

It is thought that thus "the rich results obtained by the comparative method in natural and human sciences justify the hope that not less valuable returns will be obtained" by this extension of the system. Architecture falls under the domain of law, and the immense walls of the Assyrians and the ponderous arches of the Romans are the product, not of fancy, but of the condition of environment of their builders. Mr. Ferree believes with Freeman; "Deal worthily with the history of architecture and it is worthy to take its place alongside the history of law and of language." "Comparative architecture has to do with architecture as the product of the human mind, as the result of intellectual processes and reasonings; and each day these things enter more and more into the making of modern architecture." The paper is well worthy of the careful perusal of the architect whether professional or amateur.

Energy and Vision. By S. P. LANGLEY. Washington, Nat. Acad. 18p. 4°.

THIS small volume contains, as is always expected of the papers of the distinguished astronomer and physicist, very important matter. The work was first presented to the National Academy of Sciences at its April meeting in 1888. It relates to the differing optical effects produced by waves of light of varying magnitude though containing equal energy. Two lines of research are marked out: the one to ascertain the quantity of energy in each ray; the other to measure the corresponding visual effect. In the first the "bolometer" of Langley is used to measure energy of various heat and light waves. Solar measures constitute the second. The result gives the value of equal amounts of energy at different points in the spectrum as affecting the retina. It was at once found that energy itself is not uniformly distributed in the spectrum. The gauge of energy was taken as the intensity of light required to read a table of logarithms; which method is thought more accurate than any of the usual photometric systems. It is found that the eye requires

more time to regain its sensitiveness for violet light, after having been exposed to sunlight, than for any other color. It is found that the eye can perceive lights varying in intensity in the proportion of 1 to 1,000,000,000,000,000. The same amount of energy may produce 100,000 times as much effect in one portion of the spectrum as in another. Work done in giving rise to deepest red light amounts to about 0.002 erg per second.

Spons' Tables and Memoranda for Engineers. By J. T. HURST. Eleventh edition. New York, Spon & Chamberlain.

THIS is a little pocket-edition of Hurst's tables, and is likely to prove, as indeed the issue of eleven editions shows to be the fact, a very useful miniature reference-book. It is about one and a half by two and a half inches, and 140 pages of carefully selected tables and data, with a good index. It can be carried in the waistcoat-pocket. It is even smaller than the admirable little pocket-book published by the American Iron Works of Jones, Laughlin, & Co., and but a fraction of the size of Hurst's larger tables, of Molesworth, and other so-called pocket-books.

AMONG THE PUBLISHERS.

—The tenth and concluding volume of the new edition of "Chambers's Encyclopædia" will be issued by J. B. Lippincott Co. in a few weeks. Mr. Stanley Lane-Poole writes on Swift and Turkey; Mr. F. T. Palgrave contributes the memoir of Tennyson and that of Wordsworth, Mr. Richmond Ritchie that on Thackeray. Sir W. Lawson treats of Temperance, Mr. R. W. Lowe of the Theatre, Mrs. Besant of Theosophy, and Mr. G. Howell of Trades-Unions. Mr. Hamerton is the author of the biography of Titian and of that of Turner, while Mr. J. Gray writes on Van Dyck. The article on Anthony Trollope is by his brother, the late Thomas A. Trollope. Mr. Vámbéry writes on Turkestan, Professor Shaler on the Geology of the United States, Professor J. Geikie on Volcanoes, Mr. Austin Dobson on Horace Walpole, Mr. Loftie on Westminster and Windsor, Mr. Fraser

CALENDAR OF SOCIETIES.

Biological Society, Washington.

Dec. 17.—Principal topic of the evening, What should be the Scope and Object of a Biological Society? introduced by Mr. B. E. Fernow. Communications: Lester F. Ward, Frost Freaks of the Dittany; Erwin F. Smith, Notes on Peach Rosette; M. B. Waite, Destruction of Lichens on Pear Trees; D. G. Fairchild, Notes on Apple and Pear Fusicladii.

New York Academy of Sciences.

Dec. 19.—W. B. Scott, Fossil Hunting in the North-West.

New York Academy of Sciences, Biological Section.

Dec. 12.—The following is a synopsis of the papers: On the Miocene Deposits of the White River, by Dr. T. L. Wortman. These deposits were arranged in three groups, Lower, or Menodus, beds; Middle, or Orcondon, beds; and Upper, or Protoceros, beds. The Protoceros beds were regarded as in part contemporary with the John Day beds of Oregon. On the Ilco-Colic Junction of Procyon lotor and Allied Archetoids, by G. S. Huntington. The absence of caecum in Procyon was noted as repeating the condition found in Hyena and the Ursidae. The provision for preventing return of contents of large intestine appears to consist in a series of constructions in the terminal part of the ileum together with increase in the circular muscular fibres in these situations as well as at the ilco colic junction itself. There is a complete absence of an ilco-colic valve. On the Origin of West Indian Bird

Life, by F. M. Chapman. Conclusions from study of bird (and mammal) life were (1) distinctness geologically of Lesser from Greater Antilles; (2) independence of islands and mainland since the appearance of the present fauna; (3) original connection of Indes to Central America by way of Jamaica, Central America at this time an archipelago created by passage leading from Pacific to Carribean Sea; (4) the older faunal forms of the Indes represent survivors of the insular Tertiary species; (5) the newer forms are immigrants and become differentiated under new conditions of living. H. F. Osborn reported the discovery in the Miocene of South Dakota of a horned Artiodactyl represented by male and female skulls and complete fore and hind feet. The female skull is comparatively hornless and proves to be identical with Protoceras celer Marsh. The male skull exhibits no less than five protuberances upon each side, or ten altogether. Two of these upon the frontals and sides of the maxillaries are very small; the parietal, supra-orbital, and maxillary protuberances are very prominent and had, apparently, a dermal covering, as in the giraffe. There are four toes in front and two behind, as in the early Tragulidae. The types were found by Dr. T. L. Wortman, and are in the recent collections of the American Museum of Natural History.

Society of Natural History, Boston.

Dec. 21.—W. F. Ganong, Some New Experiments on the Absorption of Liquids by Aerial Parts of Plants; S. H. Scudder, The Abdominal Pouch of Butterflies of the Genus Parnassius; W. H. Niles, Columnar Structure in Stratified Rock.

Publications Received at Editor's Office.

GEORGE, HENRY. A Perplexed Philosopher. New York, C. L. Webster & Co. 319 p. 12°. \$1.
HALE, GEORGE E. Ultra-violet Spectrum of the Solar Prominences: The Yerkes Observatory of the University of Chicago: Some Results and Conclusions Derived from a Photographic Study of the Sun. Reprints. Chicago, The Author.
NEWTH, G. S. Chemical Lecture Experiments. London and New York, Longmans, Green & Co. 323 p. 8°. \$3.
U. S. Navy Dep't Notes on the Year's Naval Progress. Washington, Government. 366 p., pl. 8°.

Reading Matter Notices.

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