First, the nature of these preparations. Serums are the liquid portion (remaining after the clot has separated) of the blood of animals, usually horses, that have been treated with gradually increased doses of bacterial toxins or attenuated or killed cultures of the organisms themselves. These preparations contain the protective substances developed in the blood of the animal so treated.

Bacterial vaccines, or bacterins, are suspensions in physiologic salt solution of pathogenic bacteria whose vitality has been destroyed by heat. These preparations contain the dead germs themselves.

Toxins are products of pathogenic bacterial growth. These preparations contain the toxic substances generated by the germs during their life in artificial culture media.

The phylacogens are neither bacterial vaccines, toxins, nor sera as ordinarily understood. They are sterile aqueous solutions of the metabolic substances generated by bacteria grown in special artificial media. The bacteria, first killed, are then removed by filtration through porcelain. These preparations contain the substances developed by the germs during their life in artificial culture media. These are so modified by sterilization that they are non-toxic. These phylacogens, of which there are several, show every indication of becoming by far the most valuable and most widely used of the bacterial derivatives. Their range of applicability is great, as there is no question that they have a place in the treatment of most of the acute and chronic infectious diseases.

Second, the feature of the container in which these are usually supplied.

The glass-sealed ampoule which needs to be broken open, and for which a sterile stopper needs to be provided in the event that only a part of the contents are used.

The rubber-stoppered glass ampoule, rendered hermetic with paraffin dipping; this is by far the most practical and convenient container, since with a little attention to antiseptic detail the rubber stopper can be easily removed and quite easily replaced, thus preserving the sterility of the contents and allowing their use at will. The syringe container is ideal when the contents are to be given at one dose.

Third, the methods of administration.

The hypodermatic method is the method commonly used for giving any serum, toxin, vaccine, or phylacogen. This is the most conservative.

The intramuscular is used but little, as this method is followed by more pain and danger of injecting directly into a blood vessel.

The intravenous is used by those who are expert in the use of bacterial derivatives. At this time the phylacogens and serums are the only preparations given by this method.

Fourth, that these preparations, when the dose is less than ½ c.c., may be admixed with normal salt solution to facilitate administration.

These and other points which the nurse unfamiliar with these preparations finds specially adapted and necessary for her individual needs can easily be compiled in a small book, which can be carried and referred to as occasion demands. Some of you may consider this application of time and energy burdensome and impractical, but I can assure you that already there are those who see the increasing value and range of applicability of the biologics that are devoting their entire time and attention to this field of therapeutics.

In the several instances, of which I have personal knowledge, opportunity for employment is never lacking, and the remuneration is very attractive.

(To be concluded.)

OUR PRIZE COMPETITION.

HOW WOULD YOU CARE FOR A PREMATURE INFANT AT THE TIME OF BIRTH, AND SUBSEQUENTLY?

We have pleasure in awarding the prize this week to Miss S. A. G. Lett, Exning, Newmarket, for her paper on the above subject.

PRIZE PAPER.

In attending a case of premature labour, the nurse's preparations will differ somewhat from her ordinary routine so far as the infant is concerned.

Instead of the usual bath and clothing, it will be necessary to have warm olive oil and plenty of warm absorbent wool or gamgee tissue ready. A fire and hot water bottles must be in readiness, no matter how warm the weather, and it is well to have two warm flannel receivers.

As soon as the head is born, the eyes, eyelids, and mouth must be carefully cleansed in the usual manner with warm boracic lotion, and if the cord is round the neck it must be slipped over the head or down over the shoulders.

One of the warm flannel receivers must now be placed so as to receive the baby's body as it is born, and to cover as much of it as is possible to exclude the cold air while the nurse ascertains that the child is breathing properly and waits for the cord to cease pulsating.

Unless there is any severe hæmorrhage it is very necessary to wait until there is no trace whatever of pulsation, as every drop of blood lost by severing the cord too soon is of great importance to the premature infant.

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