the part is bandaged. The dressing is left undisturbed for twenty-four hours, when it is removed and a fresh application made. A third dressing is applied in ordinary cases the next day, and, when necessary, a fourth dressing two days after that.

I have used this method of treatment in more than thirty cases, and in no instance has there been failure to relieve pain immediately, to prevent or remove sepsis, nor failure to produce healing in a few dressings, five being the greatest number in any one case, and that in only two instances.

I am correct in saying therefore that every burn and every wound treated by me, by paraffin, healed up in a week, and the injured persons were able to return to their work—a very important consideration both from the point of view of the injured one and also from that of the employer.

I append here summaries of some of the cases in question.

1. Boy. Burn on wrist and skin broken. Healed in three dressings.
2. Boy. Burn on fingers, skin unbroken. No blisters formed; healed in two dressings.
3. Boy. Burnt hand. Pain disappeared immediately on application of dressing; no blister present on following day when a second dressing was put on as a safeguard.
4. Youth and man. Both burned on face and arm by a hot chemical liquid,* blisters forming when cases first seen. All pain disappeared immediately on application of dressing. When dressing was removed next day there was no blister, but only dry dead skin which peeled off three days later, leaving a perfectly healed surface.
5. Two boys. Burn in palm of hand with small blister. Pain relieved immediately by dressing; blister was same size next day and was then cut and dried with sterilized wool. Paraffin reapplied, and again on the two following days. On removing dressing two days afterwards healing was complete.
6. Four boys. Burns. No pain after dressing; no blisters formed; healing after the second dressing.
7. Boy. Burn on leg, skin unbroken. Pain relieved immediately; no blister formed.
8. Woman. Lacerated fingers. Completely healed after four dressings.
9. Boy. Blow from hammer on end of finger, laceration near the root of the nail. Pain disappeared on application of dressing. On redressing next day the boy reported that he had had no trouble with the finger, and he did not return for any further dressing, but went back to work.
10. Boy. Skin scraped off leg. Pain relieved immediately; next day the wound was dry, clean, and healed.
11. Boy. Incised wound of finger. Healed after three dressings.
12. Boy. Came to ambulance room with an old wound on finger-joint which kept reopening. Completely healed after two dressings.
13. Boy. Lacerated thumb. Healed after three dressings.
14. Boy. Lacerated wound of fingers. Healed with three dressings.
15. Boy. Lacerated wound of fingers. Healed with two dressings.
16. Boy. Septic wound of finger. Wound was washed and dressed; pain disappeared immediately and the wound was clean next day. Completely healed after two more dressings.

In face of such results I need no apology for urging the claim of soft paraffin as a dressing, and I feel sure that what has been found to be so good in minor injuries has every chance of being equally good in major cases.

It seems to me that this is an appropriate place to refer to the now famous bipp treatment of wounds. I have read the fascinating little book by Professor Rutherford Morison, and I am not ashamed to confess that I could not put the book down until I had finished it. After reading it, I asked myself a question which I often asked in the old days of lengthy prescriptions—namely, which ingredient is it that is effective? In the case of bipp, is it the bismuth, the iodoform, or the paraffin, or is it all three combined?

With some hesitation, as I am not in a position to speak so positively as an operating surgeon could, I throw out the suggestion that the paraffin is the most important of the three ingredients. Iodoform alone has been used for many years, and almost discarded partly because of its smell, partly because cases of poisoning have occurred, and partly because results were not universally successful. Of bismuth alone I have had no experience, but paraffin alone I have tried and with the remarkable results already given in this paper.

* I have been unable to ascertain the exact nature of this substance, but it appears to be a mixture with a melting point of 213° C. At the time of the accident it would be about 250° C. (482° F.).

I take it that the three objections to bipp are, first, expense; secondly, the risk of toxic symptoms; and thirdly, the possibility of some interference with x-ray examinations. Where the result means the saving of a limb or of life, or merely the shortening of the healing process, expense cannot be considered. In the case of paraffin, however, the expense is reduced to a minimum, there is no risk of any toxic symptom, nor is there any interference with x-ray examination.

A suggestion that antiseptic paraffin retards the process of healing by destroying the saprophytic action of bacteria is, in my opinion, unsound, and without foundation in experience.

My thanks are due to Lieutenant H. S. Crace for his very great help in the conduct of the experiment, and to Mr. Renwick, the ambulance room attendant at St. Peter's Works, for the very careful way in which he has carried out the treatment, and for his kindness in compiling a record of the cases.

ACRIFLAVINE EMULSION AS A WOUND DRESSING.

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HAVING used flavine from the time when supplies first became available—formerly in military hospitals in France and latterly in both civil and military hospitals in this country—I have shared the disappointment which many surgeons have experienced in the results gained from using a 1 in 1,000 solution in normal saline. I believe that on this account many surgeons have ceased using flavine. By publishing the formula of an emulsified preparation of the dye, together with a few specimen cases showing its effect, I venture to hope that I may do something to restore confidence in what I believe to be our most powerful weapon against wound infection.

The value of purified paraffin as a wound dressing is well recognized, and I sought a combination of paraffin and flavine which would combine the known advantages of the former with those claimed for the latter, and I am much indebted to Mr. Griffiths Humphreys, M.P.S., of High Street, Northwich, for the patience and skill with which he has worked out a stable emulsion the droplets of which, when examined microscopically, are seen to be similar in size to those in a good emulsion of cod-liver oil, and which has given clinical results that I had not dared to hope for.

Mr. Humphreys's Formula.

Acriflavine	...	...	...	...	0.1
Thymol	...	...	...	...	0.005
White wax	...	...	...	...	4.0
Liquid paraffin	...	...	...	...	76.0
Distilled water	...	...	...	...	20.0

A good deal of skill and care is necessary in the dispensing of this emulsion in a sterile condition. It is put up in small sterile bottles, stoppered and sealed. The addition of the thymol has given better results in cases of mixed infection, and its presence has not prejudiced the results in the simpler cases.

In dealing with broken down tuberculous glands, after scraping, I have followed the practice of introducing a small quantity of the emulsion before closing the wound. The following case is, I think, a fairly severe test.

CASE I.

A. M., female, aged 18. Broken down tuberculous glands in the anterior triangle of the neck along the upper half of the sterno-mastoid muscle. Mixed infection, and a three weeks' old sinus. The tissues involved in the inflammatory process (which included the internal jugular vein) were removed piecemeal, and soiling of the newly cut tissues was inevitable. There was considerable oozing, which I was unable to control otherwise than by packing with gauze, after introducing a small quantity of the emulsion into the wound. Stitches were then inserted, but not tied. In twenty-four hours I removed the packing, and filled the cavity (about the size of a pigeon's egg) with the emulsion. Primary union ensued in seven days with a small linear scar.

It has been my custom for some years, when operating for acute infective abdominal conditions, whenever possible completely to close the peritoneum and trust to the visceral

layer of that membrane to deal with what infection remained after removal of the primary focus. I had always found it necessary, however, to drain the abdominal wall when there had been soiling of the wound edges. By filling the wound with the emulsion after closing the peritoneum, I have found it safe completely to close the wound, and thus avoid the potential incisional hernia which a drainage tube leaves. The following two cases furnish fairly severe tests of the efficacy of the emulsion in recent wounds.

CASE II.

T. L., a farmer, aged 38, with gunshot wound of elbow. The lower third of the humerus, the upper end of the radius, and the surrounding soft tissues were destroyed. The lower end of the remaining fragment of the humerus, the upper end of the lower fragment of the radius, and the upper extremity of the ulna were exposed in a wound extending from four and a half inches above the elbow to three inches below the joint, and the floor of the wound was formed by the brachial artery. There was no destruction of nerve trunks. The comminuted bone, and as much as possible of the damaged muscle, was removed. Owing to extensive destruction of skin it was impossible to close the wound, but the edges were drawn together at the upper end of the wound as far as possible without tension, and the cavity was lightly packed with gauze wrung out of flavine. The wound was dressed every three days. Owing to its size the wound has been somewhat slow in healing, and now at the end of nine weeks there remains a superficial ulcer about the size of a florin, and at no time during the period of healing has there been any evidence of infection—and this in spite of the fact that the wound was badly contaminated with manured soil, clothing, and the wad of the cartridge. The scar tissue is small in amount, and is soft and elastic. The limb is flail. After improving the nutrition of the limb by massage and electrical treatment, I intend to ankylose the elbow by means of a bone graft, and I have little doubt that a limb which at first looked fit only for amputation will be converted into a strong and very useful one.

CASE III.

O. J., a woman aged 22, had a compound comminuted fracture of the fibula due to direct violence. There was much bruising and laceration of surrounding tissues, and the anterior tibial nerve was divided just above the annular ligament. The patient was in a filthy condition, and dirty clothing was embedded in the wound. The patient's skin was cleaned with petrol, and sterilized with iodine. As much as possible of the soiled and damaged tissues was excised; the damaged nerve was sutured with fine catgut. After all bleeding had been controlled, the emulsion was applied to the surface, and the wound was closed with salmon gut. In seven days the six-inch wound was healed except for half an inch at its upper end. There was no evidence of infection in this half-inch, which had healed by the twelfth day.

The fracture of the fibula followed a normal course. In three months protopathic (but not epicritic) sensation has returned in the area of distribution of the anterior tibial nerve.

The only disadvantage that this emulsion has is its price, which works out at about five shillings for eighteen ounces. Having in mind the way in which it expedites the patient's recovery, and limits the disability resulting from his injury or disease, the saving of man power, particularly in industrial accidents, is such that the relative cost of the preparation is negligible.

TREATMENT OF ACUTE GONORRHOEA: MESSAGE-PACK METHOD.

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It is now an Australian A.M.C. order that the message-pack method of early treatment of gonorrhoea shall be used to the exclusion of all others.

As the originator of this method, and the first to point out to the A.D.M.S., A.I.F. dépôts in the United Kingdom its superiority over irrigation and sealing up processes, I wish to submit the following detailed account of my efforts and the results obtained.

My original object in devising the method was to put into practice a theory that the speediest and the best curative results would be obtained by dressing and draining the infected portion of the urethra, by the application of an antigonococcal chemical to the infected surface, and by preventing the spread of the mischief.

To attain these objects the basis of the treatment consists in packing the anterior portion of the urethra with a material soaked in silver solution. The pack not only absorbs the discharge and drains the infected part, but, by

mechanically dilating the urethra, it enhances the prospects of the chemical reaching the site of infection, and prevents apposition between infected and non-infected surfaces.

For packing I have found soft gauze far superior to cotton-wool. It is more absorbent, less irritating, and more easily passed into and withdrawn from the urethra; it has no tendency to break, and shreds are not detached from it.

In the large majority of my cases argyrol has been used for preference, but during periods of shortage silver vitelline has been tried with equally successful if not quite as speedy results.

From a curative point of view an argyrol solution stronger than 5 per cent. is not necessary, and 7 per cent. and 10 per cent. show a tendency to cause soreness, necessitating less frequent packing, thus depriving the case of the benefit of the mechanical advantages of the pack. I have found haemorrhage even with 10 per cent. a rare occurrence, and not in one single instance with 5 per cent.

Method.

The patient having passed water, and the glans penis and prepuce having been well washed with 1 in 8,000 solution of potassium permanganate, a probe is introduced into the urethra to determine its general direction and whether there is any narrowing or other obstruction.

A strip of soft open woven gauze is cut half to three-quarters of an inch in width and about seven inches in length. The width of the strip should vary with the size of the meatus, and with experience and practice can be estimated accurately. Having rolled the strip into a cylinder and well soaked it in 5 per cent. argyrol, one end is folded over the extremity of a probe and passed up the urethra until resisted at the bend. Thus the whole anterior urethra will be packed. The excess of the pack may be cut off at the meatus.

The procedure is facilitated by opening the meatus with the tips of the thumb and index finger of the hand holding the penis, and by balancing the free end of the strip on the little finger of the hand holding the probe. If the penis be slightly tilted upwards and the strip well balanced the loss of argyrol by dripping will be obviated. There is no danger of injury to the urethra if a moderately large probe with a good bulbous extremity be used.

Having packed the anterior portion of the urethra, the penis is then gently massaged for five minutes, all the movements being made towards the root of the penis.

The pack is then withdrawn, the meatus, in so doing, being gently compressed between the finger and thumb in order to leave behind in the urethra as much argyrol as possible.

A second pack is then introduced in the same manner as the first and retained for four hours, or, if the patient does not require to pass water, even longer. Whilst the pack is being retained for four or more hours there is no tendency for the discharge to trickle outwards along its side, and on withdrawal there is no evidence, such as a flow of pus, to suggest an accumulation of discharge behind the pack. On the other hand, on withdrawal, the pack will have lost most of its argyrol colour, and pus, especially in cases with copious discharge, may be easily squeezed from it.

The number of packs given in the day's treatment will be guided by the condition of the case, but as a general rule the pack is indicated with a purulent discharge or with acute subjective symptoms, such as scalding, even before the purulent stage is reached. The majority of my cases have responded to two packs a day (morning and evening), but when necessary, as in a number of cases, I have found three packs in one day easily tolerable.

The pack is rarely necessary after the fourth morning of treatment. As soon as the discharge, observed before passing water in the morning, ceases or becomes non-purulent (clear watery) the pack should be discontinued and treatment confined to gentle irrigation with 1 in 5,000 potassium permanganate three times a day.

Results.

Between the dates March 1st and December 31st, 1918, I have applied the treatment to 742 cases of acute gonorrhoea. Of these the number "not cured" and evacuated to a venereal hospital on or before the eighth day of