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Lord Rayleigh served as President of Royal Society from 1905 to 1908, when he became Chancellor of the University of Cambridge. In 1904 he became the first professor at the Royal Institution to be awarded a Nobel Prize. He received the physics award while Ramsey, with whom Rayleigh had conducted the research and announced the discovery of argon, received the Nobel Prize for chemistry. In 1906 he published his electron fluid model of the atom, a modification of Thomson's 'plum pudding' proposal. This was superseded by a series of other (also invalid) models, until Bohr's atomic theory of 1913. In 1907 Rayleigh published a detailed observational study on how humans can perceive sound and distinguish the directions of pure and complex tones. His interest in optics also continued, with a 1907 analysis of the theoretical basis for unusual banding patterns arising when polarised light was shone on diffraction gratings. This volume includes his papers from 1902 to 1910.

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VOLUME 5: 1902–1910

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# SCIENTIFIC PAPERS

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*Thou hast ordered all things in measure and number and weight.*  
WISDOM xi. 20.



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Figure 5 . . . . .		to face p. 377



## ERRATA.

### VOLUME I.

- Page 144, line 6 from bottom. *For D read  $D_1$ .*  
 „ 442, line 9. *After  $\frac{\rho' - \rho}{\rho'}$  insert  $y$ .*  
 „ 443, line 9. *For (7) read (8).*  
 „ 443, line 10. *For  $\eta$  read  $\xi$ .*  
 „ 446, line 10. *For  $\phi$  read  $\phi'$ .*  
 „ 448, line 5. *For  $v$  read  $c$ .*  
 „ 459, line 17. *For 256, 257 read 456, 457.*  
 „ 524. *In the second term of equations (32) and following for  $\Delta K^{-1}$  read  $\Delta \mu^{-1}$ .*  
 „ 528, line 3 from bottom. *For  $e^{int}$  read  $e^{i(nt - kt_0)}$ .*  
 „ 538, line 11 from bottom. *This passage is incorrect.*

### VOLUME II.

- „ 197, line 19. *For nature read value.*  
 „ 240, line 22. *For  $dp/dx$  read  $dp/dy$ .*  
 „ 241, line 2. *For  $du/dx$  read  $du/dy$ .*  
 „ 244, line 4. *For  $k/n$  read  $n/k$ .*  
 „ 414, line 5. *For favourable read favourably.*  
 „ 551, first footnote. *For 1866 read 1886.*

### VOLUME III.

- „ 92, line 4. *For Vol. I. read Vol. II.*  
 „ 129, equation (12). *For  $e^{u(i-x)} dx$  read  $e^{u(i-x)} du$ .*  
 „ 314, line 1. *For (38) read (39).*  
 „ 522, equation (31). *Insert as factor of last term  $1/R$ .*  
 „ 548, second footnote. *For 1863 read 1868.*  
 „ 569, second footnote. *For alcohol read water.*  
 „ 580, line 3. *Prof. Orr remarks that  $a$  is a function of  $r$ .*

### VOLUME IV.

- „ 277, equation (12). *For  $dz$  read  $dx$ .*  
 „ 299, first footnote. *For 1887 read 1877.*  
 „ 369, footnote. *For 1890 read 1896.*  
 „ 400, equation (14). *A formula equivalent to this was given by Lorentz in 1890.*  
 „ 418. *In table opposite 6 for .354 read .324.*  
 „ 556, line 8 from bottom. *For reflected read rotated.*