and the paper can be placed immediately over the record and printed. One assistant and I completed over 80 such prints in $3\frac{1}{2}$–4 hours. The records had been previously sorted, but the oiling was done at the time of printing. The oil, being volatile, slowly disappears and in no way harms the records.

Fig. 1 shows an ordinary blood pressure and salivary secretion record obtained in this manner. Comparing this latter

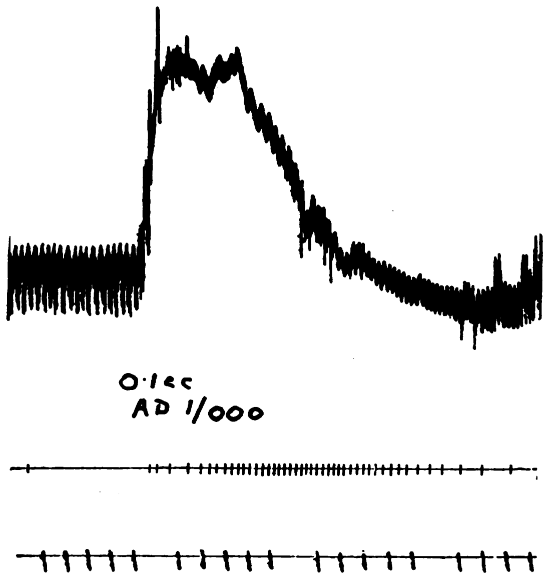

FIG. 1

with the bottom time tracing, one may see the irregularities of a poorly working signal faithfully reproduced. This is not a picked tracing and is varnished with a particularly poor

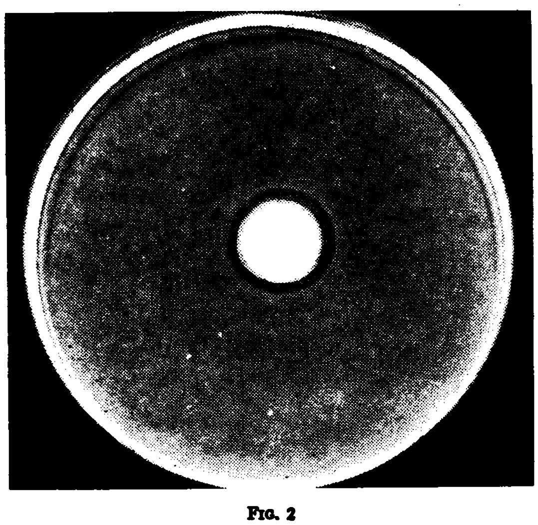

FIG. 2

wartime material which would render ordinary photographic reproduction difficult.

The same paper serves well to make direct prints of culture plates for permanent record of antiseptic tests. An example of this is shown in Fig. 2, which depicts a 48-hour *Staphylococcus aureus* culture. For this purpose the lid must be removed. Under an ordinary 100-watt lamp at a distance of 2 feet a 2-second exposure is about right. Such records do not have the clarity of photographic reproduction because of irregularities in the culture dishes, but they are quite satisfactory for ring measurements and permanent records of such labile results.

An Adaptable Three-dimensional Graph Model

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Three-dimensional graphs offer a convenient visual means of evaluating the effects of two variable factors upon a third factor—for example, the effect of different temperature and moisture levels on the rate of inactivation of 2,4-D in soil. With the aid of such a graph maximum and minimum combined effects, contours, and trends are readily apparent.

Construction of this type of graph is generally time consuming. However, when once constructed, the graph described (Fig. 1) can be easily readjusted to present data obtained

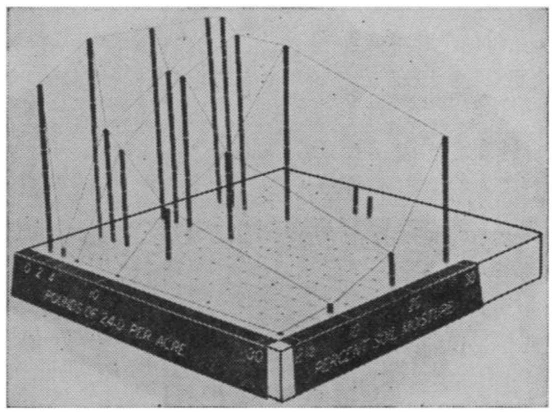

FIG. 1

from various problems involving three different factors; or, where more than three factors are concerned, it can be made to show relations of combinations of these.

This apparatus lends itself readily to photographic reproduction so that the data can be permanently recorded.

A board, 17 x 17 x $\frac{5}{8}$ inches was marked off in square inches. Holes $\frac{1}{4}$ inch in diameter were drilled at the line intersections. The base was then painted with Kodak brushing lacquer No. 4. The upright pegs were made from $\frac{1}{4}$-inch doweling cut in lengths of $\frac{1}{2}$, $1\frac{1}{2}$, $2\frac{1}{2}$,... $10\frac{1}{2}$ inches as required; and, in this case, they were graduated in inches by pasting strips of black gummed paper around them. The upper ends of the series of pegs were connected by white cotton thread as shown in the figure. Clips to hold the thread were attached to the pegs with the aid of a gun-type stapler.

Data can be presented on this model in semilog form. A base graduated in logarithms would, of course, be necessary for log-log presentation.

Differences required for significance at the 5 and 1 per cent levels can be shown by pegs at one side of the graph.