

The best method for your purpose is the Sylvester process: into each gallon of hot water required to cover the surface shave 1/2 pound of castile soap; let it dissolve, but do not make suds, and apply to the dry concrete surface boiling hot, using a wide soft brush such as a whitewash brush. After the soap solution has dried, apply lukewarm a solution of 1/2 pound powdered alum to each four gallons of water. Two repetitions of this process should close all pores and render the concrete waterproof; if not, try a further coat or two. There is no reason why the above preparation should be affected by soda, but if it is unsuccessful you might try a coat of water glass or write to the Concrete Association of America, 225 Fifth Avenue, which has conducted a number of valuable experiments in connection with varied uses of cement and is glad to give information.

NEW BOOKS, ETC.

A PORTFOLIO OF PORTRAITS OF EMINENT MATHEMATICIANS. Edited by David Eugene Smith. Chicago: The Open Court Publishing Company. Portfolio containing 12 plates with descriptive text on tissues. Price, \$3.

The portfolio before us contains some admirable selections and reproductions of portraits of many mathematicians, such as Descartes, Pythagoras, Archimedes, Fermat, Leonardo of Pisa, Euclid, Cardano, Leibnitz, Napier, Viète, Newton, Thales, and the collection would make excellent illustrative material for the classification of mathematical industries. The portrait of Descartes is particularly fine.

HOW TO IDENTIFY THE STARS. By Willis M. Wilhelm, Ph.D. New York: The Macmillan Company, 1909. 8vo.; 38 pp.; plates. Price, 75 cents net.

The ability to recognize the important brilliant stars and to locate the more conspicuous constellations is both an interesting and a useful acquirement. The number of people who have a real interest in popular astronomy and a fair acquaintance with the stars and constellations is strikingly increasing, and they will find a real pleasure in this information. The object of this little book is to enable the latter persons to identify the various constellations and stars. The method here followed and the material presented is essentially the same as that used in the course of descriptive astronomy in Williams College.

LIGHT AND SOUND. A Textbook for Colleges and Technical Schools. By William S. Franklin and Barry Macnutt. New York: The Macmillan Company, 1909. 8vo.; 344 pp. Price, \$1.60.

There always seems to be a field for a good book on the very important subjects of light and sound. The literature is already vast on these subjects, but the authors have succeeded in presenting some phases in an entirely new light. There is an entire absence of the time-honored illustrations which have been copied from book to book. The diagrams and illustrations are very numerous and are well executed. The book will prove of value to all physicists.

THE RISE AND PROGRESS OF THE BRITISH EXPLOSIVES INDUSTRY. Published under the auspices of the Seventh International Congress of Applied Chemistry by its Explosives Section. London: Whittaker & Co. New York: The Macmillan Company, 1909. 4to.; pp. 418. Price, \$5.25 net.

This very enlightening book gives an exceedingly interesting history of British explosives, reproducing many curious engravings. This is followed by chapters on the concussion caps, safety fuses, military fireworks, and pleasure fireworks. Then comes an excellent bibliography and a chronology from 1242 to 1700. The existing government and private establishments are then described. The work is highly technical, but will prove of great interest to those whom it concerns.

THROUGH THE YUKON OF ALASKA. By T. A. Rickard. San Francisco: Mining and Scientific Press, 1909. 8vo.; 392 pages. Price, \$2.50.

This book records observations made in the course of a journey in the Yukon Territory in the District of Alaska during the summer of 1908. The sections devoted to the development of mining methods are particularly valuable, and the book should prove of interest to everyone who has ever been to Alaska and the Yukon Territory or is thinking of doing so. We are particularly taken with the 175 illustrations, which are admirably executed. The book is well printed and bound.

EXPORTERS' ENCYCLOPEDIA FOR 1909. New York: Exporters' Encyclopedia Company, 1909. 12mo.; pp. 655. Price, \$5.

The present volume contains full and authentic information relative to shipments for every country in the world. The Exporters' Encyclopedia is now in its fifth year, and is a recognized standard authority among export shippers, and has the strongest indorsement of all the transportation lines and export houses, manufacturers, etc., engaged in export trade. It gives exactly the information which exporters require to enable them to ship their goods with the minimum of expense and trouble. It is a valuable compendium for anyone who is at all interested in export trade.

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INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending July 20, 1909, AND EACH BEARING THAT DATE

(See note at end of list about copies of these patents.)

Table listing inventions with patent numbers and inventors. Includes items like Acid, making nitric, F. L. Schmidt; Air compressor, T. O. Perry; Automobile motor, M. & W. Eastman; and many others.

Table listing inventions with patent numbers and inventors. Includes items like Canopy, L. F. Busenbark; Car and operating mechanism, dump, Stoitzfus & Miller; Car door, combination side and grain, H. Heaton; and many others.

Table listing inventions with patent numbers and inventors. Includes items like Folding case, A. B. Sutzer, et al.; Forming machine, H. C. O'Brien; Furnace, C. F. Diller; and many others.