imum of $\frac{7}{8}$ inch in diameter ×6 inches long.

The modified temperature control circuit of LaPlante (1966) (Fig. 2), supplies power to the heater through an SCR which is turned on whenever the charge across C_1 at point (A) is sufficiently positive. The net charge across C_1 is determined by the cancellation effect of the positive charging branch containing the temperature adjust R_1 and the negative charging branch containing the thermistor R_t.

When operating above 25°C, S_1 is placed on *HEAT* which renders the refrigeration unit inoperative and shorts R_4 and R_5 in the thermistor branch. Below 25°C, S_1 is switched to *COOL* turning on the refrigeration unit which runs continuously. This also introduces R_4 and R_5 into the thermistor branch which enhances the positive charge effect at point (A) by the temperature adjust R_1. The result is a greater heater conduction angle essential in heating the air cooled by the freezer tray (D). R_4 is adjusted for zero temperature change when switching from *HEAT* to *COOL* at 25°C.

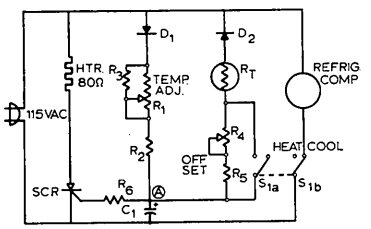

Fig. 2. Temperature control circuit.

An average rate of temperature decrease of 1°C/day* is achieved by using a 1 RPD motor (Q). It is coupled through 5:1 reduction to the spur gear (R) which is attached to the temperature adjust control R_1 (10 turn pot.). Other rates may be obtained by using motors of different speeds.

After R_4 has been correctly adjusted, the chamber may be operated in either *HEAT* or *COOL* for temperatures between 25–30°C.

Five chambers have now been in rather heavy use for two years; no problems have arisen in regard to the cooling ability of the refrigeration units.

* This is the average rate measured across the full range *i.e.* 0–45°C. The temperature *vs.* dial response is non-linear and is shown in Fig. 3. The actual rate of temperature change would be closer to 1·75°C/day above 10°C and approximately 0·5°C/day from 10 to 0°C.

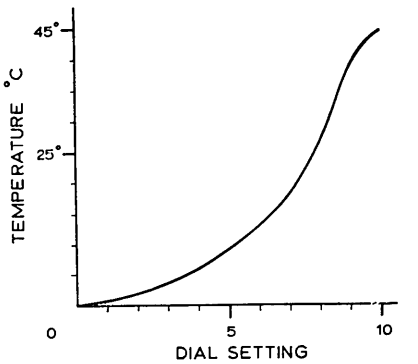

Fig. 3. Temperature *vs.* dial setting.

Detailed drawings are available from the author.

Reference

LAPLANTE, D. E. (1966). *Electronics,* **38** (28), 83.

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Notes and News

Announcements and other items of crystallographic interest will be published under this heading at the discretion of the Editorial Board. The notes (in duplicate) should be sent to the Executive Secretary of the International Union of Crystallography (J. N. King, International Union of Crystallography, 13 *White Friars, Chester CH*1 1*NZ, England*).

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