resulted in positive cultures. The inoculum used by Hickey is not described. We feel that the apparent discrepancy between his results and ours may be due to the numbers of organisms employed.

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A SIMPLE DEVICE FOR THE ADDITION OR REMOVAL OF SOLUTIONS OR GASES TO A CLOSED SYSTEM

THE aseptic removal of samples of gas or media from a closed bacteriological system has been simply and effectively accomplished using sleeve-type, soft rubber stoppers, such as those used to cover serum bottles. This device, described below, also provides for the aseptic introduction of nutrients, buffers or other materials without opening the system or otherwise interrupting the experiment.

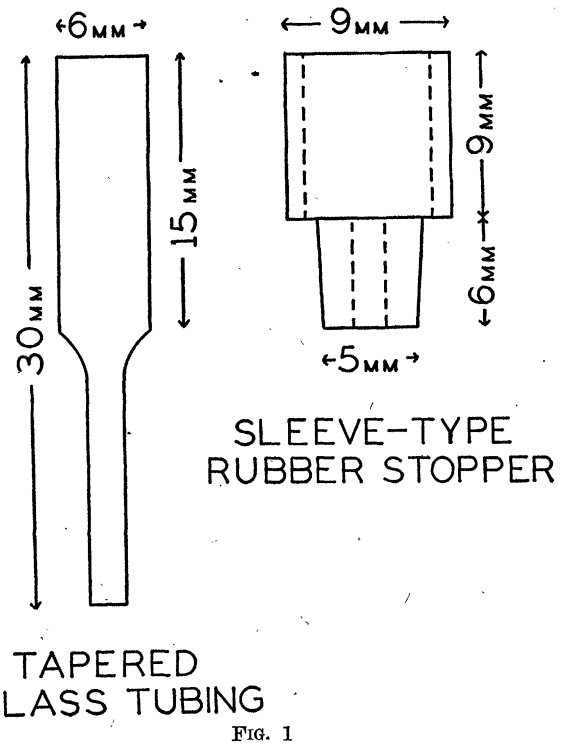

FIG. 1

A sleeve-type, soft rubber stopper measuring 5 mm at the base (see diagram) is inserted in a glass tubing of 5 mm inside diameter or slightly smaller. This tubing is pressed into a hole in the rubber stopper or closure for the bacteriological system. It is usually advisable to taper the tube for a better fit (see diagram). The media or gas may be removed by inserting a hypodermic needle (20 gauge, 1½ inch length), attached to a syringe or sampling device, through the sleeve-type rubber stopper. Several precautions are necessary. The stopper itself should be selected with care to insure sufficient thickness to the top wall so as to cut the exchange of gases to a minimum and in order to provide for adequate re-sealing if frequent punctures are necessary. The glass tube and sleeve-type stopper should be fitted with care to avoid leakage at this joint. The glass tubing should be cut off flush with the bottom of the closure stopper since complete removal of all gas bubbles would become impossible.

The author has found such a sampling device of indispensable value in the study of gas-producing organisms of certain marine bottom deposits. The gases formed in the culture system are collected directly in the Orsat gas analyzer with a hypodermic needle attached by a short rubber tubing to the inlet stopcock of the apparatus. Hydrogen-ion concentration or oxidation-reduction intensity changes can be followed at any desired interval by use of a sterile Luer-type syringe and hypodermic needle for the withdrawal of suitable aliquots. In a similar manner, samples are collected for other chemical analyses, for population estimations or for the transfer of cultures.

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CONTRIBUTIONS, NEW SERIES, NO. 254

RAPID STAINING METHOD FOR RELAPSING FEVER SPIROCHETES

IN the course of certain experiments the modification of the Field stain described by Medalia, Kahaner and Singer[1] was used. These authors have reported its use in malaria smears, differential blood counts and smears of other cell-containing body fluids. We have found the stain to produce results in spirochete infected blood comparable to those obtained by the conventional methods employing the Wright or Giemsa stains.

To stain the spirochetes, thick films prepared and dried in the usual manner are laked in distilled water or 2 per cent. acetic acid and stained in essentially the same manner as described by Medalia *et al.* The spirochetes stain a deep purple. Actual staining time is 10 to 15 seconds (compared to the 30 minutes required by the more popular Giemsa technique). This rapid method has been used successfully by the author in both animal and human infections of relapsing fever.

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[1] Leon S. Medalia, Jack R. Kahaner and Arnold J. Singer, *Amer. Jour. Clin. Path., Tech. Sect.*, 8(4): 68–70, 1944.