

CONTENTS.

ART.	PAGE
273. Interference of Sound	1
[<i>Royal Institution Proceedings</i> , xvii. pp. 1—7, 1902; <i>Nature</i> , lxvi. pp. 42—44, 1902.]	
274. Some General Theorems concerning Forced Vibrations and Resonance	8
Work Done	10
One Degree of Freedom	11
Several Degrees of Freedom	13
Action of Resonators.	15
Energy stored in Resonators	23
[<i>Philosophical Magazine</i> , iii. pp. 97—117, 1902.]	
275. On the Law of the Pressure of Gases between 75 and 150 millimetres of Mercury	27
The Manometers	28
General Arrangement of Apparatus	29
The Side Apparatus	30
General Sketch of Theory.	31
Thermometers	32
Comparison of Large Bulbs	33
Comparison of Gauges	33
The Observations	35
The Reductions	37
The Results	39
[<i>Phil. Trans.</i> cxviii. A, pp. 417—430, 1902.]	
276. On the Pressure of Vibrations	41
[<i>Philosophical Magazine</i> , iii. pp. 338—346, 1902.]	
277. On the Question of Hydrogen in the Atmosphere	49
Spectroscopic Evidence	49
Determinations by Combustion.	51
[<i>Philosophical Magazine</i> , iii. pp. 416—422, <i>April</i> 1902.]	
278. Does Chemical Transformation influence Weight?	56
[<i>Nature</i> , lxvi. pp. 58, 59, 1902.]	

vi	CONTENTS	
ART.		PAGE
279.	Is Rotatory Polarization influenced by the Earth's Motion? . [<i>Philosophical Magazine</i> , iv. pp. 215—220, 1902.]	58
280.	Does Motion through the Æther cause Double Refraction? . [<i>Philosophical Magazine</i> , iv. pp. 678—683, 1902.]	63
281.	On the Distillation of Binary Mixtures Distillation of a Pure Liquid Two or more Liquids which press independently Liquids which form true Mixtures Konowalow's Theorem Calculation of Residue Observations Alcohol and Water Hydrochloric Acid and Water Ammonia and Water Sulphuric Acid and Water Acetic Acid and Water A new Apparatus with uniform Régime [<i>Philosophical Magazine</i> , iv. pp. 521—537, 1902.]	68 68 68 69 71 73 74 75 77 79 80 80 81
282.	Note on the Theory of the Fortnightly Tide [<i>Philosophical Magazine</i> , v. pp. 136—141, 1903.]	84
283.	On the Free Vibrations of Systems affected with Small Rotatory Terms [<i>Philosophical Magazine</i> , v. pp. 293—297, 1903.]	89
284.	On the Vibrations of a Rectangular Sheet of Rotating Liquid . [<i>Philosophical Magazine</i> , v. pp. 297—301, 1903.]	93
285.	On the Spectrum of an Irregular Disturbance [<i>Philosophical Magazine</i> , v. pp. 238—243, 1903.]	98
286.	Considerations respecting the Combustion of Modern Propel- lants in Closed Vessels and in Guns Closed Vessels Combustion in Guns [<i>Minutes of Explosives Committee</i> , 1903.]	103 103 105
287.	On the Bending of Waves round a Spherical Obstacle . . . [<i>Proceedings of the Royal Society</i> , LXXII. pp. 40—41, 1903.]	112
288.	On the Proportion of Argon in the Vapour rising from Liquid Air [<i>Philosophical Magazine</i> , v. pp. 677—680, 1903.]	115

CONTENTS		vii
ART.		PAGE
289.	On the Theory of Optical Images, with Special Reference to the Microscope. (Supplementary Paper)	118
	[<i>Journ. R. Micr. Soc.</i> pp. 474—482, 1903.]	
290.	On the Production and Distribution of Sound	126
	Theory of Conical Trumpet	126
	Data respecting Fog-Signals	128
	Comparison with Musical Instruments, &c.	128
	Cones and Resonators	130
	Vibration Indicator	132
	Reeds	132
	Trumpets of Elongated Section	133
	Work done by Detached Sources	135
	Continuous Distributions	138
	Experimental Illustrations.	139
	[<i>Philosophical Magazine</i> , vi. pp. 289—305, 1903.]	
291.	On the Work done by Forces operative at one or more Points of an Elastic Solid	142
	[<i>Philosophical Magazine</i> , vi. pp. 385—392, 1903.]	
292.	On the Acoustic Shadow of a Sphere	149
	Appendix. By Professor A. LODGE	162
	Note by LORD RAYLEIGH	164
	[<i>Phil. Trans.</i> 203 A, pp. 87—110, 1904.]	
293.	Shadows	166
	[<i>Royal Institution Proceedings</i> , Jan. 15, 1904.]	
294.	Sir George Gabriel Stokes, Bart., 1819—1903	173
	[<i>Royal Society Year-Book</i> , 1904.]	
295.	On the Measurement of certain very short Intervals of Time	190
	[<i>Nature</i> , LXIX. pp. 560, 561, 1904.]	
296.	Note on the Application of Poisson's Formula to Discontinuous Disturbances	193
	[<i>Proceedings of the London Mathematical Society</i> , Ser. 2, II. pp. 266—269, 1904.]	
297.	Fluid Friction on Even Surfaces	196
	[Note to a paper by Prof. Zahm, <i>Phil. Mag.</i> VIII. pp. 66, 67, 1904.]	
298.	On the Electrical Vibrations associated with thin terminated Conducting Rods	198
	[<i>Philosophical Magazine</i> , VIII. pp. 105—107, 1904.]	

viii	CONTENTS	
ART.		PAGE
299.	On the Density of Nitrous Oxide	201
	[<i>Proceedings of the Royal Society</i> , LXXIV. pp. 181—183, 1904.]	
300.	Note to a Paper by Prof. Wood on the Achromatization of approximately Monochromatic Interference Fringes by a highly dispersive Medium	204
	[<i>Philosophical Magazine</i> , VIII. pp. 330, 331, 1904.]	
301.	On the Open Organ-Pipe Problem in Two Dimensions.	206
	[<i>Philosophical Magazine</i> , VIII. pp. 481—487, 1904.]	
302.	Extracts from Nobel Lecture	212
	[Given before the Royal Academy of Science at Stockholm, 1904.]	
303.	On the Compressibility of Gases between One Atmosphere and Half an Atmosphere of Pressure	216
	The Manometers	218
	General Arrangement of Apparatus	220
	The Side Apparatus	221
	General Sketch of Theory	221
	Thermometers	222
	The Large Reservoirs	223
	Comparison of Manometers	224
	The Observations	225
	The Reductions	227
	The Results	228
	[<i>Phil. Trans.</i> A, CCIV. pp. 351—372, 1905.]	
304.	On the Pressure of Gases and the Equation of Virial	238
	[<i>Philosophical Magazine</i> , IX. pp. 494—505, 1905.]	
305.	The Dynamical Theory of Gases and of Radiation	248
	[<i>Nature</i> , LXXI. p. 559; LXXII. pp. 54, 55; pp. 243, 244, 1905.]	
306.	An Optical Paradox	254
	[<i>Philosophical Magazine</i> , IX. pp. 779—781, 1905.]	
307.	The Problem of the Random Walk	256
	[<i>Nature</i> , LXXII. p. 318, 1905.]	
308.	On the Influence of Collisions and of the Motion of Molecules in the Line of Sight, upon the Constitution of a Spectrum Line	257
	[<i>Proceedings of the Royal Society</i> , A, LXXVI. pp. 440—444, 1905.]	
309.	On the Momentum and Pressure of Gaseous Vibrations, and on the Connexion with the Virial Theorem	262
	[<i>Philosophical Magazine</i> , X. pp. 364—374, 1905.]	

CONTENTS		ix
ART.		PAGE
310.	The Origin of the Prismatic Colours [<i>Philosophical Magazine</i> , x. pp. 401—407, 1905.]	272
311.	On the Constitution of Natural Radiation [<i>Philosophical Magazine</i> , xi. pp. 123—127, 1906.]	279
312.	On an Instrument for compounding Vibrations, with Application to the drawing of Curves such as might represent White Light Note on the Principle of the Sand-Clock [<i>Philosophical Magazine</i> , xi. pp. 127—130, 1906.]	283 285
313.	On Electrical Vibrations and the Constitution of the Atom . [<i>Philosophical Magazine</i> , xi. pp. 117—123, 1906.]	287
314.	On the Production of Vibrations by Forces of Relatively Long Duration, with Application to the Theory of Collisions [<i>Philosophical Magazine</i> , xi. pp. 283—291, 1906.]	292
315.	On the Dilatational Stability of the Earth [<i>Proceedings of the Royal Society</i> , A, LXXVII. pp. 486—499, 1906.]	300
316.	Some Measurements of Wave-Lengths with a Modified Apparatus [<i>Philosophical Magazine</i> , xi. pp. 685—703, 1906.]	313
317.	On the Experimental Determination of the Ratio of the Electrical Units [<i>Philosophical Magazine</i> , xii. pp. 97—108, 1906.]	330
318.	On the Interference-Rings, described by Haidinger, observable by means of Plates whose Surfaces are absolutely Parallel . . [<i>Philosophical Magazine</i> , xii. pp. 489—493, 1906.]	341
319.	On our Perception of Sound Direction [<i>Philosophical Magazine</i> , xiii. pp. 214—232, 1907.]	347
320.	Acoustical Notes Sensations of Right and Left from a revolving Magnet and Telephones Multiple Harmonic Resonator Tuning-Forks with slight Mutual Influence Mutual Reaction of Singing Flames Longitudinal Balance of Tuning-Forks A Tuning-Fork Siren and its Maintenance Stroboscopic Speed Regulation Phonic Wheel and Commutator [<i>Philosophical Magazine</i> , xiii. pp. 316—333, 1907.]	364 364 366 369 371 372 376 377 377

x	CONTENTS	
ART.		PAGE
321.	On the Passage of Sound through Narrow Slits	380
	Appendix	386
	[<i>Philosophical Magazine</i> , xiv. pp. 153—161, 1907.]	
322.	On the Dynamical Theory of Gratings	388
	[<i>Proceedings of the Royal Society</i> , A, LXXIX. pp. 399—416, 1907.]	
323.	Note on the remarkable case of Diffraction Spectra described by Prof. Wood	405
	[<i>Philosophical Magazine</i> , xiv. pp. 60—65, 1907.]	
324.	On the Light dispersed from Fine Lines ruled upon Reflecting Surfaces or transmitted by very Narrow Slits	410
	[<i>Philosophical Magazine</i> , xiv. pp. 350—359, 1907.]	
325.	On the Relation of the Sensitiveness of the Ear to Pitch, investigated by a New Method	419
	[<i>Philosophical Magazine</i> , xiv. pp. 596—604, 1907.]	
326.	Effect of a Prism on Newton's Rings	426
	[<i>Philosophical Magazine</i> , xv. pp. 345—351, 1908.]	
327.	Further Measurements of Wave-Lengths, and Miscellaneous Notes on Fabry and Perot's Apparatus	432
	Thirty Millimetre Apparatus	433
	Magnifying Power	435
	Adjustment for Parallelism	436
	Behaviour of Vacuum-Tubes	436
	Control of the figure of the glasses by bending	437
	Figuring by Hydrofluoric Acid	438
	Effect of Pressure in Fabry and Perot's Apparatus	440
	[<i>Philosophical Magazine</i> , xv. pp. 548—558, 1908.]	
328.	On the Aberration of Sloped Lenses and on their Adaptation to Telescopes of Unequal Magnifying Power in Perpendicular Directions	442
	[<i>Proceedings of the Royal Society</i> , A, LXXXI. pp. 26—40, 1908.]	
329.	Hamilton's Principle and the Five Aberrations of von Seidel	456
	[<i>Philosophical Magazine</i> , xv. pp. 677—687, 1908.]	
330.	Vortices in Oscillating Liquid	465
	[<i>Proceedings of the Royal Society</i> , A, LXXXI. pp. 259—271, 1908.]	

CONTENTS		xi
ART.		PAGE
331.	Acoustical Notes.—VIII	478
	Partial Tones of Stretched Strings of Variable Density	478
	Maintenance of Vibrations by Impact of Water Drops	481
	Discrimination between Sounds from directly in front and directly behind the Observer	483
	The Acousticon	483
	Pitch of Sibilants	486
	Telephones	486
	[<i>Philosophical Magazine</i> , xvi. pp. 235—246, 1908.]	
332.	On Reflexion from Glass at the Polarizing Angle	489
	[<i>Philosophical Magazine</i> , xvi. pp. 444—449, 1908.]	
333.	Note on Tidal Bores	495
	[<i>Proceedings of the Royal Society</i> , A, LXXXI. pp. 448, 449, 1908.]	
334.	Notes concerning Tidal Oscillations upon a Rotating Globe	497
	Plane Rectangular Sheet	498
	Spherical Sheet of Liquid	506
	[<i>Proceedings of the Royal Society</i> , A, LXXXII. pp. 448—464, 1909.]	
335.	On the Instantaneous Propagation of Disturbance in a Dis- persive Medium, exemplified by Waves on Water Deep and Shallow	514
	[<i>Philosophical Magazine</i> , xviii. pp. 1—6, 1909.]	
336.	On the Resistance due to Obliquely Moving Waves and its Dependence upon the Particular Form of the Fore-part of a Ship	519
	[<i>Philosophical Magazine</i> , xviii. pp. 414—416, 1909.]	
337.	On the Perception of the Direction of Sound	522
	[<i>Proceedings of the Royal Society</i> , A, LXXXIII. pp. 61—64, 1909.]	
338.	The Theory of Crookes's Radiometer	526
	[<i>Nature</i> , LXXXI. pp. 69, 70, 1909.]	
339.	To determine the Refractivity of Gases available only in Minute Quantities	529
	[<i>Nature</i> , LXXXI. p. 519, 1909.]	
340.	Note as to the Application of the Principle of Dynamical Similarity	532
	[<i>Report of the Advisory Committee for Aeronautics</i> , 1909—10, p. 38.]	
341.	The Principle of Dynamical Similarity in Reference to the Results of Experiments on the Resistance of Square Plates Normal to a Current of Air	534
	[<i>Report of Advisory Committee</i> , 1910—11.]	

xii	CONTENTS	
ART.		PAGE
342.	Note on the Regularity of Structure of Actual Crystals [<i>Philosophical Magazine</i> , xix. pp. 96—99, 1910.]	536
343.	Colours of Sea and Sky [<i>Royal Institution Proceedings</i> , Feb. 25, 1910; <i>Nature</i> , lxxxiii. p. 48, 1910.]	540
344.	The Incidence of Light upon a Transparent Sphere of Dimen- sions comparable with the Wave-Length Experimental [<i>Proceedings of the Royal Society</i> , A, lxxxiv. pp. 25—46, 1910.]	547 567
345.	On Colour Vision at the ends of the Spectrum [<i>Nature</i> , lxxxiv. pp. 204, 205, 1910.]	569
346.	Aerial Plane Waves of Finite Amplitude Waves of Finite Amplitude without Dissipation Waves of Permanent Regime Permanent Regime under the influence of Dissipative Forces Resistance to Motion through Air at High Velocities [<i>Proceedings of the Royal Society</i> , A, lxxxiv. pp. 247—284, 1910.]	573 573 583 587 608
347.	Note on the Finite Vibrations of a System about a Configura- tion of Equilibrium [<i>Philosophical Magazine</i> , xx. pp. 450—456, 1910.]	611
348.	The Problem of the Whispering Gallery [<i>Philosophical Magazine</i> , xx. pp. 1001—1004, 1910.]	617
349.	On the Sensibility of the Eye to Variations of Wave-Length in the Yellow Region of the Spectrum [<i>Proceedings of the Royal Society</i> , A, lxxxiv. pp. 464—468, 1910.]	621
Figure 5		to face p. 377