the public of the difficulties and risks involved in running through trains at a high rate of speed.

- —P. Blakiston, Son, & Co., Philadelphia, have nearly ready a "Monograph on Physical Education," by Frederick Treves, F.R.C.S., printed from the advance sheets of "A Treatise on Hygiene," by various authors. It is a systematic exposition of a very important subject that is at present attracting the attention of school boards, college trustees, physicians, and sanitarians generally.
- To Skakespeare students the plan and scope of Dr. Furness's variorum edition is universally known, as are the infinite pains, judgment, and critical faculty expended in the exposition of each play. Every volume as it appears brings into one focus all the wealth of a great Shakespeare library, so arranged as to be immediately accessible. "The Tempest" is the ninth volume of this incomparable edition, and will soon be published by J. B. Lippincott Company. The plays previously issued are "As You Like It," "Romeo and Juliet," "Hamlet" (2 vols.), "Macbeth," "King Lear," "Othello," and "Merchant of Venice."
- Under the heading "One Hundred Miles an Hour," Mr. Charles N. Deacon of the Reading Railroad discusses, in the March *Lippincott*, the facts and possibilities of railway speed, and rejects the popular notion that a faster rate necessarily means increased danger.

- J. B. Lippincott Company have just published a new edition of "Soule's Synonymes," revised and enlarged by George S. Howison, Mills professor of philosophy in the University of California.
- Houghton, Mifflin, & Co. will publish immediately the lectures in "The Evolution of Christianity," recently delivered at the Lowell Institute, in Boston, by Rev. Dr. Lyman Abbott, which have been carefully revised by Dr. Abbott for this publication in book form; "Equatorial America," in which M. M. Ballou describes his travels to St. Thomas, Martinique, Barbadoes, and the principal capitals of South America. This house will also shortly issue a new work by A. P. Sinnett, whose "Occult World" and "Esoteric Buddhism" secured so wide a reading. The new book will be named "The Rationale of Mesmerism."
- M. L. Holbrook Company, 23 Clinton Place, New York City, announce for immediate publication a work on the hygienic treatment of consumption, which has been in preparation many years, and which would have been published earlier if it had not been detained to await the verdict on Professor Koch's merits. The book is written mainly for the patient.
- In a volume of more than two hundred pages J. B. Lippin-cott Company will soon publish "Type-Writing and Business Correspondence," by O. R. Palmer. It is a compendium of the entire subject, and places in the hands of the novice just such information as is most needed. To insure its practical efficiency

CALENDAR OF SOCIETIES.

Women's Anthropological Society of America, Washington.

Feb. 20.—Folk-Lork.

Biological Society, Washington.

Feb. 20.—W. H. Dall, Factors in the Distribution of Animal Life as Illustrated by Marine Forms. It is expected that at each meeting a paper of general biological interest will be introduced for discussion, the above being the first of the series. F. A. Lucas, On Charcharodon mortoni; J. N. Rose, The Flora of the Galapagos Islands; John M. Holzinger, On the Identity of Asclepias stenophylla, Gray, and Acerates auriculata, Engelm.

Appalachian Mountain Club, Boston.

Fed. 25.—Frederick H. Chapin, Ascent of Uncompangre Peak, Cliff-Dwellings of Navajo Cañon, Colorado (illustrated by about one hundred new stereopticon views.)

Business Department.

Intending investors and others interested in real estate matters in the rapidly developing State of Texas are invited to give a careful reading of the advertisement of the For-Worth and Arlington Heights Land and Int vestment Company on first page of this number. Mr. E. W. Watkins, 156 Broadway, New York, will show views and maps of the property advertised. The writer can vouch for the entire reliability and truthfulness of any statements made in the advertisement.

Special attention is called to the novel representation of solar and lumar eclipses, with popular lectures on astronomy, recently inaugurated at Carnegie Music Hall, entitled, "A Trip to the Moon."

POPULAR MANUAL OF VISIBLE SPEECH AND VOCAL PHYSIOLOGY.

For use in Colleges and Normal Schools. Price 50 cents Sent free by post by

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

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 'Want' inserted under this head RREE OR 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, r 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.

A DDRESS 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.

A DDRESSES 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.—Books on the Magic Lantern. Will exchange, "How the Farm Pays," by Cozier and Henderson; "Culture of Farm Crops." by Stewart; "American Agriculturist," 1890 and 1891. I. SLEE ATKINSON, 43 Wallace St., Orange, N. J.

WANTED.—(1) A white man versed in wood ard 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 boselons, the salary to boselons of the salary to boselons, and forging, subordinate to the preceding; salary, from since 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.

BOOKS: How to Exchange them for others. Send a postal to the SCIENCE exchange column (insertion free), stating briefly what you want to exchange. SCIENCE, 874 Broadway, New York.

Exchanges.

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

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," 1801, \$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 AD-DISON BLAKELY, Chicago, Ill.

Wanted, in exchange for the following works, any standard works on Surgery and on Di-eases of Children: Wilson's "American Ornithology," 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. ELLSWOR'TH CALL, High School, Des Moines, Iowa.

Wanted to buy or exchange a copy of Holbrook's North American Herpetology, by John Edwards. 5 vols. Philadelphia. 1842. G. BAUR, Clark University, Worcester, Mass.

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: Balfour, "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 1883) 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 motors, glass-blowing apparatus, etc. For sale in part or whole. Also complete file of Sillinnan's Yournal, 1862-1885 (62-71 bound); Smithsonian Reports, 1854-1883; U. S. Coast Survey. 1854-1869. Full particulars to enquirers. F. GARDINER, JR., Pomfret, Conn.

the book has been divided into sections giving sample business letters representing widely-different trades, also rules for punctuation and for using the various kinds of type-writing machines.

- Of Dr. Franz Boas's recent publications on the ethnography and linguistics of the American North-west, the following are before us: 1. "Notes on the Chemakum Language," in American Anthropologist for January, 1892, pp. 37-44. The people speaking this language were visited by Boas in the summer of 1890 on Puget Sound, and then only three persons were surviving. Before Boas nothing thorough had ever been made public upon this curious and very consonantic language, which forms, together with a dialect on the Pacific Coast, unexplored as yet, a linguistic family by itself. 2. "Third Report on the Indians of British Co lumbia," contained on pp. 2-43 of Seventh Report on the Northtribes of Canada, Cardiff meeting, 1891, of the British Association for the Advancement of Science; mostly ethnographical and

somatological. 3. "Vocabularies of the Tlingit, Haida, and Tshimshian Languages," American Philosophical Society of Philadelphia, Oct. 2, 1891; in its Proceedings, pp. 173-208. These copious word collections are so arranged that the English signification stands first. At the end of the article there are texts and a song in I'shimshian with interlinear translation.

- All teachers and those interested in higher education will be attracted by the paper in the Atlantic Monthly for March, by Professor George H. Palmer of Harvard University, entitled "Doubts about University Extension." The writer has given this subject a most careful study, and relates the history of the movement in England and in the United States. He speaks of the difficulties of making it a success here, owing to the different social conditions of the two countries, and suggests plans by means of which the system may be made a possible success in America. The paper wil well repay a careful reading.

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.

MINERALOGY.

Course of Mineralogy for Young People. Conducted by correspondence; minerals and books

Conducted by Gerresponding Conducted by Gerresponding Collection and book, "First Grade," one dollar; postage, 25 cents. Send for circulars to GUSTAVE GUTTENBERG, Central High School, Pittsburgh, Pa.

GEM OPALS. Cut ready for setting. Having purcailty, we are offering them at about one-fifth Jewelers' prices; 60c., \$1, \$1.50, \$2, \$3. This is a rare opportunity to secure a fine gem very cheap. 100 pp. Mineral Catalogue 15c., in cloth 25c. Supplement 2c. GEO. L. ENGLISH & Co., Mineralogists, 733 and 735 Broadway, New York City.

20 GEMSTONES FREE as a premium with THE GREAT DIVIDE.

These Gemstones are cut and polished ready for jewelry mounting, and are given free to each new subscriber sending \$1, price of yearly subscription.

Address THE GREAT DIVIDE, 1516 Arapahoe St.,

MISCELLANEOUS.

ARTIFICIAL LIMBS WITH RUBBER FEET AND HANDS.

WITH RUBBER FEET AND HANDS.

Durable in Construction, Natural in Action,
Noiseless in Movement.

And the MOST COMFORTABLE for the wearer. It is
not unusual to see a farmer working in the fields with
an artificial leg, or a brakeman applying his brake on a
fast running train, or an engineer with hand on the
throttle, or a fireman, carpenter, mason, miner, in fact,
men of every vocation at labor in the full capacity of
their employment, wearing one or two artificial legs with
rubber feet, performing as much as men in possession
of all their natural members, earning the same wages,
in fact, experiencing little or no inconvenience.



Over 12,000 artificial limbs of the Marks' patent in daily use. Established over 39 years. Indorsed and purchased by the United States and many foreign governments. By our formula applicants can supply us with all the data necessary to secure a fit while they remain at home. One half of the legs and arms furnished by us are made from measurements and profiles without our seeing the wearers. Fit always guaranteed. A treatise of 430 pages with 256 illustrations and a formula for measuring, sent free. Address

A. A. MARKS, 701 Broadway, N. Y.



A perfect and practical Type Writing machine for only ONE BOLLAR. Exactly like cut; regular Remington type; does the same quality of work; takes a fools cap sheet. Complete with paper holder, automatic feed, perfect type wheel & inking roll; uses copying ink. Size SxxSy inches ; weight, 12 oz; Satisfaction guaranteed; Circulars free; AGENTS WANTED. Sent by express for \$1.09; by mall, 15e. extra for postage. R.H.INGERSOLL & Bro.65Cortlandt St.N.Y.City.



BOOKS AND STATIONERY.

Books ordered by Mail, selected with care and forwarded with promptness.

Books out of print and scarce, will be searched for with thoroughness.

Books not to be had, in this country, will be imported to order.

CROTHERS & KORTH,

(Room 22, Manhattan Building), 96 Fifth Avenue, New York City.

JOHN IRELAND'S Bookstore, 1197 Broadway

near 29th St., is convenient to the residence quarter of the city; it is a good place to drop into on the way up or down town to select books or stationery. His stock is well selected and embraces all the new and standard books as soon as issued. Out-of-town purchasers can order by mail with every confidence that their wants will be as well supplied as if buying in person.



AMERICAN WOODS

A book on Woods, containing actual and authentic specimens, PREPARATIONS OF WOODS FOR MICROSCOPE AND STERE-OPTICON, and WOODEN CARDS, for invitations, calling cards, etc. Send for circulars. R. B. HOUGH, Lowville, N. Y.

BABY.

An Illustrated Journal for Mothers. PUBLISHED FORTNIGHTLY.

\$1.00 a year.

Send for Sample Copy.

Charles Robinson, 907 Broadway, N. Y

THE BOTANICAL GAZETTE.

A monthly illustrated journal of botany in all its departments.

25 cents a number, \$2.50 a year.

Address PUBLISHERS BOTANICAL GAZETTE, Crawfordsville, Ind.

FSTERBROOK'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: Oamden, N. J 26 John St., New York.

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

BACK NUMBERS and complete sets of leading Magazines. Rates low. AM. MAG. EXCHANGE, Schoharie N. Y

DRY GOODS, ETC.

Hernold. Constable R Co.

Real India Pongees, CORAHS.

Unsurpassed for durability and wear.

INDIA SILK SHIRTINGS.

Stripes and Checks, new colorings, and styles.

RONGEANT. The New Summer Silk.

Broadway & 19th st.

NEW YORK.

DRESS GOODS FOR SPRING TRADE.

Especial care has been taken to provide, for the Spring trade, large and varied assortments of new weaves and shades in Paris Dress Goods, remarkable for their richness and novelty.

The choicest of these goods will be shown on Tuesday, Feb. 23, as well as additional novelties in woolens of Scotch and English manufacture for Ladies' wear.

Plisse Cashmere, in shingle plaits, Tucked effects in Plaids-illuminated colorings. Piped, Corded, and Shirred Crepes and Crepons.

The rapid sale of novelties, previously shown, indicates an active demand for the above class of goods; we therefore urge upon our customers the advantages of an early selection.

James McCreery & Co. BROADWAY & 11th STREET.

Embroidery Silks

Factory Ends at half price; one ounce in a box. All 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 beautina assortument chen The assortment chemine and arrasene; 15 hew 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 or 10 ladies nterested 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.

INVESTMENTS TACOMA 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 Bl'k, Tacoma, Wash.

Eastern Representative, H. F. TAYLOR, 47 Lafayette Place, New York. FINANCIAL.

Peabody, Houghteling & Co. BANKERS,

59 Dearborn Street, Chicago, Illinois.

Loans and Investments on Real Estate Security Exclusively.

Principal and Interest Payable in Gold.

CHICAGO CITY MORTGAGES FOR SALE.

CHICAGO CITY MORIGAGES FOR SALE. For the convenience of investors we carry from \$200,000 to \$500,000 of choice mortgages at all times. These loans are made by us after careful investigation of the titles, the value of the securities offered and responsibility of borrswers. In transacting a business of over \$70,000,000, no title approved by us has ever been successfully attacked.

IN ANY AMOUNT.

IN ANY AMOUNT.

These loans vary in amount from \$500 to \$50,000, and bear from 5 per cent. to 7 per cent. interest, payable semi-annually at our office, or at such place as investor may elect. The standard rate on ordinary amounts, say \$3,000 to \$10,000, being 6 per cent.; smaller loans, 6½ per cent. and 7 per cent.; large loans, on exceptionally strong security, 5 per cent. and 5½ per cent.

AT PAR AND ACCRUED INTEREST.

These securities are ready for delivery, and are on sale at par and accrued interest. No commission is charged the buyer, the income named being net.

INVESTORS' INTERESTS CARED FOR WITHOUT CHARGE.

We collect all interest and remit to any part of the country free of charge. We see that all insurance policies pledged as collateral security are renewed at expiration, and that the investor is protected in case of failure on the part of the borrower to pay taxes. In other words, we act as financial agents for the investor without charge. Parties buying mortgages securing building loans, where the buildings are not fully completed, are guaranteed completion free of mechanic's liens.

TACOMA SOUTH BEND 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.