

so that the amount consumed by the animals on the restricted intake was at least double that of the animals on the unrestricted intake did not increase the incidence of paralysis or death. The administration of 0.5 ml of 0.3 per cent. saline twice daily by stomach tube to the mice on restricted intake, likewise did not significantly alter the results.

From the data it appears that restricting the intake of either the complete ration or just the carbohydrate

delays the manifestation in mice of infection with the Lansing strain of poliomyelitis virus.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

A SIMPLIFIED PROPYLENE GLYCOL DISPENSER FOR FIELD USE¹

A CONSIDERABLE amount of work is in progress at the present time on the effectiveness of propylene glycol as an air disinfectant.^{2, 3} This agent is commonly employed in concentrations ranging from 1 gram per 5 million cc of air to 1 gram per 20 million cc of air^{3, 4, 5} and is most conveniently introduced into the atmosphere by vaporization.

Because some of the suggested vaporizing equipment is rather elaborate and is not suited to large-scale field experiments, we have developed a simple device requiring no special materials for construction. It consists of an ordinary electric light bulb dipping into a beaker or tin can filled with propylene glycol. Preferably the unit is insulated to diminish heat loss by setting it in a larger container and packing paper into the space between the sides. A 10-inch electric fan is placed one or two feet away so that it directs an air stream across the liquid surface. The large heating area of the bulb eliminates the danger of local super-heating with consequent decomposition of the propylene glycol, and the inexpensiveness of the equipment makes it feasible to install as many units as may be necessary in order to maintain a given concentration of vapor.

In practice the rate of evaporation of propylene glycol from the vaporizers should be great enough to bring all the fresh air coming into the room to the concentration level desired. It is usually estimated that a closed room has 2 to 10 air turnovers per hour under ordinary circumstances. Therefore, if a room has a volume of 2,000 cubic feet and there are 5 air turnovers per hour it would require the vaporization

of 14 grams of propylene glycol per hour to maintain a concentration of 1 part propylene glycol in 20 million parts of air throughout the room. A single 50-watt bulb immersed in 700 cc of propylene glycol with a surface area of 18 square inches accomplishes this. The output of a vaporizing unit can readily be increased to 100 grams per hour by the selection of proper wattage and surface area.

For any given set of conditions the rate of evaporation of propylene glycol is a function of the temperature at the surface of the glycol. As an approximate figure for calculations we have found that an increase in vaporization amounting to 5 milligrams per minute per square inch of surface accompanies each degree (C.°) rise in temperature over the range 80° to 110° C. Since propylene glycol vapor has a fairly high specific gravity, vaporizers should be placed at least six feet from the floor and a sufficient number of fans should be installed to insure thorough mixing. Otherwise the vapor will sink to the floor and lead to erroneous interpretation of experimental data.

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¹ The opinions advanced in this paper are those of the writers and do not represent the official views of the Navy Department.

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