

to the fact that the succeeding chapters are sprinkled with far too many misstatements and that the whole book is marred by a loose and slovenly style. We do not wish to imply that the book does not contain many valuable and interesting facts, but the general lack of precision of statement is painfully evident in a passage like this: "It has been hitherto [sic] held that putrefaction was a chemical action only, but recent researches have shown that numberless microbes are concerned in the process, and without these micro-organisms organic bodies retain their form" (p. 69).

Debatable questions are dismissed in a rather summary fashion, e. g., "There can be no doubt whatever that sewer gas may produce sore throat, diarrhoea, and typhoid fever. . . ." (p. 65). "the germs of disease may be easily carried into the air from refuse and faecal accumulations" (p. 75).

As for the style, "Koch demonstrated the presence of cholera bacilli in the water of Indian ponds or tanks, probably harboring and multiplying in the banks" (p. 76.). "However urgent those specially familiar with the deteriorating influences at work may regard the remedies applicable, yet they can never secure their adoption without the consensus of the opinions of others" (p. 355).

The author in a measure, however, disarms criticism by his unimpeachable statement in the conclusion (p. 344), "Errors of omission and of commission may be readily found in all human work . . ."

Report on the Brown Coal and Lignite of Texas. By E. T. DUMBLE, State Geologist. Austin. 1892. 243 p. Plates. 8°.

THIS volume is one of the numerous ones that have recently appeared on the work of the survey. It contains a very full account of the origin, formation, and composition of the Brown

coal and of its use as fuel. Many details are given of the geology of these deposits in Texas, and comparisons are made between these and the European lignites. A strong argument is made for the use of the Brown coals in Texas, and the results of the investigations made by the author in Europe and in Texas may be summed up about as follows:—

Brown coal and lignite of good quality are capable of replacing bituminous coal for all household, industrial, and metallurgical processes.

Texas has an abundant supply which is so situated as to permit its being mined and delivered for use at a far less cost than bituminous coal.

The raw coal can be used in stoves and grates, under locomotive boilers, in iron smelting, lime burning, etc. It may be used for the manufacture of gas for lighting or heating. It can be made into artificial fuel by "briquetting" with coal-tar, pitch, etc., and then used like ordinary coal. Certain varieties, if charred, will form a coke with coking coal and coal-tar pitch, which can be used for locomotive engines and other similar purposes.

These facts are of great importance to a country like Texas, where wood is practically absent, and where the ordinary soft coals and anthracite are nearly unknown. There seems no reason why similar deposits of lignite in other States west of the Mississippi River should not be utilized. JOSEPH F. JAMES.

Manual of Machine Drawing and Design. By D. A. Low and A. W. BEVIS. London and New York, Longmans, Green & Co. 1893. VI. 375 p. 8°. \$2.50.

THIS excellent work is designed for the use of engineers and their apprentices, and for students in technical schools, and is admirably adapted to its purpose. It is more a drawing-room

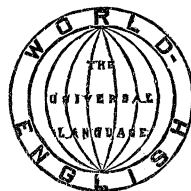
CALENDAR OF SOCIETIES.

Anthropological Society, Washington.

May 16.—Annual address by the president of the society, Dr. James C. Welling, *The Last Town Election in Pompeii: An Archaeological Study of Roman Municipal Government based on Pompeian Wall Inscriptions.*

Society of Natural History, Boston.

May 17.—Clarence J. Blake, *Out of Darkness into Light; or, The Education of a Blind Deaf-Mute.* Mr. Anagnos kindly consented to allow Miss Thayer of the Kindergarten for the Blind, and her pupil, Willie Robin, to be present.



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Reading Matter Notices.

Ripans Tabules: best liver tonic.

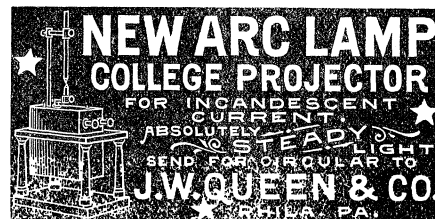
Ripans Tabules cure jaundice.

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INDEX

TO VOLUME XVIII OF SCIENCE

is in preparation, and will be issued at an early date.

text-book than one for class-room use, such as Unwin's. It includes less mathematical discussion than samples of good designing, graphically presented. It is full of excellent "dimensioned" illustrations of a great variety of machinery, and especially of machine-tools and steam-engines. It gives a large number of rules and tables of proportions of parts of machinery taken from the standard treatises and from the note-books of skilled designers. In many cases the methods of computing sizes and proportions are given. The drawings have all been prepared from working drawings, and especially with a view to their use for this purpose. Standard and successful practice is thus laid before the young student, or practitioner; and the art of proportioning is thus not only acquired, but the novice is, at the same time, made familiar with the best designs of his seniors. A combination of this work with that of Professor Unwin would seem likely to make an ideal course; the one being used in the drawing-room, the other in the class-room in conjunction with lectures. For the ambitious apprentice, no better plan could be recommended than a similar course of private reading and practice.

The Philosophy of Individuality, or the One and the Many. By ANTOINETTE BROWN BLACKWELL. New York, G. P. Putnam's Sons. \$3.

THIS work is a new attempt to solve the problem of the universe. It is by no means easy reading, the style being at once verbose and obscure, and the same thought is often repeated again and again, without ever being made clear. The fundamental doctrine of the book is a new theory of matter, namely, that matter is not a substance at all, but merely a complex of motions; or, in the author's own words, that "matter is literally composed of aggregated and coöperative modes of motion." Even an atom is regarded as nothing but a combination of balanced and correlated motions: "Our atom of matter, then, is a unit of motions with innate energy enough to achieve vastly more than has yet

been required of it by physical evolution." This view is expounded and illustrated through several chapters, and the endeavor is made to show how the theory applies to what we commonly call substances, and to distinguish between these "complexes of motion" and the "free motions" of heat, light, electricity, and gravitation. The theory is admitted to be nothing but a hypothesis, and we fear that it will always remain so.

Passing now from the realm of matter to that of mind, the author presents a theory of mind and consciousness similar to that of Herbert Spencer, that mind and matter are merely two aspects of one underlying reality. It differs, however, quite radically from Spencer's view in regarding life and consciousness as attributes not of an organized body only, but of each individual atom: "The rhythmic atom is *alive* with the high possibilities of ever-growing sensibility and actual knowledge." The objection that there is no evidence of life or feeling in inorganic matter, Mrs. Blackwell endeavors to meet by the theory of "potential mind" and "nascent feeling," phrases which are made to do duty instead of arguments and proofs. The grand difficulty with such a theory is to account for personality; for, if every atom is sentient by itself, it would seem that I must have as many minds as there are atoms in my body, and Mrs. Blackwell is by no means successful in removing the difficulty. "We assume," she says, "that the one commanding ego in each higher organism is exclusively but one individual unity!" but, notwithstanding her exclamation point, there is no warrant in her theory for such an assumption.

Such are the fundamental doctrines on which the author seeks to found a rational theology and a belief in the immortality of the soul, but we find little in her arguments that is convincing or satisfactory. The whole theory is hypothetical; and, while we recognize the earnest purpose of her book, we cannot think that she has added anything important to our knowledge of nature or of man.

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

Texas Plants. I will collect sets of plants represented in this region of Texas, either for sale or for exchange for literature, for anyone who will send me an order in time to fill it. Plants to be ready complete in November. C. F. Maxwell, Box 174, Dublin, Texas.

For sale or exchange.—A Telescope (36 diameters, copper barrel)—for \$20 cash or scientific books of that value. A. N. Somers, La Porte, Ind.

For sale.—A complete set of the Reports of the Second Geological Survey of Pa., 1874-1893, including the Grand Atlas. Publisher's price over \$115. Will sell for \$50. Address F. D. Chester, Newark, Del.

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 earthworms of the South and West. Correspondence with collectors desired. J. Percy Moore, School of Biology, University of Pennsylvania, Philadelphia.

For sale or exchange.—I have a Caligraph typewriter (No. 2) in perfect order and nearly new. It is in a heavy leather, plush lined office case, the whole costing me about \$100. I desire to clear for it, either by sale or exchange, a new No. 5 Kodak camera, with six double feather-weight plate-holders and the latest pattern of their tripod. The lens and pneumatic time-shutter must also be the same as those now sold with the last No. 5 Kodak. The price of what I desire in exchange is \$78. Address, for particulars, P. O. Box 314, Takoma, District of Columbia.

For sale.—An Abbe binocular eye-piece for the microscope. Alfred C. Stokes, 527 Monmouth St., Trenton, N. J.

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For sale.—A Zentmayer new model U. S. Army Hospital monocular stand. Price \$110, will sell for \$75. Address H. C. Wells, No. 151 Broadway, New York.

Wants.

WANTED.—Second-hand copy of Ehrenberg's Radiolaria, Berlin, 1875. Selected diatom slides, cash or both in exchange. D. C. Lewis, M.D. Skaneateles, N. Y.

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. Address, giving age, qualifications, etc., J. B. Bloomingdale, Fifty-ninth street and Third avenue, N. Y.

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