(a handful of sodium or potassium carbonate) are added; on subsequent mornings the cresol is omitted. After the morning bath, and again in the evening, the following ointment is applied to all affected parts from the neck downwards, excepting the genitals;

R Chrysarobin.	...	...	...	...	gr. 10
Acid. salicylic.	...	...	...	...	gr. 15
Acid. carbolic.	...	...	...	...	gr. 10
Zinc oxide	...	...	...	...	dr. 1½
Lanoline }	...	...	...	...	...
Vaseline }	...	...	...	...	...
	...	...	...	...	ss ad oz. 1

Throughout the period of treatment a suit of pyjamas is worn next the skin night and day, and thus becomes thoroughly impregnated with the ointment. The patient is inspected by the medical officer at least every second day.

As a rule the ointment is well tolerated, but, should any area of skin become acutely inflamed and tender, the application of the ointment to that part is at once discontinued, and, instead, some soothing preparation, such as Lassar's paste* (to which a little ichthyol may well be added), is kept thickly applied to the affected region. The genitals are throughout protected by Lassar's paste.

At the end of a week, sometimes earlier, the eruption in most cases is to a large extent cleared, whereupon Lassar's paste, containing 10 grains of salicylic acid to the ounce, is applied to the treated parts, to allay irritation and assist desquamation. A clean suit of pyjamas is at the same time issued to the patient, and at this stage a bath on alternate days only is given.

2. Treatment of Resistant Patches.

It will usually be found that a few active patches remain after the greater part of the eruption has disappeared. Such areas are commonly seen on the elbows and knees, wrists and hands, in the hollows just behind the great trochanters, and sometimes elsewhere. In the treatment of these a stronger ointment is employed as follows:

R Chrysarobin.	...	...	...	...	gr. 20
Acid. salicylic.	...	...	...	...	gr. 25
Acid. carbolic.	...	...	...	...	gr. 10
Zinc oxide	...	...	...	...	dr. 1½
Lanoline }	...	...	...	...	...
Vaseline }	...	...	...	...	...
	...	...	...	...	ss ad oz. 1

This is rubbed well into the patches twice daily, and is also kept applied to them on lint during the night, providing that the healthy skin immediately surrounding them is not actively inflamed.

3. Treatment of the Scalp and Forehead.

In order to prevent the occurrence of conjunctivitis the chrysarobin ointment is not used for these parts. The hair is cut very short, and the scalp shampooed three times a week. An ointment of the following composition is kept applied by means of lint, or, better, a closely-fitting linen cap:

R Acid. pyrogalllic.	...	...	...	...	gr. 10
Acid. salicylic.	...	...	...	...	gr. 15
Acid. carbolic.	...	...	...	...	gr. 10
Ung. hyd. ox. flav.	...	...	...	...	oz. 1

4. Treatment of the Face and Front of the Neck.

As a rule, psoriasis of these regions will yield to zinc ointment containing 10 grains of ammoniated mercury and 20 to 30 grains of salicylic acid. In more resistant cases the pyrogalllic acid ointment, as recommended for the scalp, has proved effectual.

5. Internal Treatment.

The external treatment described has up to the present been uniformly successful in clearing even the most extensive eruptions in a comparatively short time. Its object is to render a man fit for duty as quickly as possible; it will not, of course, prevent relapses.

Internal treatment is only adopted in certain cases. As regards diet, probably the most important factor to be considered in the prevention of relapses, it would in most instances seem hardly worth while to attempt to control it, seeing that the patients will return to active service conditions after their discharge from hospital. Florid individuals, however, with an inflamed eruption are kept for

a time on a milk diet, with plenty of fluids, and freely purged, and a mixture containing vinum antimoniale and potassium citrate is prescribed thrice daily. In another class of patient there is evidence of intoxication from some septic focus—frequently, apparently, the mouth. In these cases a thymol mouth-wash is directed to be used several times a day, the sockets of the teeth are cleansed with hydrogen peroxide, the bowels are kept well opened, and a mixture containing dilute hydrochloric acid and nuxvomica is given after meals. After their discharge they are recommended for dental treatment.

Contraindications and Modifications.

Very acute cases, and those in which the eruption is inflamed and angry-looking, should not be treated at once with the chrysarobin ointment. Free purgation and diuresis, a milk diet, and the administration of vinum antimoniale, together with the local application of Lassar's paste containing salicylic acid and ichthyol, form the lines along which treatment should first be directed. When the acuteness of the eruption has subsided the method of treatment already described may be cautiously begun.

No patient who is suffering from boils or other forms of pyoderma should begin the treatment until these have been cured; otherwise very acute dermatitis is apt to be provoked.

Psoriasis is not uncommonly seen in persons of the seborrhoeic diathesis, and impetiginized seborrhoeic eczema of the face, scalp, ears, and neck sometimes coexists with psoriasis of the trunk and limbs. In seborrhoeic subjects not only does the character of the psoriatic eruption differ from that usually seen, but the distribution is apt to be that of a seborrhoeic eczema—that is, the flexures and midline of the back and chest tend to be involved. As seborrhoeic subjects are peculiarly susceptible to all forms of external irritation the treatment of psoriasis in them must be carried out under very careful supervision in order to avoid chrysarobin dermatitis. The following alkaline citrate mixture is very useful in these cases: Sodium citrate gr. 30, potassium carbonate gr. 15, and sodium bicarbonate gr. 15, thrice daily one hour before meals.

CONCLUSIONS.

Although this method of treatment may not appear to differ materially from those usually employed, the fact remains that no other preparation I have ever used has given me nearly such rapid results. This, too, is the experience of my colleagues, all of whom are dermatologists. We are agreed that the carbolic acid, incorporated in the ointment, must have some specific effect. Whether its action is local, or whether it depends on absorption cannot be proved, but it is interesting to note that Kaposi considered that carbolic acid given internally was as effective as arsenic in the treatment of psoriasis. No ill effects have as yet been noted, but, of course, the possibility of renal irritation and carboloria must be considered. For this reason application of the ointment over a wide area must never be continued for longer than a week without a break; fortunately the eruption over the greater part of the body is usually cleared at the end of this period.

Apart from any special virtue of the applications used, I would lay great stress on the thorough supervision of the treatment as a factor in its success.

I wish to express my gratitude to Major MacCormac, R.A.M.C., who has kindly given me every facility for the carrying out of the treatment, and to my colleagues, Captains Semon, Small, Stewart-Smith, and Pellier, for providing me with cases.

ELECTRICAL TREATMENT OF MUSCLES IN "TRENCH FEET."

BY

FLEET SURGEON G. MURRAY LEVICK, R.N.(Ret.).

A NUMBER of cases of trench feet have been treated very successfully in the Electrical Department at Tooting Military Orthopaedic Hospital.

At first nearly all the patients were sent from the wards with a request for radiant heat treatment. After a short trial this was abandoned completely. Not only was it no use, but in nearly all cases the patients complained that it increased their pain instead of relieving it. As already

* The formula for compound zinc paste (B.P.C.) for which "Lassar's paste" is a synonym, is as follows: Zinc oxide finely sifted and starch in powder, of each 24 parts; salicylic acid in powder, 2 parts; soft paraffin (white) 50 parts. The salicylic acid may be omitted, but the name "Lassar's paste" is retained.

pointed out by Mr. Jocelyn Swan and others, the application of heat in any form in the more acute stages is contra-indicated, and relief is more likely to be found in cooling applications than in hot baths or radiant heat.

In the later stages, with which we are here concerned, there is functional loss of movement in the intrinsic muscles of the foot, with or without pain and swelling. The muscles have been completely inactive for some time and are wasted. Tissue changes have taken, and are taking, place. In addition to the blood extravasation through the walls of the damaged blood vessels, there has been inflammatory invasion of the surrounding tissues, and the products of this are not removed owing to stagnation in the veins and lymphatics. Massage and passive movements of the foot give much relief and do a great deal of good, and I think that, apart from electrical means, there is no better treatment to adopt, especially if it is carried out after immersion in hot water. In addition to this, however, some means of getting rhythmical contraction of the muscles is urgently called for, as it is the best method for re-establishing lymphatic and blood efflux; if this be left until too late, permanent tissue change will take place, with loss of muscular function, commonly leading to flat-foot.

Method of Application.

The patient sits with his feet in a warm foot-bath, deep enough to rise above his ankles. If it does not cause pain the temperature of the water may be 110° F. If this is painful, lower temperatures may be used.

After a quarter of an hour, water is removed from the bath until only the soles of the feet are covered as they rest flat on the bottom of the bath, the water rising between the toes, but not into the dorsum of the foot.

An indifferent electrode of a faradic circuit is connected to a piece of wet lint which encircles the ankle of the foot to be treated; it is better to do one foot at a time. The active electrode, a carbon plate, is first immersed in the water in front of the toes.

A metronome is in the circuit, making not more than fifty interruptions a minute, and the current is gradually introduced. It will be seen now that rhythmical contraction is taking place in the foot. The action of the interossei and flexors and extensors of the toes can be seen in a remarkably satisfactory manner. The simultaneous action of the opposing sets of muscles is unavoidable, and matters little, because the object in view is attained—namely, a rhythmical contraction and relaxation, with the certainty of increased blood supply, and efflux of blood and lymph from the part.

The stimulus should be weak at first, but it will be found as a rule that a good contraction of the muscles can be borne from the start if the whole of the above technique is followed exactly. The position of the electrode in the water can be adjusted in its relation to the foot, thus allowing a diffusion of the stimulus before it enters the tissues, and a more even application to different parts. Careful watch should be kept on the muscle contractions the whole time, and the treatment should be discontinued as soon as the muscles show signs of fatigue. This point will take longer to reach as the treatment progresses.

Results.

So satisfactory is this method, and so pleasing the appearance of the part, with the parting and closing of the toes by the action of the interossei, that it at once suggests itself as the best method of applying any form of electrical stimulus to the muscles of the feet, for whatever reason. It is highly probable, though hard to prove, that the deeper layers of muscles are all stimulated in some degree. On moving the electrode to the outer side of the foot, the abductor minimi digiti is seen to start rhythmical contraction, and on the inner side the abductor hallucis may be stimulated, and so on.

After this treatment voluntary movement will soon return in most cases, and care should be taken to elicit this as soon as possible. When it is established, regular and carefully selected exercises should be given until the muscles have regained their tone and ready response. Above all things, until tenderness has disappeared from beneath the feet on pressing them to the ground, the patient should not be allowed to walk about the hospital. His first essays in walking should all be carried out under

instruction, as otherwise he will probably develop a bad style, and I have seen cases of flat-foot which I believe to have been acquired in this way.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

MALIGNANT DISEASE AFTER INJURY.

UNDER present war conditions injuries to bone, accompanied or unaccompanied by suppuration, are of relatively great frequency. In addition to bone lesion, such injuries may be associated with extensive cicatrization. In view of the common belief that squamous cell carcinoma is liable to occur in an ulcer or scar of long standing and that sarcoma is liable to supervene on injury to bone, I have examined the records of the Middlesex Hospital in order to obtain some idea of the future chances of the wounded soldier in these two respects.

Out of over 10,000 records of malignant disease less than 1 per cent. are examples of cancer affecting the skin of trunk or limbs. Amongst these, cases of carcinoma arising on scars form a very small proportion and have chiefly been associated with cicatrices from extensive burns. Somewhat allied to this class are rare cases affecting the face where lupus has been treated with x rays, and the less uncommon cases where cancer has developed on the scalp at the seat of a sebaceous cyst of long standing.

Histological diagnosis indicates that sarcoma constitutes about 9 per cent. of all malignant disease, affects practically all regions of the body, and occurs at all ages with fairly uniform distribution. Direct association of sarcoma with injury is not often recorded; when it is stated to have occurred the sarcoma most frequently affected a long bone.

So far as concerns date of onset of the malignant disease after the trauma carcinoma and sarcoma are in marked contrast; "one year since injury" is an average period when sarcoma is said to have followed on injury of a long bone; "twenty years since injury" is an average period when carcinoma develops in a scar.

It will be seen, therefore, that past experience is reassuring; the probability that a given soldier will suffer from malignant disease at the site of his wound is so small that it may be neglected. Nevertheless, the total number of wounds, injuries to bone, and cicatrices will be very considerable, and there can be no doubt that examples of the type of malignant disease under consideration will not be infrequent in coming years.

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GUNSHOT WOUND OF ABDOMEN IN A BOY.

A boy, aged 6, was admitted to the Royal Devon and Exeter Hospital on the evening of November 19th, having been brought from Chagford in a motor car. With other children he had been playing with a loaded rook rifle when it went off; the bullet entered his abdomen on the right side of the umbilicus, and was evidently directed upwards. On admission the child was very collapsed and his clothing saturated with blood.

He was taken to the theatre and anaesthetized; the abdomen was washed with methylated ether and painted with tincture of iodine. An incision about 4 in. long was made to include the entry wound, from which blood was flowing freely. On opening the abdomen the lower part was found full of blood, which was wiped out and the pelvis packed with gauze; the coils of small intestine were then in turn taken out of the abdomen on to hot Cripps pads and the wounds in the small intestine sought for and in turn sutured; there were sixteen wounds, and from some of them portions of food and blood clot were protruding; the last hole was in the left mesocolon. The operation wound was sutured in layers and closed and the child put back to bed. A normal saline enema with glucose was ordered every six hours. As the last coil of the ileum was being returned a very long and slightly inflamed appendix made its appearance; to avoid possible future trouble this was removed in the usual way.