The writer wishes to disclaim any credit for the organization described above. The main credit belongs to Captain R. Chignell, R.A.M.C. The writer also wishes to acknowledge with thanks the permission of Colonel H. A. B. Whitelooke to record these notes.

THE TREATMENT OF VARICOSE VEINS IN THE SERVING SOLDIER.

By Captain B. McN. Truscott,
Royal Army Medical Corps.

Varicose veins cannot be described as a severe disability but they can cause marked inconvenience and render a man, otherwise perfectly fit, incapable of prolonged standing or marching. Effective treatment will result in a considerable saving of man power.

Simple injection of a sclerosing solution into the vein has become the method most practised in recent years. The course of treatment is prolonged, however, and the results often unsatisfactory if the case is more than a slight one.

The technique of ligature and injection described below is slightly more drastic. In severe cases it is the minimal procedure likely to give a good result and in cases of a moderate degree it is the most economical procedure. The end result is attained with little disturbance to the man and his unit.

No claim is made that the technique described below is original. It is the routine followed which has given the best results in the shortest time. The purpose of this paper is to attempt to show that any case of varicose veins can be simply and effectively treated by this means, rendering the patient fit for full service.

Since November, 1939, over fifty cases of severe varicose veins have been treated. There was no obvious predisposing factor in the past history of the majority. This supported the belief that some congenital factor was the basic cause.

In every case the lesion had deteriorated or become evident with active service conditions. These conditions of necessity include two factors which rapidly demonstrate underlying weakness, namely, marching and prolonged standing. Several of the patients had had previous injection treatment which had resulted in sufficient palliation for civilian occupation but not for active service. Symptoms included aching in the calf, swelling of the feet, pigmentation and ulceration. In a few cases the actual disfigurement of a grossly dilated vein was the sole complaint.

Minor cases were treated by simple injection. Certain positive findings were considered essential before ligation and injection were undertaken. These were: (a) varicosities which could be controlled by pressure on the
Clinical and other Notes

internal saphenous vein in the thigh; (b) a positive Trendelenburg test; (c) a severer degree than a few superficial dilated veins. Ulceration was not considered a contra-indication. Despite the brisk reaction following treatment healing of the ulcer was always speeded up and often complete in seven days.

The object of the operation was to tie the internal saphenous vein and inject a large quantity of sclerosing fluid into the distal end. The ligature prevented any likelihood of recurrence or recanalization in the thrombosed veins. The clots organized and finally fibrosed to form a hard painless fibrous cord. The sclerosing fluid used was 2½ per cent sodium morrhuate. The quantity varied between 6 and 12 c.c. depending on the severity of the case.

The patient was seen by the Surgical Specialist as an out-patient. If considered a suitable case admission was arranged. A patient arriving in the ward before 1200 hours was operated on the same afternoon. If admitted later he waited until next morning.

The skin of the affected leg was shaved from groin to knee and prepared in the usual way with surgical spirit or iodine. The patient walked from the ward to the theatre. This allowed the internal saphenous vein to become well dilated. He stood in a good light and the vein was marked on the skin with a slight needle scratch at the site selected for ligature. This must be done before getting the leg in position on the table. A collapsed vein is difficult to find. Marking with iodine or methylene blue was unsatisfactory because subsequent swabbing with spirit rendered it faint. The vein was tied in the upper third of the thigh just above the point at which the internal and external circumflex veins join it. About 1½ inches of skin were anesthetized with 1 c.c. of 2½ per cent novocain. An incision 1 inch long was made in the line of the vein, ½ inch of which was isolated and cleaned. A ligature was placed and tied around the proximal end. The first knot of another ligature was tied loosely around the distal end.

After placing a swab under the vein a small nick was made and the nozzle of a charged syringe slipped into the lumen. The first knot of the ligature was tied tightly around the syringe to prevent leakage. After injecting the sclerosing fluid the syringe was removed and the second knot of the ligature finally tied around the distal end of the vein which was cut right across. Care was taken during injection that no fluid escaped into the wound. In this way the troublesome and painful complication of local ulceration was avoided. The incision was sutured and a dressing applied. Massage in a downward direction dispersed the fluid to the lower parts of the leg.

The injection was followed by a periphlebitis throughout the course of the vein. This resulted in some malaise with a slight rise in temperature during the first twenty-four hours. The leg became stiff and painful keeping the patient in bed for two or three days.

After that time there was a rapid improvement and walking was resumed.
on the fourth day. The sutures were removed on the eighth day and the patient discharged from hospital as soon after this as was convenient. Four days' sick leave were usually given to allow movements of the leg to become free and full. After the completion of sick leave, the patient returned to his unit for full duty.

The final results of these cases were extremely satisfactory. A continuous and firm thrombosis from thigh to calf was achieved. Three cases with ulceration showed immediate and remarkable improvement. Occasionally there was some residual swelling of the lower part of the leg for a week or ten days. This was controlled by bandaging. Many of the cases treated would have responded imperfectly, if at all, to the ordinary injection therapy.

The treatment of varicose veins takes a certain time, during which the soldier is not able to perform his duty. Comparison of the amount of lost time due to simple injection therapy and to injection and ligation therapy shows a very favourable balance for the latter. A patient who is undergoing a course of injections will need at least twelve attendances if the condition is at all severe. This means that the patient will be off duty for the day of injection and on light duty the following day; a total of twelve days lost and twelve days light duty. This is a conservative estimate.

Transport will have to be arranged to and from the place of injection. The routine described above needs on the average eight days in hospital and four days' sick leave; a total of twelve days off duty. Transport need only be provided to the hospital on admission, and from the hospital on discharge. This curtailing of many visits is an obvious saving of time, work and money.

SUMMARY.

The routine of the treatment by ligation and injection of moderate and severe cases of varicose veins is described.

It is claimed that the results obtained are better therapeutically and economically than those obtained by simple injection.

THE OXYGEN ABSORPTION OF VARIOUS ORGANIC SUBSTANCES FROM PERMANGANATE AND FROM HYPOCHLORITE.

By MAJOR G. V. JAMES,

Royal Army Medical Corps.

BUYDENs [1] reported that animal and vegetable organic matter in water could be differentiated by the differences in their oxygen absorption from permanganate and from hypochlorite. Dixon and Jenkins [2] modified the strength of the permanganate used from N/10 to N/80, the strength used in water analysis and as a result of experiment these authors considered