cannot be isolated from the total sensory history of the animal. The basic question of the origin of the apparently insatiable responding for light, at extremely high rates, will remain unanswered until extensive developmental studies are undertaken (*7*).

RICHARD H. WENDT
DAVID F. LINDSLEY
W. ROSS ADEY
Departments of Anatomy and *Physiology* and *Brain Research Institute, University of California, Los Angeles*

STEPHEN S. FOX
Department of Psychology and *Mental Research Institute, University of Michigan, Ann Arbor*

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4. A third experimental animal (*M. mulatta*), which was subjected to visual deprivation for a shorter period, showed a similar but less marked elevation of response rates. Testing of this animal was begun after 15 weeks of visual deprivation, when the monkey was 4 months old. Its rate of responding for light (1500 to 2000 responses per hour for weeks 2 to 8 of testing) was significantly higher than that of its normal control of the same age, yet lower than the response rates of the other two experimental animals. It is not known whether the intermediate response rate of this experimental animal is related to the shorter period of visual deprivation or due simply to factors of motor development.
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7. We thank Richard Fugett for his part in caring for the animals. This study was conducted at the University of California, Los Angeles. It was supported by the U.S. Public Health Service (grant B-1883) and by the U.S. Air Force Office of Scientific Research [contract AF 49 (638)-686].

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Growth of the Cellular Slime Mold Polysphondylium pallidum in a Simple Nutrient Medium

A previous attempt to cultivate the slime mold *Dictyostelium discoideum* axenically was successful, but the generation time was too long (16 hours as compared with 3.5 hours in two-membered culture with *Aerobacter aerogenes*) and the stationary-phase cell yield too low (*1*).

Furthermore, the medium was extremely complex and included an undefined lipoprotein fraction from bacteria. A fresh attempt, with the species *Polysphondylium pallidum* (Olive), strain PP-1, has provided a much simpler medium in which exponential growth is achieved, with a cell yield of about 1.5 g (dry weight) of cells per liter.

The constituents of the medium are as follows: lecithin (Glidden Products), 400 to 800 μg/ml; a lipid-free milk powder (Starlac), 0.5 to 2 percent; proteose peptone, 1 percent; and 0.05*M* phosphate at *p*H 6.5 (autoclaved 25 to 30 minutes at 120°C). Aliquots (5 ml) containing an inoculum of 1×10^4 amoebae per milliliter or of spores taken from fruiting bodies were shaken (130 cy/min; 4-cm stroke) in 125-ml erlenmeyer flasks at 23°C. The flasks were covered with aluminum foil to prevent evaporation. Figure 1 shows the kinetic data obtained in three separate subcultures of amoebae. The generation time was 3.7 hours; the yield, 1.6×10^7 cells per milliliter. No lag phase was encountered when the inoculum consisted of amoebae taken from a log-phase culture. Spores and stationary-phase amoebae showed lag phases of varying duration depending on age and physiological state. The milk fraction is not essential; a generation time of about 4.5 hours and a yield of 1.0×10^7 cells per milliliter were obtained when the milk fraction was omitted. Lecithin and at least one of the protein sources are essential. *Polysphondylium pallidum* has been maintained in this medium over the course of seven serial passages (about 100 generations) without loss of rate or yield. Excellent growth and adequate fruiting-body construction are obtained on a corresponding agar medium, in both mass and clonal culture. Two kinds of sterility controls were run. Various dilutions of log-phase cultures were inoculated into nutrient broth, incubated at 30° and 38°C (temperature above the tolerance of the slime-mold amoebae), and plated on lecithin-peptone-milk agar at 24°C. There were no signs of contamination. In any case a yield of 10^7 amoebae per milliliter has been found to require the presence of 10^{10} living bacteria per milliliter (*2*), and contamination at this level would have been detectable by simple microscopic inspection.

Neither *Dictyostelium discoideum* nor *Dictyostelium mucoroides* could be cultivated in the medium described here (*3*).

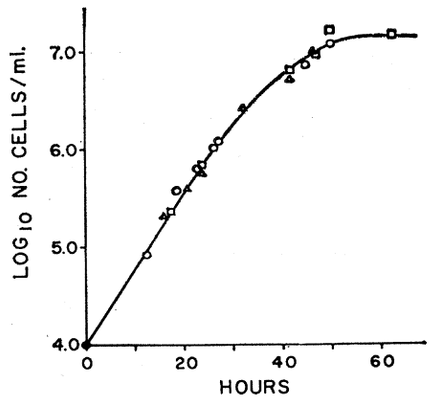

Fig. 1. Kinetic data obtained in three separate subcultures of amoebae.

Note. The successful axenic cultivation of *P. pallidum* was reported in an abstract [H. Hohl and K. B. Raper, "Abstracts of Papers Presented at the Second Annual Meeting of the American Society for Cell Biology" (Nov. 1962)] which appeared after this report had been submitted for publication. The medium used by Hohl and Raper contains bovine embryo extract, bovine serum albumin, Tryptose, dextrose, vitamins, and inorganic salts. The culture used in our study was derived from *P. pallidum*, strain WS-320, obtained from Raper's laboratory in July 1962. This, interestingly enough, is the strain upon which Hohl and Raper have centered their investigations.

M. SUSSMAN
Department of Biology, Brandeis University, Waltham, Massachusetts

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Two New Forms of Silicon

Drickamer and Minomura (*1*) have observed that at 25°C the electrical resistivity of silicon drops by a factor of about 10^5 upon compression to about 200 kilobars, and the compressed silicon appears to be metallic. They noted that the pressure interval over which the resistivity changes most rapidly depended upon the amount of