oratory. It is desired that students owning microscopes or microtomes should bring them, and applicants for admission should state whether this requirement can be complied with. The fee for workers in this department is twenty-five dollars, payable in advance. The number of students will be limited to thirty, and preference will be given to teachers or others already qualified. By permission of the director, students may begin their individual work as early as June 15 without extra charge, but the regular courses of instruction will not begin before July 9. Applications for places in either department should be addressed to Miss A. D. Phillips, secretary, 23 Marlborough Street, Boston.

The Marine Biological Laboratory is intended to continue and enlarge the work of the laboratory at Annisquam, carried on for six years by the Woman's Education Association, with the cooperation of the Boston Society of Natural History. The annual reports of the trustees, containing an account of its organization and work, may be obtained from the secretary.

BOOK-REVIEWS.

The Anatomy of the Frog. By Dr. ALEXANDER ECKER. Tr. by George Haslam, M.D. Oxford, Clarendon Pr.; London, Henry Froude; New York, Macmillan & Co.

THIS volume is No. II. of the "Translations of Foreign Biological Memoirs." The first part of Ecker's "Anatomie des Frosches" appeared in 1864, and the second part sixteen years later. This was the groundwork on which Dr. Haslam prepared his "Anatomy," adding many facts which he deduced from his own personal investigations, and in general bringing the book up to date by including the results of recent researches. It may seem to many rather peculiar that so much labor should have been expended on the study of the minute anatomy of so insignificant a creature as the frog; but when it is remembered that for many reasons the frog has for years been studied by scientific men to elucidate intricate physiological problems, and that to-day no animal is more commonly found in physiological laboratories than the frog, this peculiarity will cease to exist. It would be interesting, did our space permit, to review the intimate relations which the frog has sustained to important discoveries. Swammerdam, more than two hundred years ago, called attention to the advantages which the frog possessed as an aid to scientific study. It was from accidentally observing the contractions of the muscles of the denuded hind-legs of a frog that Galvani was led to abandon all other occupations and investigate the phenomena which were the basis of Galvanism.

Our knowledge of the capillary circulation of the blood rests upon Leeuwenhoek's observations of the web of the foot of this animal, and the gills and tail of its tadpole; and to-day the frog affords almost the only material for the investigation of the excitability of nerve and its associated electromotive changes. Histology is also deeply indebted to the frog for its present status. The structure of nerve-fibres, their origins and terminations, and the structure of muscular fibres, have all been studied more in the frog than in any other creature. These and many more reasons might be given in justification of devoting so much time and labor to the preparation of a book of such size on such a restricted subject. As a book of reference, the volume is invaluable to every biological student. It is very complete in all its parts, besides being admirably printed and illustrated. Taken as a whole, it might well serve as a model to all publishers. The paper and the type are especially worthy of commendation.

Practical Electricity in Medicine and Surgery. By G. A. LIEBIG, Jun., Ph.D., and GEORGE H. ROHÉ, M.D. Philadelphia and London, F. A. Davis. 8°. $2.

ELECTRICITY is becoming more and more each day an important adjunct to both the physician and the surgeon in their battle with disease. Whereas a few years ago no one but a specialist was expected to know any thing about the practical application of electricity in medicine, to-day many physicians in general practice, and laying no claim to being specialists, have in their offices the appliances necessary for the treatment of disease by electricity. Drs. Liebig and Rohé have therefore, in issuing this book, supplied a guide in a comparatively new field, to those who have up to this time failed to find in the literature of the subject all that was necessary to enable them intelligently to make a practical use of so important an agent as electricity.

This volume is divided into three parts. In Part I. the various forms of electrical and magnetic apparatus are described which are likely to be of use to the physician, together with the best arrangements of cells for any given work, the construction and use of galvanometers, the theory of the chemical action taking place in the storage-cell, and the best methods of caring for batteries. The electric motor, the telephone, and the phonograph are also here described. Part II. describes the effects of electric current upon the body in health and disease. Part III. treats of the application of electricity to the treatment of disease.

The work is a most valuable contribution to the elucidation of a most intricate subject, and coming just at this time, when there is such a general interest in the manifold applications of electricity, must receive a cordial welcome not only from members of the medical profession, but also from scientists generally.

Notes on American Schools and Training Colleges. By J. G. FITCH. New York, Macmillan & Co. 16°. 60 cents.

THIS little book, reprinted from a report to the English Education Department, contains the observations made by the author after a visit to the schools of this country. Mr. Fitch's opinion of American public schools is in the main very favorable; and the criticisms he makes on particular points, together with his occasional comparisons between our schools and the English, ought to be useful to American educators. The chief excellence that he notes in our school system is the enthusiasm shown, not only by teachers, but by the public as well; while the chief defect, in his opinion, is the excessive minuteness with which the lessons and the mode of teaching them are prescribed, so that nothing is left to the spontaneity and originality of the teacher. He dwells upon this topic at considerable length, remarking that "text-books and certain accepted formulas appeared to dominate the work of the classes too much," and adding that English teachers would find such minute regulations an intolerable restraint. He maintains at the same time that the English elementary schools give as good an education as those of this country. With regard to training-colleges, or, as we call them, normal schools, Mr. Fitch thinks we are as yet but poorly equipped, the number of such institutions being far too small for the work required. He notes, however, that certain other modes of training supply to some extent the place of normal schools; and he dwells with special interest on the teachers' associations and reading-circles, which he regards as admirable features of our educational system. As he came here to study the public schools, he has very little to say about the colleges and universities, what he does say relating almost exclusively to the worthlessness in general of American college degrees, — a matter that has been much discussed among ourselves, and as to which the author's remarks are not a whit too strong. We commend the book to the notice of American educators.

Practical Electrics: A Universal Handy-Book on Everyday Electrical Matters. New York and London, Spon. 8°. 75 cents.

THIS practical volume is a reproduction of a series of papers on electrical subjects which originally appeared in the third series of "Workshop Receipts." It is intended mainly for that large and rapidly growing class of scientific amateurs and conscientious artisans who, through inclination or necessity, are led into the field of electrical practice without having time or opportunity to make a thorough study of the subject. In other words, it contains a fund of information of an eminently useful and practical character, though not what

may be looked for in more complete treatises on the subject. To those having electric bells, telephones, or electric lights in their houses, and who are not practical electricians, the volume will be found a convenient reference-book, containing many valuable suggestions.

Among the subjects discussed in the book are electrical connections, alarms, batteries, bells, carbons; induction, intensity, and resistance coils; dynamo-electric machinery; fire risks; electrical measurements; microphones; electric motors; phonographs; photophones; accumulators; and telephones. A sufficient number of illustrations are introduced to make clear every point touched upon.

AMONG THE PUBLISHERS.

A NEW book by Dr. J. G. Fitch, entitled "Notes on American Schools and Training Colleges," has been issued recently by the Macmillans. The well-known "Lectures on Teaching," by the same author, has passed through many editions, having been adopted for use by the Teachers' Reading Circles throughout the country.

—Ward, Lock, & Co. will publish early in May Lane's "Manners and Customs of the Modern Egyptians."

—The J. B. Lippincott Company have in press "Economic Basis of Protection," by Professor Simon N. Patten of the University of Pennsylvania.

—Macmillan & Co. will publish at once a timely book on the silver question, to be entitled "Silver in Europe," by S. Dana Horton, a delegate of the United States to the International Monetary Conference held in Europe in 1878 and 1881.

— D. C. Heath & Co. of Boston issued last week "Deutsche Literaturgeschichte," Vol. I., by Professor Carla Wenckebach of Wellesley College. The purpose of this work, which is to be in three volumes, is to offer students a history, in the German language, of the growth of German literature.

—Pictures of fifteen representative houses built through the agency of building and loan associations will appear in W. A. Linn's article in the May *Scribner*, with the story of how each one was built told by the owner. Brooklyn, Rochester, Pittsburgh, Reading (Penn.), Cincinnati, St. Paul, New Orleans, and San Francisco are among the cities represented.

—De Wolfe, Fiske, & Co. have published "Lake Champlain and its Shores," by W. H. H. Murray, a narrative of the traditions and history of Lake Champlain, with a description of yachting, camping, and fishing. Mr. Murray's chapter on the great national park is included in the volume.

—Professors Lewis M. Haupt and Edmund J. James, of the University of Pennsylvania, have just completed a monograph on "Canals and their Economic Relation to Transportation." The former deals with the technical side of the question, while the latter discusses its economic aspects.

—Clarence Deming has found, in the manuscript diary of William Brisbane of South Carolina, some pen-pictures of the First Napoleon, as he appeared to Mr. Brisband when he visited Paris in 1804. The most interesting of these, describing the coronation procession, the presentation of colors on the Champ de Mars, etc., will be published in *Scribner's* for May.

—*The Annals of Gynæcology*, formerly published in Boston, has been enlarged and a new department added, the name being changed to *Annals of Gynæcology and Pædiatry*. The latter department is under the editorship of Dr. Louis Starr of Philadelphia, formerly professor of diseases of children at the University of Pennsylvania. The journal appeals with more than ordinary interest to the mass of the profession, in that it deals exclusively with the diseases of women and children. It is now published by the University of Pennsylvania Press.

— The leading article in *Garden and Forest* for last week is dedicated to the memory of Dr. George Thurber, in whose recent death America has lost her most accomplished horticultural writer. Professor Beal, in the same number, writes of the methods of botanical study; Mr. Sereno Watson describes a new amaryllis, which is also figured; Secretary Williams discusses the best grapes for home use; and much timely horticultural matter is given, including a description of the Easter flowers in New York. Besides the plant portrait, there is a view of The Parterre, Fontainebleau, with explanatory text.

—In the article on Millet in *Scribner's* for May, T. H. Bartlett tells of the meetings in Millet's house in Barbizon of "the most illustrious company of artists that ever sat around a table together,"—Corot, Daumier, Barye, Rousseau, and Diaz. The following anecdote is related: "At all these gatherings, when Diaz was present, there was an accustomed break in the ceremony. He had a wooden leg, and hated, above all things, talk on art; and whenever the moment of exhausted patience came, he would pound the table with his hands, imitate a trumpet with his mouth, bring the end of his stump up against the under side of the table with a fearful thump, and cry out like a wild man, 'Thunder of all the Gods, give us peace! Can't you content yourself by making art all day without gabbling about it all night? Close up!' For each and every one he had some special designation: of Rousseau, whenever he began to speak, 'Oh, there! Rousseau is going to unscrew his chair.' When his own opinion was sought, he would always reply, 'Oh, yes! oh, yes!' no matter what the question was or subject discussed. As they did not 'close up,' Diaz would get up and leave in high indignation, hearing as he passed out of the room this comforting assurance, 'Blessed is the door that hides you.'"

—The opening article of *The Chautauquan* for May is by the English historian, Edward A. Freeman, and is the first of a two part paper on "The Making of Italy;" James A. Harrison, LL D, of Washington and Lee University, takes "The Archæological Club in Italy" through the period of the renaissance in architecture and sculpture; Bella H. Stillman continues her studies of "Life in Modern Italy;" Professor Adolfo Bartoli contributes a paper on "Italian Literature;" Professor Henry A. Beers of Yale University takes for his theme Browning's drama of "King Victor and King Charles;" Principal James Donaldson, LL.D., of the University of St. Andrews, Scotland, writes on "Roman Morals;" the "Map Quiz" this month is on the present Kingdom of Italy; Albert Shaw, Ph.D, contributes a study of "The Servian Kingdom;" some facts about color-blindness will be found in the article by Professor Edward L. Nichols of Cornell University; Arabella B. Buckley considers the moral teachings of science; John R. Spears writes of "The American Navy;" a sketch of the life of Salmon P. Chase is given by his private secretary, Eugene L. Didier; "Woman's Work in Archæology" is a translation from the *Deutsche Rundschau;* Thomas Bertrand Bronson of Michigan Military Academy gives the status of the present political parties in Germany; an interesting paper on "The Literature of the Irish," by John Hull, follows; and J. W. Hamilton, D.D., asks and answers some questions about the faith-cure.

—The long-promised article by Henry George appears in the April *New Review*. The same number contains a timely paper on "The Fall of Prince Bismarck."

—E & F. N. Spon have just published "A Practical Treatise on the Manufacture of Vinegar and Acetates, Cider and Fruit-Wines," edited from various sources by William T. Brannt. It is an octavo volume of 479 pages, illustrated by 79 engravings. Besides the subjects mentioned in the title, it treats of the preservation of fruits and vegetables by canning and evaporation; the preparation of fruit-butters, jellies, marmalades, catchups, pickles, mustards, etc.

—In *The Ladies' Home Journal* for April, "How to Act before the Camera" is told by A. Bogardus, the pioneer of New York photographers; Henry Ward Beecher's love for gems and rare stones is told by himself in several unpublished letters; and Mrs. Moses P. Handy has a timely article on "How to Move Easily and Well."

—Messrs. Ginn & Co. announce to be published next month "The Nine Worlds: Stories from Norse Mythology," by Mary E.