bacillus was still capable of producing a local tubercular abscess, not followed by general infection. Over twelve hours' digestion destroyed it completely. The germicide influence of gastric juice appears to be due to its acid contents, as it was found that hydrochloric acid alone, dissolved in water in the same proportion as it is in gastric juice, proved as active a destroyer of the bacilli. The pepsin appears to have no influence on the germs. Drs. Straus and Wurtz, who publish their researches in *Archives de Médecine Expérimentale*, wisely remind their readers that the germs, when protected by animal and vegetable tissues and introduced into the stomach in ordinary nutrition, are not exposed to so direct and prolonged action of the acid constituents of gastric juice as in these experiments.

BOOK-REVIEWS.

Electric Light Installations and the Management of Accumulators. By Sir DAVID SALOMONS. New York, Van Nostrand. 12°. $1.50.

As this is the fifth edition of a work which first appeared only two or three years ago, it is unnecessary to say that it fills a very important place in the literature of electrical science. It is not intended as a text-book on electric lighting, nor is it addressed to electricians as such; but it covers a field of its own, which had been previously neglected, or, rather, a field which had not been as alluring to writers on the subject as had other departments of the science.

Though the author disclaims any pretence to literary style, his work proves that he possesses in a high degree the three essential requisites of a successful writer; namely, to have something interesting to say, to be able to say it so that it may not be misunderstood, and to stop when he has said it. As a result, he has given us a plain statement of facts in regard to the practical side of electric lighting and the management of accumulators, attractively and clearly presented, and in as concise a manner as is consistent with the nature of the subject. The author proceeds on the assumption that the reader has a general knowledge of electric lighting, omitting minor details, which may best be found in any elementary book on the applications of electricity.

To those familiar with the work in its previous editions, it may be well to mention that this edition has been carefully revised and greatly enlarged, besides which many new engravings have been introduced, rendering the text more intelligible and at the same time showing the various types of electrical apparatus adopted by different manufacturers. To those who have never read the book, its scope may best be gathered from the author's statement that previous to its appearance no book had been written on the special subject of the management of the accumulator. Of the two classes of persons most directly interested in the secondary battery, manufacturers and purchasers, the former, as a rule, know comparatively little of its properties, their knowledge being confined mainly to laboratory tests. The true knowledge of how a battery will act is gained only by long experience. While it is in the hands of a non-professional user, rarely competent to examine the question for himself, this knowledge cannot be gained or turned to account. There are but few who have both the opportunity and the qualifications necessary to observe, scientifically as well as practically, the working of an accumulator, and fewer still with time, opportunity, and inclination to write upon the subject. To fill this gap, between the manufacturer and the general user, the author has attempted; and the demand for the present work proves that his attempt has met with a full measure of success.

The book is divided into two parts, the first treating of cells and their mode of employment; the accumulator house; charging and discharging; and failures, with their causes and remedies. The second part is devoted to installation work and practice, treating of engines, dynamos, and motors; switchboards, switches, instruments, lamps, and wiring; rules for the prevention of fire risks; action of cells with dynamo; methods of working and governing; alternating currents, testing, and estimating, etc.; ending with a description and history of the author's own private installation of secondary batteries at Broomhill. The book is fully illustrated, and provided with a very complete index.

A Text-Book on Roofs and Bridges. Part II. Graphic Statics. By MANSFIELD MERRIMAN and HENRY S. JACOBY. New York, Wiley. 8°. $2.50.

THIS volume, as its name indicates, is a treatise on graphic statics as applied to the discussion of common roofs and bridges. It is an outgrowth of the course of instruction in the subjects named, given to the students of civil engineering in Lehigh University, in which institution the authors are respectively professor of and instructor in that branch of applied science. The course in civil engineering in the university mentioned consists of four parts; namely, the computation of stresses in roof-trusses and in all the common styles of simple bridge-trusses; the analysis of stresses by graphic methods; the design of a bridge, including the proportioning of details and the preparation of working drawings; and the discussion of cantilever, suspension, continuous, and arched bridges. In this volume the second part of this course is presented, together with much additional matter.

Being offered as an elementary text-book, we need not look for many novelties in the work aside from the method of arrangement and presentation, though we may call attention to the abbreviated processes employed in some of the diagrams for wind-stresses, to the determination of stresses due to initial tension, and to portions of the analysis of maximum moments and shearing strains under locomotive wheel loads, as possessing some points of novelty as well as of practical value.

For the convenience of students, blank leaves are provided, alternating with the printed pages, upon which to record the numerical computations necessary in the preparation of graphical analyses, and upon which to make sketches of the stress diagrams required in the problems. The book is divided into three main parts, treating respectively of general principles and methods, of roof-trusses, and of bridge-trusses. An appendix contains the answers to the problems. The work is written in a clear and attractive style, and, though intended mainly as a text-book for students, it is not without value to engineers and others.

Elements of Logic as a Science of Propositions. By E. E. CONSTANCE JONES. Edinburgh, T. & T. Clark. 8°. $3.

THIS book is a very ambitious, but, as it seems to us, very unsuccessful, attempt to reconstruct the science of logic. The author takes the ground that logic is an objective science, and not a branch of psychology, and then goes on to define it as "the science of the import and relations of propositions," denying altogether that it is a science of reasoning or of the laws of thought. The chief characteristic of the treatise, however, is not the view taken of the science, nor any new or startling theory of its fundamental principles, but the employment of an immense number of new-fangled terms in place of the familiar ones that have been in use for centuries. What the object of such an innovation may be, unless to give the work an air of originality, we do not know; for we fail to see in what respect the new nomenclature is an improvement on the old. Thus, we cannot see the propriety of calling existence "quantitiveness," nor of using the phrase "subject of attributes" instead of the familiar term "substance." Essential attributes are termed by the author "intrinsic," and accidental ones "extrinsic;" an absolute attribute is called "independent," and a relative one "dependent;" hypothetical propositions are "inferential," and disjunctive ones "alternative;" and so on throughout the book, till the reader who looked at the terminology only might almost fancy that he was studying a new science. Yet, apart from this strange terminology, we fail to find in the work any thing specially new or noteworthy, while in some passages there is evidence of much confusion of thought. This is specially apparent in

the chapter on abstraction and conception, and also in many cases in the use of the new terminology. Those who wish for novelty in a scientific work may be interested in this one; but most people, we think, will prefer to walk in the old ways.

AMONG THE PUBLISHERS.

IN *The Jenness-Miller Magazine* for March is an article on "Physical Culture," by Mabel Jenness, and another on "The Luxury of the Turkish and Roman Baths," by Annie Jenness-Miller.

—The issue of London *Engineering* for Feb. 28 is devoted mainly to an exhaustive and handsomely illustrated article on the recently completed bridge across the Firth of Forth in Scotland. Including advertisements and inserted plates, the number contains 268 pages. It is as notable a work in its way as the bridge it treats of.

—The *Home Journal*, which was founded in 1846 by George P. Morris and N. P. Willis, preserved its original form, four very large pages, until a few weeks ago, when it assumed the more modern form of eight smaller pages. The journal has every appearance of increasing prosperity.

—"A Digest of English and American Literature" is now in the press of S. C. Griggs & Co. of Chicago, being the last work completed previous to the death of its author, Professor A. H. Welsh, whose "Development of English Literature and Language" has passed through ten editions.

—P. Blakiston, Son, & Co., Philadelphia, will publish about March 15 a new medical dictionary, by Georege M. Gould, A.B., M.D. It will be a compact one-volume book, containing several thousand new words and definitions collected from recent medical literature, while the total number of words is beyond that in any similar book. It includes also tables of the bacilli, leucomaines, ptomaines, micrococci, etc.; of the arteries, nerves, etc.; and of the mineral springs of the United States; together with other collateral information.

—*Poet-Lore* for March 15 will give another of Mr. Nathan Haskell Dole's papers on the Russian drama, with translations from Tolstoi and Pushkin. Mr. W. G. Kingsland, a friend of Browning's, whose recollections of him date for twenty years past, will give some personal memoranda. Among other incidents, the origin of Browning's poem "Memorabilia" is told. The first of a series of selected specimens of Anglo-Saxon poetry, literally translated, by Anna Robertson Brown of Wellesley and Oxford, will be begun. The first selection is from Beowulf. Mr. J. S. Stuart Glennie's opinion of Shakspeare's attitude on the land question, as given in the January *Poet-Lore*, has called out a letter from a special student of Shakspearian records, Mr. A. Hall of London, which will be among the minor matters of the magazine for March.

—The directors of the "Old South Studies in History" have just added to their general series of "Old South Leaflets," published by D. C. Heath & Co., a translation of the Constitution of Switzerland, by Professor Albert B. Hart of Harvard University, with historical and bibliographical notes. It will be of use to those both inside and outside of our colleges who are engaged in the comparative study of politics. Equally interesting to many, at a time when several new States in the Union are just adopting constitutions, will be the Constitution of Ohio, which has also recently been added to this series of leaflets. It is the purpose of the directors of the "Old South Studies" to follow up these with several similar leaflets, enabling every student to possess for a few cents good copies of the constitutions of leading European nations as well as of representative States in the Union. Our young people are very seldom familiar with the constitution of their own State. It is too often because they cannot easily get at it.

—A good figure of our native St. John's wort, which was discovered by the Swedish botanist Kalm at Niagara Falls, and named in honor of him *Hypericum Kalmianum*, is given in *Garden and Forest* for last week. Another illustration is of a giant African aloe, which would probably flourish in our Southern States, and make a superb garden-plant. Mr. F. W. Burbidge, curator of the Botanical Gardens of Dublin University, writes of the home of the pitcher-plants on the mountain slopes of Borneo; Mr. Charles C. Binney, secretary of the American Forestry Association, discusses the means of forest-reform; and Charles Eliot proposes a plan for saving the grand Waverly Oaks.

—A cable despatch calls attention to the space occupied in the March reviews by social and economical discussions. *The Nineteenth Century*, which keeps its lead, has the third of a series by Professor Huxley. In this one, entitled "Capital, the Mother of Labor," he once more attacks Mr. Henry George and his theories. Mr. J. D. Christie, who announces himself as a pastry-cook, contributes to the same review what he calls a "Workingman's Reply to Professor Huxley." Lord Bramwell writes on property. Perhaps Mr. Herbert Spencer's paper on justice may be referred to the same category, though it is, as usual, an *a priori* argument rather than a practical help toward any valid theory of political ethics. Similar topics are uppermost in *The Contemporary Review*, where M. de Laveleye discourses on communism, neatly applying the knife to some of its favorite dogmas; Mr. Fletcher Moulton argues for taxaton of ground rents; and Mr. Lyulph Stanley discusses free schools, — a social question that goes deeper than most others.

—David Starr Jordan, president of the University of Indiana, will open the April *Popular Science Monthly* with a vigorous article on "Science in the High School." Its object is to show up the make-believe character of what is offered in many schools to satisfy the modern demand for science-teaching. An article by Professor Huxley, entitled "On the Natural Inequality of Men," will be printed. It deals with Rousseau's idea of the equality of men in the state of nature, with applications to the recent controversy on the land question. The ladies are not yet through with Grant Allen's "Plain Words on the Woman Question." Another answer to Mr. Allen's article will appear in the same number by Miss Alice B. Tweedy, who asks, "Is education opposed to motherhood?" and answers the question with a vigorous negative. Professor C. H. Toy o Harvard will contribute a thoughtful essay on "Ethics and Religion," in which he shows that religions have mainly borrowed their rules of conduct from what men have regarded as right, and that it is doubtful if ethics has received any thing from religion.

—Messrs. Mudge & Son of Boston have issued a small work by Mary Boole, widow of George Boole, entitled "Logic taught by Love." It is not a connected treatise, but a series of detached essays which had previously appeared in various periodicals. Why it is called "Logic" we cannot see; for there is nothing in it about logic except a few quotations from Mr. Boole and one or two other writers. The greater part of the book is occupied by religious essays of a more or less mystical character, the writer's religious views being a queer compound of pantheism and Judaism. Her leading doctrine is that of "pulsation," which she expresses by saying that "the very life of all that lives consists of some mode or other of pulsation or alternate action;" and again she says that "sound thought is always essentially a free pulsation between extremes." She makes no attempt to prove this doctrine or even to explain it, but takes it for granted throughout the book; yet she does not draw from it any noticeable conclusions. In dealing with religious and educational themes she has some interesting remarks, though none that can be called original; and if she had avoided mysticism and kept within the bounds of common sense, she might have written something of real value.

—Messrs. Porter & Coates, Philadelphia, have just published "Essays of an Americanist, — I. Ethnologic and Archæologic, II. Mythology and Folk-Lore, III. Graphic Systems and Literature, IV. Linguistic," — by Daniel G. Brinton. This