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HARBORS ON THE PACIFIC.

The opening of the Panama Canal will herald the dawn of a new era for the west coast of the American continent. A great impetus will be given to the development of the mineral and agricultural resources; in the increased facilities available for marketing products at the great trading places of Europe. The United States recognized the necessity of providing means of transportation for the rapidly developing Western States additional to the transcontinental railway systems in operation now. The completion of the Panama Canal will be the initial realization of the satisfaction of the demand for a shortened and cheaper route to the eastern United States and the European markets.

The United States, appreciating the consequent necessity for adequate shipping facilities as a result of the completion of the canal, are now spending millions of dollars in deepening, enlarging and constructing their harbors on the Pacific coast, so that when the new waterway is ready immediate benefits may be received from its use.

The Canadian Government have been slow to perceive the necessity of immediate action, if Western Canada is to share in the new markets opened by the canal. We are glad to see that they are awakening, however. The report of the Government engineer, Mr. L. Coste, on Victoria harbor has just been published. An abstract of the report will be found in this issue of *The Canadian Engineer*. Mr. Coste recommends a very extensive programme for the development of Victoria harbor, a programme which, if followed, will place the city in a most enviable position for handling its share of the vast traffic which will develop in our Canadian West.

The Government must take steps to follow up the report with prompt action. Every day this work is delayed means increased strength to the American harbors on the Pacific coast. Once the lines of traffic have been laid, it becomes increasingly difficult to change them. To develop our Western provinces and to receive the maximum benefit from the new avenues of transportation, we must spare no exertion. Our harbors on the Pacific coast demand immediate attention if our share of the new prosperity is to be received.

COLUMN DESIGN.

The subject of column design is a very important one, not only from the point of view of safety, but also in the necessity for securing maximum efficiency in labor and material for the manufacturer. In this issue of *The Canadian Engineer* appears an article, entitled "Notes on Column Design." In our opinion the plea of the writer for uniformity in column formulæ is well justified. An examination of the formulæ in common use shows that the majority of designers are not so far apart as is generally supposed. The most commonly employed formula at the present time is that which has been made popular by the American Railway Engineering Association. This conforms tolerably closely to the actual results of tests, and with the extensively used formula of the New York Building Code. The former, and certain formulæ giving similar values, have been justly criticized on the ground of their severity for columns having high values of slenderness ratio.

The remark of the writer concerning the necessity for careful provision for extra amount of flexure in long columns while pertinent, should not be followed to the