days; then develops a typical vaccinal lesion, consisting of one, two, three, or four firm pustules corresponding with the areas punctured. If left alone, without bandage or shield, etc., these remain firm and whole; then dry down into hard "buttons," which finally detach themselves, leaving a clean healed base, constituting a typical vaccine scar. If bandages, shields, etc., are used, the moisture from the perspiration, etc., thus retained, macerates the otherwise firm wall of the pustule, which then breaks, creating an ulcer open to infection.

II. In those who have been previously successfully vaccinated (or who have had small-pox), a raised red papule develops in a few hours; itches a little, sometimes develops a number of tiny vesicles over its surface, then dies down and disappears. This is the anaphylactic or accelerated reaction, indicating that immunity exists, sufficient to prevent typical vaccinal lesions.

III. Occasionally a mild reaction of this kind, instead of disappearing, develops into a typical vaccinal lesion, the anaphylactic papules developing into ordinary vaccine pustules instead of receding and drying up. These pustules then run the ordinary course described under II. Evidently here the immunity from the previous vaccination, while sufficient to give anaphylaxis, was not complete enough for protection.

IV. Very occasionally no reaction of any kind follows the puncture. Only in such cases need revaccination be done. The probable explanation in the few cases observed was improper technique or old vaccine.

Notes.

(a) Certain rare cases showed the anaphylactic reaction (II) although, according to the history given, they never had been successfully vaccinated and never had had small-pox. They showed history of "chicken-pox," however. We investigated two of these cases, communicating with the mother of each and securing from her a detailed account of the alleged attack of "chicken-pox." In one case it was quite evident from the mother's description that the attack was really small-pox; in the other, it was extremely probable that it was small-pox.

(b) The only "bad arms" out of many hundreds done that have come to my attention were constituted by slight inflammations about the bases of ulcers, due to prematurely knocking off the dried "buttons" after the vaccination process was quite complete, the buttons having become somewhat loosened but not ready for removal. It must be added, however, that some arms which had been bandaged despite instructions to the contrary flared up more than was necessary, and in a few instances the pustules opened.

For civilian practitioners, not able to employ eight or nine assistants to do the washing, etc., the technique, nevertheless, is so simple that no one vaccination operation need take over five minutes. Its great advantages in civil life are:

(c) Not even adolescent girls object to the punctures; there is no fainting, etc.

(d) There is no waiting, after the vaccination is done, for the vaccine to dry. The instant the puncturing is finished the surplus vaccine is wiped off and the sleeve pulled down.

(e) No bad arms, and no loss of time due to bad arms.

(f) In all open methods of vaccination (scraping, scarifying, cross-hatching, etc.) one obvious source of "bad arms" is infection of the open wound, during and after the removal of the epidermis, from the mouth spray of the vaccinator, his assistants, and the patients themselves, especially if there be a number of the latter, crowding the office and all talking at once, as often happens. In the puncture method no epidermis is removed; moreover, the process is so rapid, and the exposure of the arm so short, that this really serious source of infection in the older methods is almost completely eliminated.

REFERENCE.

¹ Canadian Medical Journal, March, 1916.

THE twenty-fifth meeting of the Italian Congress of Surgery, which is to be held this year at Bologna on March 4th, 5th, and 6th, under the presidency of Professor Durante, will practically be given up to war subjects. The programme consists of communications on wounds of bones and joints; of vessels, nerves, and spinal marrow; of the head; of the chest, and of the abdomen.

THE TREATMENT OF MALARIA AND MALARIAL COMA BY INTRAVENOUS INJECTION OF QUININE URETHANE.

BY

LIEUT. RICHEL AND WALTER B. GRIFFIN, F.R.C.S.,

SOUTH AFRICAN AMBULANCE, SOUTH OF FRANCE.

THE cases of malaria that reached this hospital from Salonica were of a severe type; in all anaemia, loss of weight, and exhaustion were marked; there were rigors in which the temperature reached 107.8°. Most of the men had received numerous intramuscular injections of quinine, some as many as ten or twelve, and all had been treated with quinine by the mouth. In the severe cases quinine by the mouth and intramuscularly had little effect in controlling the fever or the recurrence of rigors.

The type of case in which the patient passed into a state of coma in twenty-four hours was new to most of us. The men were usually markedly anaemic and wasted, but the temperature rarely exceeded 102°. Quite suddenly the patient would complain that he had difficulty in swallowing, rapidly followed by inability to speak, loss of power in the limbs, coma, and incontinence of urine and faeces. The pupils were dilated, reacting sluggishly to light, pulse feeble and quick, and respiration resembled the Cheyne Stokes characteristic. The spleen was enlarged and tender, knee-jerks diminished, Babinski's sign was absent, and there was no ankle clonus. Examination of the blood showed the presence of numerous gametes and schizontes.

These symptoms all came on within twenty-four hours, and it was for this type of case that intravenous injection of quinine urethane was first tried.

The injection was made with a fine needle mounted on an ordinary serum syringe of 15 c.cm. capacity, and the solution was made up as follows:

Chlorhydrate of quinine	...	...	0.40 c.cm.
Urethane	...	...	0.20 c.cm.
Distilled water	...	...	1 c.cm.

To this solution in the syringe was added 14 c.cm. of physiological serum well warmed. The skin was sterilized with tincture of iodine and alcohol and a bandage applied above the elbow to render the veins more prominent. When the needle enters the vein blood will flow back into the syringe, and this sign will prevent the solution being injected into the tissues. Remove the bandage and inject the solution very slowly; conscious patients noticed a bitter taste in the mouth, buzzing in the ears, and slight giddiness within a minute.

The results in cases of coma were remarkable. In five hours the patient became more conscious, and in periods varying from twelve to twenty-four hours he had recovered completely and all symptoms had disappeared.

For some cases one injection was sufficient, and for weeks after there was no further rise of temperature; other cases were given a second injection within twelve hours if the return to consciousness appeared slow.

In no case had the injection any ill effect; only one patient in a series of seventy cases had slight thrombosis of a vein for a few days. Within twelve hours of the injection Lieutenant Richet found evidence of disintegration in the gametes and schizontes, and it was difficult to find any after forty-eight hours.

Two cases of coma only proved fatal, both complicated by dysentery. Each case had two attacks of coma, recovering from the first after intravenous treatment, but relapsing three days later into a second, from which no effort could restore them. Intravenous injections of serum and adrenalin, oxygen by the mouth and subcutaneously, proved of no avail. All cases had been treated with quinine by the mouth and intramuscularly over long periods at Salonica, and we continued to give them fifteen grains daily by the mouth after intravenous injections. An attempt was made to treat all cases of malaria with continued high temperature and constant rigors with intravenous injections of quinine urethane, and the results were more than satisfactory. Practically every case yielded to this treatment, and the rapid improvement in the physical condition of the men was most marked.

Sometimes it was necessary to give two or three injections before the temperature remained normal and the gametes disappeared from the blood, and every endeavour was made to give the injection six hours before the rigors

was expected, according to the type of malaria from which the patient suffered. In Salonica as much as 18 grains of quinine were injected at one dose, but we never found it necessary to give more than 6 to 10 grains in one injection.

Several cases of pueris with effusion, but without any fever, occurred in malarial patients, and the fluid rapidly absorbed after intravenous injections. For the anaemia arsenic was given by the mouth or sodium cacodylate injected hypodermically.

Many men arrived at the hospital with the chronic form of malaria which had well-marked symptoms. Chronic headache, often diarrhoea and sickness, anaemia, lassitude, with an evening rise of temperature to 100°, occurred in nearly all these patients, and the symptoms rapidly yielded to intravenous treatment.

The conclusion arrived at was, that intravenous injection of quinine urethane was the only treatment of malarial coma and a valuable remedy for persistent fever and chronic forms of malaria; it was also painless.

Intramuscular injection of quinine was painful, and often cases arrived with indurated lumps in the buttocks from the effect of injection which later broke down into abscesses.

We are much indebted to Colonel Casalis, R.A.M.C., for permission to publish these notes.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE PERSISTENCY OF VENEREAL DISEASE.

THE persistency of gonorrhoea and its complications are not a little neglected by the great men of the profession. A German professor declared some years ago that the disease was "never cured." This statement, although a great exaggeration, is corroborated to an unfortunately wide extent. The histories of the following cases that have been through my hands in the last few years support the dictum of the enemy professor:

A man of 30 came with a very copious gonorrhoea. He was a highly respected tradesman. He declared that ten years ago, long before he was married, he had become infected. After coitus with his wife the "running" had relapsed, although he had seen nothing for some years. There was no reason of any kind to doubt this man's bona fides.

A man of 35 summoned me to attend him for an attack of rheumatism. I soon found that it was gonorrhoea; his knees and ankles were severely affected, and he was an invalid for over two months. This was due to a relapse of the disease, as he suffered from a slight discharge more than seven years after the original attack. He was a perfectly straightforward man, and endeavours to shake his statement always failed.

An officer returned from France, where he had been isolated from all female society for fifteen months. He slept with his wife, and next day had some discomfort. In the evening there occurred a copious purulent discharge, and next morning he appeared in my consulting room. I found a few undoubted gonococci in the pyorrhoea. This was ten years from the original infection, and he believed himself to have been free from all symptoms for many years.

The last is a striking case at present under treatment. An officer, aged 32, called me in to relieve him from some painful swellings of both ankles. He was a very stout man of rather alcoholic tendencies. Gout was confidently diagnosed, but after two days there was little improvement. Talking to him on the third day, he said that nine years and two months ago he had a bad attack of gonorrhoea, followed immediately by arthritis and iritis. Every symptom entirely left him after a few weeks. Four years ago he had a very mild iritis and penile discharge for two days, and since then no symptom of any kind. There was now a drop of pus which showed quantities of gonococci. This discharge has been visible in the form of a drop about once a week since. He has now been ill for two months, but has greatly improved on the Phylacogen of Parke Davis. There has been a monocular iritis, with a mild hypopyon.

A very rare case of syphilis has also come into my hands:

A child was born to a very robust-looking couple. In the third week typical condylomata developed on its buttocks. The diagnosis was corroborated by two other doctors. Vigorous treatment with grey powder soon cured this and greatly improved the baby's condition. The Wassermann reaction was very well marked in the father. Syphilis was contracted by the father nineteen years previously, well treated, and apparently absolutely cured.

Such a history is entirely outside my experience, and, indeed, the universal experience as evidenced by the textbooks in general. Dr. Graham Little recently published in the *Practitioner* a paper on gonorrhoeal rheumatism, in which were enumerated a large selection of cases. He had only been able to find in the literature one which had occurred many years after the original attack. The general practitioner is non-communicative, for I feel sure that relapses and arthritis are not very uncommon phenomena.

East Sheen.

VAUGHAN PENDRED.

SCIATIC HERNIA.

THE patient whose case is here related was sent to me by Mr. George Cole of this city. It seems to me to be worth putting on record because of the unusual site of the hernia.

The patient was a male child, 10 weeks old, very poorly nourished, although the mother was feeding it from the breast. She was 33 years of age, and this child was her eighth. A swelling the size of a large nut was found on the left side near to the sciatic notch. I was told that it disappeared entirely at times. The swelling was easily pressed back into the pelvis, gurgling being very noticeable. The case was obviously one of hernia which contained bowel.

I have referred to what literature I possess on the subject of congenital hernia with the following result, namely: Mr. T. Holmes recorded a case of vaginal hernia in his *Surgical Diseases of Children*; Mr. Edmund Owen, one of lumbar hernia; Mr. J. Hutchinson, jun., four cases of lumbar hernia; Dr. W. T. Wilkins, of Kansas, a very interesting case of lumbar hernia the result of injury to the mother before the birth of the child. With the exception of Mr. Holmes's case, all are to be found fully described in Keating's *Encyclopaedia*.

Nottingham.

LEWIS W. MARSHALL.

HOT SAND AS A PREPARATION FOR MASSAGE AND MANIPULATION.

IN his excellent article on "Contractures and allied conditions" in the *BRITISH MEDICAL JOURNAL* of January 27th Dr. George Cooper makes the following remarks:

Hot sand has been recommended as a useful method of imparting heat to the tissues. It is, however, rather painful, and the skin is found to have been rendered much too tender for subsequent massage. It has no advantages over other methods, and is but seldom employed.

Dr. Cooper's experience is quite contrary to mine, and the explanation is easy. He has used the sand too hot. If he will try it again, applying it at a comfortable temperature, as I always do, he will find it as valuable as I have. I should be sorry to see the method discredited, knowing how good it is, and discredited through an error in the mode of application; for it has this great advantage over other methods, that almost every patient can readily avail himself of it where more elaborate means of heat cannot be obtained. At the present moment it is being employed by a rheumatic patient of mine with the greatest benefit in a place where electric light does not exist.

Exeter.

W. GORDON.

THE shortage of rubber in Germany is responsible for severe restrictions on the sale of babies' comforters. Parents can be sure of obtaining them only on the presentation of a birth certificate, and they are granted only to children less than a year old. Not more than two comforters can be allotted to a baby on first application, and before a comforter can be replaced the old one must be returned to be repaired. No restriction is, however, put on the sale of comforters made of substitutes for rubber.

WE learn from the *New York Medical Journal* that the deans of ninety-five American medical schools met recently at Washington on the invitation of the Secretary of State for War to discuss plans for co-operation with the Council of National Defence, and adopted a resolution to the effect that a system of universal military training would be of great benefit to the health, development, and proficiency of the youth of the United States. A petition was sent to the Secretaries for War and the Navy asking that each medical school should be supplied with an instructor in military sanitation and medicine.