Beams 15 and 16 were sawn out of trees felled at Keewatin in 1894, and were received into the Laboratory on the 13th of December, their weights being 415.75 lbs. and 457.78 lbs. respectively. They were both tested on the 2nd of February, 1895, when it was found that beam 15 had lost 36.69 lbs. or 8.8 per cent. of its weight, and that beam 16 had lost 46.59 lbs. or 10.2 per cent. of its weight. When the beams were sawn through after the test they were still found to be completely saturated with water excepting for a depth of 1 inch from the surface. The beams were from the central portion of the trees, the heart running from end to end. Beams 28 to 43 were sawn from trees felled in water, 1893—4, in Quinze Lake Co., P.Q. They remained in water one year, and were received into the Laboratory on October the 4th, 1895. They were all first quality timber, and, generally speaking, straight in grain and free from knots and shakes. In order to determine the excess of moisture in the timber, three slabs, one near the middle and one at each end, were sawn out of the beams immediately after they had been tested and were at once placed in a chamber kept at a temperature of 212° F. by steam-pipes. The moisture was also removed from the whole beams by drying them in the same chamber. Beam 36 failed suddenly under a very small load, the fracture commencing at a knot in the tension surface. On exam-

TABLE I.

White Pine From Ordinary Stock.

No. of Beam.	Dimensions in inches.			Breaking weight in lbs.	Skin stress (f) in lbs. per sq. inch.			Coefficient of elasticity in lbs. per sq. in.	Sp. wt. in lbs. per cub. ft. at date of test.	Per ct. of weight lost when dried at 212 deg. F. at			Character of failure.
	l.	*b.*	*d.*		Max.	Min.	Mean.	*E.*		Centre.	Left end.	R't end.	
15	186	6.225	15.2	23,850	5,021	4,777	4,889	1,296,950	36.43	.....	.....	.....	Crippled.
16	186	6.32	15.25	22,690	4,774	4,480	4,627	1,359,050	38.64	.....	.....	.....	Longitudinal shear.
28	138	9.1	15.21	39,000	4,403	4,018	4,210	1,078,230	27.121	17.29	12.89	13.21	Longitudinal shear.
32	186	6.025	12.25	16,000	5,531	5,153	5,342	1,368,500	27.983	28.262	27.014	27.274	Crippled.
46	186	5.725	5.9	5,200	8,967	7,312	8,389	1,625,220	23.794	.....	.....	.....	Crippled.

TABLE II.

White Pine Dried at 212° F.

36	150	5.95	11.925	.....	2,201	2,164	2,182	1,245,780	22.007	.....	.....	.....	Tensile.
38	75	2.965	5.925	5,000	5,911	5,569	5,740	1,272,440	22.105	.....	.....	.....	Crippled.
42	150	5.7	5.9	8,000	9,538	9,247	9,392	1,282,770	20.674	.....	.....	.....	Tensile.
43	150	6.05	11.725	23,000	9,992	7,091	8,542	1,171,240	22,648	.....	.....	.....	Tensile.

TABLE III.

Red Pine From Ordinary Stock.

No. of Beam.	Dimensions in inches.			Breaking weight in lbs.	Skin stress (f) in lbs. per sq. inch.			Coefficient of elasticity.	Sp. wt. in lbs. per cub. ft. at date of test.	Per ct. of weight lost when dried at 212 deg. F. at			Character of failure.
	l.	*b.*	*d.*		Max.	Min.	Mean.			Centre.	Left end.	R't end.	
17	186	6.15	15.2	21,350	4.531	4,322	4,426	1,252,700	32.279	.....	.....	.....	Crippled.
18	180	5.75	15.0	21,730	4,589	4,466	4,527	1,351,350	.....	.....	.....	.....	Crippled and longitudinal shear.
31	186	5.975	12.275	23,400	7,840	7,469	7,654	1,814,190	35.95	17.38	16.9	12.94	Longitudinal shear.
45	186	6.025	6.025	7,600	10,034	9,871	9,952	2,768,630	37.144	.....	.....	.....	Crippled.
49	188	5.75	14.925	22,700	5,240	5,100	5,170	1,669,010	30,592	8.8	8.7	8.1	Longitudinal shear.

TABLE IV.

Red Pine Dried at 212° F.

37	150	5.75	11.875	21.000	6.160	5,953	6.056	2,049.430	30.072	.....	.....	.....	Longitudinal shear.
41	150	5.885	5.925	8,800	9,572	9,472	9,522	2,261.820	30.858	.....	.....	.....	Tensile.
44	150	5.875	11.785	20,000	5.732	5,617	5,674	2,219.550	34.038	.....	.....	.....	Longitudinal shear.