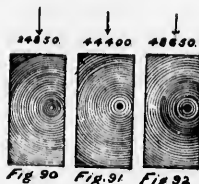


Beam XLV was tested March 11th, 1893, with the annular rings as in Fig. 90.



The load upon the beam was gradually increased until it amounted to 24,850 lbs., when it failed by the tearing apart of the fibres on the tension side.

The maximum skin stress corresponding to this load is 3681 lbs. per square inch.

The co-efficient of elasticity, as determined from an increment in the deflection of .81-in. between the loads of 2500 and 12,000 lbs., is 956,540 lbs.

Table P shows the several readings.

Beams XLVI and XLVII are the two ends of Beam XLV, tested on March 11th, 1893, the central portion containing the fracture having been cut out.

Beam XLVI was tested March 30th, 1893, with the annular rings as in Fig. 91.

The load upon the beam was gradually increased until it amounted to 44,400 lbs., when it failed by the tearing apart of the fibres on the tension side.

The maximum skin stress corresponding to this load is 2740 lbs. per square inch.

The co-efficient of elasticity, as determined by an increment in the deflection of .23 in. between the loads of 10,000 and 25,000 lbs., is 536,770 lbs.

Table P shows the several readings.

Beam XLVII was tested March 30th, 1893, with the annular rings as in Fig. 92.

The load upon the beam was gradually increased until it amounted to 48,650 lbs., when it failed by the tearing apart of the fibres on the tension side.

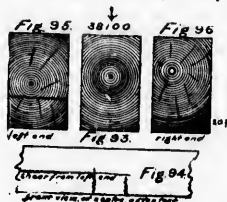
The maximum skin stress corresponding to this load is 3003 lbs. per square inch.

The co-efficient of elasticity, as determined by an increment in the deflection of .2-in. between the loads 10,000 and 25,000 lbs., is 617,283 lbs.

Table P shows the several readings.

Beams XLVIII to L were sent to the laboratory by Mr. P. A. Peterson. These beams were purchased from the Pembroke Lumber Company, and are supposed to have been similar in quality to the timber used on the Pembroke section of the Canadian Pacific Railway.

Beam XLVIII was tested March 1st, 1894, with the annular rings as in Fig. 93. The darkened portion, Fig. 96, represents sapwood.



The load upon the beam was gradually increased until it amounted to 38100 lbs., when the beam failed by the crippling of the material at the support on the compression side, Fig. 94. The load was still