

the usual phenomena of chemical action may peruse the work with still more profit. The topics are introduced methodically, beginning with units, states of aggregation, elements and compounds, and conditions of chemical action; but proceeding to the more difficult laws, and giving due notice to such topics as kinetic molecular theory, mass action, dissociation, solution, electrolysis, and the periodic law. Chemical students whose attention has been concentrated on the facts observed in experiment will find these theories very suggestive.

*An Introduction to Chemical Theory.* By ALEXANDER SCOTT. London and Edinburgh, Adam & Charles Black. 8°. 274 p. \$1.25.

THIS volume presents modern views and much valuable information upon the constitution of matter, atomic and molecular weights, classification of elements and compounds, vapor densities, and other physical properties, thermo-chemistry, chemical change, solution, and electrolysis. It claims to be an *introduction* only, although a fair knowledge of chemical facts and experiments is assumed; and it would be unreasonable to expect such completeness as in the works of Ostwald, Meyer, and Naumann. It may prove attractive to many who would be repelled by the more comprehensive works; or, better still, it may awaken a thirst for such exactness of scientific statement as requires more mathematics than Dr. Scott admits into his elementary volume.

#### AMONG THE PUBLISHERS.

"THE Eighteenth Report of the Geological Survey of Indiana: Palæontology," by S. A. Miller, contains descriptions of a large number of new fossils from various formations, mainly of Upper Silurian and Sub-Carboniferous age. Crinoidea largely predominate, no less than 39 new species and 4 new genera being described. It is unfortunate that some of the species are described from single specimens. All are, however, illustrated. Mr. Miller

pays his compliments in his usual way to Professor James Hall and Professor Hyatt. Some of the new species are from the Cincinnati, or Hudson River, group of south-eastern Indiana.

— *St. Nicholas* is universally considered "the best of children's magazines." Contributors for 1893 include John G. Whittier, Edmund C. Stedman, Frank R. Stockton, George W. Cable, Frances Hodgson Burnett, Thos. Wentworth Higginson, George Kennan, Charles Howard Shinn, Laura E. Richards, W. O. Stoddard, Harriet Prescott Spofford, Susan Coolidge, Mary Hallock Foote, Kirk Munroe, Hezekiah Butterworth, President Gilman, Rev. Dr. Lyman Abbott, Howard Pyle, Colonel R. M. Johnston, John Burroughs, H. H. Boyesen, Nora Perry, Poultney Bigelow, Charles F. Lummis, Edith M. Thomas, Kate Douglas Wiggin, and Mary Mapes Dodge.

— Following the principles announced by Teisserenc de Bort, G. Raymond has prepared a little brochure (Paris, Gauthier-Villars) concerning the influence of the chief centres of atmospheric pressure on the prediction of the weather. De Bort laid down his general plan some years ago, and Raymond now presents a number of specific examples that seem to follow in accordance with it; illustrating the conditions for mild winters, moist summers, and so on. The book deserves study by those who have access to our International weather bulletins, and who can undertake the difficult task of generalizing their innumerable facts.

— Henry Collins has written an interesting little pamphlet on "The International Date Line" (Bardeen, Syracuse, 15 cents), giving a chart of the line that runs irregularly through the Pacific, and on either side of which the dates differ by a day. Teachers will find it instructive; although a few matters of fact might have been more fully ascertained before publication, as by correspondence with consuls. The interesting point is raised: Who first celebrate the New Year? It is clearly shown that the 180° meridian from Greenwich has not the importance often given it in the matter of changing dates.

## 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 new Model U. S. Army Hospital Microscope (Zentmayer), also  $\frac{1}{4}$ -inch and  $\frac{1}{8}$ -inch Objectives. HENRY C. WELLS, 151 Broadway, New York.

For sale or exchange.—A Stevens' new model pocket shot-gun, 44 cal., with 22-cal. rifle barrel. Just the thing for collecting birds and small mammals. Will exchange for a 22-cal. cane-gun or good books on ornithology. Write for particulars, stating what you have for exchange. R. C. MCGREGOR, 2841 Champa st., Denver, Col.

For sale.—A very fine stone sword (?) so named by myself. It is perfect—15 inches in length, a little over 2 inches in width, and  $\frac{1}{4}$  inch thick. It is of a dark slate color, perhaps limestone, and is the largest implement of the kind known. Some fifteen years ago, when it was not mine, I was offered \$40 for it; since that time it has come into my possession; that price will now buy it. Address Rev. C. FOSTER WILLIAMS, Ashwood, Tenn.

For exchange.—Fine specimens of Wis. fresh-water pearls. I want books or papers on marine and fresh-water algae; also classified specimens of same. I will exchange for Smithsonian reports or crystallized minerals. D. M. ANDREWS, Dodge Centre, Minn.

For Sale or Exchange.—The undersigned has a lot of first-class duplicate bird's skins and sets of eggs, both rare and common, for sale or acceptable exchange. Also about two hundred second class skins and five hundred eggs, suitable for study specimens, at very low figures. The latter, for starting a collection, are as good as the best, embracing all classes and nearly all families. Also about forty species of fossils, principally Devonian. MORRIS GIBBS, M.D., Kalamazoo, Mich.

#### Wants.

A POSITION is desired in the South, preferably the Gulf States, where I can teach the sciences. Can also instruct in other branches. Salary only nominal, as I am simply desirous of employment while spending the winter in the South. A private family preferred, but will accept regular school work if not too confining. MORRIS GIBBS, M.D., Kalamazoo, Mich.

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.

METALLURGICAL CHEMIST will give instruction in the metallurgy and chemical analysis of iron and steel. Complete or special courses applying to the manufacture of pig irons and steels, as well as to their uses. Address "METALLURGIST," care SCIENCE.

A GRADUATE of the University of Pennsylvania and a practical mineralogist of twenty years' experience desires to give his services and a cabinet of 25,000 specimens, all named, with about the same number of duplicates, in minerals, crystals, rocks, gems, fossils, shells, archaeological and ethnological specimens and woods to any institution desiring a fine outfit for study. The owner will increase the cabinet to 50,000 specimens in two years and will act as curator. Correspondence solicited from any scientific institution. J. W. HORTER, M.D., Ph.D., San Francisco, Cal., General P. O. Delivery.

CHEMIST AND ENGINEER, graduate German Polytechnic, Organic and Analytical, desires a position in laboratory or chemical works. Address 213½ E. 7th Street, New York, care Levy.

## The American Geologist for 1893.

Edited by PROF. S. CALVIN, University of Iowa; DR. E. W. CLAYPOLE, Buchtel College; JOHN EVERMAN, Lafayette College; DR. PERSIFOR FRAZER, Penn. Hort. Soc.; PROF. F. W. CRAGIN, Colorado College; PROF. ROBT. T. HILL, U. S. Irrigation Survey; DR. ANDREW C. LAWSON, University of California; FRANK D. KNOWLTON, U. S. National Museum; JOSEPH B. TYRRELL, Geol. Sur. of Canada; E. O. ULRICH, Minnesota Geological Survey; PROF. I. C. WHITE, University of West Virginia; PROF. N. H. WINCHELL, University of Minnesota. Now in its Xth volume. \$3.50 per year. Sample copies, 20 cents. Address

THE GEOLOGICAL PUBLISHING CO., Minneapolis, Minn.