PRACTICAL POINTS.

Souttar's "Thermos" Saline Infusion Apparatus.

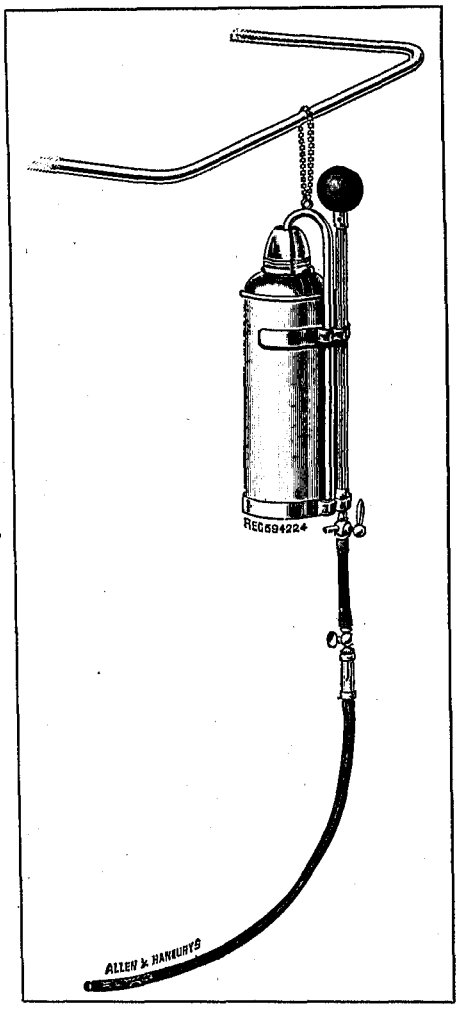
Mr. H. S. Souttar, F.R.C.S., Eng., gives the following description in the *Lancet* of the above apparatus :—

"This apparatus consists of a vacuum flask, a syphon, a water gauge and a three-way tap. The vacuum flask is the ordinary Thermos pattern and holds either one or two pints. The syphon has two limbs, one a rubber tube reaching to the bottom of the flask, the other of plated copper, reaching down outside to a point below the flask and terminating in the tap. Parallel with the syphon tube and connected with its lower end above the tap is a water gauge of glass tube, protected by a metal guard. This gauge carries above a rubber ball used for filling the syphon. The flask stands upright in a small tray and may easily be detached. It is closed by a cap which may be removed for refilling without disturbing the syphon.

"The method of use is as follows: The flask is filled with hot saline, the syphon, &c., being already attached. The tap is closed. The rubber ball is compressed, a small hole below it is closed by the finger and the ball is released. A rush of fluid follows round the syphon and up the gauge and the apparatus is ready for use.

"The flask is hung by means of the chain from any convenient support above the patient's bed, and the needles for subcutaneous infusion or the rectal tube are connected by a rubber tube with a nozzle below the tap. The rate of flow is regulated by the tap and observed on the gauge. Should it be desired to discontinue the flow for a short time the tap is closed, and before restarting the syphon is emptied of its now cold contents by the side nozzle on the three-way tap.

"The temperature at which the saline should be poured into the flask will, of course, depend upon the rate of flow, the length of tube exposed and the temperature of delivery required. It is found that if the saline in the flask is at 125 deg. F., the rate of flow one pint per hour, and one foot of rubber tube is exposed, the temperature of delivery is about 105 deg. F. in a room at 60 deg. F. At a rate of half a pint an hour, the initial temperature should be 130 deg. F. These figures are only approximate, but are sufficiently accurate for all practical purposes. The temperature of the saline in the flask is almost constant, falling about 1 deg. F. per hour. If, then, the flow remains constant the temperature of delivery will be unaltered so long as the apparatus is not disturbed.



SOUTTAR'S "THERMOS" SALINE INFUSION APPARATUS FOR PROCTOCLYSIS.

"For subcutaneous infusion it is essential that the apparatus should be sterilised. This is readily accomplished by filling the flask with boiling water and running this out through the tubes in the ordinary way. The needles should be separately boiled.

"The great advantages of this apparatus are its extreme simplicity both in construction and action, its absolute reliability, and the fact that it can be readily sterilised. The flask being upright, there is no risk of leakage and no danger of breaking the glass lining by inserting a stopper. The whole apparatus can be in action within five minutes of the moment when it is requested and it requires no further attention.

"A very remarkable feature is the enormous quantity of saline absorbed by this method. Owing to its constant high temperature it is taken up at once into the vessels, there is rarely any swelling of the legs or return by rectum, shock is successfully combated, and renal excretion is increased. We constantly, at the London Hospital, give five pints subcutaneously by this method in as many hours, and occasionally twice that amount, with no result whatever other than a very remarkable improvement in the patient's condition. In critical cases we use temperatures higher than those mentioned with striking success. Any excess of fluid is at once given balanced by its rapid excretion—in marked contrast to the waterlogged subcutaneous tissues so often resulting in the older methods where the temperature of delivery too often was merely that of the atmosphere. The apparatus has been constructed to my design by Messrs. Allen & Hanburys, Ltd., of 48, Wigmore Street, London, W."

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