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Principal Contents of this Issue

CONCRETE IN ALKALINE SOILS

FOR the past eight years it has been generally known that alkaline soils have a disintegrating effect upon porous concrete. The Reclamation Service of the United States issued a pamphlet nearly a decade ago which called attention to the action of such soils, and when the matter was reviewed editorially in the January 14th, 1910, issue of *The Canadian Engineer*, it was stated that it would be of great interest to engineers doing work in Western Canada.

For some years, however, but little complaint has been heard from Western Canada regarding underground concrete structures in alkaline districts, but the accumulation of evidence has gradually alarmed many engineers until now it appears to be a very live subject in the Prairie Provinces. When proper drainage is not provided, the action of alkaline waters on concrete is similar to frost action if the concrete be sufficiently porous. Properly made, dense concrete apparently offers much greater resistance. Most of the western concrete that has failed after being placed in alkaline soil, was made with pit-run gravel; and nature has rarely been sufficiently obliging in regard to the proper grading of aggregates.

There are too many examples of excellent service afforded by concrete structures over long periods of years, even when placed in contact with alkaline waters, to condemn the material in any wholesale manner because of failures of concrete of which the precise history is unknown. On the other hand, there are certainly serious failures in Western Canada. Even one wing wall of the Bassano Dam is affected, although it is not known to what extent this and other failures may be due to frost instead of alkali action. The extent of the problem is sufficient, however, to warrant earnest study, and the Calgary Branch of the Engineering Institute of Canada is to be congratulated upon its initiative in appointing a committee to investigate whether density—better workmanship—be truly the proper and only solution. The outstanding feature of the Calgary investigation to date appears to be that good concrete requires good materials correctly used and not abused, and that the most important ingredient of successful concrete is the brain of a trained engineer.

THE FUTURE OF PRICES

IN discussions as to the course of industry after the war, it is generally assumed that prices will fall again to "normal." This assumption is, however, not entirely justified. There is really no such thing as "normal" prices. What is meant is, of course, the price levels existing in 1914. These represent a considerable change as compared with prices of preceding years, and it would be an extraordinary thing if prices should again decline to anything which could be referred to as "normal" as compared with the prices existing at the beginning of the war.

From one point of view the whole future, not only of manufactures, but also of other phases of economic life, such as the wage scale and the value of real estate, resolves itself into a question of prices. The phenomenal rise which has taken place during the war years has been due to a number of causes, including scarcity of labor, unusual requirements on the part of governments and of industries working for the government, and disturbances to industry directly resulting from the war, such as shipping losses. Some of these, it will be seen, will disappear upon the return of peace while others will remain more or less permanently. Generally speaking, the factors on the demand side which have been influential in the rise in prices will cease. On the side of supply, it may reasonably be expected that an ample labor force will again be available. The large volume of shipping now being created will probably replace all the damage by a large margin, but some of the inroads upon industry will not be repaired for many years to come. For instance, the conversion of industrial plants into the munitions business and their reconversion into peace activity will add an element of capital expense.

Rising prices did not commence with 1914. As a matter of fact, a period of rising prices was almost concluding at the time and probably would have done so had not extraordinary conditions not only extended the period but also accentuated the movement. During the past hundred years and more there has been an alternate rise and fall of prices during every period of about 21 years. The year 1896 was the end of a period of falling prices and from that time up to the present, the movement has been consistently upwards. The year 1914 was the eighteenth of this period and if previous experience had been repeated a decline would have set in at this time. War conditions, however, were sufficiently abnormal to disturb entirely the ordinary course of economic events. These fluctuations in price levels are usually attributed to a large extent to the relation of the supply of gold to the demand. This is represented by a valuation of gold, expressed in terms of other commodities, and when the supply is not equal to the requirements, prices naturally fall. A large production of gold, on the other hand, brings about a rise in prices which tends to restrict the production of gold by increasing its cost. It is significant, therefore, that gold production has declined rapidly of late and there is every evidence of it continuing to do so, as profits have been greatly reduced.