

thus given continually increasing value. Each new edition shows the perfecting touch of the author's hand. Messrs. Baudry & Cie., the French correspondents of this firm, have completed a translation into French of the "Manual of Steam-engine and Boiler Trials," by the same author, and will at once send it to press. They are also translating the "Manual of the Steam-engine," and expect to have that in type before the close of the year, under special arrangements with author and publishers.

— The number for March begins the seventh year of *The Forum*, and for its seventh year several new enterprises in periodical work are announced: first and foremost, the Silver Question. The March number contains two papers on it — one by Mr. Bland, who makes his best argument for silver, and the other by Mr. Leech, director of the mint. In the following months *The Forum* will publish the most thorough discussion of this subject that has been made, by the foremost writers of both continents. These articles will be a special feature of forthcoming numbers. The Educational Investigation into the work of the public schools in the several large cities of the Union has already been announced, and Dr. J. M. Rice, the special student of the most advanced school-work abroad, is now engaged in this task. His articles will begin in an early number. In the March number are two noteworthy educational articles — one by Mr. Clarence King, on "The Education of the Future," wherein he shows the narrow limitations of all our teaching, and points out the yet undeveloped fields and

methods, and the other by Professor John Earle on "The Study of English." Another line of special work laid down by *The Forum* is an investigation and discussion of Municipal Government, which is confessedly the weak place in our whole governmental system. The present number contains an investigation made by Professor Peabody of Harvard into the municipal government of Dresden. The Progress of the most Important Arts and Sciences will make a continuous feature of the coming volumes of *The Forum*, such as Music, Sculpture, Painting, Architecture, the Practical Application of Electricity, the Advance of Preventive Medicine, the Progress of Astronomy. Another group of subjects — old subjects that scientific progress makes of perpetual interest — will be Good Country Roads, and How Well they Pay; Scientific Agriculture and its Possibilities; What the Coming Man will Eat and How He will Cook it; and the like. The especial development of *The Forum* will be in the direction of original investigation by experts and authorities, into all classes of subjects of the greatest concern to readers who wish to keep abreast in their thought and lives with the world's progress; and the aim is never to thresh over old straw.

— A revised edition of Herbert Spencer's "Social Statics," the book which has created such a stir among social reformers, will be issued shortly by D. Appleton & Co., simultaneously with its publication in England. Having been much annoyed by the persistent quotation from this work, in the face of repeated warnings,

#### CALENDAR OF SOCIETIES.

##### Philosophical Society, Washington.

Feb. 27. — M. W. Harrington, Notes on the Climate of Death Valley; L. A. Bauer, Wilde's Explication of the Secular Variation Phenomenon of Terrestrial Magnetism; B. Pickman Mann, An Attempted Solution of a Social Problem.

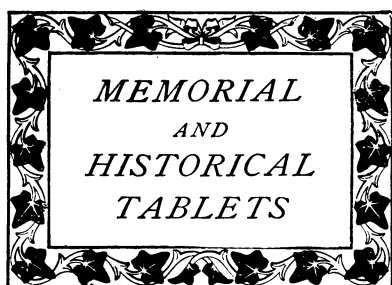
##### Society of Natural History, Boston.

Mar. 2. — W. G. Farlow, Notes on Collections of Cryptogams from the Higher Mountains of New England; G. Frederick Wright, Invasion of Eastern England by Norwegian Glaciers; Additional Evidence Concerning Human Remains under the Sonora Table Mountain, California.

##### The Numismatic and Antiquarian Society, Philadelphia.

Mar. 3. — Daniel G. Brinton, Mediæval and Aboriginal Dramas.

#### METAL, MARBLE, AND MOSAIC WORK.



TABLETS EXECUTED IN METAL,  
OR MARBLE AND MOSAIC.  
PHOTOGRAPHS ON REQUEST.  
ILLUSTRATED HANDBOOK FREE.

**J. & R. Lamb**

59 Carmine St., New York.

#### Wants.

*Any person seeking a position for which he is qualified by his scientific attainments, or any person seeking some one to fill a position of this character, be it that of a teacher of science, chemist, draughtsman, or what not, may have the "Wants" inserted under this head FREE OF COST, if he satisfies the publisher of the suitable character of his application. Any person seeking information on any scientific question, the address of any scientific man, or who can in any way use this column for a purpose consonant with the nature of the paper, is cordially invited to do so.*

**A PROFESSORSHIP in Chemistry** is wanted by one who has had five years' experience in that capacity. Would prefer to give instruction by lectures and experiments rather than by text-book methods. Would like a position in a college or university where there is a good student's laboratory. Special points of strength claimed are: (1) Thorough control of a class and good order during lectures and recitations. (2) Accuracy in experimenting with chemicals and skill in the manipulation of chemical apparatus. The permission of several distinguished educators has been given to refer to them if required. Would not care to accept a position paying less than \$1,500. Address B. E., care of Science, 874 Broadway, New York.

**ADDRESS WANTED.**—Will some one please send the address of the Secretary of the American Philological Society. Also that of Herbert Spencer. "ADDISON," Room 84, 164 Madison St., Chicago, Ill.

**ADDRESSES of Old Book Dealers** wanted. —Wishing to obtain a number of old books out of print. I very much desire the addresses or catalogues of rare second-hand book dealers. If there is a directory or list of such dealers I should like to obtain possession of one. W. A. BLAKELY, Chicago, Ill.

**WANTED.**—(1) A white man versed in wood and iron working, able to work from specifications and plans, suited for an instructor of boys; his business to have charge of shops of school, outline and direct the work for foremen and students; salary to be \$1,000 per annum (nine months). (2) A man (black preferred) to teach the colored, iron working and forging, subordinate to the preceding; salary, \$720. (3) A man (white) competent to take classes in engineering (assistant's position), but with the ability to perform any of the work required in any of the ordinary engineering courses of our universities; salary from \$1,000 to \$1,500. A. H. BEALS, Milledgeville, Ga.

#### METAL, MARBLE, AND MOSAIC WORK.



#### Exchanges.

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

For exchange.—A fine thirteen-keyed flute in leather covered case, for a photograph camera suitable for making lantern slides. Flute cost \$27, and is nearly new. U. O. COX, Mankato, Minn.

To exchange; Experiment Station bulletins and reports for bulletins and reports not in my file. I will send list of what I have for exchange. P. H. ROLFS, Lake City, Florida.

Finished specimens of all colors of Vermont marble for fine fossils or crystals. Will be given only for valuable specimens because of the cost of polishing. GEO. W. PERRY, State Geologist, Rutland, Vt.

For exchange.—Three copies of "American State Papers Bearing on Sunday Legislation," 1891, \$2.50, new and unused, for "The Sabbath," by Harmon Kingsbury, 1840; "The Sabbath," by A. A. Phelps, 1842; "History of the Institution of the Sabbath Day, Its Uses and Abuses," by W. L. Fisher, 1859; "Humorous Phases of the Law," by Irving Browne; or other works amounting to value of books exchanged, on the question of governmental legislation in reference to religion, personal liberty, etc. If preferred, I will sell "American State Papers," and buy other books on the subject. WILLIAM ADDISON BLAKELY, Chicago, Ill.

Wanted, in exchange for the following works, any standard works on Surgery and on Diseases of Children: Wilson's "American Orthology," 3 vols.; Coues' "Birds of the Northwest" and "Birds of the Colorado Valley," 2 vols.; Minot's "Land and Game Birds of New England"; Samuels' "Our Northern and Eastern Birds," all the Reports on the Birds of the Pacific R. R. Survey, bound in 2 vols., Morocco; and a complete set of the Reports of the Arkansas Geological Survey. Please give editions and dates in corresponding. R. ELLSWORTH CALL, High School, Des Moines, Iowa.

For sale or exchange, LeConte, "Geology," Quain, "Anatomy," 2 vols.; Foster, "Physiology," Eng. edition; Shepard, Appleton, Elliott, and Stern, "Chemistry," Jordan, "Manual of Vertebrates," "International Scientists' Directory," Vol. I. *Journal of Morphology*, Bal-four, "Embryology," 2 vols.; Leidy, "Rhizopods," Science, 18 vols., unbound. C. T. MCCLINTOCK, Lexington, Ky.

To exchange Wright's "Ice Age in North America" and Le Conte's "Elements of Geology" (Copyright 1882) for "Darwinism," by A. R. Wallace, "Origin of Species," by Darwin, "Descent of Man," by Darwin, "Man's Place in Nature," Huxley, "Mental Evolution in Animals," by Romanes, "Pre-Adamites," by Winchell. No books wanted except latest editions, and books in good condition. C. S. Brown, Jr., Vanderbilt University, Nashville, Tenn.

For Sale or Exchange for books a complete private chemical laboratory outfit. Includes large Becker balance (200g. to 1-10mg.), platinum dishes and crucibles, agate mortars, glass-blowing apparatus, etc. For sale in part or whole. Also complete file of *Silliman's Journal*, 1862-1885 (62-71 bound); Smithsonian Reports, 1854-1883; U. S. Coast Survey, 1854-1860. Full particulars to enquirers. F. GARDINER, JR., Pomfret, Conn.

of views which he had abandoned, and by the misquotation of others which he still holds. Mr. Spencer some ten years ago stopped the sale of the book in England and prohibited its translation. But the rapid spread of communistic theories gave new life to these misrepresentations; hence Mr. Spencer decided to delay no longer a statement of his mature opinions on the rights of individuals and the duty of the state. The volume includes also "The Man versus the State," a series of essays on political tendencies heretofore published separately. Mr. Spencer has secured an American copyright for his new volume.

— P. Blakiston, Son, & Co., announce "A Manual of Autopsies, designed for the Use of Hospitals for the Insane and Other Public Institutions," by I. W. Blackburn, M.D., pathologist to the Government Hospital for the Insane, Washington, D.C. This subject has for several years engaged the attention of the Association of Medical Superintendents of American Institutions for the Insane,

that the abundant material afforded the alienist may be systematically studied in all its clinical as well as pathological aspects. A uniform method being desirable, this manual has been prepared by the direction of the association committee, with the co-operation of Drs. Welch and Hurd of the Johns Hopkins Hospital, that by following the described routine in examination, pathologists, and even non-expert physicians, may prepare the most concise, graphic, and useful record of actual cases. It is fully illustrated from original drawings, sectional and regional, and as an adopted standard, should be in the hands of every examiner who can contribute to the valuable records thus established.

— D. Appleton & Co. have just ready "Moral Teachings of Science," by Arabella B. Buckley, intended for readers who would not take up an elaborate philosophical work; and a "Manual of Chemical Technology," by Randolph von Wagner, translated and edited by William Crookes.

## PROPRIETARY.

# Exhaustion

## Horsford's Acid Phosphate.

A wonderful remedy, of the highest value in mental and nervous exhaustion.

Overworked men and women, the nervous, weak and debilitated, will find in the Acid Phosphate a most agreeable, grateful and harmless stimulant, giving renewed strength and vigor to the entire system.

Dr. Edwin F. Vose, Portland, Me., says: "I have used it in my own case when suffering from nervous exhaustion, with gratifying results. I have prescribed it for many of the various forms of nervous debility, and it has never failed to do good."

Descriptive pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

**CAUTION.**—Be sure the word "Horsford's" is on the label. All others are spurious. Never sold in bulk.

## PROPRIETARY.

## Sleeplessness, Impaired Vitality,



Nervous Exhaustion and Debility are the causes of acute diseases that destroy life. Take

## CROSBY'S Vitalized Phosphites

and prevent Debility and Nervous Prostration. Pamphlet free. Sold by leading Druggists. Sent by mail (\$1) from 56 West 25th Street, New York.

Avoid substitutes. None genuine without this signature printed on the label.

*R. Crosby & Co.*

## PENS AND PATENTS.

## ESTERBROOK'S STEEL PENS.

OF SUPERIOR AND STANDARD QUALITY.

Leading Nos.: 048, 14, 130, 135, 239, 333

For Sale by all Stationers.

THE ESTERBROOK STEEL PEN CO.,  
Works: Camden, N. J. 26 John St., New York.

## PATENTS

For INVENTORS. 40-page BOOK FREE. Address W. T. Fitzgerald, Attorney at Law, Washington, D.C.

## SCIENCE ADVERTISING RATES.

Established January, 1892.

## INSIDE PAGES.

Per line, agate measure, 14 lines to an inch. 15c.  
" column, " 140 lines, - \$20.00  
" page, three columns, 420 lines, - 50.00

### LAST OUTSIDE PAGE AND PAGES FACING READING MATTER.

Per line, agate measure, 14 lines to an inch. 20c.  
" column, " 140 lines, - \$25.00  
" page, three columns, 420 lines, - 60.00

## FIRST OUTSIDE TITLE-PAGE.

Double-column space at top next Contents, \$30.00  
Triple-column space, below Contents, - 50.00

## SCALE OF DISCOUNTS.

10 percent. on 4 times, 1 month, or on amount	\$100
15 " " 8 " 2 " " "	200
20 " " 13 " 3 " " "	300
25 " " 26 " 6 " " "	400
33 1/2 " " 52 " 12 " " "	600

20 per cent. advance for preferred positions.

Nothing inserted for less than \$1.00 a time.

Reading Matter Notices, under that caption, 30c. a count line, set in nonpareil.

Copy should be in office not later than Wednesday of the week of issue.

Henry F. Taylor,  
47 Lafayette Place, New York.



## DO YOU INTEND TO BUILD?

If you intend to build, it will be a mistake not to send for "SENSIBLE LOW-COST HOUSES," now arranged in three volumes. In them you will find perspective views, floor plans, descriptions, and estimates of cost for 105 tasteful, new designs for houses. They also give prices for complete Working Plans, Details, and Specifications, which enable you to build without delays, mistakes or quarrels with your builder, and which any one can understand. Vol. I. contains 35 copyrighted designs of houses, costing between \$500 and \$1800. Vol. II. contains 35 copyrighted designs of houses, costing between \$500 and \$1800. Vol. III. contains 35 copyrighted designs, \$3000 to \$9000. Price, by mail, \$1.00 each, or \$3.00 for the set.

"COLONIAL HOUSES," a volume showing Perspectives and Floor Plans of houses arranged in the inimitable style of the Colonial Architecture, and having all modern arrangements for comfort. Price, \$2.00.

"PICTURESQUE HOUSES FOR FOREST AND SHORE":—This show Perspectives and Floor Plans of new designs for Summer Cottages, which are romantic convenient, and cheap. Price \$1.00, by mail.

N. D. C. HODGES, 874 Broadway, New York

## DRY GOODS, ETC.

*Arnold,  
Constable & Co.*

## LACES,

New and Choice Styles,

Point Alencon, Gaze and Applique,  
Duchesse Point and Applique

## BRIDAL VÈILS.

POINT de GENE LOOM LACES,

In Black, White and Beige.

Real Thread Lace Veils & Veilings, Paris  
Styles of Ladies' Lace Neckwear.

## EMBROIDERIES

Embroidered Flouncings and Edgings.

Hemstitched, Embroidered and Lawn  
Handkerchiefs.

*Broadway & 19th St.*  
NEW YORK.

**Save Money**  
BY PURCHASING  
Dry and Fancy Goods  
THROUGH  
**KOCH & CO.'S**  
ILLUSTRATED  
Fashion Catalogue.

Koch & Co.'s catalogue is "a household necessity." It illustrates and describes all articles useful and ornamental for the wear of either young or old, and for the furnishing and beautifying of a home; and their goods are the cheapest, without ever sacrificing quality to price.—*Herald*.

Spring and Summer Catalogue  
(ready March 10) will be  
mailed free upon application.

**H. C. F. KOCH & CO.,**  
Importers and Retailers of  
DRY AND FANCY GOODS,  
Clothing, Shoes, &c.

West 125th St. bet. Lenox  
Formerly 6th Ave. New York  
and 20th St.

## WASTE Embroidery Silks.

Factory Ends at half price; one ounce in a box. All good silk and good colors. Sent by mail on receipt of 40 cents; 100 crazy stitches in each package. Latest and best book on Art Needlework, only 10 cents. A beautiful assortment chenille and arrasene; 15 new shades in each for 50 cents. Send postal note or stamps to  
**THE BRAINERD & ARMSTRONG SPOOL SILK CO.,** 625 Broadway, New York, or 621 Market St., Philadelphia, Pa.  
For the names and addresses of 10 ladies interested in Art Needlework we will send one book free.

## FINANCIAL.

*New Method of Protecting Property  
from Lightning.*

### The Lightning Dispeller.

Price, \$20 to \$30.—According to size.

The Patent Lightning Dispeller is a conductor specially designed to dissipate the energy of a lightning discharge,—to prevent its doing harm,—placing something in its path upon which its capacity for causing damage may be expended.

No recorded case of lightning stroke has yet been cited against the principle of the Dispeller. So far as known, the dissipation of a conductor has invariably protected under the conditions employed.

Correspondence solicited.

## AGENTS WANTED.

The American Lightning Protection Company  
United Bank Building, Sioux City, Iowa.

### TACOMA INVESTMENTS FOR NON-RESIDENTS. TAYLOR & GUNSTON,

Take full charge of property for the

## EASTERN INVESTOR.

City, Town, and Suburban Lots,  
Garden, Fruit, Hop and Timber Lands.

10% Guaranteed on all Investments.

Houses for sale on the instalment plan, by which the purchaser can obtain an income sufficient to cover all payments, including taxes, insurance, etc.

Information regarding any particular point in the State of Washington gladly furnished upon application. Personal attention given to all loans. Correspondence solicited. Refer, by permission, to the Pacific National Bank, Tacoma, Wash.; Geo. H. Tilley, Esq., Secretary and Treasurer of the Southern Express Co., and Frederick C. Clark, of Clark, Chapin & Bushnell, New York.

Address 504 California B'k, Tacoma, Wash.

Eastern Representative,

H. F. TAYLOR, 47 Lafayette Place, New York.

## FINANCIAL.

## 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.

### TACOMA SOUTH BEND INVESTMENTS PUGET CITY INVESTMENTS

I GUARANTEE 12 per cent per annum in any of the above cities. I have made from 40 to 50 per cent. per annum for non-residents. I also make first mortgage, improved real estate loans on unquestionable securities from 8 to 10 per cent. per annum net. Also have choice bargains in Farm, Hop, Hay and Garden Lands. Correspondence Solicited regarding Western Washington. All inquiries answered promptly. Address

A. C. SICKELS, Tacoma, Washington

## PROTECTION FROM LIGHTNING.

All the capital desired for the parent company to handle my patents on a new method of protecting buildings from lightning has been subscribed. Sub-companies and agencies to introduce the invention are forming, and any desirous of taking State-rights should address The American Lightning Protection Co., Sioux City, Iowa.

The English patent is for sale, and offers an excellent opportunity for the formation of a company now that the American company is so favorably started.

N. D. C. HODGES, 874 Broadway, New York.