

In fractures of both bones of the forearm, so commonly compound when caused by shrapnel, the aluminium splinting or open trellis splint is very comfortable and light. It enables a wound to be dressed without removing the splinting every time and the splints can be fixed to the arm separately.

4. *Wrist*.—Fractures at the wrist are usually of the type of fracture of the lower end of the radius. The commonest is that described by Colles of Dublin in 1814 and called after his name. Here Carr's Gordon's and the pistol splint are applied according to the nature of the case and the fancy of the surgeon.

The use of massage in all fractures of the forearm and wrist is well-known and should be carried out judiciously under the surgeon's directions. Indeed many a soldier has recovered the use of his arm quite beyond the expectations of the surgeon through the assiduous and faithful massage treatment of the trained masseuse.

- References*.—(1) Thomson and Miles, *Manual of Surgery*.
 (2) *Practitioner*, May, 1917—C. H. Fagge, F.R.C.S.
 (3) *B. M. J.*, June 2nd, 1917—Bowley and Wallace.

BOILING OVER.

By J. WALLACE, C.E.

NO one can learn to cook without some experiences of boiling over or foaming, and yet many never seem to understand it and endless messes are the result, as when a gas or oil stove is used. The liquid boils over, extinguishes the light and fouls the burner. One of the largest Bombay hospitals had a gas outfit in the kitchen that was found by an expert to be in a filthy state because the cook was too lazy to clean the burners. Gas escaped unburnt from some hole and added to the unsavory smells of a dirty kitchen. This illustrates how things should not be done. Foaming is very easily explained. When the liquid begins to boil, bubbles of vapour form and rise to the surface. These bubbles take up space and raise the level of the liquid just as if so many round pebbles were put into the pan. If the pan is not big enough to hold the increased volume it boils over. Foaming varies with the nature of the liquid dealt with. Water is the least liable to foam because the steam bubbles escape most freely, and it foams less in a wide and shallow pan because the steam gets away quickly, but if filled up the shallow pan will boil over because when filled with steam bubbles the water is more bulky than before. Milk boils over more readily than water because the steam escapes more slowly and the bubbles accumulate. If heated slowly milk will not foam. An earthenware pot lets heat pass more slowly than a metal one and is safer for that reason. A sheet of asbestos placed below a metal pan has the same effect. But if heating is prolonged a deposit from the milk will adhere to the pan that prevents the liquid from touching it and carrying off

the heat which increases and burns the milk. When water is boiled in a tin vessel it carries away heat so rapidly from the metal that in spite of the heat of the flame below the tin gets no hotter than the water. A piece of white paper may be pasted on the underside of the pan and water may then be boiled in it over a clear fire without discoloring the paper. The fire or flame does not touch it as the temperature of boiling water is too low to support combustion; in fact a space always exists between the flame and the bottom of the pan known as the cold zone. This space will continue until all the liquid has boiled away and the bottom of the pan becomes red hot.

Boiling oils and fats will also foam but at a higher temperature than water and as their vapour is a hot combustible gas it is dangerously inflammable, it is therefore important to know what measures should be taken to manage all boiling liquids with safety. In the first place there should be room for the liquid to expand when boiling and there should also be room for the vapour bubbles to break and discharge their vapour without causing an overflow. For boiling milk a very simple device has long been known, it may be made in glass, earthenware or metal. It is a conical collar like a funnel without the spout. The wide end is nearly the size of the bottom of the pan, its depth is nearly that of the pan and the upper end is about half or a third of the width of the lower one. The lower end is supported on three feet leaving a quarter of an inch of space all round. In operation the boiling liquid is carried up in the cone, overflowing all round, and the bubbles break as they fall over, returning to liquid form that descends outside the cone to the bottom of the pan. Without this cone the bubbles nearest the edge of the pan would overflow before they had time to break.

This cone is a modification of the Kier, so well-known in dye and bleach works.

JOURNAL NOTES.

By MISS ADELA MOSS.

JANUARY 15.—We left Ellareddypett for the village of Rudravarum. The patel or headman, made us very welcome for his only little son had been nursed back to health in our hospital. We made this village our headquarters for four days. On the night of arrival we showed the limelight slides of the life of Christ in the village square, and at the close, when all the people were crowding round, we explained that we had come specially to bring them a medicine that would prevent the terrible plague from visiting their village if they would allow a needle prick in their arms. Next day about a hundred were inoculated and one hundred and thirty sick folk were treated. From that centre four other villages were visited; in three of which we were warmly welcomed, but in one we were turned away with discourtesy.

Jan. 19.—From the Rudravarum centre we crossed the river Manarara, a formidable undertaking, to Ramareddy, and there we also found a warm