

The Smith Publishing and Supply Company recognizing the value of this treatise, which is considered the best practical book on cement in the country, are undertaking its sale in Canada. The price of the volume is \$3.50. Orders should be addressed to The Manager, Order Department, Smith Publishing and Supply Company, 18 Court Street, Toronto.

The Elastic Arch:—With special reference to the Reinforced Concrete Arch. By Burton R. Leffler, A.M.A.S.C.E., New York: Henry Holt & Company.

"Writers on the arch have invariably neglected to give a rough view. I have attempted to overcome this by giving a preliminary view of arch action, and then a definite statement of this action. Further exposition is nothing but a detailed account of the definite statement."

Mr. Burton R. Leffler, Engineer of Bridges, Lake Shore and Michigan Southern Railway, thus opens his introductory chapter, "How to Study." "Superiors in office," he says, "giving instructions to their subordinates, often carry a subject for quite a while in their minds and then present it all at once to their subordinates expecting them to see it in an instant as they themselves see it." This volume accordingly treats the subject so that the average reader may grasp easily its intricacies.

Mr. Leffler claims several new features. He has shown how the subject of reinforced concrete arch construction can be deduced from one simple equation. He also gives, which we believe, is the first presentation, a correct and simple method of designing a reinforced concrete section for combined thrust and moment. A graphical analysis of an arch for oblique forces is also given. Speaking of the objections to the elastic theory, Mr. Leffler says, "One objection is its difficulty in theory and practice. This is largely the fault of writers. It is no more difficult than the theory of continuous beams, yet the theory of continuous beams furnishes the only practical determination of stresses in draw-bridges. The difficulties can be largely overcome by the use of good English.

"Another objection is that the external forces cannot be exactly determined. The most glaring case is an arch under a high embankment. A similar case is a lintel carrying a wall over a door or window. This objection is not peculiar to the elastic theory. It applies to any theory of the arch. It will not do to say that, since the forces cannot be determined, no calculation of stresses is necessary. The folly of this is evident in the broken lintels that can be seen often. In railroad work, many arches are close to the track, and the loads are quite definite.

"The exact determination of the points on the gravity axis at which the tangents are rigidly fixed is uncertain. The best that can be done, is to join the ring to the abutments by a rather sudden enlargement of section. In a two-hinged arch, this objection vanishes."

The articles in this useful volume include, A Rough View of Arch Action, Meaning of the Pressure Curve, Location of the Pressure Curve, Determination of Unit Stresses, Time to Calculate an Arch, Shrinkage of Concrete, Shear, Summary, Approximations Necessary for the Use of Eq. 1, Application of Eq. 1, Graphical Use of (2), (3), and (4),

Temperature Stresses, The Effect of $\frac{T}{A}$ in Eq. 1, Some Ob-

jection to the Elastic Theory, Unsymmetric Arches, Some Vagaries in the Development of Reinforced Concrete, and Graphical and Algebraic Methods.

It is a practical manual, and is written in plain English, by one who is an authority on his subject. A very difficult subject is presented in its simplest form.

Directory of American Cement Industries.—C. C. Brown, M. Am. Soc. C.E., Indianapolis, Ind.; New York, N.Y.; Municipal Engineering Company.

The cement industry has progressed with such strides that the publishers of this volume have issued a new edition of their directory. The condensed list of cement companies which it contains, and which is arranged alphabetically by States, is most convenient. A map accompanies this list which clearly shows the distribution of cement plants in operations and proposed. There is also a directory of cement brands. From this, one can easily place the quality, situation, and method of manufacture of any brand presented to the trade.

All the lists in the book have been revised by persons in individual cities and acquainted with their conditions, so that in general and in particular they are accurate and full. It has been the intention to include all cities and towns with more than 2,500 population. Many names from smaller places will be found, but no organized effort was made to carry the lists into these smaller places.

They are unusually complete for places larger than 2,500 population. There is a table of freight rates which has been revised and is one of the most valuable single features of the directory. Other features are; American Cement Manufacturers, Directory of Sales Agents, Cement Companies' Names not now in use, Dealers in Cement, Contractors and other users of Cement, Engineers and other supervisors of the use of Cement, Cement Tests and Analyses, Engineers Designing Cement Plants, Machinery and Supplies for Cement Plants, Machinery and Tools for Cement Users.

The volume is a valuable addition to the trade-list. It is indispensable to those who desire to keep in close touch with the industry throughout the continent.

CEMENT MARKETS.

"Cement and Concrete Review" Office,
Montreal, March 14th.

The markets for cement throughout the whole of Canada, as will be seen from other items in this issue, are opening up in a most satisfactory manner. A large number of contracts have already been closed, and many factories have their output contracted for well into the summer. In fact, some well-informed dealers state that the entire output of a few of the Canadian mills is booked up for the season. Apparently manufacturers are looking forward to a considerable advance in the near future, as some of them do not appear specially anxious to book orders at the moment. Buyers are not experiencing any difficulty whatever in getting all the cement they require placed on order.

Prices of English cement have advanced within the past few week and factories are fairly well booked up already. English dealers are said to be looking forward to advances in the near future. The advance which has already taken place is said to have been largely due to the high price of jute, the English bags being made of that material.

Following are the latest prices:—

Canadian Cement.—Prices are \$1.80 to \$1.85 per barrel, in cotton bags,, and \$2.10 to \$2.20 in wood, weights being in both cases 350 pounds. There are four bags of 87½ pounds each, net, to a barrel, and 10 cents must be added to the above prices for each bag, the bags being, however, accepted back at the same figure. In the case of American cement, 10 cents each is charged for the bags, and only 7½ cents is allowed when they are returned.

Foreign Cement.—English cement is quotable at \$1.80 to \$1.90 per barrel in jute sacks of 82½ pounds each (including price of sacks), and \$2.10 to \$2.20 in wood, per 350 pounds, gross. Belgian cement is quoted at \$1.75 to \$1.90 per barrel, in wood.

Toronto, March 15th.

Cement here has advanced during the last month 5 cents per barrel. There is most likely to be another advance. The manufacturers are not looking for any orders as they are booked right through to the end of the season.