

of the subject from the point of view of physiological plant anatomy. That point of view is for the present, however, somewhat under a cloud in this country because it does not appeal to the morphologist and the evolutionist on the one hand or to the cultivator of the disembodied plant physiology at present in vogue in these United States, on the other. When the physiologist among us again begins to recognize the importance of plant structures, he will possibly find a work conceived in this manner useful.

E. C. JEFFREY

America's Greatest Problem: the Negro. By R. W. SHUFELDT, M.D., major, medical corps, United States Army, member Association of American Anatomists, fellow of the American Ornithologists' Union, etc. Philadelphia, 1915. Roy. 8vo, pp. 377, with fifty-two illustrations.

Unfortunately this volume has been heralded as "a wonderfully startling book . . . certain to instantly arouse a vigorous nation-wide discussion," and—by implication—as "an authoritative . . . guide to the solution of this menace of the deterioration of the Caucasian race in America." Nevertheless (these hyperboles being credited to the mercantile enthusiasm of the publishers, whose part has been done quickly and well), a notice of it was undertaken by the present writer partly because of his interest in the Negro, and partly because he took for granted that the author, a well-known ornithologist and comparative anatomist, would materially increase our knowledge of the facts involved, facilitate our comprehension of the nature and causes of the existing undesirable relations between the races, and offer something novel as "a remedy whereby the peril may be safely passed."

These expectations have not been met. On the contrary, while the author's earnestness is evident, a careful and unprejudiced examination of the volume leads the reviewer to wish that the time and energy expended upon it had been devoted to the strictly scientific work which the author had in hand (p. vii); that might, at least, have been free from the need-

lessly frequent references to topics connected with *psychopathia sexualis* which characterize this and some of his other publications.

BURT G. WILDER

SPECIAL ARTICLES

ZYGOSPORES AND RHIZOPUS FOR CLASS USE

Rhizopus nigricans—the common bread mold—is the form most frequently used in the microscopic study of fungi in elementary classes in botany. Its production of both sexual and non-sexual spores, added to the ease with which it may be obtained and grown without refined laboratory facilities, makes it an ideal form for class study. The zygospores, though not difficult to find, have been overlooked by most teachers and many requests have been made of the writer for information in regard to methods of obtaining them. It has seemed desirable therefore to publish a short note on the subject.

Rhizopus is commonly found in nature on decaying fruits and vegetables as well as upon bread which has been kept in a moist atmosphere. The air is so full of its spores that almost any substratum rich in carbohydrates, if kept under proper moisture conditions, will produce a spontaneous growth of the fungus. The essential precaution is to insure a moist atmosphere and at the same time to prevent the substratum itself from becoming so moist as to stimulate the growth of bacteria. A simple method is to line a tumbler with moistened filter paper or even newspaper and to place a piece of bread on some non-absorptive object inside that will keep it from contact with the moist paper on the sides and bottom. The bread should be moist but not wet—the consistency of fresh bread is ideal—and the container should be kept closed. A bell jar lined with moist filter paper covering a dish with water or moist paper on the bottom, also makes a good moist chamber. Within a week, if the air has been kept moist, a good growth of the mold will result. Green molds will often be present as well, but the *Rhizopus* is so rapid in growth that contamination with other forms will not generally be seriously troublesome. Zygospores will sometimes be