sure that Dr. Cohn and all concerned would regret it exceedingly.

Dr. Lhamon's paper describing the method appeared in the *American Journal of Anatomy* for March, 1912, and Dr. Cohn's publication did not appear until May, 1913 (*Heart,* 1913, iv, 225). Dr. Cohn's paper dealt with the subject in a different manner from Dr. Lhamon's, and did not purport to be the description of a new method. In this paper Dr. Cohn expressly states how he learned that such injections were possible, and gives a reference to Dr. Lhamon's communication. It hardly seems, therefore, that Dr. Meyer has any serious ground for complaint or cause for worry. If any doubts remain in his mind, he should be reassured by the fact that in the monograph by Aagaard and Hall, "Ueber Injektionen des 'Reizleitungssystems' und der Lymphgefässe des Säugetierherzens" (Wiesbaden, 1914), priority is given to Lhamon, although they were familiar with Cohn's paper in which reference is made to the report in the New York Pathological Society Transactions.

RUFUS COLE
HOSPITAL OF THE ROCKEFELLER INSTITUTE,
November 16, 1915

SCIENTIFIC BOOKS

Methods in Plant Histology. By CHARLES J. CHAMBERLAIN, professor of botany in the University of Chicago. University of Chicago Press, 1915. Price $2.25.

When a work like the present has reached its third edition there can be no question as to its value for the public to which it appeals. It begins with an account of apparatus, including some valuable improvements which have originated in the botanical laboratories of the University of Chicago. There follow chapters on reagents, stains and staining, microchemical tests, free-hand sections, the glycerin method, the Venetian turpentine method, the paraffine method, the celloidin method, special methods and photomicrographs and lantern slides. The last two chapters contain the chief novelties of the edition and one can only say of them that they are excellent but might with advantage be much fuller. One wonders, however, why slow contrast plates are used for the photomicrographs instead of more rapid iso- or chromatic plates, which would give better results in much less time.

The second part of the treatise, covering more than half its total number of pages, is devoted to the specific directions for securing and studying representatives of the various groups of lower and higher plants. This section of the work will appeal specially to those taking extension courses and to teachers, whose acquaintance with laboratory methods is not recent. Following the specific directions for the study of the larger groups of plants are final chapters on the use of the microscope, labelling and cataloguing preparations, class list of preparations and formulæ for reagents. Last of all the book closes with a good index. It is copiously illustrated often by means of excellent photomicrograms. The best that can be said of this work is that it will do for the American student of botany, what Strasburger's "Botanische Practicum" has done for those of all lands. Like the "Practicum" of the great German morphologist it has passed through a number of editions, an unquestionable tribute to its value. E. C. JEFFREY

W. I. Palladin, Pflanzenanatomie, nach der fuenften russischen Auflage uebersetzt and bearbeitet. VON S. TSCHULOK. Leipzig u. Berlin, B. G. Teubner, 1914.

This work on anatomy by one of the professors of botany in the University of St. Petersburg (Petrograd) is essentially the so-called physiological plant-anatomy of Haberlandt, tempered with a large infusion of the morphology of Strasburger. It is a curious phenomenon to find German ideas thrown into the form of a book and illustrated with figures of German origin by a Russian botanist, translated back into the Teutonic speech for German consumption. The loss in this peculiar sort of metempsychosis is much less than one would suspect but the advantage of it is difficult to imagine. The work in question is chiefly valuable, not because it presents any new points of view or is illustrated by any new figures, but because it presents a clear and readable résumé

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 expectatons 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 needlessly 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