

THE ENGINEERS' LIBRARY

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With this issue we announce the publication of a supplement to The Canadian Engineer.

This supplement will appear monthly, and will be devoted exclusively to book reviews and new publications. As the Department grows, it is expected that, in addition to reviewing of books, we will from time to time, be able to review articles that appear in the different engineering magazines.

The engineer is a busy man, and cannot take the time to himself to look over all articles published. We intend to devote considerable time to this class of work and point out to the engineer where he may secure, with the least possible trouble, the greatest amount of information on a given subject.

For this Department of the paper we would gladly accept criticisms of articles that appear in our own or other journals, and also of books published or criticisms of the reviews published.

BOOK REVIEWS.

Railway Act of Quebec, compiled and published by J. A. Lefebvre, Department of Public Works, Quebec, Que. Size 6 x 9, pp. 100, price \$2.00.

This publication is a consolidation of the Acts of the Province of Quebec, relating to railways, the taxes payable by railway companies and the repayment of railway subsidies, and has in addition a table showing the subsidies of all kinds which have been guaranteed or paid on account of provincial railways.

The publication in the one volume contains the information in both French and English. Each section gives the references to the original Act or Revised Statutes of Quebec, from which it is taken.

It will be found very convenient for lawyers or engineers having to do with railways in that province.

Directory of Contractors' and Public Works Annual, 1910, size 6 x 9, pp. 500, price \$4.00. Published by the Contractors' Chronicle, 48 Gray's Inn Road, W.C., London, England.

This is a reference book containing a list of contractors engaged in the various kinds of contract work in Great Britain. In addition to the list of contractors, engineers and architects, the volume contains the names and addresses of the various associations and organizations that are connected with the engineering profession and the contractor, together with a list of the officers of the principal public bodies of Great Britain.

Some sixty pages are devoted to summaries of the recent decision of the courts on matters that affect the contractor and the engineer. There is also published a list of the private bills that passed the last session of the British House, together with the applications granted by the Board of Trade.

The classification enables one to see at a glance, who it is that has the giving out of contracts and to get the names and addresses of the principal officials of the different corporations and public bodies. The aim of the compiler and the editor has been to arrange the work that will bring in close relation the municipal officers and engineers who have contracts to give out and the firms who are in a position to undertake the class of work which is being given out.

"Tests of Timber Beams" by Arthur N. Talbot, is issued as Bulletin No. 41 of the Engineering Experiment Station of the University of Illinois. The tests described in this bulletin were undertaken with the view of supplying data concerning the structural properties of full-size timber beams of the quality secured under ordinary methods of purchase. The test timbers were selected by the inspectors of two railroad companies. The material thus chosen and tested included 112 bridge stringers of longleaf pine, shortleaf pine, loblolly pine, and Douglas fir, and of several hundred smaller test pieces cut from the same timber. The beams were generally 8 x 14 in. or 8 x 16 in. in section and 14 ft. long.

The results show a preponderance of failures in horizontal shear which is so marked in every series of tests as to emphasize the importance of the shearing resistance of timber. The stringers developed horizontal shearing stresses averaging from 273 to 390 lb. per sq. in. in the several series. Blocks having the full thickness of the beam were cut from an uninjured part of the beam, and the results of shear tests made on these are much below those which have been obtained from small test pieces heretofore used. Comparatively little difference in shearing resistance was found for the different kinds and conditions of wood, large seasoning checks controlling the strength in the stronger woods. It is shown that seasoning checks should be recognized as a source of weakness and that in woods which develop checks and cracks in seasoning, care should be given in dealing with large sticks to avoid rapid and uneven seasoning. The results also show the strong influence of knots, cross grain and other defects on the strength and elastic limit of beams in which they appear. While these effects have been recognized for a long time, their importance is now emphasized by the fact that with the growing scarcity of timber, poorer grades of timber are constantly coming upon the market, making it desirable that the dangers arising from such defects be more accurately understood.

The fibre stress developed in beams not failing in horizontal shear is generally low, averaging for untreated timber tested from 3,690 lb. per sq. in. in the Old Douglas fir to 5,300 lb. per sq. in. in the longleaf pine. One longleaf pine stringer developed a fibre stress of 8,410 lb. per sq. in., while in another a value as low as 2,530 lb. per sq. in. was found. In general, the fibre stress at the elastic limit is proportionally high, the ratio to the fibre stress at failure averaging from 0.67 to 0.90 for the several series of tests.

The small beams cut from the top and bottom of the tested stringers developed from 50 per cent. to 100 per cent. higher strength than the large stringers, the results demonstrating the effect of size on strength in a striking way. The