

These should be boiled together until the salt is thoroughly dissolved.

Sup. Sat. Sol. Oxalic Acid should always be made in a porcelain or glass receptacle. Add as much boiling water to the acid as it will take up, and strain well, as the acid is very dirty.

Boric Acid Sol. is made by boiling the crystals until dissolved.

4 % or Sat Sol. viii. $\frac{3}{4}$ teaspoonfuls boric acid
of water.

3 % Sol boric acid vi. teaspoonfuls
water oj

Pot. Permanganate Sol. :—

Sat sol gr. xviii— $\frac{3}{4}$ i warm water
2 % " gr. viii— $\frac{3}{4}$ i " "

Sterile Soda Solution :—

Carbonate of soda $\frac{3}{4}$ i
Water oj
Boil soda and oj water 20 minutes.

Thiersch's Sol. :—

Salicylic acid $\frac{3}{4}$ ii
Boric acid $\frac{3}{4}$ ii
Water oviii

If boiled in an iron vessel this solution will turn rose coloured.

Hot 1 per cent. Sol. Acetic Acid is commonly used as an antiseptic, especially for vaginal douches, and a stronger sol. is used for the sterilization of hands and field of operation.

Coleman's powdered mustard can also be used with great advantage for the sterilization of the skin. (See sterilization of hands, etc.)

Lactic Acid, in $\frac{1}{2}$ -1 per cent. sol. is also an antiseptic for vaginal douches, etc.

Bichloride Solution is used for sterilizing the skin of the patients, dressings, and towels.

It is by no means an ideal solution for washing sponges, as it coagulates the albumen in the blood, and thus prevents the sponges from being properly cleansed. It should under no circumstances be used for sterilization of instruments, as it will eat the coating, turn them black, and does not sterilize them. It is often used for sterilization of basins, tables, and glass or porcelain receptacles, but it should only be used if they cannot be boiled.

A better germicidal agent is a new drug called Mercuriol (Parker Davis), which is a true chemical combination of mercury with yeast nuclein. It is used in 3 per cent. solutions, is non-irritating, and has the advantage over bichloride, as it does not coagulate albumen.

Carbolic Acid Sol. is used for sterilization of the skin, but it should not be used too strong, as it produces a local anæsthesia, and often causes an eruption. It is also used for sterilization of sponges, dressings, instruments, ligatures, and in a weak solution as an irrigation.

(To be continued.)

Educational Questions.

THE PRELIMINARY EDUCATION OF NURSES.*

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In looking over the field of nursing and noting the remarkable improvements made in some directions, our attention is drawn to one particular phase of our work in which certain departures have been made from ordinary methods which seem to us significant of tendencies of thought, and as such to be worthy of careful consideration. The changes referred to are the establishment in some schools for nurses of what is called "preliminary training," meaning, briefly, a period set apart for the preparation of the pupil nurse by some preliminary instruction before permitting her to proceed with the further training provided by practical work in the hospital wards. From the fact that these changes have been established in schools widely remote from one another, and without communication or common impulse, it would seem that each school must be responding in its own way to a recognised need in its work.

The first school, so far as we know, to demonstrate the existence of such a need by making provision to meet it was the Glasgow Royal Infirmary, which in January, 1893, established a course of preliminary training extending over a period of three months. This plan of preliminary instruction included courses of lectures and demonstrations in anatomy, physiology, bacteriology, and hygiene, in the principles of therapeutics, in cookery, and in ward work. The course was divided into two parts; the first, consisting of lectures, etc., was delivered at St. Mungo's College; the second and more advanced part was given at the hospital. Entrance upon the second half of the course was conditional upon passing the examinations of the first. The fees for the full course were about five pounds, the pupil providing board and lodging for the three months at her own expense.

In establishing this course of instruction the superintendent of nurses, Mrs. R. Strong,† referred to her experience in hospital nursing, extending over thirty years, which had made it evident that a pupil requires a certain amount of technical knowledge before she can reap any benefit from the practical part of her work or be of service to others; that the ignorance of a probationer is a dangerous ignorance, greatly lessened by preliminary instruction and training, and that

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† "A Plea for Uniformity of Education in Nursing," by Mrs. R. Strong, Superintendent of Nurses, Glasgow Royal Infirmary. Published in *Trained Nurse*, January, 1895.

[previous page](#)

[next page](#)