When the kidney is not enlarged, as happens in such early stages, the lumbar incision is the better route for removal.

Nephrectomies.

SEPTIC.

Initial.	Age.	Medical Attendant.	Diseased Condition.	Result.
C. B.	24	Dr. Percy Kidd	Enormous pyonephrosis	Cured.
B.	44	London Hospital	Left calculus pyonephrosis	"
D.	36	Dr. Welsford, of Tiverton.	Right calculus pyonephrosis	"
C.	50	Dr. Fitzgerald	Right pyonephrosis	"
Miss W.	28	Dr. H. W. Webster	Left pyonephrosis	"
G. W.	70	Dr. Robb	Right pyonephrosis and villous growth	"
T.	54	Dr. F. W. Foott, of Enfield	Right pyonephrosis	"
S.	26	St. Peter's	Inflamed white kidney	"
H.	45	"	Right calculus pyonephrosis	"
J.	36	Dr. Stenson Hooker, of Hastings	Cystic kidney, nephritis, due to operation	Died eventually of septicity.
B.	3	Dr. A. Brown	Septic tuberculous pyonephrosis	Healed.

ASEPTIC.

H.	35	Mr. Waren Tay, Dr. Sutton.	Enormous hæmohydro-nephrosis	Cured.
H.	19	Dr. Percy Kidd	Calculus hydronephrosis	"
T.	37	Dr. Samuel Fenwick	Advanced hydro-nephrosis	"
H.	46	—	Carcinoma, lower end	Healed rapidly.
D.	54	Mr. Hall	Carcinoma of middle	Died of shock.
B.	59	Dr. Boissier, of Banbury	Papilliferous carcinoma	Healed rapidly.
Mrs. C.	32	Mr. Howse	Malignant adenoma	"
Mrs. C.	50	Mr. Jekyll	Carcinoma of a dilated calyx	"
K.	35	Dr. Netherclift	Tubercle	"
Mrs. R.	31	Dr. Delamotte, of Staines	Tubercle and stone	"

21 cases. 2 died.

REFERENCES.

¹ BRITISH MEDICAL JOURNAL, 1890, Part ii, p. 894. ² These 100 cases form a consecutive series, and were reviewed in a paper read before the Brighton and Sussex Medical Society, February 4th, 1897. ³ The more I cystoscope patients in their own urine, and the less I wash out the bladder, the better are my results. Of course if there is blood or pus the bladder must be thoroughly washed out before the cystoscope can be used. In this case I do not undertake to cystoscope unless I am allowed to operate coincidentally, or unless the surgeon in charge is ready to start there and then with the operation. I never touch a case of obvious tubercle of the lower urinary tract. ⁴ Author, *Medical Annual*, 1896, p. 597.

CONTRIBUTION TO OUR KNOWLEDGE OF SOLUBLE URATES: PRELIMINARY NOTE.

By F. W. TUNNICLIFFE, M.D., M.R.C.P.,
From the Scientific Workroom, St. Bartholomew's Hospital.

My attention having been drawn to a letter in the *Chemiker Zeitung* of January 20th, 1897, by Dr. C. Goldschmidt on piperidine as a uric acid solvent, I desire to publish the following results which have been obtained by me, in conjunction with my chemical collaborators, Drs. Rosenheim and Schidowitz, independently. Our original intention was to complete, before publishing, our researches in regard to the solvency of the respective urates in the various media of pathological and physiological interest, as well as to determine the toxic equivalents of the respective bases. These researches, which we regard as of interest and importance, are at present approaching completion. The urates, the solubility of which we have determined, are (1) piperidine urate, (2) hexamethylenamine urate.

1. *Piperidine Urate*.—If 10 g. of uric acid be added to a solution of 5 g. of piperidine in about 50 c.cm. of water, the uric acid is completely dissolved in a very short time in the cold. The resulting urate of piperidine can be completely precipitated by a strong solution of sodium chloride, and can be subsequently purified by washing with alcohol and ether, in which liquids it is insoluble. The most interesting property of this salt is its solubility in distilled water, which

we have determined at the following temperatures:—The solubility at 17° C. or 62° F. is 5.3 per cent., at 36° C. or 98° F. is 9.1 per cent., at 100° C. is 25 per cent. A solution of the salt in water has a slightly alkaline reaction to litmus.

2. *Hexamethylenamine Urate*.—If 4 g. of uric acid be added to a solution of 3.5 g. of hexamethylenamine in about 100 c.cm. of water, and the mixture kept for some time on a water bath, a clear solution is obtained which does not give any precipitate on cooling. The resulting product may be obtained in the solid form by a method identical with that described under piperidine urate. The solubility of this salt, determined at the following temperatures, is at 17° C. or 62° F. 0.7 per cent., at 36° C. or 98° F. 3.3 per cent. A solution of this salt in water has a slightly acid reaction to litmus.

For the purposes of comparison we thought it would be interesting to give the solubilities of the following known urates:

¹ Piperazine urate at 17° C. is soluble to the extent of 2.0 per cent.

Lithium urate at 20° C. " " " 0.3 "

" " " 39° C. " " " 0.9 "

Potassium urate (acid salt)

at 20° C. " " " 0.7-0.8 "

The physical conditions obtaining in the blood and other physiological and pathological fluids differ sufficiently from those in distilled water to render a separate research necessary before any suggestion can be made with regard to the probability of the above bases being of use in the treatment of lithæmia in the human subject. This matter we are at present investigating.

REFERENCE.

¹ Beilstein: *Handbuch der organischen Chemie*, B. I, 1334. We have been unable to confirm the high solubility ascribed to piperazine urate.

SEVERE CASE OF TYPHOID FEVER IN WHICH ANTITOXIN WAS SUCCESSFULLY EMPLOYED.

By P. R. COOPER, M.B. LOND., F.R.C.S. ENG.,
Bowdon, Cheshire.

As a supplement to the four cases recorded by Dr. Pope in the BRITISH MEDICAL JOURNAL of January 30th, the following brief report may prove of interest:

J. B., aged 29, a labourer, formerly a soldier, of strong physique (but rather alcoholic habits), had never been abroad, and his only previous illness had been an attack of "rheumatic fever" whilst in the army. He presented no cardiac lesion. On December 13th, 1896, he complained of severe pain and aching in the head, back, and limbs, shivering, general *malaise*, complete loss of appetite, and vomiting of everything taken by the mouth. He had also sore throat, enlarged glands in the neck, hoarseness, cough with thick

muco-purulent expectoration. The temperature was 103.2°, the pulse 96, and the respirations 30, the tongue was furred,

and the face dusky. No dulness could be detected over the chest, but there was general loud rhonchus with harsh breathing. The abdomen was retracted. There was no marked tenderness, but severe constipation. He had not been feeling quite well for a few days, but the onset of the illness was sudden. He attributed his condition to a severe wetting a few days before. Next morning, although the pains and cough were a little easier, the pyrexia continued. Examination of the chest showed no further development of physical signs, the constipation and anorexia were unaltered.

During the following week the temperature ranged between 102° and 104.5°; the pulse, however, remained fairly steady, the pains were easier, but anorexia and constipation continued, and tenacious muco-purulent expectoration, swarming with micro-organisms, chiefly cocci, was coughed up with great difficulty. The patient became markedly prostrate, rather sleepless and delirious. Careful daily examination of the lungs failed to show any patches of consolidation. The spleen was found to be enlarged, and the continued temperature and great prostration, in spite of absence of other typical symptoms, raised the suspicion of typhoid. On December 24th three fairly typical spots were discovered on the abdomen, and for the first time tenderness and slight tympanites were noticed in the right iliac fossa. The case was as soon as possible removed to the local fever hospital. On the evening of December 26th blood was first detected in the stools, which were extremely offensive and dark. The mæna continued nearly three days, the pulse being hardly at all affected. On December 31st the morning temperature was 99°, and the patient "felt splendid." He was fed chiefly on whey of milk and white of egg, and Benger's food. There was no tympanites, but the bowels were again confined.

A visit from his mother (whom he had not seen for some time, and with whom a slight difference existed), caused him some excitement, and the temperature again suddenly rose to 102°. During the next week almost a typical ascent was noticed on the temperature chart, and by January 8th the temperature was 104°. The patient was packed for half an hour, and perspired freely, but the temperature soon rose again to 103°. Again, the chief symptoms were bronchial rather than intestinal, severe coughing, rapid breathing, thick yellowish expectoration, rhonchi all over the chest, and *râles* in the throat; some loud, harsh, almost cavernous, breathing was heard under the right clavicle. On January 11th hæmoptysis was first noticed, and about the same time hiccough developed. The hæmoptysis continued nearly a week, the blood being intimately mixed with the gelatinous sputum. The hiccough proved extremely refractory, and soon attended every act of respiration. The patient's general condition became extremely grave; the tongue dry and shrivelled, the face pinched and dusky (purplish). He was mostly in a state of low muttering delirium, picked at the bedclothes, and passed urine and fæces unconsciously. The temperature kept above 103°, except when temporarily brought down by packing or phenacetin; the pulse was feeble, and markedly dicrotic. He was only capable of being momentarily roused to consciousness; he continued, however, to take plenty of nourishment and stimulant.

On January 13th his condition seemed so hopeless that it was decided, as a last resort, to try some antitoxin. Accordingly, at 6 P.M., 5 c.cm. of serum, procured from Messrs. Burroughs, Wellcome, and Co., were injected into the iliac region. Within a few hours the temperature began to fall, the patient perspiring freely. Next morning the temperature was 99.8°, and the pulse felt stronger; the patient had slept without hiccough. Unfortunately, however, the latter symptom immediately returned as the patient partly roused. By midday, January 14th, the temperature was again up to 103.4°, and the patient was much as before; so a second injection of 5 c.cm. of serum was given. This was quickly followed by a fall of temperature, with marked perspiration, and at 8 P.M. the thermometer registered 98.8°. The patient seemed certainly rather better, but the hiccough continued without intermission. About this time there was some very severe weather, with fogs and east winds, and although every care was taken to protect the patient from the effects of these, towards evening his chest symptoms became markedly aggravated. His breathing became rapid and laboured, the expectoration was very thick and tena-

cious, and he had not the strength to cough it up; cyanosis and hypostasis were both marked, the pulse grew feeble, more rapid and irregular, *râles* accumulated in the throat, swallowing became almost impossible, and urine and fæces were passed involuntarily. He appeared to be moribund. However, by morning he had rallied a little, and was able to take some food and brandy. A fresh relay of serum had been promptly forwarded by Messrs. Burroughs, Wellcome, and Co., and a third injection of 8 c.cm. of serum was now given, the temperature being 102° at the time. The patient again perspired freely, and the temperature fell forthwith, reaching 98° at 8 A.M. on January 18th. From this time the patient's general condition steadily and surely improved. The hæmoptysis ceased. The hiccough, however, still harassed him, but was less severe, first stopping during sleep, then gradually becoming less frequent, finally disappearing on January 21st. The bowels still remained very stubborn, and could only be made to act by enemata. On January 22nd he was allowed a little solid food—poached eggs and soft bread and butter. He has had so far an uneventful convalescence except for some rather troublesome boils. He is now steadily gaining strength and flesh; his cough is rarely troublesome; he sleeps well, and his appetite is excellent.

REMARKS.

There could be no doubt as to the grave condition of the patient when the serum treatment was resorted to. Ordinary treatment seemed to exert little if any beneficial effect; indeed, it is probable that the chlorine mixture (so strongly advocated by Dr. Yeo) rather aggravated the bronchitis, and may have done actual harm. The occurrence of intestinal hæmorrhage, and later hæmoptysis, and the extreme prostration and low typhoid condition into which the patient had fallen were all the gravest of symptoms. According to Poore,¹ hiccough of any persistence in the course of typhoid is often an indication of perforation and the onset of general peritonitis, but there were certainly no evidences of perforation here. It hardly seems possible to resist the conclusion that the injections of serum enabled the patient to "round the corner," and although not wishing to lay too much stress upon this one case, yet, taken in conjunction with the cases recorded in the BRITISH MEDICAL JOURNAL of January 30th, they seem to justify a further trial of this new remedy, which may probably prove of service even in the most desperate cases. The chart shows the temperature in the week during which injections were given.

REFERENCE.

¹ Last edition of Quain's *Dictionary of Medicine*.

A CASE OF SEVERE PUERPERAL SEPTICÆMIA; INJECTION OF ANTISTREPTOCOCCIC SERUM; RECOVERY.

By ARTHUR J. SHARP, M.D.LOND., F.R.C.S.ENG.,
Whitby, Yorks.

A. E., 23, primipara, was confined on November 2nd, 1896. The house and its surroundings were not ideally perfect. The patient was a weakly anæmic girl, subject to fainting fits, and the labour a most difficult one. The child was very large, and presented by the breech. This was difficult to recognise, as it did not descend into the pelvis at all readily. The child's sacrum was directed towards the mother's right sacro-iliac joint. The chief difficulties arose from the liquor amnii not exceeding 3j or 3ij, and from the legs being extended so that it was quite impossible to reach a foot. The case was watched patiently for twenty hours, by which time the pulse had risen to 120, and as hardly any progress had occurred in the last twelve hours it was felt that there was nothing to be gained by further delay. Counterpressure on the fundus and every other available device failed. The breech was eventually extracted by hooking two fingers of the right hand over the right groin and iliac crest of the child, whilst two fingers of the left were passed up its rectum and hooked into the hollow of the sacrum. The mother's perineum was badly lacerated, and there was almost uncontrollable hæmorrhage *post partum*. The child was resuscitated with great difficulty, and lived thirty hours. Fortunately I had