

CONTENTS

PAPERS

No.		PAGE
1179	REMEDIES FOR LANDSLIDES AND SLIPS ON THE KANAWHA AND MICHIGAN RAILWAY.	
	By R. P. Black.....	1
	Discussion :	
	By CHARLES H. MILLER.....	8
	R. P. BLACK.....	9
1180	THE RECONSTRUCTION OF THE PASSENGER TERMINALS AT WASHINGTON, D. C.	
	By W. F. Strouse.....	11
1181	THE TIETON CANAL.	
	By E. G. Hopson.....	158
	Discussion :	
	By HORACE W. SHELEY.....	185
	H. F. DUNHAM.....	187
	E. G. HOPSON.....	187
1182	TWO REINFORCED CONCRETE COAL POCKETS.	
	By Myron S. Falk.....	192
1183	RUST—AS SHOWN IN THE REMOVAL OF A SEVENTEEN-STORY BUILDING.	
	By T. Kennard Thomson.....	200
	Discussion :	
	By E. L. VERVEER.....	202
	A. W. CARPENTER.....	203
	F. LAVIS.....	208
	S. M. PURDY.....	209
	R. A. MACGREGOR.....	209
	J. B. FRENCH.....	209
	F. W. GARDINER	211
	T. KENNARD THOMSON.....	211
1184	THE FAILURE OF THE YUBA RIVER DÉBRIS BARRIER, AND THE EFFORTS MADE FOR ITS MAINTENANCE.	
	By H. H. Wadsworth.....	217
	Discussion :	
	By WILLIAM W. HARTS.....	228
	W. C. HAMMATT.....	229
	THOMAS C. ATWOOD	231
	H. H. WADSWORTH.....	232

	PAGE
1185 THE ARCH PRINCIPLE IN ENGINEERING AND ESTHETIC ASPECTS, AND ITS APPLICATION TO LONG SPANS.	
By C. R. Grimm.....	233
Discussion :	
By MAX M. MILLER.....	249
LEON S. MOISSEIFF.....	252
FR. ENGESELLER.....	257
R. KROHN.....	258
R. S. BUCK.....	259
ERNST JONSON.....	267
GUSTAV LINDENTHAL.....	270
PAUL CHAPMAN.....	271
C. R. GRIMM.....	276
1186 A THEORY OF THE WATER WAVE.	
By Morton F. Sanborn.....	284
1187 HYDROMETRY AS AN AID TO THE SUCCESSFUL OPERATION OF AN IRRIGATION SYSTEM.	
By J. C. Stevens.....	314
Discussion :	
By E. F. CHANDLER.....	342
C. E. SHIPMAN.....	343
CLEMENS HERSCHEL.....	344
ROBERT FOLLANSBEE.....	346
J. C. STEVENS.....	347
1188 NOTES ON THE BAR HARBORS AT THE ENTRANCES TO COOS BAY, AND UMPQUA AND SIUSLAW RIVERS, OREGON.	
By Morton L. Tower.....	349
Discussion :	
By LEWIS M. HAUPT.....	360
MORTON L. TOWER.....	362
1189 TIMBER PRESERVATION, ITS DEVELOPMENT AND PRESENT SCOPE.	
By Walter Buehler.....	364
Discussion :	
By RICHARD LAMB.....	374
J. MARTIN SCHREIBER.....	382
GEORGE W. TILSON.....	384
ERNEST F. HARTMANN.....	388
A. L. DEAN.....	395
CLIFFORD RICHARDSON.....	399

MEMOIRS OF DECEASED MEMBERS

	PAGE
WILLIAM FOSTER BIDDLE, M. AM. SOC. C. E.....	401
CLARENCE ALLAN CARPENTER, M. AM. SOC. C. E.....	408
GEORGE EARL CHURCH, M. AM. SOC. C. E.....	405
WILFRED EMORY CUTSHAW, M. AM. SOC. C. E.....	408

	PAGE
CHARLES DAVIS, M. AM. SOC. C. E.	411
EDWIN PELEG DAWLEY, M. AM. SOC. C. E.	413
IRVING TUPPER FARNHAM, M. AM. SOC. C. E.	415
CHARLES EDWARD GOAD, M. AM. SOC. C. E.	418
DANIEL FARRAND HENRY, M. AM. SOC. C. E.	420
GEORGE ANTHONY LEDERLE, M. AM. SOC. C. E.	423
EDMUND DORMAN LIBBY, M. AM. SOC. C. E.	424
JOHN EGBERT MCCURDY, M. AM. SOC. C. E.	426
THOMAS McKEOWN, M. AM. SOC. C. E.	428
JOHN JAY MCVEAN, M. AM. SOC. C. E.	430
WILLIAM ANSON PEARSON, JR., M. AM. SOC. C. E.	431
STILLMAN WILLIAMS ROBINSON, M. AM. SOC. C. E.	433
ARCHIBALD ALEXANDER SPROUL, JR., M. AM. SOC. C. E.	435
GEORGE HUNTINGTON THOMSON, M. AM. SOC. C. E.	438
RICHARD FENWICK THORP, M. AM. SOC. C. E.	442
JAMES EAGER WILLARD, M. AM. SOC. C. E.	445
ROGER BROOKE IRWIN, ASSOC. M. AM. SOC. C. E.	448
VARDRY ECHOLS MCBEE, JR., ASSOC. M. AM. SOC. C. E.	449
RALPH CARROLL SOPER, ASSOC. M. AM. SOC. C. E.	450
NORMAN ALFRED TAYLOR, ASSOC. M. AM. SOC. C. E.	451
SILAS GILDERSLEEVE COMFORT, ASSOC. AM. SOC. C. E.	452
GEORGE HIGGINS MYERS, JUN. AM. SOC. C. E.	454

P L A T E S

PLATE		PAPER	PAGE
I.	Cross-Sections of Landslides, Kanawha and Michigan Railway, and Plan of Brighton Slip, Showing Piling Driven to Protect Track.....	1179	5
II.	Plan of Station Coach Yard, Roundhouse and Shops, Washington Terminal Improvement.....	1180	15
III.	Front Elevation ; and Interior of Main Waiting-Room during Construction, Washington Terminal Station.....	1180	17
IV.	Concourse ; and General Waiting-Room, Washington Terminal Station.....	1180	21
V.	Dining-Room ; and Balcony in Main Waiting-Room, Showing Lighting Equipment, Washington Terminal Station.....	1180	23
VI.	Main Waiting-Room during Construction ; and Traveler Used in Placing Ceiling Coffers, etc., Washington Terminal Station	1180	27
VII.	Roof of Concourse ; and West End of Washington Terminal Station, Showing Erection of Last Steelwork in Roof.....	1180	31
VIII.	Gate in Train Fence, Showing Train Sign ; and Portico, Washington Terminal Station.....	1180	57
IX.	Umbrella Sheds, Washington Terminal Station ; and Southern Portion of Express Building, Showing Traveler Used in Erection of Steelwork.....	1180	65
X.	Washington Terminal Station : General View of Throat of Train Yard ; and Interior View of K Street Tower.....	1180	115
XI.	Signal Bridge at Diamond Crossing ; and General View of North Approach to Washington Terminal Station.....	1180	117
XII.	Interlocking Plan, K Street Tower, Washington Terminal Station.....	1180	119