A Simple Double-Surface Dialyzing Membrane

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Very high concentration of botulinus toxin Type D can be obtained by growing the *Clostridium* in cellophane bags immersed in appropriate media (*1*). However, it is very difficult to tie the end of cellulose sausage casings securely enough to prevent bacteria growing through

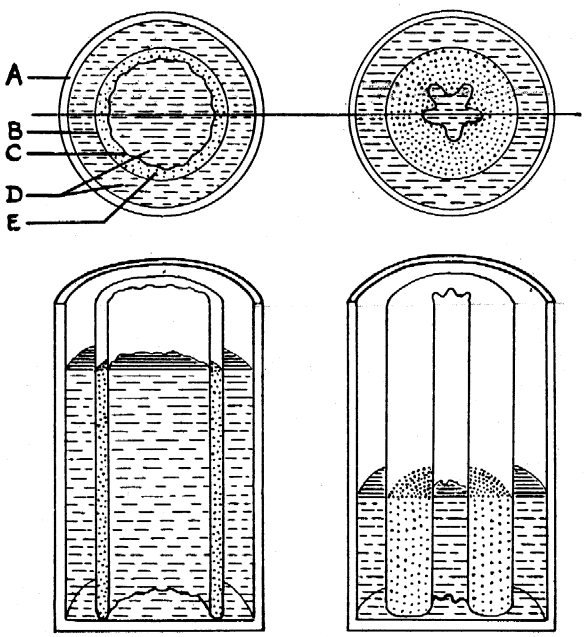

FIG. 1. At left, longitudinal and cross section of apparatus showing close approximation of cellophane walls when the level of outside liquids is high. At right, same cross section, but showing state when level of liquid outside cellophane walls is low. A—Container. B—Outside cellophane wall. C—Inside cellophane wall. D—Liquid outside cellophane container. E—Liquid inside cellophane container.

the tie. The difficulty can be overcome by pulling the end of the casing back through the tube. This forms a double-walled seamless tube. For our purpose saline is filled into the annular space between the walls and the whole tube is immersed in nutrient medium. The inoculum is placed in the saline.

If the apparatus is required for dialysis, the liquid to be dialyzed is filled into the annular space between the cellophane walls. As the top is left open and as the membrane is flexible, the levels of the liquid inside and outside the membrane always remain the same. By varying the amounts of liquid inside and outside the bag, the dialyzing surface can be varied at will.

Reference

1. POLSON, A. and STERNE, M. *Nature*, 1946, **158**, 238.

Increased Radioresistance of Red Bone Marrow after Anoxia

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Jacobson *et al.* (*3*) have reported that the red bone marrow of rabbits, in which a regenerative anemia has been produced by phenylhydrazine hemolysis or by repeated bleeding, shows less histological injury following 800 r of total-body X radiation than does the normal. We have attempted to extend this to mice, using partial anoxia as the marrow stimulus.

One hundred and forty female mice (White Swiss Bagg, 18–20 gm) were randomly distributed into two groups. One was maintained at sea level pressure as control, and the other exposed to a simulated altitude of 15,000 ft (430 mm Hg) in an evacuated chamber for 10–14 hr a day. Both groups were kept at 25–30° C, and fed freely on standard chuck.

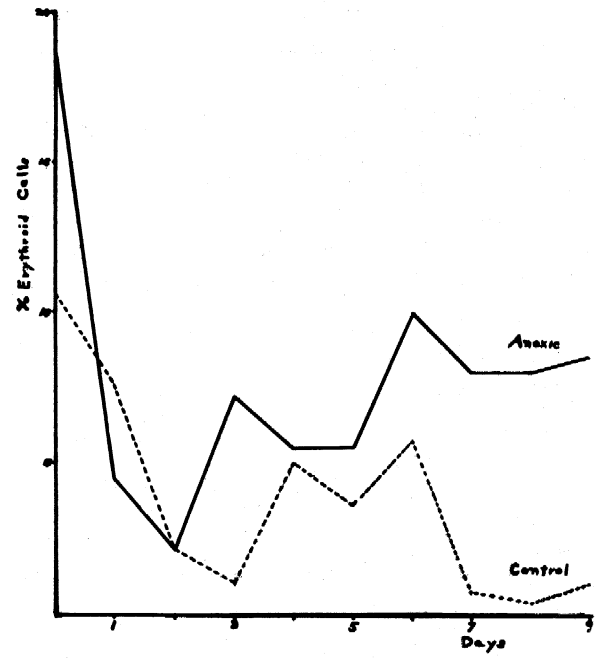

FIG. 1

Animals were sacrificed at intervals and the marrows examined as follows: Marrow from each femur was smeared and stained with Wright's stain. Late erythroblasts and normoblasts were counted together as erythroid cells and expressed as percentage of total marrow cells. Since early erythroblasts might be confused with myeloblasts and lymphocytes by the inexperienced observer, only the later forms of the red series were counted. Smears of marrow from each femur were counted by both observers independently. Each point in the figure represents the mean of 20 observations on five animals.

The percentage of erythroid cells in the marrow of this