Comments and Communications

Comment on Flying Saucers

I WOULD like to call to the attention of your readers that the entoptical theory of E. F. Mauer (SCIENCE, 116, 693 [1952]) that the flying saucers may be spots before the eyes, is untenable.

If such a theory would be correct, one would expect a more or less even geographical distribution of the sightings, expressed—say—in terms of sightings per million population per year.

From the declassified version of an Air Force Report, it is possible to find the geographical distribution of the sightings, and this indicates that the distribution is not uniform, but shows definite maxima in certain regions of the country. This is definitely not in agreement with any entoptical interpretation.

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A Single Tube Method for Anaerobic Incubation of Bacterial Cultures[1]

PREVIOUSLY described methods for obtaining anaerobiosis in culture tubes either require that the tube be inverted or that accessory equipment be used (*1*). By the procedure reported here, it is possible to obtain anaerobic conditions in individual tubes without the use of special media or apparatus. This method has been found especially applicable when it is desired to follow the progress of anaerobic growth in broth by turbidimetric procedures.

A 5/8 by 6 in. culture tube containing up to 10 ml of medium is stoppered with a cotton plug rolled tightly around a small vial, as shown in Fig. 1A. These tubes can be inoculated in the usual manner, and will permit normal aerobic growth. When anaerobic conditions are desired, the cotton plug is pushed down into the culture tube until the top of the vial is below the lip of the tube. Two milliliters of 40% KOH and 2 ml of 20% pyrogallol are pipetted into the vial. Immediately after addition of the second reagent, the mouth of the tube is flamed lightly, and a rubber stopper, previously coated with paraffin, is inserted. The stopper is held firmly in place for a few seconds until the tube cools and the paraffin hardens to form a seal (Fig. 1B).

Experiments have shown that the anaerobiosis is complete and fairly rapid. When incubated in this manner, facultative organisms do not grow on media which support aerobic but not anaerobic growth. *Aerobacter aerogenes,* for example, will grow aerobically but not anaerobically on synthetic medium containing lactate as sole carbon source. Methylene blue indicator solution (*1*) in such tubes is visibly reduced after a few minutes and totally decolorized in two hours.

[1] The writer is a Public Health Service Research Fellow of the National Institutes of Health.

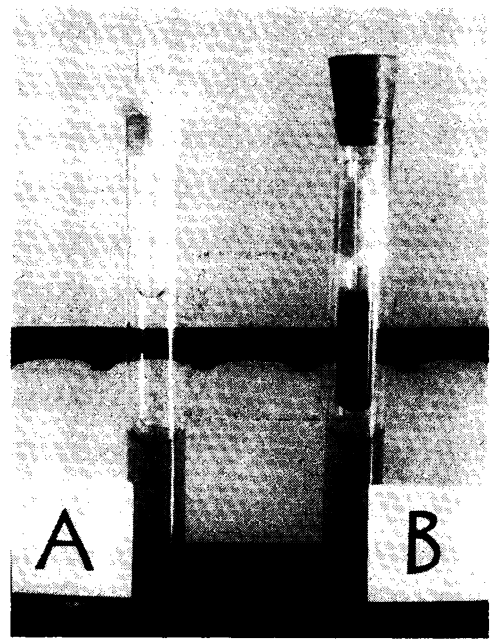

FIG. 1. Single tube for aerobic or anaerobic growth. A, aerobic conditions; B, anaerobic conditions.

Rapid attainment of anaerobic conditions may be improved by folding accordion-wise a strip of filter paper slightly longer than the inner vial and placing it in the vial to provide greater surface for oxygen adsorption.

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Reference

1. SOCIETY OF AMERICAN BACTERIOLOGISTS. *Manual of Methods for Pure Culture Study of Bacteria* (Leaflet III). Geneva, N. Y.: Biotech. Publ. (1952).

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Pain—Controlled and Uncontrolled

THE sources of the disagreement expressed in the two communications on the subject of pain by Henry K. Beecher and by Hardy, Wolff, and Goodall (SCIENCE, 117, 164 [1953]), can be seen to arise from certain errors on both sides. Dr. Hardy and his group base their arguments upon studies in which they have been attempting to measure accurately the pain that arises under controlled experimental conditions, when normal healthy tissues are exposed to a noxious stimulus. They have failed to recognize that the pain they are measuring is fundamentally different from that pain which originates within tissues whose metabolism has become deranged through damage or disease, and thus constitutes a sign of existing injury.

On the other hand, Dr. Beecher has approached the problem at the clinical level but has confused the issues by insisting upon an artificial distinction be-