hydrogen peroxide-methemoglobin, namely as a coordinative linkage between the porphyrin-bound trivalent iron and the peroxide molecule. The stoichiometry in the two cases may, however, differ.[3] In contrast to methemoglobin, catalase will combine with the substrate at a pH where both, at least in part, exist as anions. This may be of some significance in explaining the behavior of the two catalysts.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

PIPETTING DEVICE FOR DISINFECTANT TESTING

IN the determination of phenol coefficients by the F.D.A. method, it is necessary to inoculate suspensions of pathogenic microorganisms into medication tubes with quantitative accuracy. Pipettes are the prescribed equipment for measuring the dosage of culture, which must be introduced without the tip of the pipette touching the disinfectant. The tip may be allowed to rest against the side of the tube just above the surface of the liquid. It is obvious that greater precision will be obtained if uniform and accurately measured samples of culture are used and if organisms are not left on the sides of the tube where they might escape adequate contact with the solution.

We have found that a simple device regulates the spatial relations of pipette and test fluid in the medication tube, irrespective of the fatigue of the worker, and permits an unusual precision of technique in this test, which in our experience greatly reduces irregularities of results. Furthermore, our arrangement reduces the danger of infection of the technician or of the laboratory.

Fig. 1 shows the device, assembled for use. It consists of a graduated pipette A, actuated through suitable tubing by a heavily greased, 10 ml syringe B. An essential feature is a 90° V-shaped guide trough C, fixed in a vertical position to a convenient support. We have used a supporting block of wood fastened to a ring stand with ordinary burette clamps D. This trough is conveniently formed from No. 18 gauge aluminum, 2″ × 12″, with its long edges rolled back. (This size is useful for medication test-tubes, 25 × 150 mm). A screw clamp on one edge of the guide trough serves as a stop E to fix the position of the test-tube in use. The spring clamp F, attached by clamp fasteners G and short pieces of steel rod to the ring stand, is adjusted to hold the pipette in a position equidistant from and parallel to the walls of a test-tube H held against the trough. A beaker I directly below the pipette and containing a small volume of 1:1000 $HgCl_2$ serves as a trap for any accidental dripping of culture.

When a test is to be made, the guide trough is

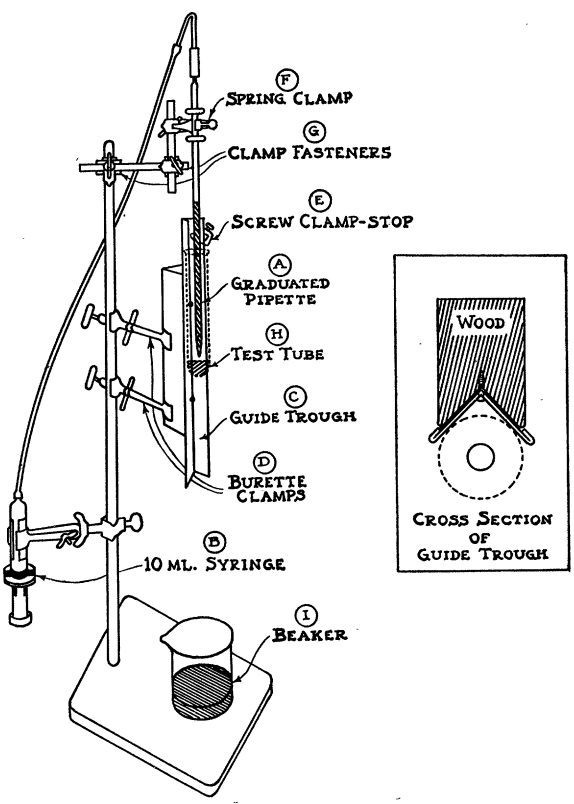

FIG. 1

flamed with a bunsen, the free end of the rubber tubing is slipped over the mouth end of a sterile, cotton-plugged pipette which is then clamped into position. A test-tube of bacterial culture is slid along the trough to a point where the pipette is just above the sediment, and the pipette is then charged with inoculum by withdrawing the syringe plunger. Inoculation is effected into a medication tube slipped into place where the level of its contents will be substantially 1 cm below the pipette tip. By means of the syringe the desired volume of inoculum is dispensed smoothly. The last drop may be withdrawn or dislodged, provided the same technique is always followed.

This device has the following advantages:

(1) A uniform suspension, avoiding sediment, may be selected, since the whole pipette is in full view of the operator, instead of in distorted myopic perspective.

(2) There can be neither infection *per os* of a careless or fatigued technician nor spattering of drops on floor or bench top.

(3) Uniform delivery of uniform dosage is made directly into the disinfectant solution without spattering and without loss on sides of test-tubes.

(4) No organisms can be left on the sides of the medication tube where they might escape immediate and complete contact with the test solution.

(5) Time ordinarily consumed in needful caution when using a pipette in the ordinary way and in the multiple motions for positioning tube and pipette is made available for useful attention to precision of technique.

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AN INEXPENSIVE MAGNIFIER FOR READING FILM COPIES OF SCIENTIFIC ARTICLES

SINCE the library of the U. S. Department of Agriculture has been distributing copies of papers in the form of film copies, there has been considerable ingenuity shown in various institutions to find some method of reading them. A recent paper,[1] for instance, reports the use of a binocular dissecting microscope for this purpose.

It is now pretty well known that there is a magnifier for this purpose on the market and that a special projector is being developed for rendering the films easier to read than with the use of the magnifier. To the writer it seems as if the ideal method for any institution to arrange for reading these films received by its members would be to have a projector in some central place, designed for use in careful study, and a magnifier intended for more superficial perusal available to each member of the staff who would be likely to receive articles sent out in this form. The present cost of the magnifiers, however, might make this out of the question in some institutions.

For this reason it was with much interest that a still cheaper magnifier already on the market (price $1) was recently observed. This magnifier is ordinarily sold as a sort of toy and designed for looking with both eyes at stereoscopic views of pictures put out by the company manufacturing the magnifier. The magnifier is sold under the trade name "Tru-vue" and is a product of the Rock Island Bridge and Iron Works, Rock Island, Illinois. The films that the company supplies for use with this magnifier are standard 35 mm cinema films, the same as used for the film-stat reproductions. Accordingly, the latter can be used in this "Tru-vue" magnifier by simply blocking up one eyehole in it so that one is not looking at one page with one eye and at another page with the other.

The magnification thus secured is less than with the magnifier designed especially for reading these films, and no focusing is possible. The "Tru-vue" magnifier is set in focus for use with normal eyes, and as a result a far-sighted or near-sighted person can not use it except with his glasses in addition. The writer has had a number of different individuals try it, however, and although some have experienced more difficulty than others in reading the text, no one has proved unable to do so if he also used properly fitted glasses and had sufficient illumination.

Although this magnifier is not as perfect, therefore, as the one put on the market for this particular purpose, it has two advantages over the latter: first, its low price; and second, the fact that it is so small that it can be carried in a pocket or handbag. This latter feature should make it of use to travelers who wish to carry a film collection of articles with them.

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GENEVA, N. Y.

[1] G. R. Coatney, SCIENCE, 82: 105, 1935.

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