then fall off rapidly. If a new one is started every three weeks, a continuous supply of *Paramecium* for classes of many hundreds can be maintained.

For success it has seemed essential to (1) keep the grass mattress just awash and the grass about ¼ in. from the jar where the *Paramecium* grow best; (2) maintain a temperature gradient roughly between 23° and 25° C.; (3) use tap water free from injurious metals to start, and distilled water for later additions; (4) keep the jar covered with a loose lid; (5) try to encourage lagoon formation; (6) keep the grass blades at right angles to the temperature gradient, which should be in the direction of the incident light; and (7) shade from sunlight or really bright daylight.

Letters to the Editor

Convulsive Effects of Antibiotic Agents on the Cerebral Cortex

The lack of clinical evidence of neural toxicity when penicillin is administered systemically or intrathecally has led to the assumption that penicillin has no adverse effect upon the physiologic processes of the nervous system. The singular dearth of experimental studies of the effects of antibiotic substances applied to the brain has perpetuated this erroneous impression.

Both clinical and experimental studies on animals and man indicate that penicillin may produce convulsive manifestations when applied to the cerebrum. During systemic administration for conditions other than primary ones of the central nervous system, the electroencephalogram was found to be abnormal in more than 60 per cent of a series of 51 cases. Control records before and after penicillin therapy usually showed norm l tracings. Large doses of penicillin injected intrathecally in man (40,000 units) or monkey (10,000 units) may give rise to generalized convulsions followed in some cases by coma and death. The application of as little as 250 units of penicillin to the cerebral cortex of the macaque may induce epileptic attacks. These convulsive phenomena are not due to impurities in the preparation, for they have occurred with penicillin made by ten different manufacturers and with purified crystalline penicillin.

Streptomycin applied to the cerebral cortices of cats and monkeys in doses of 1,250 units induced convulsive manifestations in 30 per cent of the cases. Electroencephalographic records at such times showed slow waves and spikes with subsequent decrease of cortical activity lasting for one to three hours. Cisternal injection of 2,500 units of streptomycin in the monkey induced signs of severe cerebellar dysfunction.

Streptothricin applied to the parietal cerebral cortex in doses of 5,000 to 10,000 units produced clinical and electroencephalographic convulsive manifestations. Although these phenomena usually disappeared spontaneously in two to three hours, in two monkeys they persisted for two weeks. At necropsy the brains of these animals showed extensive softenings with perivascular petechial hemorrhages.

Actinomycin injected into the cerebral cortex or cisterna magna in a dose of 1 mg., after a latent period of nine hours produced severe prostration, fasciculations, and convulsions with death in one to seven days. At the site of injection into the cerebral cortex a severe necrobiotic reaction with edema and petechial hemorrhages was found.

Clavacin, when injected into the cerebral cortex in doses of 5 to 10 mg., induced clinical and electroencephalographic manifestations of convulsive phenomena with a marked decrease in spontaneous electrical activity of the brain.

There appears to be a relatively wide margin of safety between the antibiotic concentration and convulsive threshold of penicillin and streptomycin. Such does not appear to be the case for streptothricin, clavacin, or actinomycin.

A. Earl Walker, Herbert C. Johnson, Theodore J. Case, and Jerry J. Kollros
University Clinics, University of Chicago

The Genus *Aspergillus*

In his review of Thom and Raper's *Manual of the Aspergilli* (*Science*, 1945, 102, 460–461) Dr. B. O. Dodge says: "It is gratifying to see that the authors have continued to maintain that the generic name *Aspergillus* should apply not only to the conidial stage but also to the ascosporic stage. The genus *Aspergillus* is here to stay, regardless of rules of nomenclature." This statement should not be allowed to pass unchallenged by those who believe that progress in any branch of science dealing with living organisms will be facilitated by precise designation of the organisms concerned, and that such precision can best be attained by conforming to an established procedure based upon conference and agreement between as many as possible of those who are interested in such matters. In the mycological field, such a procedure is set forth in the International Rules of Botanical Nomenclature. Admittedly imperfect and incomplete (what codification of practice in other fields is perfect and complete?), the rules in their present form represent an orderly development of careful and intelligent thinking on the subject of nomenclature and are entitled to the serious consideration of all who use names subject to these rules. In the very rare cases in which it seems impossible