led to the quantitative recovery of a highly pure, stable, antigenic toxoid which should prove suitable for clinical use (*6*).

The purified toxoid is not precipitated by an anti-*C. diphtheriae* rabbit serum and is relatively free of porphyrin. It gives the usual protein reactions, and in general its characteristics are almost identical to those of the purified toxin prepared by Pappenheimer (*3*). The details of the purification procedures, as well as the characteristics of the purified toxoid, will be reported later.

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A Simple Anaerobic Method of Obtaining Plasma

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By the method described here one can obtain plasma for gas analysis without the inconvenience and uncertainty of transferring the blood from the syringe into which it is drawn and

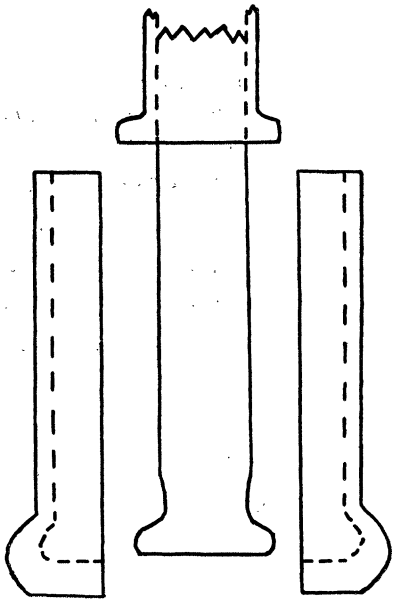

Fig. 1

without the use of oil or mercury. The method is described for a 5-ml. syringe, but syringes of any size can be used.

About 5.5 ml. of blood is drawn into a 5-ml. syringe containing some heparin solution and greased with stopcock lubricant. The needle is removed, and about 1 ml. of blood is delivered for estimation of the hematocrit, pH, etc. A short piece of thick-walled rubber tubing is slipped over the nozzle of the syringe. The two halves of the plastic spacer shown in Fig. 1 are placed around the plunger and held with rubber bands, the plunger then being pushed in until stopped by the spacer. The length of the spacer is such that the syringe contains about 4 ml. of blood. The lumen of the rubber tubing is now full of blood; and while the spacer is held firmly against the barrel of the syringe a glass plug is inserted into the lumen, displacing the blood. The syringe is centrifuged, plunger down, at about 1,500 r.p.m. in a 50-ml. cup fitted with a reducing ring.

When centrifugation is finished, the spacer and the glass plug are removed. The tip of a blood-gas pipette is inserted into the lumen of the tubing, and, by means of gentle twisting pressure on the plunger, plasma is delivered directly into the pipette.

"Braking" Pipettes

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A "braking" pipette is an extremely important tool in many microtechniques. A good braking pipette, because of its slow, controlled rate of flow of air, enables the investigator to pick up several single cells in a measured amount of fluid as small as 0.5 mm.[3]

The conventional type of braking pipette, constructed by pulling a fine, hair-like constriction in a capillary pipette, is very unsatisfactory. If any moisture collects in the constriction, it is almost impossible to clear it. Even if it is baked out, the residue left in the constriction usually changes the characteristics of the pipette, *i.e.* the rate of flow. It is unusual to make two of these with the same characteristics, since a good one is usually the result of a happy accident. An improvement over the constriction pipette has been described by Linderstrom-Lang and Holter (*1*), but their construction does not solve the problem of condensation in the brake, because they use a continuous capillary system such as that used in previous constriction pipettes.

The following two types of braking pipettes have proved easy to make; characteristics of one type can be duplicated in any number of pipettes, and both types are satisfactory in operation.[1]

Type A: The chief advantage of this type, in which a replaceable glass capillary brake is used, is that the brake can be replaced when necessary. For instance, if the pipette is calibrated, and a change in rate of flow is required, the brake can be replaced without recalibrating the tip. Furthermore, the possibility of moisture collecting in the brake is eliminated, in as much as the latter is not part of a continuous capillary system.

A piece of heavy pyrex capillary tubing, 6 cm. long and with an internal diameter of 0.5 mm., is joined to a capillary tube of the same length and external diameter but with an internal bore of 1.0-mm. diameter. The end of the 1.0-mm. capillary tube is flared as shown in Fig. 1a. A 0.3- to 0.5-mm. capillary

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