



"The Modern Asphalt Pavement," by Clifford Richardson (John Wiley & Sons, New York, 1905).

Mr. Richardson's work in the field of research in cement is well known to all interested in that art, while in the field of asphalt he has been the pioneer investigator. His book just issued is practically the last word to be said on this important subject.

While the CEMENT AGE does not pretend to cover the whole field of paving, it certainly feels that the asphalt pavement, which rests upon a concrete foundation, comes within its bailiwick; and that part of Professor Richardson's book, which refers to concrete, is certainly of interest to our readers, as it gives as the conclusion of his judgment as an expert of extended experience with all the various bases used for asphalt pavements,—tar base, macadam base, Telford base, and granite block base—that hydraulic concrete, if properly proportioned, made with good cement and a well graded aggregate, well mixed and put in place satisfactorily, and in good weather, is the "ideal" base. He devotes considerable space to this branch of the subject, giving special attention to the methods of mixing and placing the concrete base: its thickness and the qualities of the materials to be used, and recommends Portland cement in preference to natural cement.

The book covers some 580 pages; has interesting tables illustrating the text, and some 32 figures in the text itself.

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"Portland Cement," by A. C. Davis; Fellow of the Chemical Society: *Stone Trade Journal*, London, 1904.

In a beautifully illustrated book of some 150 pages, Mr. Davis writes



of modern practice in the Manufacturing and Testing of Portland cement in England. He describes fully what Portland cement is; gives illustrations of a modern dry process cement works in England, which, by the way, has the old-fashioned kilns; shows by a number of illustrations the kind of work that can be done in cement; describes the methods of preparing the raw materials,—chalks, limestones and clays; gives some interesting photographs of the quarries of chalk and also of lias formations; refers to the recent use of rotary kilns in England; to the introduction of the Griffin, ball and tube and other mills for grinding, and, being a chemist himself, goes deeply into the chemistry of cement and the methods of testing the same. The chapters on this branch of the subject are replete with beautiful illustrations of the various modern appliances used in testing laboratories.

The work concludes with suggested specifications for cement, evidently forgetting the work that the Engineering Standards Commission is doing, and also gives the last specifications for the English Admiralty and War Department.

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"The Constitution of Hydraulic Mortars," by Le Chatelier. Translated from the original by Jos. Lathrop Mack; McGraw Publishing Co., New York, 1905.

What has already been said with reference to the re-publication of Henry Faija's well prepared book, applies equally well to the translation of Monsieur Le Chatelier's valuable thesis, which was prepared some fifteen years ago, when that writer was about to take his degree of Doctor of Science.

In the preface to the work, Monsieur Le Chatelier refers to what has been done by Professor Newberry and Mr. Candlot within the last ten years in confirming his first results, and also to the discovery by Mr. Candlot of the two extremely important compounds which relate to the behavior of cements in the sea, the calcium chloro- and sulpho-aluminates.

The book itself has been brought up to date by the writer, who refers to more modern literature upon the various subjects treated. Among the illustrations are some microscopic slides of cement, one of which shows the beginning of the hydration of a Portland cement and the starting of setting, a subject that Mr. Richardson is now investigating.

The chapter on the Manufacture and Industrial Use of Cement contains much of a most interesting character to manufacturers, and though written many years ago is true to-day, the development of the rotary kiln, however, having changed some of the statements which were made at the time when only dome, or continuous kilns, were used.

Mr. Le Chatelier's work will always stand as a text book for the scientific manufacturer, and should find a place in the library of all those interested in the industry.

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"Portland Cement for Users," by the late Henry Faija. Revised and



enlarged by D. B. Butler, Pres. Soc. E. M. C. I., London: Crosby Lockwood & Son, 1904.

Contemporaneous with the increased demand for cement and the increased demand for knowledge of how it is made and how it is used, it seems but proper that Faija's book, printed some twenty-three years ago, should be again reprinted with its supplementary chapters by Mr. Faija and by Mr. Butler.

In the early days of the cement industry in this country, Faija and Reid were the authorities, and their books and General Gilmore's book on "Cements and Hydraulic Limes" were the Bible and Prayer-Book of the early manufacturers and experts.

It seems strange that among the chapters added as appendices one should be devoted to "Adulterations," and the second to a form of specification. In these days adulterated cements are easily recognized, and in England a specification has just been produced by the Engineering Standards Commission.

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The Fourth Annual Report of the Metropolitan Water and Sewerage Board, Boston, 1905.

Through the courtesy of Mr. Frederic P. Stearns, Chief Engineer, this interesting volume of the work of the Metropolitan Water & Sewerage Board has been sent to us. It describes the Wachusett Dam and Power and Gate House; the High Level Sewerage; the Weston Aqueduct, and other important work in the vicinity of that city.

Appendix No. 2 contains cement tests from 1896 to 1900, and from 1901 to 1904, and from 1901 to 1903. An interesting feature of the tests is the vindication of Mr. Stearns's theory in the construction of the Clinton Dam, namely, that in this enormous piece of work, built across a narrow valley and designed to form a storage reservoir to hold some 40 billion gallons of water, that stability and weight of masonry were as essential as strength of masonry, and that in order to obtain these two first qualities at a minimum of cost, the use of natural cement in lieu of Portland would be justified. The tables adduced of records on several hundred thousand barrels of Portland cement and nearly 200,000 barrels of "Union" natural cement, practically show at periods of 6 months and over in mortar of 2 sand to one of cement, that the natural cement attains the same strength as Portland cement. Inasmuch as the dam was many years in building, Mr. Stearns's conclusions have been thoroughly established.

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"Cement Materials and Industry of the United States," by Edwin C. Eckel, Department of the Interior, United States Geological Survey, Washington, D. C., 1905.

This important work of some 400 pages, illustrated with many typographical and geological maps showing Portland cement deposits and Portland cement plants in the United States, and the geology of the various cement formations, embraces a tremendous amount of work done by Mr. Eckel and his assistants.

The book goes fully into the raw materials,—cement rocks, hydraulic limestones, soft limestones, fresh water marls, shales and other materials used in the various works in the United States. It takes up the various States and shows the materials found that might be used in the production of Portland and natural cements; describes the method of manufacturing in the various districts; gives analyses of cements made of various materials, and altogether covers the field entirely, from the standpoint of geology to the ultimate termination of cement in bag or barrel in the car in a very full and complete way.

It might seem that more space could have been devoted to the Lehigh (Pennsylvania) District, where the great bulk of the Portland cement of the country is manufactured, as compared with the space devoted to some of the smaller districts; but this is possibly an oversight on the part of the writer.

An interesting feature of the book is a table showing the growth of the cement industry within the past sixteen years, as compared with the gold production of Cripple Creek and Alaska. This table is printed on another page of the present number of CEMENT AGE.

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“Concrete Buildings and Their Architectural Possibilities,” by Albert Moyer, Vulcanite Portland Cement Company, Land Title Building, Philadelphia, is the title of a beautifully illustrated pamphlet devoted to the possibilities of the architectural effects of concrete.

The Recreation or Field House Building, erected by the South Park Commission of Chicago, is used as an illustration of what may be done in concrete in a decorative way. The building itself is shown in several photographs, both exterior and interior, and special attention is called to the appearance of the walls, which are unique in that there is no finish, as popularly termed, to the outside of the walls. No effort has been made to imitate any other material, the work being an example of honest concrete, the result being to produce beautiful, though simple, architectural effects. It is in the same line as the finish of the Cement Building at the World's Fair Exposition, the latter, however, having been roughed with iron brushes when the cement was practically soft. This finish destroyed the smooth exterior coating and showed a great deal of the stone in the concrete itself.

Mr. Moyer's book goes into many of the finer uses to which Portland cement is adapted, and refers to all the capabilities of the material from an artistic standpoint.