

in a case of hay fever in which cocaine and the bromides had been given without result. He gave it in 30-grain doses at the hours when the attacks usually came on, and found that the drug aborted the attacks. After taking antipyrin for some weeks the disease disappeared in this case.

Sonnenberger, from an experience of 70 cases in which he used the drug in whooping-cough, concludes that it is a very useful remedy in such cases. He gave it to infants in doses of $\frac{1}{2}$ to $1\frac{1}{2}$ grain three times a day in syrup of tolu or raspberry, increasing the dose to 10 or 15 grains for older children. The remedy must be used systematically to produce a good result in whooping-cough.

In nervous vomiting, especially in the vomiting of pregnancy, antipyrin is useful. If the vomiting be periodic, the drug should be given a few hours before the usual appearance of the attack. In sea-sickness the drug has been lauded as a specific, perhaps only to have its day as most other specifics for this disorder have had. More than one medical man has, however, recorded the debt of gratitude he owes to this remedy in crossing the Atlantic, so that it may be tried in the hope that it may be of use.

Antipyrin has been used as a hæmostatic in cases of pulmonary hæmorrhage by Dr. Olikoff. He made a solution of 15 grains to the ounce in water, and made his patients breathe through this for four or five respirations, repeating the use of it every half hour. In all the six cases tried the hæmorrhage was diminished. As a hæmostatic for general purposes, antipyrin is too costly a remedy to be employed lavishly, though it has been recommended for epistaxis and other forms of hæmorrhage. Herpes zoster and locomotor ataxy have both been successfully treated with antipyrin. In locomotor ataxy it appears to act in alleviating the lightning pains and in giving ease to the patient rather than by altering the course of the malady.

Since antipyrin became a popular remedy, many cases in which the drug has produced disagreeable effects have been recorded, though, as far as I am aware, none of these cases have ended fatally, nor have there been any symptoms which have lasted more than a few hours. The cases which I have collected (more than twelve in number) appear to me to be pure examples of idiosyncrasy. They are usually isolated cases occurring amidst many others in which the same quantity of the drug was administered. They do not appear to depend on the quantity of the drug given, for in one case 4 grains, in another 8 grains, and in a third 15 grains of antipyrin produced symptoms of poisoning, though more than double the dose has been given in many hundreds of cases without bad effects. There is, as far as I can find, no special class of cases in which the administration of antipyrin is likely to bring on symptoms of poisoning; but, as it appears in certain individuals to cause disagreeable symptoms, regardless of dose, we are likely to hear further of this property if it possesses from some of the large number of people who are now taking the drug as a preventive against sea-sickness.

The chief symptoms which manifest themselves in cases of poisoning by antipyrin are certain nervous sensations, such as restlessness, loss of memory, a feeling of general expansion of the body, and a sensation of great coldness. These are followed by swelling of the face and the appearance of an erythematous eruption resembling measles—so much like it, in fact, that those who have seen cases of antipyrin rash are careful to warn us to avoid the diagnosis of measles in patients taking antipyrin.

The chief points of difference between this rash and measles are that it appears but slightly on the face, that its chief distribution is on the extremities, that it is non-crescentic in distribution. In many cases it is not accompanied by catarrh of the eyes and nose, but in a few cases catarrh does occur, and when present it must make the differential diagnosis very difficult. Besides these symptoms, antipyrin may cause diaphoresis, feebleness of the pulse, and general collapse. Gastro-enteritis occurs rarely.

The antidote which removes these disagreeable effects most readily is belladonna, given either as the tincture or in the form of atropine used hypodermically (one-seventieth of a grain).

Conclusions.—I would venture to think that in antipyrin we have a drug which, though suffering from a temporary over-popularity, is likely to be of use in practice. Its power of relieving migraine and other forms of cephalalgia is, in many cases, magical. As an anodyne it is particularly useful in those cases where morphine is contra-indicated, especially in advanced kidney disease, acute gastritis, or in the bronchitis of old people. I do not think that antipyrin is at all likely to displace morphine, as this drug possesses the advantage of being much more powerful bulk for bulk, and hence is more convenient for hypodermic medica-

tion. But a trial of it should be made where morphine cannot be given, or where morphine must be withheld for fear of establishing the morphine habit. In cases of long continued pain in which some anodyne must be given for a period often stretching over years, antipyrin may be found useful as an occasional substitute for morphine when the patient has become habituated to the morphine, and when it otherwise would be necessary to increase the dose of this drug. I regret I have not met with a case in which I could try this, but such cases as locomotor ataxy, or cases of slow paralysis accompanied by spasm of the muscles, would be suitable ones in which to make a trial.

I do not think antipyrin will displace the alkaline salicylates in the treatment of acute rheumatism, but it is undoubtedly useful where the salicylates have failed, or where they are contra-indicated by the disagreeable effects they occasionally produce.

With regard to the objection raised against antipyrin that it not infrequently gives rise to symptoms of poisoning, I believe that such is of little value. I have given the drug in a large number of cases without meeting with any bad effects from it, and few of those who have used this drug most largely lay any stress upon this difficulty. One must be prepared to meet with cases of idiosyncrasy in the administration of this drug as one has to be with cocaine, morphine, quinine, and other drugs.

By far the most serious objection to its extended use, particularly in hospital practice, is expense. At present, its manufacture is in the hands of monopolists, and though the French chemists say they have ascertained its composition and method of preparation, no one at present has sent on the market any of the drug under its proper chemical name, which is dimethyl-oxiquinisin, a name which requires some reflection before being added to a prescription.

I have tried antifebrin as a substitute for this drug in several cases of migraine, and though the effect does not seem so certain as when antipyrin is used, yet in many cases it has acted well. The relative expense of antifebrin is much less than that of antipyrin.

THE USE OF "SALUFER" (SILICO-FLUORIDE OF SODA) AS AN ANTISEPTIC.

By A. W. MAYO ROBSON, F.R.C.S.,

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A PERFECT antiseptic for surgical purposes has yet to be found. It must be at the same time a strong germicide, non-poisonous, non-irritating to the skin or to the tissues, inodorous, non-volatile, not destroyed by oxidation, non-corrosive to steel instruments, non-injurious to sponges, and inexpensive. In "salufer" (silico-fluoride of sodium) we have a substance which would seem to fulfil most of these conditions. Mr. W. Thomson, F.R.S. Edin., read a paper before the British Association at Manchester last year in which he explained the results of certain experiments he had made with respect to the antiseptic properties of some of the fluorine compounds. He had tried the effects, on flour paste and on meat chopped into small pieces and mixed with water, of a very large number of chemical compounds, and had found that those which had the most remarkable antiseptic properties were the compounds of fluorine, the neutral fluorides of sodium, potassium, and ammonium, and their fluosilicates. Fluosilicate of soda he found to be the best adapted for use as an antiseptic, it being non-poisonous, inodorous, and sparingly soluble in water. As it had only a very slightly saline taste, he said it might be employed in preserving food without communicating any taste to it. Mr. Thomson stated that a saturated solution which contained only 0.61 per cent. possessed greater antiseptic power for animal tissue than 1 in 500 perchloride of mercury solution.

For general surgical purposes I have been very well satisfied with perchloride of mercury, which is a most efficient antiseptic, and which is so very conveniently carried in the form of powders, each containing five grains of perchloride and five grains of sal-ammoniac, which quantity, dissolved in a pint of water, makes a 1 in 2,000 solution; but it has the great disadvantages of roughening and cracking the hands, of corroding steel instruments, and of being poisonous. Hence it is dangerous for syringing out large cavities—for example, psoas abscess; for washing out serous sacs—for example, peritoneum and pleura; or for irrigating the interior of the uterus after gynaecological operations or in obstetric practice.

It is chiefly to find a safe and efficient antiseptic for such cases that I have during the past few months been using "salufer" almost exclusively in my surgical work.

Before describing details of critical cases which incontestably try the value of any antiseptic, it might be well to mention a few of the uses to which I have put "salufer"; and, unless otherwise stated, a solution of 20 grains to the pint of water is always understood, which proportion seems to be at the same time un-irritating and efficiently antiseptic. They are as follows: in washing out the peritoneal cavity after laparotomy, here using 10 grains to the pint; in cases of strangulated hernia; in the radical cure for hernia; in excision of joints; in amputation of the arm, leg, and thigh; in washing out the pleural cavity; in the removal of tumours; in excision of veins; in ligation of blood vessels; in compound fractures; in osteotomies; in washing out the bladder; in washing out the uterus after curetting the interior, and after the removal of septic retained membranes; as a vaginal douche before and after Apostoli's operation for fibroid; in the irrigation of extensive ulceration in the rectum, where a poisonous antiseptic could not have been employed; in washing out the stomach; as an injection in gonorrhœa (10 grains to the pint); as an injection in otorrhœa; in syringing out large pelvic abscesses; as a gargle in hospital and in diphtheritic sore throat; as a nasal douche after removing polypi; for syringing out empyema of antrum; and in many other cases. My colleague, Mr. Bendelack Hewetson, tells me that he has used it extensively in ophthalmic and aural surgery, and that he is well pleased with it as an antiseptic.

As I have no opportunity of testing "salufer" in obstetric practice, I have asked some of my medical friends to try it, and their reports have been uniformly satisfactory. My brother, Mr. Herbert Robson, tells me that he has found it most efficient, both in syringing out the uterus and as a vaginal douche.

The following cases, for the notes of which I am indebted to my house-surgeon, Mr. Berkeley G. A. Moyrihan, are given more in detail.

1. *Goitre* threatening asphyxia. Division of isthmus by galvanocautery. Skin incision four inches long. Drainage-tube introduced, and wound stitched up with catgut sutures. Tube removed on third day. Antiseptic dressings on third, fifth, and eighth days, the wound being then completely healed. The highest temperature was on the day following operation, being then 99.7°.

2. *Strangulated Inguinal Hernia*.—After the return of the gut (a portion of the Omega loops of Treves) the neck of the sac was ligatured with No. 3 catgut. The wound was syringed out and a drainage-tube introduced. Dressing on first, third, sixth, and seventh days, the tube being removed on third day. All but the drainage opening healed by first intention. Highest temperature 99.6°, at every other time below 99°.

3. *Double Osteotomy* for extreme bowing of the tibiæ. The right tibia was divided on December 8th, and three-quarters of an inch of the shaft of the bone removed. No drainage-tube introduced. The wound was uncovered for the first time on December 22nd, and found to be perfectly healed. Highest temperature 100.4°, the evening of the day after operation. Temperature never afterwards reached 100°. Left tibia divided on December 29th, and an inch and a quarter of bone removed. On January 11th, when the wound was uncovered, it was found to be perfectly healed. Highest temperature 99.5°. In both cases a catgut stitch was introduced.

4. *Varicocele* of enormous size, said to reach in summer to the knee. At the operation the veins were ligatured in four places, and the intermediate bundles of veins removed. No drainage-tube. On the seventh day the dressing was taken off, and, but for thickening and induration round the veins, the site of the wound could not have been found. Temperature never above normal.

5. *Removal of Enlarged Glands of Neck*.—Incision two inches long; four enlarged glands, two of them caseous, were removed. Small drainage-tube introduced. Dressings on third, sixth, and ninth days; wound healed by first intention. Highest temperature 99.2°.

6. *Radical Cure of Varicose Veins of Leg and Thigh*.—Two veins of the leg and the internal saphenous trunk were doubly ligatured, the ligatures being about half an inch apart, the intermediate portion of vein not being divided. The wounds, which were not drained, were not dressed till the eighth day, running an aseptic course, the highest temperature being 98.8°.

7. *Compound Fracture of Tibia and Fibula*.—About half an inch

of projecting tibia was removed, and the tendo Achillis was divided before the leg could be got into good position. The wound was enlarged for about an inch and a half, and syringed out with five pints of "salufer" lotion. The highest temperature was 100.2° the night after operation, never afterwards reaching 100°; perfectly aseptic course.

8. *Radical Cure of Varicose Veins of Leg and Thigh*.—Ligatures applied in four places. Dressed on ninth day; course aseptic. Highest temperature 99.7°.

9. *Tubercular Salpingitis: Acute Peritonitis*.—An incision about three inches long was made through linea alba. Acute peritonitis with effusion was found, and as its cause a ruptured Fallopian tube, covered with miliary tubercles. After removing the diseased appendage, the peritoneum was washed out with "salufer" (grs. x ad Oj), and a Bantock's tube introduced. The case ran a perfectly aseptic course.

10. *Removal of Scirrhus of Breast*, of very large size, together with enlarged axillary glands. The whole breast and about six enlarged axillary glands were removed. The wound was of such large size that it was found impossible to bring the edges into apposition along the central part, where a gap of about three inches by two inches was left. Wound dressed on third and ninth day. The whole of wound, with exception of central part, was perfectly healed. Highest temperature 98.6°; course perfectly aseptic.

11. *Macewen's Operation for Extreme Genus Valgum*.—The angle formed by the tibia, with a line continued down in vertical direction from the thigh, was 75°. Highest temperature 100.2°. Dressing never changed until twelfth day, when the wound was healed.

12. *Pyosalpinx*.—The abdomen was opened by an incision about an inch and a half in length. The distended and totally adherent Fallopian tube was accidentally burst, a large quantity of the most fetid pus escaping. The abscess cavity and the lower part of general peritoneal cavity (the upper being separated off by sponges) were well syringed out with about ten pints of "salufer" lotion (twenty grains to the pint). Keith's drainage-tube introduced. At subsequent dressings the discharge was found to be perfectly sweet. The temperature, which before operation had never been below 101.2°, fell after operation to normal, and has remained so since.

13. *Lipoma of Shoulder*.—Tumour, size of large orange, removed January 25th. Dressed on third day, when the drainage-tube was removed, and on the tenth, when the wound was quite healed. No pus was seen, and temperature normal throughout.

The following are the conclusions to which I have come, after an extensive and varied trial of the fluosilicate.

1. That "salufer" is an efficient antiseptic.
2. That the powder is a strong irritant, even acting as a caustic if dusted on a raw surface, and is, therefore, in that form, unavailable for surgical purposes.
3. That a solution of one grain to an ounce of water is quite strong enough for ordinary purposes, in that strength being apparently unirritating.
4. That a solution of ten to twenty grains to a pint may be safely used to syringe out closed cavities, even where one cannot be certain of all the fluid returning.
5. That the solution is unirritating to the hands, which is no small advantage to those operators whose fingers are easily irritated by the ordinary antiseptic solutions.
6. That the solution acts on the glaze of porcelain after long use, and corrodes steel instruments, but that sponges are unaffected by it. Mr. Thomson kindly suggested to me the addition of bicarbonate of soda to the solution of "salufer" to prevent it corroding steel instruments; this certainly diminishes its action on steel.
7. That a very convenient and comfortable antiseptic poultice may be made by soaking Gangee tissue or absorbent wool in a hot solution (ten grains to the pint), wringing it free of excessive moisture, applying it to a wound, and covering with gutta-percha tissue.
8. That although for ordinary surgical work I may still employ perchloride of mercury, in all cases where there is danger of absorption, as in syringing out cavities, I shall employ "salufer."
9. That I believe "salufer" will prove to be of great use to obstetricians, it being both safe and efficient.
10. That it acts very efficiently as a deodoriser to the hands. After examining carcinoma of the uterus or rectum, by washing and steeping the hands in a saturated solution, the odour is removed more efficiently than it is by any solution with which I

am acquainted. Messrs. Reynolds and Branson have made some compressed tabloids, each containing forty grains, that is, sufficient to make a quart of solution. They have also been good enough to carry out my wishes in making a dressing of "salufer" wool.

In all the cases related this "salufer" wool has been the dressing employed, a layer of gauze wet with the "salufer" lotion covering the wound, and intervening between it and the wool.

TREATMENT OF CONGENITAL HERNIA.

By LEWIS W. MARSHALL, M.D.,
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MR. TIMOTHY HOLMES called attention, in an address on "Children's Hospitals as Medical Schools," which was published in the JOURNAL of October 30th, 1886, to the absence of statistics in relation to congenital hernia and its persistency. Acting upon his suggestion I kept a record in 1887 of all cases occurring amongst my hospital patients, and at the commencement of this year tabulated them as follows, namely:

No. Cases.	Cured.	Not Well.	No Reply.
41	20	12	9

(all boys)

Each of these forty-one cases was treated by the wool-truss suggested first by Mr. Coates,¹ of Salisbury, and more recently referred to by Mr. Lund. This method commends itself to us because it can so thoroughly be carried out by any mother of ordinary intelligence, and efficient means of support are obtained at a trivial cost.

In analysing the forty-one cases I find that in every instance one of two things was noted, and sometimes both—either a congenital phimosis existed, or an imperfect urethral opening, and sometimes both.

Having recognised for many years that hindrances of this kind were a common cause of hernia in male children, I had not quite realised how very frequently the two co-existed as cause and effect. That they occupy this position is shown by the speedy relief gained by removal of the conditions referred to, either by circumcision—freeing the prepuce from the glans penis by passing a probe round between them, and maintaining this separation, or when necessary by slitting up the urethra.

From the twelve cases entered as "not well," I learn that in all some one or more of these urinary conditions still existed. In one case pertussis was present; in another, obstinate constipation; and in several, malnutrition, with very deficient muscular development.

We may fairly assume, I think, that at least half of those cases in which no reply had been given were cured. In ten of the twelve cases still showing a hernia a phimosis had to be treated more energetically than had been done before, or the urethra was enlarged. Considerable objection is often raised to circumcision, and the simpler method of dilatation has therefore been adopted first in some cases. I am disposed to think that the importance of the size of the orifice of the urethra has been to some extent lost sight of, because cases have not uncommonly come into my hands in which circumcision, having been practised by another surgeon, the difficulty in passing water still remains, and is relieved at once by slitting the urethra. I regret that in the notes no mention has been made of the number of double herniæ, but my impression is that there were not more than half a dozen. All the children were under three years of age.

The practical outcome of this inquiry is that if the primary factor in the production of the hernia is duly recognised and dealt with, the pressure given by the wool-truss is ample to ensure closure of the canal when the nutrition is maintained. As a proof of the importance of this statement in reference to the nutrition may be quoted the fact that "breast" babies always do best. Nothing need be said by me about the best form of wool, etc., because Mr. Pye has so fully described all these details already, and the opinion expressed by him I can endorse.

¹ Vide paper by Mr. W. Pye, JOURNAL, May 28th, 1887.

MESSRS. MANSELL AND Co. have forwarded us mezzotint portraits which they are publishing of Sir Andrew Clark, Sir Joseph Lister, and Sir Spencer Wells. The plates, which are 11½ × 9 inches, are in brownish-black upon plate paper 27 × 20 inches. The trial proofs have been approved and signed in each case.

CLINICAL MEMORANDA.

EPILEPTIFORM SEIZURES CAUSED BY OXYURIDES VERMICULARES IN AN ADULT.

RECENT numbers of the JOURNAL (March 24th, p. 642, and March 31st, p. 700) have contained illustrations of the connection between intestinal irritation and convulsive attacks. The following case has features of its own which may entitle it to a brief description.

In December, 1885, I was first consulted by a man, aged 57, but of a much older as well as somewhat cachectic appearance. He complained that for fully a year he had been troubled by attacks, growing in frequency and severity, characterised by momentary disorders of vision (chiefly amblyopia); these were sometimes accompanied by an unpleasant odour issuing from the throat, and always followed by unconsciousness. The unconscious state was at first very brief, the man supporting himself by clutching his bench firmly. Latterly, however, he had on several occasions fallen down, and the body had presented convulsive manifestations, as witnessed by his family and others. He was never a week free from several attacks, Sunday being his worst day.

The family history exhibited no acknowledged neurotic taint. The patient claimed to have been always a healthy man prior to the onset of this affection. After I had very closely pressed him, however, as to details regarding his bodily state, he admitted with great hesitation—owing to the delicacy of the subject, he alleged—that he had long been troubled with threadworms, which caused him annoyance only by the itching they produced.

Assuming a possible cause in these vermin, I resolved to try the effect of treatment directed against them upon his other affection. The result was that, for six weeks afterwards, there was no convulsive attack, though a few of the *petit mal* seizures. The patient then became careless of treatment, with the effect of again inducing the graver phenomena. The same alternation between improvement and self-neglect has been the man's history since, with, on the whole, considerable gain during the past three months.

I may mention that at one stage I prescribed the bromides, but the man's broken down condition quickly increased, and one of the worst epileptoid seizures occurred during their administration, and they were soon withdrawn. By careful observance of dietetic, vermifuge, cathartic, and tonic treatment, the patient reduces his ailment to rare attacks of the minor form, but has never been able to get completely rid of them. Whether by more prolonged adherence to treatment he might effect cure, or whether that is too much to hope for, taking into account the difficulty of finally exterminating the parasites in persons well on in life, and also the morbid excitability of the cerebrum acquired by long subjection to special irritation, I cannot affect to say.

Perth.

JAMES FERGUSON, M.B., C.M.

TOXICOLOGICAL MEMORANDA.

CHEMICAL NOTES.

A Simple Test to Distinguish the Carbonates from the Bicarbonates of Potassium and Sodium.—A delicate and simple test for distinguishing a carbonate from a bicarbonate will be found in phenol-phthalein. Add a drop of phenol-phthalein solution to a carbonate, and it will be turned to a bright red, but with a bicarbonate there will be no change of colour. I have prepared test-papers which are very convenient; they will detect 1 part of K_2CO_3 in 1,000 parts of water. These papers may be obtained from Mottershead and Co., 7, Exchange Street, Manchester.

Colour Test for Strychnine.—There are many colour tests for strychnine, but I believe the chromate of zinc used in the same way as permanganate of potassium, deserves a place in our text-books, as it is superior to some. JOHN BROWN, L.R.C.P.Lond.

Bacup.

SURGICAL MEMORANDA.

FAILURE TO FIND THE COLON IN LUMBAR COLOTOMY. IN Mr. H. Allingham's valuable remarks on the causes of failure to find the colon in lumbar colotomy, a considerable difference occurs in the tables of statistics quoted as to the presence or absence of a complete peritoneal investment or meso-colon on either side. I think there is one circumstance which has a very important bear-