sented must convince the reader that the topics discussed in the book are not only most interesting, but are also those with which science is to-day grappling. The method of presentation is also forceful, since it gains power and simplicity because of the unifying influence of the great theory that pervades it throughout. By thus giving a coherent treatment of the problems that are in process of solution at the present moment, Professor Drude has produced a book that is bound to have great influence for good upon the science of optics, since it must impress the student that, to use the author's own words, 'optics is not an old worn-out branch of physics, but in it there pulses a new life.'

In doing this the author has in addition given a valuable hint to writers of texts—for how much greater would be the interest in physical science among the people generally if many of the time-worn, cut-and-dried (particularly dried) discussions that have clung tenaciously to the texts could be rewritten so as to present the subject entirely from the present and future point of view instead of from that of the past? In such a presentation stress would be laid, as Professor Drude has done, not only upon that which had been settled, but also upon that which still remains to be settled; so that the reader would not be tempted, after reading the book, to think that he knows it all, since everything is finally settled and he can and has committed it to memory.

Thus all students of physics owe a debt of gratitude to the author of this 'Theory of Optics,' not only because he has woven together for them the scattered threads of the electromagnetic theory into a web of pleasing and symmetrical pattern, but also because he has, in so doing, shown how to present a scientific subject in such a way that the student is left with a realization of the fact that the science is alive and teeming with future possibilities, instead of with a feeling of disgust at having had thrust upon him the usual glorified and embalmed image of past grandeur—a corpse fixed in death.

Thus this work impresses us as a very able and original presentation of a difficult subject. We, therefore, welcome it as a distinct addition to the literature of optics. We congratulate the publisher on having made this book accessible to those to whom German is a barrier. They could perform another service to science if they could persuade Professor Drude to revise his earlier work on the 'Physics of the Ether,' for this work helps much in the understanding of his 'Theory of Optics.'

C. R. Mann.
University of Chicago,
September, 1902.

*Medical Microscopy.* By T. E. Oertel, M.D. Philadelphia, P. Blakiston's Son & Co. 1902. Small 8vo. Pp. 362.

The facts which a working knowledge of microscopy may reveal to aid in diagnosis are so important that the profession demands an acquaintance with this subject which is coming to be recognized more and more as fundamental in medicine.

This small volume is offered in response to a legitimate voice, as the author believes, coming especially from that part of the medical profession which graduated before much instruction was given in the subjects in which the microscope serves so great a purpose.

Naturally the microscope is the first to receive attention. The various parts are named and their functions explained. The terms used in manipulation are defined and some of the phenomena are considered.

The summary of the facts regarding the habitat, pathogenesis, morphology and cultural characteristics of many of the more important pathogenic bacteria will be of much assistance to those unfamiliar with the subject. The following topics are also briefly treated: preparation of tissue, tumors, blood and the various secretions and excretions of the body.

An author is certainly justified in compiling a work upon medical microscopy in order that the rudiments of the somewhat scattered knowledge may be accessible to all, yet, on the other hand, when such a book compiled from works upon subjects which are experiencing such rapid changes and additions reaches the reader, there will be an opportunity to take exceptions to certain portions of it. This

book is unfortunate in this respect. The technique suggested in many cases, doubtless, will not be received with favor by experienced laboratory workers.

Claim to originality is made by the author with respect to the presentation of the subject only. On the whole, the book is written in a style which is clear and concise. Some of the unqualified statements should be modified to meet the prevailing opinion of to-day. To aid in a future edition we should call attention also to the lettering of the diagrams to represent optical phenomena of the microscope, which we believe to be inadequate and confusing.

A book compiled on the plan of this one will do good service in the place to which the author in the preface modestly assigns it: 'It is to the beginner in microscopy, and particularly to him who must work without the personal guidance of a teacher, that the book may prove of value.'

G. FRANKLIN WHITE.

## SCIENTIFIC JOURNALS AND ARTICLES.

*The American Journal of Mathematics* for October contains the following articles: 'The Plane Geometry of the Point in Point-Space of Four Dimensions,' by C. J. Keyser; 'On the Functions Representing Distances and Analogous Functions,' by H. F. Blichfeldt; 'Surfaces whose Lines of Curvature in One System are Represented on the Sphere by Great Circles,' by L. P. Eisenhart; 'On the Invariants of a Homogeneous Quadratic Differential Equation of the Second Order,' by D. R. Curtiss; 'Surfaces of Constant Mean Curvature,' by L. P. Eisenhart.

## SOCIETIES AND ACADEMIES.

### MICHIGAN ORNITHOLOGICAL CLUB.

AFTER a few years of apparent sleep, the Michigan Ornithological Club was reorganized at Detroit on February 13, 1903. The officers elected for the current year are: *President,* Adolphe B. Covert, Ann Arbor; *Vice-President,* Dr. Phillip E. Moody, Detroit; *Secretary-Treasurer,* Bradshaw H. Swales, Detroit. Two permanent committees were created. The committee on Geographical Distribution consists of Dr. Charles C. Adams (chairman), Ann Arbor; Professor Walter B. Barrows, Agricultural College; Bryant Walker and B. H. Swales, of Detroit. The Bird Protection Committee consists of Edward Arnold (chairman), Battle Creek; Professor Walter B. Barrows, Agricultural College; James B. Purdy, Plymouth, to act in conjunction with Wm. Dutcher, chairman of the Protection Committee of the American Ornithologists' Union.

It was decided to continue the former club journal styled the *Bulletin of the Michigan Ornithological Club,* three numbers of which (Vol. IV.) have appeared so far. Alexander W. Blain, Jr., was made editor and business manager, and later J. Claire Wood, of Detroit, and Adolphe B. Covert, of Ann Arbor, were elected associates. The *Bulletin* is published by the club at Detroit as an illustrated quarterly devoted to the ornithology of the Great Lake region.

The prospects for the Ornithological Club in the Wolverine state seem most bright, and the society already has over one hundred members enrolled. Monthly meetings are held on the first Friday of each month at the Detroit Museum of Art and annual meetings will be held at the same time and place as the annual meeting of the Michigan Academy of Science.

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## DISCUSSION AND CORRESPONDENCE.

### MICHIGAN PLANT SOCIETIES AGAIN.

THE thorough remodeling which my paper on the upland plant societies of Kent County, Mich.,* received at the hands of Mr. Francis Daniels in SCIENCE for August 14, 1903, makes this note by the author seem necessary. In the first place, I hasten to acknowledge with thanks the two very bad blunders which the reviewer has pointed out. *Quercus ilicifolia* should read *Q. prinoides,* and *Vitis cordifolia* should be replaced by *V. riparia.*

In the original paper the author expressly

* Annual Report State Board of Geol. Survey, Mich., 1901, pp. 81–103. *Botanical Gazette,* **35**: 36–55. 1903.