these two pairs of metal pieces and gradually tightened from day to day, supination being complete when the two pairs are opposite one another. If desired, pronation can be obtained by reversing the process. It will be found necessary to put extra felt padding over the head of the second metacarpal, over the lower end of the radius, and over the ulnar border of the hand. When supination is complete the arm should be kept in this position for at least three weeks to prevent relapse before massage is begun.

This method is suited to cases of adhesions in the upper and lower radio-ulnar joints, fractures of the forearm where there is danger of cross union, and disability due to contracture of soft parts.

I am indebted to Colonel Sir Robert Jones, C.B., for permission to publish this article. The photograph was kindly taken for me by Mr. F. H. Lewis.

A SIMPLE MEANS OF ASCERTAINING IF A STERILIZING HUT IS HOT ENOUGH TO DESTROY LICE AND NITS IN CLOTHING OR BLANKETS.

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THE following method was planned in the first instance with a view to its possible service to sanitary officers who had to use extemporized sterilizing chambers, but a subsequent knowledge of the working of permanent hot-air sterilizing huts in home camps suggests that it might be of assistance to officers in charge of these also. Unless an electric ventilating fan, or other efficient means of circulating the air and so causing a uniform temperature throughout the chamber, exists, a stratified condition obtains, in which the heat is too low to kill at the lower levels and needlessly high at the top. For instance, door thermometers (that is, thermometers visible through a glass panel let into the door) record only the temperature in the vicinity at the level at which they are placed, and Captain J. T. Grant's trials with maximum thermometers have shown that, while the door thermometer records 60° C., the temperature just over the floor may be only 37° C., while at 7 ft. it is 103° C. The use of maximum thermometers placed at different situations within the chamber affords a useful check upon the record of the door thermometer, but may be deceptive, as only the extreme temperature is registered, there being no indication of the length of the period to which the clothes have been exposed to it.

By the use of porcelain pots or dishes of a definite surface area, containing a given quantity of stearin or paraffin wax of a suitable melting point, a sufficiently stable relationship between the heat and period required to kill both the insects and their nits can be established. In arriving at this relation a number of experimental trials must be made, but once the quantity and surface area required for a stearin or wax of a known melting point is settled only the simplest precautions are required to ensure efficiency. It is necessary that the wax or stearin should be replaced when it gets dirty, as otherwise its melting point may be reduced, and that the pots, which may either stand or hang, are not tilted at such an angle that the surface area is altered. Even if this last condition should occur, however, it will lead to an increased temperature or period of exposure being needed to melt the stearin, so that the error would be on the safe side.

I have worked out the following quantities in relation to the temperature and period needed for the destruction of the nits of *Pediculus humanus* when enclosed in a pocket made of khaki cloth as used for army breeches in France and the home service. The samples of stearin used were supplied by Messrs. Price, Ltd., and melted at 60° C., according to the trade tests. Nits, when protected by a single thickness of khaki cloth as above described, are killed by a fifteen minutes' exposure to a temperature of 52° C. As the method pursued in practice is to place clothing or blankets in a cool, or with the second and later batches in a warm, chamber, and count the exposure period from the moment when the door thermometer reaches the stated temperature, the same procedure was followed in the trial tests. The periods quoted, therefore,

always presuppose a gradual rise up to the temperature, except in the case of the precautionary tests dealing with a quick rise to a high temperature mentioned below. In order to allow an adequate margin for contingencies, the temperature and period required for the destruction of nits is assumed to be 60° C. for thirty minutes, thus allowing as a margin at least fifteen minutes in time and 8° C. The porcelain pots used were supplied by Messrs. Price, Ltd.; they are those commonly used in the trade for samples of tallow, stearin, etc., and should therefore be easily obtainable. They are 2½ in. deep by 2½ in. in diameter; if only smaller or larger ones are obtainable the quantities of stearin used must be reduced or increased accordingly. The stearin must, of course, be melted in the pot and allowed to cool before use; 7 grams of stearin (trade melting point 60° C.) require thirty minutes at 60° C. under the conditions named, a small portion being still unmelted after twenty-five minutes; 10 grams require between forty and fifty minutes to completely melt it, only a narrow ring being melted within thirty minutes.

If two pots, one containing 7 grams and the other containing 10 grams, are placed or hung slightly below the level of the lowest garments in the sterilizing room, one can be sure, if all the stearin in the 7-gram pot is melted before the removal of the garments, that the exposure has been sufficient, both as regards period and heat; while, if all the stearin is melted in the pot containing 10 grams, it will show that greater heat or a longer exposure than was necessary has been used.

The question of the possibilities of an altered relation between the melting of the stearin and the killing of the nits with a short-period exposure to a higher temperature was tried. Nits and stearin were exposed together, and it was found that the stearin was more resistant to these conditions than the nits. For instance, when the temperature was rapidly raised from 21° C. to 80° C. within twenty minutes, the nits were killed while the 7 grams of stearin was not quite all melted. A rise to the same temperature in eighteen minutes showed the same result. A rise to 82° C. in fifteen minutes was just sufficient to melt all the stearin, the nits being killed. Again, a rise in twelve minutes to 81° C. killed the nits, but left a central disc of stearin unmelted.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

MECHANICAL AIDS IN A FIELD OPERATING THEATRE.

THIS short description might have been headed "The Mechanical Orderly," as most of the devices are made with a view to releasing the services of a trained man.

Fig. 1 represents a webbing loop and a length of tent rope with runner and button. The rope is looped round bars (1½ in. water pipe is useful) placed some 7 ft. 6 in. high

FIG. 1.

but away from, the foot and sides of the table. By placing the loop round ankle or wrist the elevation and the degree and direction of traction on the limb can be instantly adjusted. A stretcher sling unknicked to its full length makes

four loops. It is specially useful in fractured thigh cases.

Fig. 2 shows a very simple arm rest made from two pieces of wood and two wide strip-iron hooks. The table portion should be 19 in. by 9 in., and the thinner piece, half of which is screwed to the under surface of the former, is 40 in. by 4 in. The thin portion goes under the top of the operating table, and the hooks then engage with

FIG. 2.