

CONTENTS

ART.	PAGE
350. Note on Bessel's Functions as applied to the Vibrations of a Circular Membrane	1
[<i>Philosophical Magazine</i> , Vol. xxi. pp. 53—58, 1911.]	
351. Hydrodynamical Notes	6
Potential and Kinetic Energies of Wave Motion	6
Waves moving into Shallower Water	7
Concentrated Initial Disturbance with inclusion of Capil- larity	9
Periodic Waves in Deep Water advancing without change of Type	11
Tide Races	14
Rotational Fluid Motion in a Corner	15
Steady Motion in a Corner of a Viscous Fluid	18
[<i>Philosophical Magazine</i> , Vol. xxi. pp. 177—195, 1911.]	
352. On a Physical Interpretation of Schlömilch's Theorem in Bessel's Functions	22
[<i>Philosophical Magazine</i> , Vol. xxi. pp. 567—571, 1911.]	
353. Breath Figures	26
[<i>Nature</i> , Vol. lxxxvi. pp. 416, 417, 1911.]	
354. On the Motion of Solid Bodies through Viscous Liquid	29
[<i>Philosophical Magazine</i> , Vol. xxi. pp. 697—711, 1911.]	
355. Aberration in a Dispersive Medium	41
[<i>Philosophical Magazine</i> , Vol. xxii. pp. 130—134, 1911.]	
356. Letter to Professor Nernst	45
[<i>Conseil scientifique sous les auspices de M. Ernest Solvay</i> , Oct. 1911.]	
357. On the Calculation of Chladni's Figures for a Square Plate	47
[<i>Philosophical Magazine</i> , Vol. xxii. pp. 225—229, 1911.]	
358. Problems in the Conduction of Heat	51
[<i>Philosophical Magazine</i> , Vol. xxii. pp. 381—396, 1911.]	
359. On the General Problem of Photographic Reproduction, with suggestions for enhancing Gradation originally Invisible	65
[<i>Philosophical Magazine</i> , Vol. xxii. pp. 734—740, 1911.]	
360. On the Propagation of Waves through a Stratified Medium, with special reference to the Question of Reflection	71
[<i>Proceedings of the Royal Society</i> , A, Vol. lxxxvi. pp. 207—266, 1912.]	

viii		CONTENTS	
ART.			PAGE
361.	Spectroscopic Methods		91
	[<i>Nature</i> , Vol. LXXXVIII. p. 377, 1912.]		
362.	On Departures from Fresnel's Laws of Reflexion		92
	[<i>Philosophical Magazine</i> , Vol. XXIII. pp. 431—439, 1912.]		
363.	The Principle of Reflection in Spectroscopes		100
	[<i>Nature</i> , Vol. LXXXIX. p. 167, 1912.]		
364.	On the Self-Induction of Electric Currents in a Thin Anchor-Ring		101
	[<i>Proceedings of the Royal Society, A</i> , Vol. LXXXVI. pp. 562—571, 1912.]		
365.	Electrical Vibrations on a Thin Anchor-Ring		111
	[<i>Proceedings of the Royal Society, A</i> , Vol. LXXXVII. pp. 193—202, 1912.]		
366.	Coloured Photometry		121
	[<i>Philosophical Magazine</i> , Vol. XXIV. pp. 301, 302, 1912.]		
367.	On some Iridescent Films		123
	[<i>Philosophical Magazine</i> , Vol. XXIV. pp. 751—755, 1912.]		
368.	Breath Figures		127
	[<i>Nature</i> , Vol. XC. pp. 436, 437, 1912.]		
369.	Remarks concerning Fourier's Theorem as applied to Physical Problems		131
	[<i>Philosophical Magazine</i> , Vol. XXIV. pp. 864—869, 1912.]		
370.	Sur la Résistance des Sphères dans l'Air en Mouvement		136
	[<i>Comptes Rendus</i> , t. CLVI. p. 109, 1913.]		
371.	The Effect of Junctions on the Propagation of Electric Waves along Conductors		137
	[<i>Proceedings of the Royal Society, A</i> , Vol. LXXXVIII. pp. 103—110, 1913.]		
372.	The Correction to the Length of Terminated Rods in Electrical Problems		145
	[<i>Philosophical Magazine</i> , Vol. XXV. pp. 1—9, 1913.]		
373.	On Conformal Representation from a Mechanical Point of View		153
	[<i>Philosophical Magazine</i> , Vol. XXV. pp. 698—702, 1913.]		
374.	On the Approximate Solution of Certain Problems relating to the Potential.—II		157
	[<i>Philosophical Magazine</i> , Vol. XXVI. pp. 195—199, 1913.]		
375.	On the Passage of Waves through Fine Slits in Thin Opaque Screens		161
	[<i>Proceedings of the Royal Society, A</i> , Vol. LXXXIX. pp. 194—219, 1913.]		
376.	On the Motion of a Viscous Fluid		187
	[<i>Philosophical Magazine</i> , Vol. XXVI. pp. 776—786, 1913.]		
377.	On the Stability of the Laminar Motion of an Inviscid Fluid		197
	[<i>Philosophical Magazine</i> , Vol. XXVI. pp. 1001—1010, 1913.]		
378.	Reflection of Light at the Confines of a Diffusing Medium		205
	[<i>Nature</i> , Vol. XCII. p. 450, 1913.]		
379.	The Pressure of Radiation and Carnot's Principle		208
	[<i>Nature</i> , Vol. XCII. pp. 527, 528, 1914.]		

CONTENTS		ix
ART.		PAGE
380.	Further Applications of Bessel's Functions of High Order to the Whispering Gallery and Allied Problems [<i>Philosophical Magazine</i> , Vol. xxvii. pp. 100—109, 1914.]	211
381.	On the Diffraction of Light by Spheres of Small* Relative Index [<i>Proceedings of the Royal Society</i> , A, Vol. xc. pp. 219—225, 1914.]	220
382.	Some Calculations in Illustration of Fourier's Theorem [<i>Proceedings of the Royal Society</i> , A, Vol. xc. pp. 318—323, 1914.]	227
383.	Further Calculations concerning the Momentum of Progressive Waves [<i>Philosophical Magazine</i> , Vol. xxvii. pp. 436—440, 1914.]	232
384.	Fluid Motions [<i>Proc. Roy. Inst.</i> March, 1914; <i>Nature</i> , Vol. xciii. p. 364, 1914.]	237
385.	On the Theory of Long Waves and Bores Experimental [<i>Proceedings of the Royal Society</i> , A, Vol. xc. pp. 324—328, 1914.]	250 254
386.	The Sand-Blast [<i>Nature</i> , Vol. xciii. p. 188, 1914.]	255
387.	The Equilibrium of Revolving Liquid under Capillary Force . . [<i>Philosophical Magazine</i> , Vol. xxviii. pp. 161—170, 1914.]	257
388.	Further Remarks on the Stability of Viscous Fluid Motion . . [<i>Philosophical Magazine</i> , Vol. xxviii. pp. 609—619, 1914.]	266
389.	Note on the Formula for the Gradient Wind [<i>Advisory Committee for Aeronautics. Reports and Memoranda.</i> No. 147. January, 1915.]	276
390.	Some Problems concerning the Mutual Influence of Resonators exposed to Primary Plane Waves [<i>Philosophical Magazine</i> , Vol. xxix. pp. 209—222, 1915.]	279
391.	On the Widening of Spectrum Lines [<i>Philosophical Magazine</i> , Vol. xxix. pp. 274—284, 1915.]	291
392.	The Principle of Similitude [<i>Nature</i> , Vol. xcv. pp. 66—68, 644, 1915.]	300
393.	Deep Water Waves, Progressive or Stationary, to the Third Order of Approximation [<i>Proceedings of the Royal Society</i> , A, Vol. xci. pp. 345—353, 1915.]	306
394.	Æolian Tones [<i>Philosophical Magazine</i> , Vol. xxix. pp. 433—444, 1915.]	315
395.	On the Resistance experienced by Small Plates exposed to a Stream of Fluid [<i>Philosophical Magazine</i> , Vol. xxx. pp. 179—181, 1915.]	326
396.	Hydrodynamical Problems suggested by Pitot's Tubes [<i>Proceedings of the Royal Society</i> , A, Vol. xci. pp. 503—511, 1915.]	329

* [1914. It would have been in better accordance with usage to have said “of Relative Index differing little from Unity.”]

X	CONTENTS	
ART.		PAGE
397.	On the Character of the “S” Sound [<i>Nature</i> , Vol. xcv. pp. 645, 646, 1915.]	337
398.	On the Stability of the Simple Shearing Motion of a Viscous Incompressible Fluid [<i>Philosophical Magazine</i> , Vol. xxx. pp. 329—338, 1915.]	341
399.	On the Theory of the Capillary Tube The Narrow Tube The Wide Tube [<i>Proceedings of the Royal Society</i> , A, Vol. xcii. pp. 184—195, Oct. 1915.]	350 351 356
400.	The Cone as a Collector of Sound [<i>Advisory Committee for Aeronautics</i> , T. 618, 1915.]	362
401.	The Theory of the Helmholtz Resonator [<i>Proceedings of the Royal Society</i> , A, Vol. xcii. pp. 265—275, 1915.]	365
402.	On the Propagation of Sound in Narrow Tubes of Variable Section [<i>Philosophical Magazine</i> , Vol. xxxi. pp. 89—96, 1916.]	376
403.	On the Electrical Capacity of Approximate Spheres and Cylinders [<i>Philosophical Magazine</i> , Vol. xxxi. pp. 177—186, March 1916.]	383
404.	On Legendre’s Function $P_n(\theta)$, when n is great and θ has any value* [<i>Proceedings of the Royal Society</i> , A, Vol. xcii. pp. 433—437, 1916.]	393
405.	Memorandum on Fog Signals [<i>Report to Trinity House</i> , May 1916.]	398
406.	Lamb’s <i>Hydrodynamics</i> [<i>Nature</i> , Vol. xcvi. p. 318, 1916.]	400
407.	On the Flow of Compressible Fluid past an Obstacle [<i>Philosophical Magazine</i> , Vol. xxxii. pp. 1—6, 1916.]	402
408.	On the Discharge of Gases under High Pressures [<i>Philosophical Magazine</i> , Vol. xxxii. pp. 177—187, 1916.]	407
409.	On the Energy acquired by Small Resonators from Incident Waves of like Period [<i>Philosophical Magazine</i> , Vol. xxxii. pp. 188—190, 1916.]	416
410.	On the Attenuation of Sound in the Atmosphere [<i>Advisory Committee for Aeronautics</i> . August 1916.]	419
411.	On Vibrations and Deflexions of Membranes, Bars, and Plates [<i>Philosophical Magazine</i> , Vol. xxxii. pp. 353—364, 1916.]	422
412.	On Convection Currents in a Horizontal Layer of Fluid, when the Higher Temperature is on the Under Side Appendix [<i>Philosophical Magazine</i> , Vol. xxxii. pp. 529—546, 1916.]	432 444
413.	On the Dynamics of Revolving Fluids [<i>Proceedings of the Royal Society</i> , A, Vol. xciii. pp. 148—154, 1916.]	447
	* [1917. It would be more correct to say $P_n(\cos \theta)$, where $\cos \theta$ lies between ± 1 .]	

CONTENTS		xī
ART.		PAGE
414.	Propagation of Sound in Water [<i>Not hitherto published.</i>]	454
415.	On Methods for Detecting Small Optical Retardations, and on the Theory of Foucault's Test [<i>Philosophical Magazine</i> , Vol. xxxiii. pp. 161—178, 1917.]	455
416.	Talbot's Observations on Fused Nitre [<i>Nature</i> , Vol. xcvi. p. 428, 1917.]	471
417.	Cutting and Chipping of Glass [<i>Engineering</i> , Feb. 2, 1917, p. 111.]	473
418.	The Le Chatelier-Braun Principle [<i>Transactions of the Chemical Society</i> , Vol. cxi. pp. 250—252, 1917.]	475
419.	On Periodic Irrotational Waves at the Surface of Deep Water [<i>Philosophical Magazine</i> , Vol. xxxiii. pp. 381—389, 1917.]	478
420.	On the Suggested Analogy between the Conduction of Heat and Momentum during the Turbulent Motion of a Fluid [<i>Advisory Committee for Aeronautics</i> , T. 941, 1917.]	486
421.	The Theory of Anomalous Dispersion [<i>Philosophical Magazine</i> , Vol. xxxiii. pp. 496—499, 1917.]	488
422.	On the Reflection of Light from a regularly Stratified Medium [<i>Proceedings of the Royal Society, A</i> , Vol. xciii. pp. 565—577, 1917.]	492
423.	On the Pressure developed in a Liquid during the Collapse of a Spherical Cavity [<i>Philosophical Magazine</i> , Vol. xxxiv. pp. 94—98, 1917.]	504
424.	On the Colours Diffusely Reflected from some Collodion Films spread on Metal Surfaces [<i>Philosophical Magazine</i> , Vol. xxxiv. pp. 423—428, 1917.]	508
425.	Memorandum on Synchronous Signalling [<i>Report to Trinity House</i> , 1917.]	513
426.	A Simple Problem in Forced Lubrication [<i>Engineering</i> , Dec. 14, 28, 1917.]	514
427.	On the Scattering of Light by Spherical Shells, and by Complete Spheres of Periodic Structure, when the Refractivity is Small [<i>Proceedings of the Royal Society, A</i> , Vol. xciv. pp. 296—300, 1918.]	518
428.	Notes on the Theory of Lubrication [<i>Philosophical Magazine</i> , Vol. xxxv. pp. 1—12, 1918.]	523
429.	On the Lubricating and other Properties of Thin Oily Films [<i>Philosophical Magazine</i> , Vol. xxxv. pp. 157—162, 1918.]	534
430.	On the Scattering of Light by a Cloud of Similar Small Par- ticles of any Shape and Oriented at Random [<i>Philosophical Magazine</i> , Vol. xxxv. pp. 373—381, 1918.]	540
431.	Propagation of Sound and Light in an Irregular Atmosphere [<i>Nature</i> , Vol. ci. p. 284, 1918.]	547

xii	CONTENTS	
ART.		PAGE
432.	Note on the Theory of the Double Resonator [<i>Philosophical Magazine</i> , Vol. xxxvi. pp. 231—234, 1918.]	549
433.	A Proposed Hydraulic Experiment [<i>Philosophical Magazine</i> , Vol. xxxvi. pp. 315, 316, 1918.]	552
434.	On the Dispersal of Light by a Dielectric Cylinder [<i>Philosophical Magazine</i> , Vol. xxxvi. pp. 365—376, 1918.]	554
435.	The Perception of Sound [<i>Nature</i> , Vol. cii. p. 225, 1918.]	564
436.	On the Light Emitted from a Random Distribution of Luminous Sources [<i>Philosophical Magazine</i> , Vol. xxxvi. pp. 429—449, 1918.]	565
437.	The Perception of Sound [<i>Nature</i> , Vol. cii. p. 304, 1918.]	583
438.	On the Optical Character of some Brilliant Animal Colours [<i>Philosophical Magazine</i> , Vol. xxxvii. pp. 98—111, 1919.]	584
439.	On the Possible Disturbance of a Range-Finder by Atmospheric Refraction due to the Motion of the Ship which carries it [<i>Transactions of the Optical Society</i> , Vol. xx. pp. 125—129, 1919.]	597
440.	Remarks on Major G. I. Taylor's Papers on the Distribution of Air Pressure [<i>Advisory Committee for Aeronautics</i> , T. 1296, 1919.]	602
441.	On the Problem of Random Vibrations, and of Random Flights in One, Two, or Three Dimensions One Dimension Two Dimensions Three Dimensions [<i>Philosophical Magazine</i> , Vol. xxxvii. pp. 321—347, 1919.]	604 607 610 618
442.	On the Resultant of a Number of Unit Vibrations, whose Phases are at Random over a Range not Limited to an Integral Number of Periods [<i>Philosophical Magazine</i> , Vol. xxxvii. pp. 498—515, 1919.]	627
443.	Presidential Address [<i>Proceedings of the Society for Psychical Research</i> , Vol. xxx. pp. 275—290, 1919.]	642
444.	The Travelling Cyclone [<i>Philosophical Magazine</i> , Vol. xxxviii. pp. 420—424, 1919.]	654
445.	Periodic Precipitates Hookham's Crystals [<i>Philosophical Magazine</i> , Vol. xxxviii. pp. 738—740, 1919.]	659 661
446.	On Resonant Reflexion of Sound from a Perforated Wall [<i>Philosophical Magazine</i> , Vol. xxxix. pp. 225—233, 1920.]	662

CONTENTS xiii

	PAGE
CONTENTS OF VOLUMES I—VI CLASSIFIED	
ACCORDING TO SUBJECT	670
I. Mathematics	671
II. General Mechanics	672
III. Elastic Solids	674
IV. Capillarity	675
V. Hydrodynamics	677
VI. Sound	681
VII. Thermodynamics	688
VIII. Dynamical Theory of Gases	689
IX. Properties of Gases	691
X. Electricity and Magnetism	694
XI. Optics	700
XII. Miscellaneous	707
INDEX OF NAMES	710