PAGE.	PAGE.
Treated timber for elevated railroad	Vacations, reduction in 156
floors	Vibration caused by thrust from
Treated timber, value of 677	brake trains 731
Trestles, highway	Vibration in bridges, amount of 493
Trestles, pile 24	Vibrations in elevated railroads, ef-
Triangulation, the study of 848	fect of
Trigonometry, the importance of 847	View, breadth of 519
Truss, parabolic	
Trusses, calculation, by various	
methods, of stresses in 488	
Trusses, distance between277, 278	W
321, 351, 451	
Trusses, economical depth of 230	Waddell, J. A. L., place and date of
278, 452	birth 1
Trusses for highway bridges 226	Walls and earth compared to steel
Trusses, multiple intersection300, 344	work for elevated railroads752, 753
Trusses, Pettit	Warren trusses 334
Trusses, pony	Wastes, Japanese disposal of 65
Trusses, Pratt	Water power, Japanese 75
Trusses, styles of306, 312, 320, 334, 344	Water supply, course in 114, 947, 951
346, 347, 351, 364 Two-column bents for elevated rail-	Web members, stiffening of 277
road	Web of girders, counted in flange 289
Tying a new line to an old one 34	Web plates, thickness of 394
Types of construction abandoned 453	Web stiffeners, crimped605, 684
Typical freight engines	Web stiffeners for plate girders 288
- yprem areagan enganearithman 411	Wheel concentrations, graphical
	methods of finding position of
U	maximum stress
Undergraduete week advise to stu	Wheel load method, origin of262, 331
Undergraduate work, advice to stu-	Whipple stresses, calculation of
dents regarding	stresses in
Uniform live loads262, 263, 265, 268	Whist, Dr. Waddell's interest in 10
Uniform live loads, labor-saving	Willows, their resistance to erosion. 59
value of338, 341, 346, 349, 358, 384	Wind pressure, amount of273, 298, 300
392, 398, 420, 421, 426	312, 320, 346, 350, 371
Uniform loads, accuracy of 268, 270, 271	382, 397, 425, 436, 450
298, 308, 309, 312, 314, 317, 324	Wind pressure, areas acting upon 274
327, 329, 331, 332, 338, 346, 358	Wind pressure, effect of 274, 323, 375
365, 374, 375, 424, 468, 469, 471	387, 425, 435
Uniform loads, diagrams for426, 431	Wind stresses, provision for 450
Uniform loads, use of, in calculating 436	Windmills for irrigation 79
Uniformity of construction of ele-	Wire ropes, fastenings for 561
vated railroads618, 620, 621, 622,	Wire ropes, testing of 564
624, 625, 627	Work, changes of, for experience 836 Work, joys of, by engineer 794
Union Loop Elevated Railroad 7	Work, plan for changes in 794
Unit stresses372, 383, 386, 387, 414	Working stresses, intensity of 301,
418, 438, 450	313, 354
Unit stresses, a matter of judgment. 499	Workmanship, quality of 892
Unit stresses for railway bridges 412 Unit stresses, formulæ for 295, 307, 348	Workmen, association with, for ex-
Unit stresses in elevated railroad	perience 788
structures	Writing by engineers, importance of,
Unit stresses in medium steel 776	830, 937
Universities, technical schools in 167	Writing by young engineers, re-
Uplifts, amount of 275	straint of 834
-,3	Writing of papers81, 512
V	
Versiles and substituted and by the first first	Y
Vacation, students' work in 153, 851, 864	
Vacation work in field156, 157	Voung engineers ambition of 922
Vacations, amount of 99	Young engineers, ambition of 823