With the condition I have described present it is obvious that in many instances it would add materially to the comfort and well-being of the patient if the set of symptoms known as Ménière's were to convey in the first instance the impression of the existence of gastro-intestinal derangement rather than as at present an incurable condition of the ear; for with the former basis thoughts would travel to gastro-intestinal antiseptics, medicines for reducing blood pressure and correcting digestive derangement, and as to the advisability or otherwise as a preliminary measure of washing out the stomach with an alkaline solution in the usual manner by means of a funnel attached to a flexible rubber tube. In some cases I have had a specimen obtained from the stomach during fasting and a vaccine prepared and administered as an adjunct to other treatment.

With regard to blood pressure, I may mention in passing that a solution of adrenalin chloride taken internally is by many supposed to increase blood pressure, but in reality a small dose reduces it, and three to five drops with a little dilute hydrochloric acid, appropriately flavoured, makes a pleasant and useful mixture; but no medicine given with the object of reducing blood pressure will yield satisfactory results unless the intestinal tract is restored to a healthy condition, and as a first step to medicinal treatment I am in favour of a full dose of castor oil.

Although the removal of the cause is essential for the successful treatment of the case, local measures also give material relief; the most important of these is to restore the patency of the Eustachian tubes. In many instances the mere injection of air into the tympanum lessens the distressing symptoms, but I find that for permanently restoring the patency of the Eustachian tubes the injection into them through a catheter of a few drops of collosol argentum is often shortly followed by a beneficial result. The nozzle of the syringe which injects the drug into the catheter must not fit the catheter tightly, or the drug might be forced directly into the Eustachian tube instead of being sent into it in the form of a spray by air pumped from an air-bag, the nozzle of which closely fits the catheter. To lessen the nasopharyngeal catarrh, collosol argentum or collosol iodine is useful, sprayed directly backwards through the nostrils by an all glass or vulcanite spray producer so that it reaches the nasopharynx and the orifices of the Eustachian tubes.

The injection of a few drops of collosol argentum, or in some cases of collosol iodine, into the Eustachian tubes with the object of restoring their patency, is useful not only to patients suffering with Ménière's symptoms but also in closure of the tubes to Valsalva's inflation due to any cause. I have seen many instances in which this treatment greatly relieved or removed tinnitus when closure of the tubes existed, although the patient may have been suffering from incurable deafness due to sclerosis or other conditions. Whether in this case the tinnitus is due to a congestion produced by long-continued closure of the tubes, and the mere restoration of the patency by removing this causes the tinnitus to subside, or whether it is due to the tissues being affected by the drug, I am unable to say. This simple method of removing the tinnitus, often of old standing, which is frequently the patient's chief trouble, is worth remembering, as tinnitus has always been a difficult symptom to get rid of; even the more troublesome treatment by ionic medication, when it gives relief, is not always followed by complete cessation.

I have found collosol argentum also useful for stopping earache, and usually apply it for this purpose by placing the patient with the meatus of the affected ear upwards and then filling it with the drug and allowing it to remain there. Collosol iodine or collosol mercury should not, I have been told, be given in conjunction with arsenic, as mercurial poisoning or iodism respectively quickly follows. I have had no personal experience of the result of these drugs being administered together or in close succession.

AN institute for soldiers blinded in the war was recently opened at Salerno. Its establishment is due to the initiative of Professor Carlo Carucci, director of the local technical school. There was no ceremony, but an interesting feature of the occasion was a musical performance by Professor Marinuzzi, who is himself blind.

THE PARAFFIN TREATMENT OF BURNS.

BY

LIEUT.-COLONEL ALFRED J. HULL, F.R.C.S.,
ROYAL ARMY MEDICAL CORPS.

THE introduction of new non-irritating antiseptics has led to several modifications in the paraffin treatment of burns.

Various preparations of paraffin have been made under my direction, containing acriflavine, brilliant green, chloramine-T, etc., dissolved in the paraffin base. These preparations have been given a very extensive trial. Another direction in which the new antiseptics have given scope for improvement has been the treatment of the burn by an antiseptic before the application of the paraffin. The results following this modification have been so satisfactory that we have adopted it as a routine method.

The method of application of the paraffin base is the same in all cases. The burn is first of all washed with normal saline (1 in 1,000 acriflavine solution or proflavine has now been substituted). The burn is dried with gauze or an electric drier. A layer of paraffin is painted over the burn. The paraffin is applied at a temperature of about 55° to 60° C. A thin layer of wool is placed over the first layer of paraffin and a second layer of paraffin at the same temperature painted over the wool. A dressing of wool and bandage is applied over the paraffin dressing. The dressing is changed every twenty-four hours. It is important to paint or spray on a sufficiently thick layer of paraffin. If the temperature of the paraffin is too high, the layer is liable to be too thin. The efficacy of this treatment depends largely upon the mechanical effect of the paraffin. The epithelium is conserved from damage; the tissues are held at rest by a splint-like action of the dressing. The addition of antiseptics to the paraffin preparation gave better results than preparations without antiseptics. The first antiseptic to be extensively used was eucalyptus oil, which, in conjunction with beta-naphthol, is still used in No. 7 paraffin. Scarlet-red paraffin has given satisfactory results in general use, and has special indications for its use which makes it a preparation of value. Burns which have been treated with No. 7 paraffin occasionally become sluggish and present unhealthy granulations. We have therefore changed the paraffin to scarlet-red paraffin when burns have become clean and shown a tendency to begin to heal. This treatment has resulted in great acceleration of healing. We have made many experiments with a view to improving the paraffin base, but no preparation has given such good results as No. 7 paraffin. Later a flavine paraffin has been extensively used, and has given satisfactory results. Paraffin preparations of brilliant green and chloramine-T have not been satisfactory from a pharmaceutical point of view, the antiseptics being difficult to incorporate in the paraffin.

Various paraffins of varying degree of melting point have been tried, but the use of paraffin of intermediate melting point does not produce so good a mechanical base as No. 7 paraffin. The dilution of a high melting point wax with vaseline and oil appears to have some special value in the treatment of granulating surfaces, and makes a better mechanical mixture. The question as to whether special paraffins (scarlet-red, acriflavine, chloramine-T) possess any particular value has been debated. It would appear that since the antiseptic can be painted on the burn before the application of the paraffin, the use of special paraffin is somewhat unnecessary. The results of acriflavine applied in the form of solution followed by the application of No. 7 paraffin have been so good that we have practically discarded the use of special preparations with the exception of acriflavine paraffin and scarlet-red.

The effect upon recovery of the application of various antiseptic solutions previous to the application of the paraffin has been studied.

Eusol accelerated the cleaning of the burn but was too irritating in its action.

Brilliant green cleaned the burns well, but if used beyond a certain stage caused light-coloured and unhealthy granulations.

Acriflavine cleans the surfaces well; whether better than brilliant green or not is doubtful, but it certainly produces a healthier type of granulation.

Scarlet-red is only used when the burns are clean and

require stimulation. A 10 per cent. aqueous solution is painted over the burn before the application of the paraffin. There is very distinct evidence that convalescence is greatly accelerated by the use of this powerful stimulus to the formation of epithelium; 1 and 10 per cent. have been tried, and in most cases the 1 per cent. has proved sufficient.

Mustard gas burns heal readily by the ordinary application of No. 7 paraffin.

The treatment giving the most satisfactory results, obviating pain, sepsis, and other complications, and which we have found generally applicable, is the preliminary painting of the surface of the burn with aqueous flavine solution 1 in 1,000, followed by the application of No. 7 paraffin. In cases of long duration scarlet-red 1 per cent. is substituted for the flavine solution. We have found rapidity of healing and minimized scarring to be greatly favoured by this treatment.

FORMULAE.

No. 7.

Resublimed beta-naphthol	...	...	0.25 per cent.
Eucalyptus oil	...	...	2 "
Olive oil	...	...	5 "
Vaseline	...	...	25 "
Paraffinum durum	...	...	67.75 "

No. 10. Red.

Scarlet-red	...	...	0.2 per cent.
Eucalyptus oil	...	...	2 "
Olive oil	...	...	5 "
Adeps lanae hydrosus	...	...	4 "
Paraffinum molle	...	...	21 "
Paraffinum durum	...	...	67.8 "

No. 11.

Scarlet-red 0.2 per cent. at expense of paraffin molle. It is difficult to get a good wax which will melt and retain most of the scarlet-red.

No. 12.

Brilliant green	...	...	0.05 per cent.
Eucalyptus oil	...	...	2 "
Olive oil	...	...	5 "
Adeps lanae hydrosus	...	...	4 "
Paraffinum molle	...	...	21 "
Paraffinum durum	...	...	67.95 "

No. 13. Flavine Wax.

Flavine	...	...	0.2 per cent.
Eucalyptus oil	...	...	2 "
Olive oil	...	...	5 "
Adeps lanae hydrosus	...	...	4 "
Paraffinum molle	...	...	21 "
Paraffinum durum	...	...	67.8 "

No. 14.

Dichloramine-T	...	...	0.2 per cent.
Eucalyptus oil	...	...	2 "
Olive oil	...	...	5 "
Paraffinum molle	...	...	25 "
Paraffinum durum	...	...	67.8 "

To make a Kilogram of Paraffin.

Take $\frac{1}{2}$ gram of brilliant green or 2 grams of scarlet-red or flavine, and 40 grams of lanoline, rub up the coloured material with the adeps lanae hydrosus until a highly-coloured smooth paste is obtained which contains no undisintegrated particles of the dye; using about half an ounce of water assists the solution of the dyes. Melt the paraffinum durum (678 grams), and add 210 grams of paraffinum molle and 50 c.cm. of olive oil. Let the temperature of the resulting mixture sink to at least 65° C., then stir in the previously prepared lanoline paste, stirring until thoroughly mixed. At about 55° C. add 20 c.cm. of eucalyptus oil, stir and allow to solidify.

The adeps lanae hydrosus is used as a suspending and diffusing agent. Smaller quantities do not satisfactorily take up the dyes. Larger quantities are undesirable, as they make the resultant wax less satisfactory to paint on. If the above directions are carefully followed, little of the dye falls out of suspension, although reheating the wax for use tends to make this occur. Unless small quantities of wax are melted at a time, it is advisable to stir the liquid before using. The scarlet-red forms the least satisfactory suspension, and requires stirring while using, but its therapeutic value has caused it to be persevered with.

To prepare dichloramine-T paraffin, dissolve the dichloramine-T in eucalyptus oil and add to the other ingredients at 55° C.

The dichloramine-T wax has proved an unsatisfactory wax from a practical point of view owing to the tendency to be brittle and adhere to the raw surface of the burn, instead of being easily removed in one piece, as is the case with the other preparations.

A CASE OF FULMINANT CEREBRO-SPINAL FEVER WITHOUT MENINGITIS.

BY

WILLIAM STCLAIR SYMMERS,

PROFESSOR OF PATHOLOGY, QUEEN'S UNIVERSITY, BELFAST.

THE case here reported is one of meningococcal infection, the course of which was so rapid (twenty hours) that the meningeal symptoms and signs remained undeveloped, whereas the outstanding symptoms (witness the laparotomy) pointed to some abdominal lesion, these symptoms being intense pain in the abdomen, rigidity of the recti, repeated vomiting, and diarrhoea. The absence of headache is to be remarked; the pain in the back was not associated with any naked-eye sign of spinal meningitis.

On September 16th, 1916, a boy aged 16, apparently in good health, went to his work as usual in one of the Belfast shipyards. Shortly after commencing work, about 7 a.m., he was seized with violent pain in the abdomen and back; he lay on the ground and vomited freely. He was sent to the Royal Victoria Hospital, arriving almost in collapse, cyanosed, and vomiting. There was now marked diarrhoea, some rigidity of the abdominal muscles, but no trace of headache; the temperature was 96° F., and the pulse 98. By evening the temperature was 100.2 F., and the pulse 130. There was still no headache, but increasing weakness and considerable cyanosis of face. He died twenty hours after the appearance of the first symptoms. Some hours after admission to hospital laparotomy had been performed by Mr. Holmes, without, however, throwing any light on the case.

At the post-mortem examination the points noted were as follows: numerous petechiae on the posterior aspect of the heart, an enlarged and much reddened thymus, enlarged mesenteric glands, some of which showed minute haemorrhages, marked enlargement of the solitary follicles in the lower ileum and colon, the bowel being hyperaemic; Peyer's patches were unchanged. The liver showed superficial yellowish patches scattered over the upper surface near the anterior border. The remaining thoracic and abdominal organs were normal.

The above appearances¹ were identical with those I have invariably seen at the autopsies in cases of cerebro-spinal fever in Belfast during the past seven years, and therefore, at this stage of the autopsy, this disease was suspected.

The brain and cord, however, on being removed, were found normal to the naked eye; there was not the slightest appearance of meningitis, unless some exceedingly faint turbidity of the scanty ventricular fluid could be so interpreted. This cerebro-spinal fluid was small in amount, the brain and cord being somewhat drier than is normally the case. The few drops of fluid collected showed microscopically some finely granular debris, to which its faint turbidity was due; there were a few polymorphonuclear cells, but no inclusion of bacteria.

This fluid, when planted out on ascitic agar,² however, furnished very numerous colonies of the meningococcus in pure culture, the agar tubes being covered by scores of the typical colonies, consisting of the well-known Gram-negative cocci, which acted upon the various sugars in the manner characteristic of this organism—namely, acid production in maltose and dextrose, absence of acid on the others, including galactose.

REFERENCES.

¹ BRITISH MEDICAL JOURNAL, February 16th, 1907, p. 391; *Lancet*, February 23rd, 1907, p. 508. ² BRITISH MEDICAL JOURNAL, June 22nd, 1907, pp. 1477-79.

CHLORINE WATER IN THE TREATMENT OF INFANTILE DIARRHOEA.

BY

S. ROSEBERY, M.B., CH.B. EDIN.,

SENIOR MEDICAL OFFICER, SHOREDITCH INFIRMARY, LONDON.

THE use of chlorine water in the treatment of typhoid fever was advocated by Burney Yeo, and it occurred to me that it might be usefully applied to diarrhoeal conditions in children. The death-rate in these is high everywhere, and in Shoreditch and Hoxton the dangers are increased by the very unfavourable conditions under which most of these children are reared, and many of them were admitted to the Shoreditch Infirmary in a critical condition.

During recent months fifty-three cases have come under observation, varying to a considerable degree in severity.