PARTICULARS OF 49 CASES OF PUERPERAL FEVER DISCHARGED FROM MONSALL HOSPITAL, MANCHESTER, DURING 1906—(Continued).

No.	Day of onset of fever.	Day of disease on admission.	Days elapsing between calling in of the medical man and admission to hospital.	Practitioner or midwife.	Forceps.	Curetting of uterus.	Other operations.	Serum.	Bacteriology of uterus.	Bacteriology of blood.	Complication.	Days in hospital.	Result.
35	Fourth.	Fifth.	—	P.	Yes.	Yes.	Laparotomy.	Yes.	Streptococci.	Sterile.	Large pyosalpinx.	75	Recovered.
36	Seventh.	Fifth.	2	Neither.	No.	Yes.	„	Yes.	—	„	Pelvic suppuration.	45	„
37	Second.	Fourth.	—	P.	Yes.	No.	„	No.	Streptococci.	„	—	½	Died (12 hours).
38	Fourth.	Second.	1	Neither.	No.	Yes.	—	No.	—	„	—	19	Recovered.
39	Sixth.	Third.	—	P.	Yes.	Yes.	—	No.	Streptococci.	„	—	40	„
40	Seventh.	Second.	—	P.	Yes.	Yes.	—	No.	„	„	—	32	„
41	Third.	Second.	1	M.	No.	Yes.	—	No.	„	„	—	30	„
42	Third.	Sixth.	5	M.	No.	Yes.	—	No.	„	„	—	44	„
4	Fifth.	Fifth.	—	P.	No.	Yes.	—	No.	—	„	—	49	„
44	Third.	Thirteenth.	—	P.	Yes.	Yes.	Pelvic incision.	No.	Streptococci; bacillus coli communis.	„	—	54	„
45	Fourth.	Fourth.	—	P.	No.	Yes.	—	Yes.	—	„	—	32	„
46	Fourth.	Fourth.	—	P.	No.	Yes.	—	Yes.	Streptococci; bacillus coli communis.	„	—	32	„
47	Sixth.	Third.	7	M.	No.	Yes.	—	No.	A bacillus not identified.	„	—	40	„
48	Eighth.	Fifth.	—	P.	Yes.	Yes.	—	No.	Streptococci.	„	—	22	„
49	Second.	Third.	4	M.	No.	No.	Laparotomy.	Yes.	„	Not examined.	General peritonitis on admission.	1	Died (24 hours).

instances pelvic abscesses occurring in convalescence were opened extra-peritoneally through the vagina ; all recovered. In another case the general peritoneal cavity was opened through the vagina ; diffuse suppuration in the parametrium, together with a large tubo-ovarian abscess, was found. This case did not recover.

Serum treatment.—Antistreptococcic serum was given on admission to 20 patients, the dose ranging from 50 cubic centimetres in three cases to 200 cubic centimetres in three ; the usual amount injected was 100 cubic centimetres. In these 20 cases streptococci were found in the uterus in 16 instances and in the blood also in five. The sera employed had been prepared in the Wellcome Research Laboratory at first from five cultures of streptococci obtained from material removed from the uterus and blood of cases treated at Monsall Hospital. Latterly more strains from other puerperal sources had been, I understand, added. So far I have been unable to discover any difference in the action of these two brands.

The whole subject of the use of bactericidal sera in puerperal fever is beset with difficulties, which have not been diminished by the publication of cases in which active local treatment has been adopted together with the administration of small quantities of a (possibly stale) serum and the result attributed to the serum only. My own practice is to give a polyvalent serum in all cases in which examination fails to discover any gross lesion and to any in which streptococci are subsequently found in the blood. I have never seen any ill effects from the sera except the production of transient rashes and, in some instances, of joint pains also. I feel, however, that the administration of a single dose of 10 or 20 cubic centimetres is almost useless and that it is better to give any quantity in one injection than in repeated small doses. The prevailing factor is one of time. The sooner it is given, the better.

It is not, of course, possible to come to any definite conclusions statistically from such a small series as 49 cases of puerperal sepsis. For most of the incidental remarks I have made I have drawn upon my previous experience also. As far as they go, however, the 1906 cases have strengthened my belief that in such a terrible disease as puerperal fever we must act as we should in any other variety of wound

fever and try active local disinfection promptly, and that collections of pus, whether they be inside or outside the peritoneal cavity, must be treated by incision and drainage. As adjuncts to these surgical methods that have received due recognition in every other region of the body, such measures as the use of bactericidal sera and some drugs are occasionally useful, but they can never cure by themselves. As long as puerperal fever continues to be treated by vaginal douches and bottles of medicine only it will, I believe, always have a high mortality. It is, of course, better still to prevent its occurrence altogether.

Manchester.

CHLORETONE AND ITS USES, ESPECIALLY IN CHOREA.¹

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It has been said by an eminent French physician that what impresses the patient's friends is a correct prognosis, what impresses other medical men is an accurate diagnosis, but what impresses the physician himself is the occurrence of any decided benefit from the employment of a particular remedy. It is because we are naturally rather impressed with what is new than with what is already familiar that this statement may be regarded as applying to new remedies or new applications of old ones, and it is of such an impression, while still fresh, that I propose to speak to-day.

Chloretone, which is trichlor-tertiary-butyl-alcohol, is obtained by the interaction of chloroform, acetone, and an alkali. It is a white crystalline compound having a camphor-like odour and taste, and may be melted and sublimed at the body temperature. It is only slightly soluble in water but easily so in glycerine, alcohol, petroleum, or oil. The dose is from five to 25 grains in cachet or solution in one of the

¹ This paper goes over the ground of a recent lecture delivered at the Middlesex Hospital.

above-mentioned solvents. The first account of the drug in English medical literature is in THE LANCET of Jan. 13th, 1900, and so far as I am aware it was first employed by Messrs. Parke, Davis, and Co. in 1899 as a preservative for their solutions of adrenalin.

On account of its local anæsthetic effect I was prompted to employ this drug in painful and irritable conditions of the stomach, such as gastritis, cancer, gastrodynia, ulcer, and especially in those cases of pain, vomiting, and hæmatemesis so frequently associated with chlorosis and scarcely yet completely removed from the category of gastric ulcer, with which they are by no means identical. In doses of five grains or more in petroleum emulsion it has a remarkably soothing effect both on pain and vomiting and exercises a deterring influence on fermentation, resembling in this carbolic acid. It was while using chloretone for this purpose that its hypnotic effect became apparent, and I have since employed it satisfactorily in ten-grain doses simply to procure sleep, though the state of quietude induced by the smaller doses is itself a very great alleviation of painful and protracted illness, such as the gastric conditions to which I have referred.

The local anæsthetic effects have been found of value in vaginal pruritus as exercised by a 0.4 per cent. solution in warm water, or by five-grain suppositories in hæmorrhoids. The sedative effect on the brain, similar to that of the bromides but more rapidly induced, associated as it is with a similar effect on the stomach, led to its early employment for sea-sickness, and it is in connexion with this distressing malady that its reputation has chiefly been established. Five grains in powder taken a quarter of an hour before embarking will generally insure complete immunity from sickness during the Channel passage even in rough weather, and the drug does not appear to lose its efficacy by repetition, as is the case with some others. A young French lady, who was invariably ill during the crossing to Dieppe, since being fortified with chloretone has only once suffered and that in a way which suggests a useful hint in prescribing. Having performed the outward journey "tute, cito et jucunde" under the influence of one of the five-grain powders of which she was provided with four, the other three were carefully deposited in a purse against her return after the summer holiday. Then accompanied by a friend, to whom she promised immunity from the discomforts of the sea on the strength of this new remedy, she confidently embarked and proceeded to share the remaining doses. One paper after another was opened but all were empty. In the hot weather the chloretone had evaporated and vanished, leaving nothing behind but disappointment and the prospect of a miserable voyage, which was amply verified in both cases. As negative evidence this was distinctive testimony to the value of the drug and has been subsequently remedied by inclosing it in impervious wrappers such as paraffin paper.

When taken at intervals in similar doses longer voyages have been undertaken without discomfort—such, for instance, as that across the Atlantic. The drug was taken about 20 minutes before meals two or three times a day during rough weather and the journey was completed without a qualm. A more general knowledge of this remedy will certainly save a large amount of discomfort and in those who suffer continuously will enable journeys to be undertaken which were formerly dangerous or actually impossible.

I have dwelt upon these effects of chloretone as they have led up to its employment in another class of cases for which we have hitherto possessed no efficient remedy. I refer to chorea. During the past 12 months the opportunity has occurred of exhibiting the drug in some 14 cases and the result has been so striking and uniform that though the number is small it is worth making known that those who have wider opportunities may further test its reliability. In these cases, both boys and girls between the ages of seven and 12 years, five grains of chloretone in half an ounce of petroleum emulsion were given three times a day for two and sometimes three days; there was in all of them such a marked diminution of the choreic movements that the dose was then halved and sometimes given only twice and even once a day according to the severity and progress of the case. The number of days in which the drug was continued varied from five to ten, by which time it was omitted and either steel wine with arsenic or cod-liver oil was substituted to meet the anæmia and feebleness which usually accompanied the disease. Under this treatment the duration of choreic movements was limited to nine days and the stay in hospital to three weeks on an average. This is a great advance in the treatment of chorea, which even with the advantage of hospital

régime usually extended to double and treble that time. These advantages consist in rest in bed with isolation and liberal dietary. When convalescing the patients were encouraged to knit or crochet or to use the hands in some such manner so as to practise purposive movements and also as a test of steadiness.

Many patients on admission were unable to feed themselves, experienced considerable difficulty in speech, and in some cases needed padding in their cots to prevent bruising in their uncontrolled movements. It was found that those cases which came under treatment early benefited most. Of the 14 which took chloretone, two were removed from the hospital before they were quite recovered on account of contracting rōtheln, and two others resisted the treatment for a longer time—one, a girl, aged ten years, who had suffered from chorea for three years with short remissions, and another girl, aged seven years, who, after four months' chorea before admission, appeared rather to be cured by the relief of constipation, which had been a marked feature, this being effected in 21 days.

With any comparatively new drug exerting marked beneficial effects the question always arises as to drawbacks, and in the present instance there are some, though not of serious account. Two of the cases exhibited exfoliation of the skin on the hands and heels which gave rise to a suspicion of scarlet fever—one after ten days in hospital without fever or rash and the other shortly after removal on account of rōtheln, of which there had been an outbreak in the hospital. The other 12 cases did not show this and the retention of one such case in the hospital and subsequent removal to the convalescent home did not lead to communication of scarlet fever to anyone else, so this exfoliation of the skin may be regarded as an occasional effect of the drug.

In two of the earlier cases treated, possibly owing to the physiological effect of chloretone being carried rather too far, there was marked somnolence, the child lying in any attitude in which he was placed and rousing only to take food. This passed off in a few hours on discontinuing the drug. The only other objection taken account of was the cost (4s. an ounce is somewhat expensive in hospital work), but considering the small quantity used and the comparative infrequency of the cases it is not serious and with increased demand it will no doubt be reduced.

As regards the permanency of the cure further experience is required; one of the cases cited was readmitted in about three months with a relapse, and on the other hand another was successfully treated which had relapsed after treatment by arsenic. Like the treatment of rheumatism by salicylates the effects of the specific drug requires to be followed by a tonic *régime* in most cases since the little patients are usually anæmic and feeble in addition to suffering from the spasmodic movements. Where endocarditis coexists salicylates can be combined with the chloretone or may be applied to the skin instead, but for the chorea itself chloretone appears to be as much a specific as the salicylates have come to be regarded in rheumatism.

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"PULMONARY HYPERTROPHIC OSTEO-ARTHROPATHY" OCCURRING IN A CASE OF CONGENITAL HEART DISEASE (!).¹

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THE patient, a young unmarried woman, aged 21 years, was recently admitted to University College Hospital under the care of Sir Thomas Barlow, to whom we are indebted for permission to publish the notes of the case. The patient had suffered from palpitation, breathlessness, and blueness since birth. During the last ten years she had suffered from pains in the limbs, both in the ankles and wrists and in the shafts of the long bones of the legs, more particularly after standing and walking. She had scarlet fever at the age of ten

¹ Report of a case shown at a meeting of the Clinical Society of London held on March 22nd, 1907.