

Book Notices.

PROCEEDINGS OF THE AMERICAN PHILOSOPHICAL SOCIETY. No. 99, January to May, 1877.

Contains papers on the progress of the "North American Carboniferous Flora," now in preparation, L. Lesquereux; Tabular Synopsis of the Rhynchophora of America, J. L. Le Conte; Refraction Tables, A. K. Mansfield; E. S. Nettleton's first systematic collection of Oil Well Records in Venango County, J. F. Carll; Centres of Aggregation and Dissociation, P. E. Chase; Astrophyllite, Arfvedsonite and Zircon from El Paso, G. A. König; Measured Section of the Patleozoic Rocks of Central Pennsylvania, C. A. Ashburner; Coahuila, T. L. Kane; Continuation of Researches among the Batrachia of the Coal Measures of Ohio, a Dinosaurian from the Trias of Utah, and the Brain of Coryphodon, E. D. Cope; Composition of the Natural Gas from certain Oil Wells, S. P. Sadtler; Eight Meteoric Fireballs seen in the United States in 1876-7, and the Relative Ages of the Sun and certain of the Fixed Stars, D. Kirkwood; the Asserted Antagonisms between Nicotine and Strychnia, F. L. Haynes; a New Eurypteroid from the Coal Measures of Pennsylvania, C. E. Hall; the Timucua Language, A. S. Gatschet; Approaches to a Theory of the Cause of Magnetic Declination, and regarding some Mesozoic Ores, P. Frazer, Jr.; Experimental Tests of American Condensed Peat, J. B. Britton; Syllabus of Lectures on Sylviculture, J. T. Rothrock.

C.

PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES. Part I, for 1877.

Contains papers on Astrophyllite, Arfvedsonite and Zircon, G. A. König; Fertilization of *Browallia elata*, Asa Gray; *Ibid.*, Thos. Meehan; Hudson River and Utica Slates of Pennsylvania, Anthracite from "Third-Hill Mountain," W. Va., Copper-bearing rocks of the Mesozoic Formation, and Contamination of Drinking Water, P. Frazer, Jr.; Contamination of Drinking Water, Eozoon, and The Diaphragm, J. Leidy, M. D.; Generic names proposed by Zittel, Stoliczke, and Zekeli, and Notes on Shells, T. A. Conrad; Unionidae of Ohio and Alabama, J. Lewis, M. D.; The Giraffe, H. C. Chapman, M. D.; The Habits of *Quiscalus purpureus*, J. Willcox; Excrementitious deposits found in the West, H. W. Henshaw; Fishes of Northern Ind., D. S. Jordan, M. D.; Genera of North American Fresh-water Fishes, Id. and C. H. Gilbert; List of Plants recently collected on Ships' Ballast in the neighborhood of Philadelphia, I. Burk; The Valsei of the United States, M. C. Cooke; Influence of Nutrition on Fertilization, The Blue-bird and Holly Berries, Vitality of Seeds under low temperature, and Evolutionary Law as illustrated by Ab-

normal Growth in an Apple Tree, T. Meehan; Rocky Mountain Locusts, J. L. Le Comte, M. D.; Mineral Caoutchouc, G. C. Morris; Vital Power of Ants, Rev. H. C. McCook. C.

A PRACTICAL TREATISE ON LIGHTNING PROTECTION.—By Henry W. Spang. 12mo, pp. 180, with illustrations, cloth, \$1.50. Claxton, Remsen & Haffelfinger. Philadelphia, 1877.

The author begins the work with an effort to instruct the reader upon the subject of electricity in its various phases, but more especially in its static condition, and as displayed in the phenomenon of thunderstorms. This occupies 68 pages, and while reasonably correct in its bearing on lightning protection, it contains some strange statements. For instance, on page 47, in speaking of electrical accumulations in the air and earth, he says: "In the earth it (the "electricity") is principally spread out over the subterranean water "bed" . . . While all will agree that moist earth is a much better conductor than dry, we know of no evidence that the electricity in the earth is localized.

Then follows a description of the various means employed for protection from lightning, including conductors, air and earth terminals, attachments to buildings, etc., in which the best methods are very clearly pointed out.

While several varieties of conductors, and methods of making good connections and attachments to buildings are approved, all of them are based upon the requirement that the conductors shall be of ample cross-section of metal, and that they shall terminate in a large metallic surface, planted in constantly moist ground.

Only on the subject of earth terminals does there seem to be any bias of judgment.

All the earth terminals *now* offered for sale by "Lightning Rod Men," are, without exception, condemned, but one devised by the author is pronounced pre-eminently effective, although having no more surface exposed, nor sunk deeper in the soil, than some others mentioned. This, together with the last seven pages, headed "Reform in the Lightning Protection Business," are certainly blemishes in an otherwise really useful book. K.

REPORT ON EUROPEAN SHIPS OF WAR, THEIR ARMAMENT, NAVAL ADMINISTRATION AND ECONOMY, MARINE CONSTRUCTION AND APPLIANCES, DOCK YARDS, ETC., ETC.—By John W. King, U. S. N., Washington, 1877. Gov't Printing Office.

Mr. King sailed from New York in August, 1875, under orders from the Secretary of the Navy, "for the purpose of personally observing and reporting upon recent construction and mechanical appliances for ships of war." This report is the result of about