

## A SIMPLE ENTOMOLOGICAL CHILL TABLE TO BE USED WITH A CIRCULATING COLD BATH

R. A. GAUNT

Defence Research Establishment Suffield, Defence  
Research Board, Department of National  
Defence, Ralston, Alberta T0J 2N0,  
Canada

When sorting, identifying, pooling and triturating mosquitoes for the purpose of detecting the presence of arboviruses, it is necessary to keep them cold.

Sudia *et al.* (1965) and Sudia and Chamberlain (1967) specified that a temperature between 3° to 5° C on the surface of a sorting table is necessary for the preservation of arboviruses which are

ment ordinarily used with Virtis Freezedryers<sup>1, 2</sup>) and a unique, simple and inexpensive chill table.

When the circulating cold bath and chill table are operated (using methanol as a coolant) at a temperature of -55° C (lowest temperature achieved with our cold bath), the surface temperature of the chill table is -26° C in a room with an ambient temperature of 25° C. The table can, therefore, be operated at any temperature from -26° C to ambient. Temperature is maintained by the thermostatically controlled cold bath. The table can be used to chill ceramic mortars prior to trituration of sorted and identified, pooled mosquitoes. When operating, a thin, felt pad is placed over the surface of the table to minimize condensation.

This laboratory had greatest success when op-

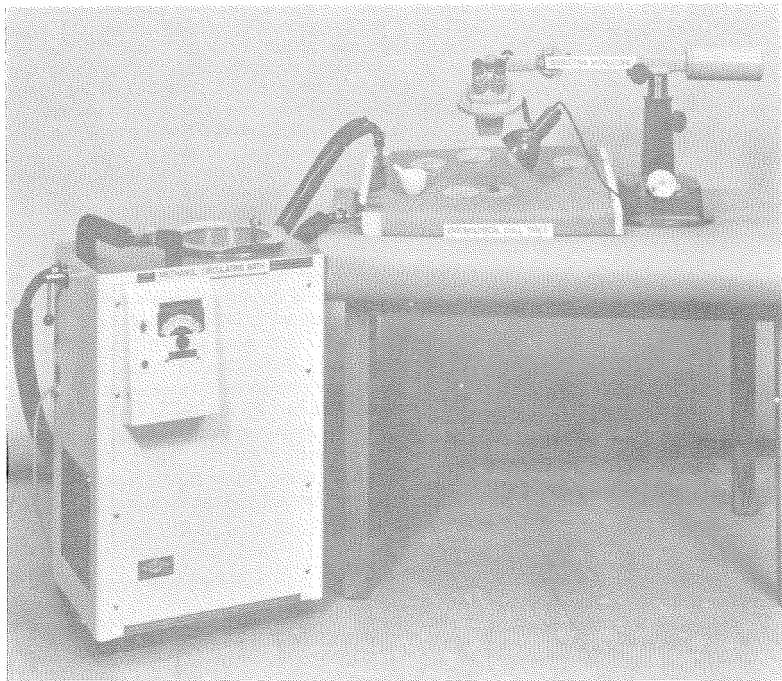


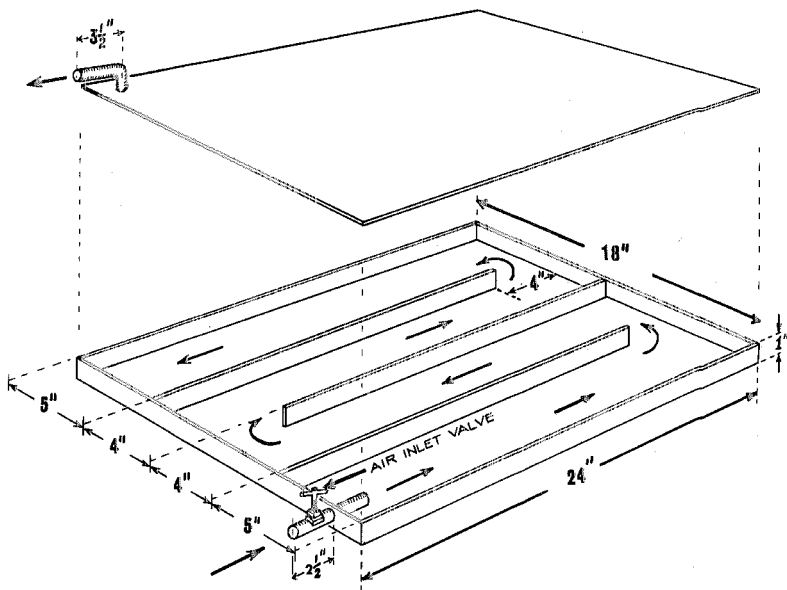
Fig. 1.—Entomological chill table. Photograph to show arrangements and connection for use.

highly unstable in dead mosquitoes at room temperature.

One method, which preserves the infectivity of arboviruses contained within the tissues of feral mosquitoes, makes use of the Virtis 10-900E circulating cold bath (an accessory piece of equip-

<sup>1</sup> The Virtis Company Incorporated, Research Equipment, Gardiner, N. Y. 12525.

<sup>2</sup> Use of trade name is for identification only and does not constitute endorsement by the Department of National Defence.



### ENTOMOLOGICAL CHILL TABLE.

Fig. 2.—Entomological chill table. Drawing to show dimensions and operating details.

erating the chill table at  $-3$  to  $-5^{\circ}\text{C}$  which preserved mosquitoes in the frozen state, but did not maintain the brittle characteristic of their  $-70^{\circ}\text{C}$  storage temperature.

The cold bath has a specified volume of 7.5 litres with a circulation capacity of 7.8 gallons per minute at 0 head or 5.7 gallons per minute at 6' head. The volume of the chill table is approximately 7.0 litres.

**DETAILS OF CONSTRUCTION.** The chill table is fabricated from 20 gauge stainless steel with three internal partitions spot-welded into place, alternating in their origin from either end of the table so that the coolant will circulate under the entire surface of the table top (Figs. 1 and 2). The bottom surface and edges of the table, which has the dimensions  $1'' \times 24'' \times 18''$ , are insulated with  $\frac{3}{4}''$  foam rubber. An air inlet valve is incorporated into the coolant receiving port so that air can be bled into the table top when coolant is being removed after use.

Two ports,  $\frac{9}{16}''$  in diameter, are located on the table (Fig. 1). The receiving port is located in the lower left corner of the table on the edge. The exhaust port is located at the opposite corner

(upper left), but is placed on the upper surface of the table in order to maintain the total volume of coolant within the table while it is operating and thus cool the entire surface of the table.

**SUMMARY.** A refrigerated entomological chill table, to be used for the sorting, identification, and triturating of mosquitoes, is described. The chill table makes use of a circulating cold bath commercially available. Temperatures are thermostatically controlled. The coolant is methanol. The table can be operated at temperatures as low as  $-26^{\circ}\text{C}$  at an ambient room temperature of  $25^{\circ}\text{C}$ .

#### *References Cited*

- Sudia, W. D. and Chamberlain, R. W. 1967. Collection and processing of medically important arthropods for arbovirus isolation. U. S. Dept. Hlth. Educ. Wel., PHS, NCDC, pp. 29.
- Sudia, W. D., Chamberlain, R. W. and Collier, M. Y. 1965. The CDC entomological chill table, a refrigerated unit for use in processing mosquitoes for arbovirus isolation study. *Mosq. News* 25:385-389.