his opponent's elbow, which laid him out for the moment. He vomited, but was able to rise and walk to the dressing room. Whilst changing he vomited again. He then walked about half a mile to a bus, which conveyed him to within a short distance of his home. During the whole time pain in the abdomen was severe. When he arrived home he lay down, and as the pain got no better he, later in the evening, called in his doctor, who thought that he must be suffering from appendicitis, but in view of the history, decided to wait till the following morning. The diagnosis then seemed certain. When admitted to hospital at 2 p.m. the temperature was 100° , the pulse 88. The tongue was furred, the abdomen was definitely rigid and tender in the right iliac fossa, the point of maximum tenderness being somewhat below McBurney's point.

At 7 p.m. Dr. E. N. Nason administered an anaesthetic, and the abdomen was opened through a right rectus incision. Omentum presented on opening the peritoneal cavity. A small quantity of slightly turbid fluid was mopped out, and the appendix was then found pointing downwards over the brim of the pelvis, the vessels deeply engorged, and the organ throughout its length covered with patches of lymph. The appendix was removed in the usual manner and the abdomen closed without drainage.

Convalescence was uneventful, except that two days after operation a tense swelling the size of a plum was discovered in the tissues of the right spermatic cord immediately above the testicle. This was diagnosed as a haematoma, and at the time of discharge it had shrunk almost to vanishing point.

On cross-examination after operation this youth informed me that some two months previously he had suffered from an attack of "indigestion" (pain all over the abdomen and vomiting), which lasted for two days and then cleared up. He was positive that when he walked on to the football field he was feeling as well as he had ever done in his life.

CASE II.

H. V., aged 22, at about 1 a.m. on October 18th, 1922, was working on the night shift down the pit when he had to put forth a violent effort to lift a tub on to the rails. About three minutes later he was seized with sudden acute pain across the lower abdomen and vomited. He was brought out and sent home, when he vomited again three or four times, and the pain continued to be severe. At 9 a.m. he was seen by his doctor, who advised his immediate removal to hospital, but as "his people were not willing" he refused. However, at 6.31 p.m. on the following day he was admitted. The temperature was 99.8° and the pulse 88. He complained of severe pain in right side of the abdomen.

On examination there was tenderness all over the lower abdomen, with increased rigidity; tenderness was very marked over McBurney's point. An anaesthetic was administered by Dr. Bradbury, and at 8.45 p.m. the abdomen was opened by a right rectus incision, and a short, stumpy, acutely inflamed appendix, buried in adhesions, was found behind the caecum. About half a drachm of thin pus free in the peritoneal cavity was sponged out and the operation completed in the usual way, the abdomen being closed without drainage.

He had had a troublesome cough previous to the present illness, and this somewhat complicated his recovery, as he coughed open the skin wound. In other respects convalescence was uninterrupted.

In both of these cases the attack was definitely ushered in by violence—in the one by a direct blow on the abdomen, in the other by a severe strain. An intriguing point in both cases is their bearing on the Workmen's Compensation Act. In the first case, of course, that question did not arise; but supposing it had, I do not think that compensation could have been withheld, even allowing that the patient had had a previous attack, the onset being apparently so definitely the result of the blow. In the second case the influence of trauma is more debatable.

I find on looking through my notes that I have dealt with one other case allied to these. It occurred at Scapa Flow in 1916. A boy, aged 16, from H.M.S. *Conqueror*, was kicked on the right side of the abdomen. He was admitted to hospital ship two days later with tenderness and rigidity in the right iliac fossa, but the temperature was normal. I removed a very long and congested appendix. This case would probably have cleared up without operation.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE VARIATIONS OF NORMAL TEMPERATURE.

A PASSAGE in Dr. E. Clark-Jones's article (BRITISH MEDICAL JOURNAL, November 25th, 1922, p. 1026), that ignorance obtains as to what constitutes a normal temperature, leads me to record some investigations I made as a student on my own body temperatures in March and April, 1892. I found that thermometers differed by as much as a third of a degree, and selected one which recorded the mean of six as I was unable to procure one with a Kew certificate of accuracy.

I made 170 records of my mouth temperature at intervals of an hour or two during a period of twenty-one days in April, 1892, and, averaging each period, I obtained the accompanying Chart A. I was led to do this because in the previous

CHART A.—Normal day temperature curve while studying, with short periods of slight exercise.

CHART B.—Rise of temperature at five-minute intervals after severe exertion in well-trained condition.

March, during training for the Hospital Rugby Cup final, I had been trying to find out the effect of exercise on the temperature, with some astonishing results. I found that the effect of slight exercise was to raise the body temperature slightly for a short time until perspiration began, when, if the exercise was continued, there was a continuous fall, and a few days before the final cup tie after a two hours' run I found my mouth temperature was 94.6° ; Chart B shows the rise afterwards at successive five-minute intervals. At the commencement of vigorous training on March 6th that year after one hour's run I recorded 95.4° , and after half an hour's interval it had risen to 99.1° , and did not return to normal till four hours afterwards. The effect of training was to diminish that rise until it was not perceptible, although the fall was lower.

On March 8th, after one hour's run, I discovered that the urinary temperature was three degrees $^{\circ}$ er than the mouth temperature at the same time, being 93.7° while the mouth was 95.7° , and when I recorded the mouth temperature of 94.6° the urinary temperature was 99.6° .