long list of these is simply appalling. In spite of many improvements, their number even in recent years is not small, although, as a rule, they are not quite as disastrous as they formerly were. Over 5,500 lives have been lost from this cause in England alone between 1850 and 1898. We can commend the volume to all persons interested in the subject of coal and coal mining.

J. F. J.


The breadth of view expressed in the preparation of this excellent text-book makes it more worthy of notice in an American journal than most English books are. Its illustrations, both verbal and graphic, are of course largely British; but so many examples are taken from other parts of the world that its insular origin is not prominent. Its various chapters suggest many of the newer points of geological view; its style is simple and easy, inciting the student to further reading than the end of his lesson. As is the case with most text-books on geology, the treatment of the chapters on sedimentary deposits and on the origin of valleys shows clearly how much later an understanding was reached in the latter than in the former subject. Stratified rocks are described as if they were manifestly the product of aqueous deposition; but the origin of valleys by aqueous denudation is carefully argued out, with a series of proofs. Buried valleys, as mentioned before drowned valleys, although the natural order of occurrence is the other way. From my own greater interest in physiographic geology than in the other chapters of the book, my attention is naturally directed towards that part of the subject, especially as the author recognizes it as a primary division of the science. While its treatment is greatly in advance of that which it commonly receives, it still leaves something to be desired before it shall be commensurate with its importance and with the treatment of other equally important but more attentively considered chapters. For example, it is implied that anticlines are normally transformed into valleys, and synclines into mountains; while it is easily shown that this transformation is not dependent on the attitude but only on the hardness of the beds involved in the folding and on their relation to base-level. Again, in the discussion of sub-aerial denudation and the origin of valleys, no reference is made to the completion of the task of valley-filling in the base-leveling of the region; and plans of denudation are referred to only as a product of marine erosion.

The book may be warmly recommended for the reference shelves of school libraries, and until the variety of American text-books of geology is increased, it will doubtless share with Geikie's smaller 'Geology' a place in our schools and colleges.

W. M. D.

One of the largest cases in the Century Company's room at the World's Fair is devoted to an exhibit of "how a dictionary is made." Beginning with a copy of the very earliest English dictionary, Bullok's "English Expositor," printed in London in 1616, a half-dozen of the important dictionaries of the past are shown, up to Bailey's, Johnson's, and the Imperial, the latter of which was the basis of the Century Dictionary. The exhibit includes a copy of the edition of Bailey's which was the first to include cuts, or "engraved schemes," as they are called on the title-page. In order to picture the growth of the language, especially in scientific lines, each book is open at the words beginning in one, in the first dictionary; two, in the second; and so on up to eight, in the last. Eight pages of the compounds of "micro." These eight pages, from the first manuscript, through the various proofs (showing additions and corrections) up to the finished dictionary, form the exhibit of plates, original pictures, engravings on wood, and the manuscript and proofs of the word "take." With the latter are the quotations and definitions, used and unused, handed in by readers. The enter under "take" occupies about twelve columns in the dictionary, but it will be seen that not more than half of the material gathered was finally used.

A Tonic

For Brain-Workers, the Weak and Debilitated.

Horsford's Acid Phosphate is without exception the Best Remedy for relieving Mental and Nervous Exhaustion; and where the system has become debilitated by disease, it acts as a general tonic and vitalizer, affording sustenance to both brain and body.

Dr. J. C. Wilson, Philadelphia, Pa., says: "I have used it as a general tonic, and in particular in the debility and dyspepsia of overworked men, with satisfactory results."

Descriptive pamphlet free.

Horsford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

Exchanges.

[Free of charge to all, if satisfactory character. Address N. D. C. Hodges, 454 Broadway, New York.]

I have 500 microscopic slides to exchange in lots to suit. Want Kodak first-class field-glass or scientific books. A. C. Grahame, Watertown, Ind.

Texas Plants. I will send names of plants represented in this region of Texas, either for sale or for exchange for literature, for names which will send me an order in time to fill it. Plants to be ready complete in November. C. F. Maxwell, Boar 174, Dallas, Texas.

For sale or exchange—A telescope (36 diameters, 1 1/2 inches). It can be had for the value. A. N. Somers, La Porte, Ind.


The undersigned has skins of Pennsylvania and New Jersey birds, as well as other natural history specimens which he wishes to exchange for marine, fresh-water, and terrestrial birds of the North and West. Correspondence with collectors desired. J. Forey Brooks, School of Biology, University of Pennsylvania, Philadelphia.

For sale or exchange—I have a Calligraph writer (No. 2) in perfect order and nearly new. It is in a heavy leather, plush-lined office case, the whole costing me $100. I desire to obtain for it, either by sale or exchange, a new No. 5 "Kodak" camera, with six double flash-weight plate-holders and the latest pattern of their tripod. The lens and pneumatic tripod. Owing to the cost of this set, it will be necessary for you to give me at least the same, as new and in the best of condition, No. 5 Kodak. The price of what I desire in exchange is $25. Address, for particulars, P. O. Box 31, Takoma, District of Columbia.

For sale—An Abbé binocular eye-piece for the microscope. Alfred C. Stokes, bee, Mount Pleasant, N. J.

For sale or exchange—One old long range Remington H. L. rifle, 44 caliber, five shot, also land and fresh water, and marine shells. Want shells, safety, camera or printing frame. H. Boisse, Hudson, Mich.


Wants.

WANTED, as principal of a flourishing technical school, a gentleman of education and experience who will be capable of supervising both mechanical and common school instruction. Special familiarity with some technical branch desirable. Addressing agency for Bureau of Education, New York.

WANTED.—A young man as assistant in our medical department. Queen & Co., Philadelphia.

The undersigned desires specimens of North American Belemnites in the flesh for the study of their structure. Those species are wanted which can be preserved by alcohol, such as Gigantoclypeus, Bellerophon, etc. Also fresh examples of forms preserved in the mud of the Tertiary period, such as Belemnodesmus, Microdenis, etc., and other forms having alkaline species which they are willing to loan or who can obtain specimens of any of the above are requested to communicate with Robert Lyman Clark, 385 Fifth Avenue, Pittsburgh, Pa.

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

CAN any one inform me as to the age to which such lives? I have one twenty years old. Edward D. Webb, 128 W. Eighty-first St., New York.

WANTED.—Second-hand. Foster's Physiology, Baldwin's Comparative Embryology, Claus & Sedgwick's Zoology, Flower's Botany of Man- namia, Vire's Physiology of Plants. Please state editions and prices asked and address Richard L. Ferguson, Portage, Canada.

A GRADUATE ENGINEER will give instruction evenings in geometry, trigonometry and sur- face, mechanics, physics, machines, electrical and general engineering construction. Five years practical work, with a series of practical and edited engineering journals. References furnished. C. S. H., 102 Tribune Building, New York.

The Archaeologist.

An Illustrated Monthly Magazine devoted exclusively to American Archeology and Anthropology. Subscription price, one dollar a year. Samples copies free.

The Archaeologist, Waterloo, Ind.
THE AMERICAN BELL TELEPHONE COMPANY.

93 MILK ST., BOSTON, MASS.

This Company owns the Letters-Patent No. 196,797, granted to Alexander Graham Bell, January 20th, 1877, the scope of which has been defined by the Supreme Court of the United States in the following terms:

"The patent itself is for the mechanical structure of an electric telephone to be used to produce the electrical action on which the first patent rests. The third claim is for the use in such instruments of a diaphragm, made of a plate of iron or steel, or other material capable of inductive action; the fifth, of a permanent magnet constructed as described with a coil upon the end or ends nearest the plate; the sixth, of a sounding box as described; the seventh, of a speaking or hearing tube as described for conveying the sounds; and the eighth, of a permanent magnet and plate combined. The claim is not for these several things in and of themselves, but for an electric telephone in the construction of which these things or any of them are used." This Company also owns Letters-Patent No. 463,969, granted to Emil Berliner, November 17, 1891, for a combined Telegraph and Telephone and controls Letters-Patent No. 474,331, granted to Thomas A. Edison, May 3, 1893, for a Speaking Telegraph, which cover fundamental inventions and embrace all forms of microphone transmitters and of carbon telephones.

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.

THE RADIOMETER.

By DANIEL S. TROY.

This contains a discussion of the reasons for their action and of the phenomena presented in Crookes' tubes.

Price, postpaid, 50 cents.

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

MINERALS.


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

Fact and Theory Papers

I. THE SUPPRESSION OF CONSUMPTION. By Godfrey W. Haskins, M.D. 12¢. 40c.

II. THE SOCIETY AND THE "FAD." By Alliston Morgan, M.D. 12¢. 20c.

III. PROTOPLASM AND LIFE. By C. J. Cox. 12¢. 15c.

IV. THE CHEROKEES IN PRE-COLUMBIAN TIMES. By C. J. Thomas. 12¢. 25c.

V. THE TORNADO. By H. A. Hazen. 12¢. 50c.

VI. TIME-RELATIONS OF MENTAL PHENOMENA. By Joseph Jastrow. 12¢. 50c.

VII. HOUSEHOLD HYGIENE. By Mary Taylor Bissell. 12¢. 75c.

N. D. C. HODGES, Publisher,
874 Broadway, 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¢, 154 pp., $1.50.

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

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.

"BUSY FOLKS' GYMNASIUM."

A few minutes' daily exercise on our fascinating apparatus clears the brain, tones up the body, develops weak parts. Our cabinet contains chest-weights, rowing-weights, lifting-weights, clubs and dumb bells, adjustable for old and young. It is the only complete exercising outfit in the world suitable for use in living rooms. All prices. You can order on approval. Chest machine separate, $4.50 and up.

Educated agents wanted. PHYSICAL CULTURE CHART, with illustrated directions for developing every part of the body healthfully, 50 cts. Sent for half price to those naming this paper.

WHITNEY HOME GYMNASIUM CO., Box D, Rochester, N. Y.