

handy in form and weight, and, in our opinion, will be found useful to all engineers engaged, or likely to be engaged, in any kind of hydraulic work.

AMONG THE PUBLISHERS.

OF the International Education Series published by the Appletons more than twenty volumes have now been issued, one of the latest of which is "Rousseau's Emile," abridged, translated, and annotated by William H. Payne of the University of Nashville. It is not a mere series of extracts, but a judicious condensation, forming a continuous work and giving as much of the original as readers of our time are likely to care for. The important and wide-reaching influence of Rousseau's work has been due in the main to his perception of the grand truth, previously too little regarded, that the child's faculties have a certain natural course of development, and that, if education is to be successful, it must be in harmony with that development. Unfortunately, he knew but little of what that course of development really is, and his practical plans for meeting it were about as inappropriate as they well could have been; and whoever should adopt them would find in the end, if not sooner, that he had followed anything but nature. Rousseau's notions that the child ought not to do anything against his will, that children have and can have no morality, and that all wickedness is weakness, are both false and mischievous; and many others of like character might be cited. Moreover, though a vehement democrat in politics, he would refuse the benefit of education to the poor, expressly saying that "the poor man has no need of an education," and he held that women ought to be educated merely to please men. Mr. Payne is clearly conscious of these faults in Rousseau's work, and sharply animadverts on some of them in the short but very suggestive notes that he has furnished to this volume. Moreover, he does not hesitate to attack some of the educational fads of the time; and his comments add much to the value of the book. Indeed,

we think the public would be glad to receive from him an independent work of his own, in which his views might be stated more at large.

— Charles Scribner's Sons have in preparation "How to Know the Wild Flowers," by Mrs. William Starr Dana, with 100 illustration by Marion Satterlee.

— The latest issue in Scribner's series on the Great Educators treats of "Froebel and Education by Self-activity." The author is an Englishman, Mr. H. Courthope Bowen, who is an enthusiastic disciple of Froebel, and has had much practical experience of kindergarten work. We cannot say, however, that his book is a quite satisfactory treatment of its theme, the literary form of it being in some respects defective. There is a good deal of repetition in it, as indeed the author himself admits, and the sentences are often loaded down with parenthetical expressions which make them awkward and sometimes obscure. The first two chapters relate the principal events of Froebel's life, the processes of his own education and his various experiences and experiments as a teacher. Then follows a notice of his philosophy, which, however, Mr. Bowen makes no more intelligible than others have done, and then an exposition of his theory of education. The remainder of the book is devoted to a description of the kindergarten and other contrivances that Froebel designed, with some account of his relation to earlier and later educators, thus giving on the whole as full an exposition of his views and methods as most teachers will desire. As to the value of those methods themselves, we have not space to speak largely; but we cannot help thinking that both Froebel and Pestalozzi are at the present day greatly overrated. Their methods are only adapted to a few years of early childhood, and are not perfect even for that period; while their prejudice against book-learning was little short of barbarous. Nevertheless, whatever is good in their systems we want, and we trust that our teachers will not fail to appropriate it.

Dyspepsia

Dr. T. H. Andrews, Jefferson Medical College, Philadelphia, says of **Horsford's Acid Phosphate.**

"A wonderful remedy which gave me most gratifying results in the worst forms of dyspepsia."

It reaches various forms of Dyspepsia that no other medicine seems to touch, assisting the weakened stomach, and making the process of digestion natural and easy

Descriptive pamphlet free on application to **Rumford Chemical Works, Providence, R. I.**

Beware of Substitutes and Imitations.
For sale by all Druggists.

Exchanges.

[Free of charge to all, if of satisfactory character. Address N. D. C. Hodges, 874 Broadway, New York.]

For sale—A Zentmayer new model U. S. Army Hospital monocular stand. Price \$110, will sell for \$75. Address H. C. Wells, No. 151 Broadway, New York.

For sale—A complete set of the third series of the American Journal of Science (1870-1893) handsomely bound in single volumes in dark brown half morocco. Address G. H. Williams, 803 Cathedral Street, Baltimore, Md.

For sale, or for exchange for books on medicine or surgery, new editions only, a large geological library, containing nearly all the State and Government Reports since 1855. Will be pleased to answer letters of inquiry and give information. Address R. ELLSWORTH CALL, Louisville, Ky.

For exchange.—Slides of Indian Territory Loup Fork Tertiary Diatoms for other microscopic fossils. Address S. W. WILLISTON, Univ. of Kansas, Lawrence, Kans.

For exchange.—Will exchange an "Ideal" Microscope of R and J. Beck, London, 2 eye pieces 3 objectives, 3 inch, 1 inch, 1-6 inch; bull's eye condenser on stand, substage condenser, mechanical stage, etc., for any of the leading makes of type writers. Particulars by mail. DELOS FALL, Albion College, Albion, Mich.

Sale, or exchange for similar material: Diatoms (Isthmia nervosa), unmounted, from San Francisco Bay. M. J. ELROD, Bloomington, Ill.

For sale or exchange.—I have a few copies of my translation of "Strasburger's Manual of Vegetable Histology, 1887," now out of print, which I will send post-paid for \$3 or for one dozen good slides illustrating plant or animal structure. Address A. B. Hervey, St. Lawrence University, Canton, N. Y.

The undersigned has the following specimens to exchange for crystals of any eastern or foreign localities or Indian relics: tin ore, metacinnabarite, stibnite, garnierite, calenante, hanksite, ulexite, rubellite, lepidolite, blue and green onyx, Cal. pinitite, aragonite on chaledony, cinnabar, double refracting spar, clear and clouded, and others. J. R. Bush, care of General Delivery, Los Angeles, Cal.

For sale or exchange.—A private cabinet of about 200 species of fossils, well distributed geologically and geographically. Silurian, about 40; Devonian, about 50; Carboniferous, about 80; others, about 30. Frank S. Aby, State University, Iowa City, Ia.

Wants

WANTED—Second-hand copy Tryon's Systematic Conchology. Please quote condition, date, price. H. L. Osborn, Hamline University, St. Paul, Minn.

A COMPETENT TEACHER of botany in college or university is open to engagement. Address L. Box 86, Rochester, Mich.

CAN any one inform me as to the age to which cats have lived? I have one twenty years old. Edward D. Webb, 132 W. Eighty-first St., New York.

WANTED—Second-hand. Foster's Physiology, Balfour's Comparative Embryology, Claus & Sedgwick's Zoology, Flower's Osteology of Mammalia, Vine's Physiology of Plants. Please state editions and prices asked and address Richard Lees Brampton, Ontario, Canada

WANTED.—American Journal of Conchology, seven volumes. Parties having these for sale will please address the undersigned, stating condition and price. R. Ellsworth Call, Louisville, Ky.

A GRADUATE ENGINEER will give instruction evenings in geometry, trigonometry and surveying, mechanics, physics, mechanical drawing and general engineering construction. Five years' experience in field and editorial work on engineering journal. References furnished. C. S. H., 102 Tribune Building, New York.

WANTED.—By well-qualified and experienced science master and associate of the Royal School of Mines, London, aged 26 (at present in England), a mastership in technical college or university for any of the following subjects: Engineering sciences, geology and mineralogy, physics, chemistry and metallurgy, etc., etc. Can provide excellent references and credentials. Apply, J. G., 17 Sussex St., Rochdale, England.

Arnold,
Constable & Co.

Spring Dress Stuffs.

GLACÉ AND FIGURED EPINGLINES,
Silk and Wool Mixtures.

GLACÉ & JACQUARD FIGURES,

Fancy Plaid Stuffs.

DIAGONALS, CAMEL'S HAIR.

Serges and Suitings

In New and Fashionable Colorings.

FANCY PRINTED CHALLIES

EMBROIDERED ROBES,

NEW STYLES AND COLORINGS.

Broadway & 19th St.

NEW YORK.

THE
American Bell Telephone
COMPANY.

95 MILK ST., BOSTON, MASS.

This Company owns the Letters Patent granted to Alexander Graham Bell, March 7th, 1876, No. 174,465, and January 30, 1877, No. 186,787.

The Transmission of Speech by all known forms of ELECTRIC SPEAKING TELEPHONES infringes the right secured to this Company by the above patents, and renders each individual user of telephones, not furnished by it or its licensees, responsible for such unlawful use, and all the consequences thereof and liable to suit therefor.

MINERALS. New Store. New Stock. New Departments.

Send for our "Winter Bulletin," recently issued. Minerals, Gems, Microscopical Sections, Fine Lapidary Work.

GEO. L. ENGLISH & CO., Mineralogists,
Removed to 64 East 12th Street, New York.

"A THOUGHTFUL BOOK"
JUST PUBLISHED BY
S. C. Griggs & Co.
The Secret of Character-
Building.

By JOHN B. DEMOTTE, A.M., PH.D. Cloth, Finely Illustrated, \$1.

"The design of this book is to show that character has a physical basis in the brain and nerves; that waves of good and evil impulses and thoughts run along the nerves from the brain and establish highways, so to speak, and thus good or evil propensities and thoughts become easier as they are exercised or indulged, by wearing tracks, and determine the character of persons in the physical records they make, like the waves of sound on the cylinder of a phonograph. It is a thoughtful book and suggests a momentous fact in the building of human character."—*Lutheran Observer, Phila.*

"In its scientific and rational treatment of the subject of character-building it is the ablest and most interesting work that we have ever read, and its great value incites us to earnestly commend it to the thoughtful reading of both old and young."—*Boston Home Journal.*

The Youth of Frederick the Great.

By ERNEST LAVISSE, Professor at the Sorbonne, Paris. Translated from the French by MARY BUSHNELL COLEMAN. 1 vol., 462 pages. Cloth, \$2.00.

"A masterly study of the rise of the most imperious figure of the eighteenth century sovereigns. The picture it portrays of life and manners of education and training at the Prussian Capital are most entertaining and instructive. The study is the more interesting because it is made by a modern French professor, who is attempting to analyze the sources of that tremendous expansion of German power which made France herself bow in cruel defeat."—*The Review of Reviews, N. Y.*

A Study of Greek Philosophy.

By ELLEN M. MITCHELL. With an introduction by William R. Alger. Cloth, \$1.25.

"The book is one from which the general reader can gather a clear idea of the drift of Greek thought, its subject matter and development, which will serve as an excellent groundwork for further study."—*The Scotsman, Edinburgh.*

Pre-Adamites.

OR, A DEMONSTRATION OF THE EXISTENCE OF MAN BEFORE ADAM. By ALEXANDER WINCHELL, LL.D., of the University of Michigan. 1 vol., 8vo, 563 pages, with ethnographic maps and numerous illustrations, \$3.50.

"There has been no work published upon the subject which can compare with this in importance. It is the fruit of an exhaustive study not of one but of all the sources of information which can be supposed to throw light upon the subject. Dr. Winchell deals fairly and honestly with facts, and neglects no source of information that is open to him. His argument is elaborate and many-sided. The comparative novelty of his attempt may be trusted to win for the work the widest attention on the one hand and the most critical scrutiny on the other."—*New York Evening Post.*

Sparks from a Geologist's Hammer.

By ALEXANDER WINCHELL, LL.D. Third Edition. 1 vol. Illustrated. Cloth. Price, \$2.

"We know no more readable and instructive work on popular geology."—*Philadelphia Inquirer.*

"In these essays Dr. Winchell again proves his claim to be ranked with Prof. Proctor as one of the most brilliant and popular expounders of modern science."—*Canadian Methodist Monthly.*

Pre-Historic Races
Of the United States.

By J. W. FOSTER, LL.D. Crown 8vo. Illustrated. Price, cloth, \$3.00.

"It is full of interest, from beginning to end, contains just that kind of information in clear, compressed and intelligent form which is adapted to the mass of readers."—*Popular Science Monthly.*

For sale by booksellers generally or sent, postpaid, on receipt of price by the publishers.

S. C. GRIGGS & CO.,
262 and 264 Wabash Ave., Chicago.

"For enlightened owners of gardens and woodlands this journal is invaluable."—*N. Y. Tribune.*



Filled every week with original, entertaining and exact information from the best American and European authorities about trees, shrubs, flowers and fruits; the beautifying of home-grounds, roadsides and parks; the preservation of forests and of natural scenery, together with vigorous editorial treatment of topics within its field and illustrations of the highest artistic finish.

"The foremost journal of its class."—*Boston Herald*. "A capital specimen of pure literature."—*N. Y. Journal of Commerce*. "The arbiter in matters of rural taste."—*Boston Transcript*. "Crisp and fresh text."—*N. Y. Tribune*. "Illustrations of rare excellence."—*Buffalo Courier*. "Edited with signal ability."—*Cin. Times-Star*.

Published Weekly. \$4.00 a year.

Send for Specimen Copy of *Garden and Forest* and special net clubbing rates with other periodicals.

GARDEN AND FOREST PUBLISHING CO.,
TRIBUNE BUILDING, NEW YORK.

THE MODERN MALADY; or, Sufferers from 'Nerves.'

An introduction to public consideration, from a non-medical point of view, of a condition of ill-health which is increasingly prevalent in all ranks of society. In the first part of this work the author dwells on the errors in our mode of treating Neurasthenia, consequent on the wide ignorance of the subject which still prevails; in the second part, attention is drawn to the principal causes of the malady. The allegory forming the Introduction to Part I. gives a brief history of nervous exhaustion and the modes of treatment which have at various times been thought suitable to this most painful and trying disease.

By CYRIL BENNETT.

12°, 184 pp., \$1.50.

N. D. C. HODGES, 874 Broadway, N. Y.

BUSINESS OPPORTUNITY.

There is an opening for a young man to open a New York office of the American Lightning Protection Co., operating under my patents. But little capital will be required.

N. D. C. HODGES,
874 BROADWAY, NEW YORK