Clinical and other Notes.

A METHOD OF TEACHING THE FRONT LINE APPLICATION OF THOMAS'S SPLINT BY NUMBERS.

By Lieutenant-Colonel E. M. COWELL, D.S.O.
Royal Army Medical Corps (Special Reserve).

For the past three and a half years the principles of splinting fractures of the thigh and certain severe injuries of the leg, as early as possible, and with the least amount of anatomical disturbance, have been gradually making headway. This became feasible by the introduction of the Thomas's splint in sufficient numbers to permit of immediate application in forward areas. From several centres this practice spread until, owing to the work of Colonel H. McI. W. Gray, A.M.S., in the first battle of Arras, in April, 1917, it was possible to organize and establish this system of treatment on a large scale.

In November, 1917, it fell to the writer's lot to teach the "Front line application of the Thomas's splint" to large classes of medical officers, N.C.O.s., and other ranks of the Royal Army Medical Corps, as well as regimental stretcher bearers. For this purpose a system of teaching as a "Splint Drill" by numbers was devised, and found to give good results.

The application of the splint was divided into twelve distinct steps, simple detail being given with each movement. For the purpose of instruction, the class was divided into "teams," made up as far as possible from personnel drawn from the same units. Each team was allotted to its own stretcher, and consisted of an "operator," first and second assistants, and a "patient." Every member of the team changed places after each application, and was thus given ample opportunity of mastering all the details.

From the teacher's point of view it was found easy to control each step, and check faults if they occurred. I have been able to teach single-handed a class of 160 men, none of whom had any previous knowledge of the Thomas's splint. From the learners' standpoint the steps were found to follow in logical sequence, and to be easy to remember. Practice made the application automatic, and the drill became a question of discipline. It was found in actual practice that a well-trained team did its work quietly and smoothly without flurry or nervousness, even under fire. In addition to these advantages, the drill gave to the senior members of the class a simple method of instruction, which they themselves made use of on rejoining their units.

It has been thought worth while to publish this "Splint Drill" in the Corps Journal, since it has now stood the test of over twelve months' actual experience both in the Royal Army Medical Corps Schools in France and in those of some of our Allies, as well as in certain of the Training Depots in England.

To Major-General H. N. Thompson, C.B., C.M.G., D.S.O., is due the credit of insisting for the past two years on the importance of teaching this front line method. The details herein described were worked out from suggestions made by Major-General Cuthbert Wallace, C.M.G.
Clinical and other Notes

First Army. Front Line Application of Thomas's Splint.

Drill by Numbers.

The Thomas's Outfit consists of: stretcher on trestles; blankets, three; Primus stove; Thomas's splint (largest size); reversible stirrup (Sinclair's); suspension bars, two; flannel bandages (six yards), three; triangular bandages, four; dressings; safety pins; Gooch splinting (10 inches by 6 inches and 8 inches by 6 inches).

Personnel required: Operator, one. No. 1 assistant; No. 2 assistant (if available).

When not in use the splint is kept hung up. The five slings of flannel bandage are rolled round the inner bar of the splint, the leather is kept soft by saddle soap, and the iron bars are smeared with vaseline.

Indication of Front Line Application.—(1) For all fractures of the thigh bone, except where there is an extensive wound in the upper part of thigh or buttock, which would interfere with the fitting of the ring.

(2) In severe fractures about the knee-joint or upper part of the leg.

(3) In certain cases of extensive wounds of fleshy part of thigh.

Detail of Thomas's Splint Drill.

On the word "One."—The stretcher, placed on trestles with a Primus stove beneath, is prepared as follows: The first blanket is folded lengthwise into three, two folds lie on the stretcher, one hangs over the side. The second blanket is arranged in the same way, one fold hanging over the other side of the stretcher. The patient is now placed on the prepared stretcher and lies on four folds of blanket; the two folds hanging down form a hot-air chamber. The third blanket is placed across the patient's chest while the splint is being applied.

On the word "Two."—The No. 1 assistant stands at the foot of the stretcher facing the patient and opposite the injured limb. Grasping the heel of the boot with his right hand and the toe with his left, keeping the arms straight, he exerts a steady pull, thereby producing the necessary extension. The No. 2 assistant supports the injured part above and below the fracture.

On the word "Three."—To form the clove-hitch, the operator takes a length of nine feet of flannel bandage. Holding it in the left hand by its mid-point, he grasps the centre of the left half with his right hand, palm to the right, and makes a loop by rotating the right hand through half a circle. This loop is carried up and passed in front of the left hand, thus forming a clove hitch with a diameter of ten inches. This is applied over the boot so as to surround the ankle and leave both ends on the outer side. The long end is carried under the instep, up and through the loop round the ankle. Two extension bands are thus produced ready to be attached to the splint later on. A pad prevents undue pressure on the back of the foot and care must be taken not to constrict the ankle.¹

¹ I am much indebted to Lieutenant-Colonel A. M. H. Gray for help in the wording of this rather complicated detail.
Clinical and other Notes

On the word "Four."—The operator threads on the splint; No. 1 assistant removing and re-applying upper and lower hands alternately to allow the ring to be passed over the foot. The splint should be pushed up under the buttock as far as possible, care being taken to keep the notched transverse bar horizontal. No. 2 assistant, as before, steadies the thigh.

On the word "Five."—(1) The extension bands of the clove-hitch are tied round the notched bar at the end of the splint as follows: The outer band is passed over and under the bar, round the notch, drawn taut, and held over to the opposite side. The inner band is passed under and over the bar, then also round the notch where it crosses the first band and prevents its slipping. The two are finally tied off by a half bow.

(2) The middle sling is tied off over the outer bar, No. 2 assistant keeping the knee partly bent.

Detail by Numbers.

I, warming (Réchauffement); II, extension; III, modified clove-hitch over boot; IV, splint; V, fixation of leg; VI, dressing wound of thigh; VII, Gooch splint and triangular bandages; VIII, figure-of-8 and stirrup; IX, Spanish windlass; X, pad in ring; XI, suspension bar; XI', a second bar is now added; XII, hot water bottles and blankets.

(3 and 4) The slings behind ankle and calf are tied, so that the leg rests in a shallow trough, half in and half out.

(5) To prevent the leg rising off the splint a narrow fold bandage is placed across the leg, just below the knee; the ends are carried down between the leg and splint, brought up outside the bars, and tied off. The lower limb is now firmly fixed in a position of extension and it may be moved without causing pain to the patient or damage to the injured part.

On the word "Six."—The wound is exposed by cutting away the overlying portion of trousers on the wounded part of the thigh, and the dressings are applied.

On the word "Seven."—The Gooch splints are now applied. The short piece is placed behind, and secured by tying the remaining two slings. The long piece is placed on the front of the thigh, care being taken to avoid pressure on the knee.
Clinical and other Notes

On the word "Eight."—The stirrup is "sprung" on to the splint above the ankle, its foot towards the stretcher. A bandage is then applied to form an additional sling, which by a figure-of-8 turn prevents lateral movement of the foot.

On the word "Nine."—The extension bands are tightened, and a small piece of wood or a nail is introduced to increase the tension by twisting up as required.

On the word "Ten."—A pad is placed inside the ring on the outer side of the thigh to act as a wedge and prevent undue movement.

On the word "Eleven."—The suspension bar is fitted to the stretcher with the "grip" away from the rackets. The splint is slung up not less than six inches from the horizontal part of the suspension bar. To damp down the side movements, lateral tapes are tied to the uprights; they should not be tight. For the journey in the motor ambulance an additional band may be passed from the splint round one handle of the stretcher; this prevents excess of vertical movement. To prevent the ring slipping up into the groin a second suspension bar is applied and the upper part of the splint slung as shown in the fig. (XI).

On the word "Twelve."—Hot bottles are applied. The third blanket is folded into two lengthwise, and laid over the patient. The hanging folds of the first and second blankets are brought up over this so that the patient is evacuated with four folds of blanket on top as well as underneath.

RELAPSING FEVER: A ROUGH BUT EFFECTIVE METHOD OF DEALING WITH THE LOUSE IN INDIA.

By LIEUTENANT-COLONEL WANHILL.

Royal Army Medical Corps.

During the hot weather of last year, 1918, an extremely virulent epidemic of relapsing fever occurred among the Indian population of the United Provinces India. As the strength of the Indian Army was being increased enormously, as rapidly as possible, the influx of recruits into the United Provinces' cantonments was very considerable. Besides recruits for combatant corps other corps had been formed, notably supply and transport corps, drivers and labour corps. The class of recruits for these last two corps was, as one might suppose, much lower than that for the combatant corps, and hence were more likely to be infested. In Lucknow alone the Indian garrison had risen from approximately 4,000 in peace time to about 25,000, of which 5,000 were supply and transport drivers under training, and some 4,000 labour corps. As, however, the danger of introduction of infectious disease, from villages, by the class of men recruited for the above corps, was recognized early, care had been taken to secure a considerable interval between the camps of these men and the lines of the combatant corps depots.

The epidemic commenced suddenly in the 5th Mule Corps Depot, a very large number of men being attacked, and all dying in a week. Matters were so serious