beam 16 had lost 46.59-lbs. or 10.2 p.c. 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 portions of the trees, the heart running from end to end.

Beams 28 to 43 were sawn from trees felled in the water 1893-94 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 means of 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 examination it was also found that the grain on the face was oblique to the neutral surface, while there were shakes running from end to end in the neighbourhood of the heart which, on the average, was below the middle of the depth of the beam. The results of this test should be discarded, as the beam was not of fair average quality.

Beam 38 was cut out of beam 36 in such manner that the grain was straight.

Beam 43 failed under a breaking load of 23,000-lbs., but a somewhat long continued and slowly increasing deflection under a load of 22,000-lbs. seemed to indicate that at this point the beam failed in compression, although there were no apparent signs of crippling.

AIR DRIED SPECIMENS FROM WHITE PINE BEAM 15.

Tension Tests.					Compression Tests.				Shearing Tests.				
Spec.	Coefficients of elasticity in lbs. per sq. in.		Tensile strength in lbs. per sq. in.	Sp. wt. in lbs. per cub. ft.	Spec.	Coefficients of elasticity in lbs. per sq. in.		Compressive strength in lbs. per sq. in.	Sp. wt. in lbs. per cub. ft.	Spec.	Shearing strength in lbs. per sq. in.	Sp. wt. in lbs. per cub. ft.	Spec.	Shearing strength in lbs. per sq. in. of rounds.
	Forward.	Return.				Forward.	Return.							
a_1	1,749,520	1,762,500	10,230	.....	c_1	.....	.....	2916	29.258	g_1	395.64	28.529	m_1	516.6
a_2	1,659,770	.....	11,111	.....	c_2	.....	.....	3393	27.918	g_2	411.26	27.552	m_2	505.2
b_1	1,932,660	.....	15,640	.....	f_1	.....	.....	3751	33.103	g_3	555.21	26.032	m_3	561.7
b_2	1,934,680	1,956,220	13,218	.....	f_2	1,572,850	1,572,090	3604	29.025	h_1	119.19	28.119	n	598.1
	1,910,270	1,951,120	.....	.....		1,571,600	1,565,500			h_2	327.81	27.561	o	477.1
c	2,062,870	.....	12,686	.....		.....	.....	.....	.....	h_3	382.38	27.173		486
d	1,828,960	.....	14,163	.....	m	1,731,300	1,716,230	3918	28.032	i	362.75	26.655	p	
										j_1	315.24	26.122		
										k	361.26	27.541		
										l	338.11	27.229		