

at Berlin (80 p. and 16 plates, Berlin, W. Spemann, 1891). The explorer, Dr. P. Ehrenreich, here presents his observations, studies, and experiences from July to November, 1888, among the tribes of the Araguaya River in the Brazilian province of Goyaz and those of the Puru River, a tributary of the middle Amazonas. These reports appear under the modest subtitle, "Beiträge zur Völkerkunde Brasiliens," and the illustrations in the text are just as instructive as those in the plates. Of the Goyaz tribes the Karaya were the chief object of the explorer's studies; among the Puru tribes, the Yamamadi, Ipurina, and Paumari. The accounts given of their customs and manners, implements, weapons, dances, and other merry makings are as interesting as the specimens of their folk-lore, of which many instances are inserted. The masks used in the dances cover the whole body, and are figured on pages 35 and 36.

— Warren K. Moorehead writes, in the *Illustrated American* for Jan. 30, a most remarkable and interesting story about "New Relics of the Mound Builders in Ross County, Ohio." One of these relics, he says, is the skeleton of a man with copper helmet with antlers, and the other is a Swastika cross, oriental in character, and is one of the first finds ever unearthed to show the origin of the Indians. He says in this connection: "The discovery of four crosses, which are peculiarly oriental in character, marks a new epoch in American archaeology. M. G. de Mortillet, the eminent French anthropologist, refers to the same style of cross

found by the survey, and gives numerous illustrations in his works of its occurrence on pottery, sepulchres, and monuments of Brittany, Italy, and particularly India. The Swastika was used as one of the emblems of Buddha worship before the Christian era, and may have spread later into Phœnicia. This symbol is occasionally found in Egypt and China, but, so far as the writer is aware, not in Yucatan or Mexico. A cross does occur on the Palestine tablet, but it is not the Swastika. No skeleton in the mound indicated a person of more importance than No. 248. Copper antlers, 22 x 23 inches, extended from the forehead upward. The breast and back were covered with copper plates, bear teeth, and other singular ornaments. Strings of beads lay about the ankles and wrists, while at the feet were traces of decayed sandals. The copper horns had been originally fastened to a helmet of copper, covering the skull from the upper jaw to the base of the occipital. A rough cloth skirt extended from the waist to the knees. Where the copper plates came in contact with the fabric it was well preserved. Beautiful pearl beads and large bear and panther tusks were interlaced or strung upon the front of the garment. The other skeletons were covered with shell beads, and a few copper plates and celts accompanied them."

— It is the design of the *Modern Science Series*, published by D. Appleton & Co., to provide brief untechnical treatises for the educated layman who has neither time nor inclination to become a specialist, but who feels the need of informing himself on the

Business Department.

"The Country Circus" at the Academy of Music offers excellent entertainment for children of all ages. There is, too, enough disguise in the name to enable such grown persons to go who enjoy a real circus but who haven't the courage of their convictions—as it were. It has been said that it requires three adults to take one child to the circus. The first two acts are merely a logical introduction to the last, in which is shown a genuine circus-ring with a very good make-believe second ring beyond. Here disport trained dogs, horses and donkeys, bareback riders, acrobats and clowns. The street parade in the second act is very good also, with its long array of cages of wild animals (?), the gorgeous trappings of men, women and horses, the elephant, the streaming banners and the crowd of noisy and admiring street boys. In fact the spectator will find all the charms of the genuine circus well displayed and the unpleasant features avoided, such as: unsavory odors, uncomfortable seats, noises, etc. Erlanger entertainment at the Academy is a great success.

Mark's Patent Artificial Limbs with Rubber Hands and Feet, advertised in another column, have been awarded a long series of *first premiums* by the American Institute, as well as the Centennial Medal, and Gold Medals by the International Cotton Exposition and the World's Industrial and Cotton Centennial Exhibition. They have always been the victors in every competition and are endorsed by the leading surgeons of this city and country. Hosts of grateful wearers, both at home and abroad, testify to the superiority of the firm, and *noiseless* rubber foot made only by this well-known house, the largest in the world.

OF WHAT USE IS THAT PLANT?

You can find the answer in

SMITH'S "DICTIONARY OF ECONOMIC PLANTS."

Sent postpaid on receipt of \$2.80. Publisher's price, \$3.50.

SCIENCE BOOK AGENCY,
874 Broadway, 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 'Want' 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.

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.

WANTED.—Two or three efficient computers with good knowledge of Spherical Trigonometry and ready use of logarithms, for temporary employment in the office of the Coast and Geodetic Survey. Applicants should furnish evidence of their fitness for the work. Apply by letter to the Superintendent, Coast and Geodetic Survey, Washington, D.C.

WANTED.—*Science*, No. 178, July 2, 1886, also Index and Title-page to Vol. VII. Address N. D. C. HODGES, 874 Broadway, New York.

A YOUNG MAN (31) would like a position in a college, laboratory, or observatory, is also willing to assist at a steam engine, etc. Address J. W., care of *Science*, 874 Broadway, New York.

WANTED.—A position in the philosophical or pedagogical department of a college or university by a young man (30) who has had five years' practical experience in teaching, and who has done four years' post-graduate work in philosophy, devoting his attention during the last two years especially to study and original investigation in scientific psychology and its applications in education. Address E. A., care *Science*, 874 Broadway, N. Y. City.

WANTED.—A suitable position in Washington, D. C., not connected with the Government, and with a salary not to exceed \$650 a year, by an experienced biologist with six years' university training. Applicant has been a skilful surgeon for fourteen years; is a practical photographer, cartographer, and accustomed to the use of the typewriter. He is also capable of making the most finished drawings, of any description, for all manner of illustrative purposes in science; trained in museum methods and work; also field operations and taxidermy in its various departments, and modeling, production of casts, restorations of paleontological specimens and similar employments. Address U. S. R., care *Science*, 47 Lafayette Place, N. Y.

Exchanges.

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

Wanted, in exchange for the following works, any standard works on Surgery and on Diseases 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. ELLSWORTH 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.

For sale.—A 6½ x 8½ Camera; a very fine instrument; with lens, holders and tripod, all new; it cost over \$40, price, \$25. Edw. L. Hayes, 6 Athens street, Cambridge, Mass.

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, 1854-1869. Full particulars to enquirers. F. GARDINER, JR., Pomfret, Conn.

For exchange or sale at a sacrifice, an elaborate microscope outfit. Bullock stand; monocular objectives, one-sixth homogeneous immersion, four-tenths, and three inch, Bausch & Lomb, also one-fourth and one inch Spencer. Four eye-pieces. Objectives are the best made. Address Mrs. Marion Smith, 41 Branch Street, Lowell, Mass.

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.

present status of the various branches of science. The second volume is entitled "The Horse: A Study in Natural History," and is intended to especially illustrate some important principles in biology. It outlines the principal characteristics of the comparative anatomy of the horse and his near relations, the tapir and the rhinoceros, and shows incidentally how a "missing link," described by Professor Huxley in 1877, has since been found in the Lower Eocene deposits, thus identifying a connection believed to have existed in the ancient ancestry of the animals. The author is William H. Flower, C.B., director of the British Natural History Museum.

— "Evolution in Science, Philosophy, and Art" is the title of a book containing seventeen lectures by Professor John Fiske, Mr. Underwood, Dr. Abbott, Mr. Wakeman, and other able exponents of evolution, which is to be published immediately by D. Appleton & Co. The principle of evolution being universal, admits of a great diversity of applications and illustrations, and many which

appear in this volume are fresh and striking. The scientific lectures, as in the case of that by Dr. Alleman on Optics, are often of direct practical value. These lectures when delivered before the Brooklyn Ethical Association attracted general attention. In book form they are accompanied by a letter from Herbert Spencer, and by numerous illustrations.

— The title of Tyndall's forthcoming book is "New Fragments." Among the subjects which are treated in the five hundred pages are The Sabbath, Life in the Alps, The Rainbow and its Congeners, Common Water, and Atoms, Molecules, and Ether-Waves. In addition to the popular treatment of scientific themes, the author devotes several chapters to biographical studies of the utmost interest. Among the subjects of these studies are Count Rumford and Thomas Young, and there are also chapters on Louis Pasteur, his Life and Labors, and Personal Recollections of Thomas Carlyle. Tyndall's "New Fragments" will be published immediately by D. Appleton & Co.

A Tonic

Horsford's Acid Phosphate.

A most excellent and agreeable tonic and appetizer. It nourishes and invigorates the tired brain and body, imparts renewed energy and vitality, and enlivens the functions.

Dr. EPHRAIM BATEMAN, Cedarville, N. J., says:

"I have used it for several years, not only in my practice, but in my own individual case, and consider it under all circumstances one of the best nerve tonics that we possess. For mental exhaustion or overwork it gives renewed strength and vigor to the entire system."

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.

ARTIFICIAL LIMBS

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 490 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 DOLLAR. Exactly like cut; regular Remington type; does the same quality of work; takes a fool's cap sheet. Complete with paper holder, automatic feed, perfect type wheel & inking roll; uses copying ink. Size 5x13 inches; weight, 12 oz.; Satisfaction guaranteed; Circulars free; AGENTS WANTED. Sent by express for \$1.00; by mail, 15c. extra for postage. R. H. INGERSOLL & Bro. 65 Cortlandt St. N. Y. City.

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.

Course of Mineralogy for Young People.

Conducted by correspondence; minerals and books furnished.

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 purchased a large lot at the Mexican locality, we are offering them at about one-fifth jewelers' prices; 50c., \$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.

PATENTS

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. Schenck N. Y.



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.

Spring, 1892.

REAL INDIA PONGEES.

CORAHS,

Unexcelled for Durability and Wear.

NOVELTIES.

Printed Glace Rongean,

Striped Silk Shirtings.

Broadway & 19th St.

NEW YORK.



LINENS.

Art Embroidery Linens, Linens for the Bed-room, Dining-room, or Kitchen, in large assortment, including a full line of "Old Bleach" goods.

For nearly forty years we have made a specialty of Linen Goods, and there is no desirable linen article or fabric which may not be found in our stock.

Catalogue on request.

James McCutcheon & Co.,
THE LINEN STORE,

64 & 66 West 23d St., New York.

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.

DRY GOODS, ETC.

1892. SILKS. 1892.

ON THE MAIN FLOOR

Ladies who visit our Silk Department this week will have an opportunity of examining some very beautiful Fabrics and Styles that have been specially designed for this season.

They will also find a very rich quality of Bengaline de Soie in the most desirable colorings, at \$1.00 per yard.

IN THE BASEMENT

We shall make a special sale of a large importation of Figured India and China Silks, broken assortments of Rich Brocaded Silks and Satins, etc.

James McCreery & Co.

BROADWAY & 11th STREET,
NEW YORK.

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 SOUTH BEND INVESTMENTS
PUGET CITY

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

PUBLICATIONS.

THE WINNIPEG COUNTRY;

OR,

ROUGHING IT WITH AN ECLIPSE PARTY.

BY

A. ROCHESTER FELLOW.
(S. H. SCUDDER.)

With thirty-two Illustrations and a Map.
12°. \$1.50.

"The story is a piquant, good-humored, entertaining narrative of a canoe voyage. A neater, prettier book is seldom seen."—*Literary World*.

"This is a sprightly narrative of personal incident. The book will be a pleasant reminder to many of rough experiences on a frontier which is rapidly receding."—*Boston Transcript*.

"The picture of our desolate North-western territory twenty-five years ago, in contrast with its civilized aspect to-day, and the pleasant features of the writer's style, constitute the claims of his little book to present attention."—*The Dial*.

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

HANDBOOK OF METEOROLOGICAL TABLES.

By ASST. PROF. H. A. HAZEN.

127 pp. 8°.

Professor Waldo says: "I heartily recommend them to all workers in meteorology, and do not see how any of our American meteorologists can afford to be without a copy."

Professor Symons of London says: "They are unquestionably valuable helps, which must be kept handy, and replaced when worn out."

Price, postpaid, \$1.

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

THE AMERICAN RACE:

By DANIEL G. BRINTON, M.D.

"The book is one of unusual interest and value."—*Inter Ocean*.

"Dr. Daniel G. Brinton writes as the acknowledged authority of the subject."—*Philadelphia Press*.

"The work will be of genuine value to all who wish to know the substance of what has been found out about the indigenous Americans."—*Nature*.

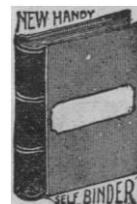
"A masterly discussion, and an example of the successful education of the powers of observation."—*Philadelphia Ledger*.

Price, postpaid, \$2.

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

A TEMPORARY BINDER

for *Science* is now ready, and will be mailed postpaid on receipt of 75 cents.



This binder is strong, durable and elegant, has gilt side-title, and allows the opening of the pages perfectly flat. Any number can be taken out or replaced without disturbing the others, and the papers are not mutilated for subsequent permanent binding. Filed in this binder, *Science* is always convenient for reference.

Temporary binders of the same description but without side title, to fit any paper or periodical of ordinary size, will be mailed postpaid on receipt of price as given below. In ordering, be sure to give the name of paper or periodical and style of binder.

8 to 12 inches long, cloth, \$0.50; leather, \$0.60.

12	"	14	"	"	"	60	"	75.
14	"	17	"	"	"	75	"	1.00.
17	"	19	"	"	"	1.00	"	1.25.

N. D. C. HODGES, Publisher,

874 Broadway, New York.