

# Contents

<b>Acknowledgments and Permissions</b>	<b>v</b>
<b>Series Editor's Preface</b>	<b>vii</b>
<b>Editor's Acknowledgment</b>	<b>viii</b>
<b>Contents by Author</b>	<b>xiii</b>
<b>Introduction. Acoustics: Science, Technology, and Art</b>	<b>1</b>
1. Lindsay, R. B.: "The Story of Acoustics"	5
<i>J. Acoust. Soc. Amer.</i> , <b>39</b> , 629–644 (1966)	
2. Aristotle: <i>De Anima</i> (Selections)	22
<i>De Audibilibus</i> (Selections)	
<i>A Source Book of Greek Science</i> , 288–290 (1948)	
3. Vitruvius: "Acoustics of the Theater"	26
Translation from the Latin treatise <i>De Architectura</i> , 139–145, 153 (1914)	
4. Boethius: "Concerning the Principles of Music"	35
Translation from the Latin edition of <i>De Institutione Musicae</i> , Sec. 1, 3, 8, 9, 10, 11 (1867)	
5. Galilei, Galileo: "Dialogues on Music and Acoustics"	41
<i>Mathematical Discourses Concerning Two New Sciences</i> , 138–157 (1730)	
6. Mersenne, Marin: "On the Velocity of Sound in Air"	63
Translated from <i>Cogitata Physico Mathematica</i> (1644)	
7. Boyle, Robert: "Air as the Medium for the Transmission of Sound"	68
<i>New Experiments, Physico-Mechanical, Touching the Spring of the Air</i> , 105–110 (1662)	
8. Newton, Isaac: "Theoretical Derivation of the Velocity of Sound in Air"	75
Excerpts from <i>Mathematical Principles of Natural Philosophy</i> , 356–367 (1848)	
9. Sauveur, Joseph: "Système général des intervalles du son / General System of Sound Intervals and Its Application to Sounds of All Systems and All Musical Instruments"	88
Translated from <i>Memoires de l'Academie Royale des Sciences</i> , 297–300, 347–354 (1701)	
10. Taylor, Brook, "De Motu Nervi Tensi / The Motion of a Stretched String"	96
Translated from <i>Phil. Trans. Roy. Soc. London</i> , <b>28</b> , 26–32 (1713)	
11. Euler, Leonhard: "Dissertation on Sound"	104
Translated from <i>Dissertatio Physica de Sono</i> (Basel) 1727	
12. d'Alembert, Jean le Rond: Recherches sur la courbe que forme une corde tendue mise en vibration / Investigations on the Curve Formed by a Vibrating String"	119
Translated from <i>Hist. Acad. Sci. Berlin</i> , <b>3</b> , 214–219 (1747)	
13. Lagrange, Joseph Louis: "Recherches sur la nature et la propagation du son / Researches on the Nature and Propagation of Sound"	125
Translated from <i>Miscellanea Taurinensis</i> , <b>1</b> , 1 (1759)	
<i>Oeuvres</i> , <b>1</b> , 39 (1867)	
14. Euler, Leonhard: "Letter to Joseph Louis Lagrange, from Berlin"	131
Translated from <i>Oeuvres de Lagrange</i> , <b>14</b>	

15. Euler, Leonhard: "On the Propagation of Sound" **136**  
Translated from *Memoires de l'Academie des Sciences de Berlin* (1766)
16. Chladni, Ernst Florens Friedrich: "Discoveries in the Theory of Sound" (Selections) **156**  
Translated from *Entdeckungen über die Theorie des Klanges* (Wittenberg, 1787)
17. Laennec, René Théophile Hyacinthe: "Invention of the Stethoscope" (Selection) **167**  
Selection from *A Treatise on the Diseases of the Chest*, John Forbes, ed. (Hafner Publishing Company) 284-288 (1962)
18. Poisson, Siméon Denis: "Memoir on the Theory of Sound" **173**  
Translated from *l'Ecole Polytechnique*, 7, 319 (1808)
19. Laplace, Pierre Simon: "Velocity of Sound in Air and Water" **181**  
Translated from *Ann. Chimie Physique III* (1816)
20. Wheatstone, Charles: "New Experiments on Sound" **184**  
*Ann. Phil.*, 81-90 (1823)
21. Colladon, Jean-Daniel: "Experiments on the Velocity of Sound in Water" **195**  
Translated from *Souvenirs et Mémoires—Autobiographie de J.-Daniel Colladon*, Geneva (1893)
22. Savart, Felix: "On the Sensitivity of the Ear" **203**  
Translated from Poggendorf's *Ann. Physik Chemie*, 20, 290 (1830)
23. Faraday, Michael: "Acoustic Streaming Over Vibrating Plates" **211**  
*Phil. Trans. Roy. Soc.*, 299-318 (1831)
24. Green, George: "On the Reflexion and Refraction of Sound" **232**  
*Trans. Cambridge Phil. Soc.*, 6, 233-242 (1838)
25. Ohm, Georg Simon: "On the Definition of a Tone with the Associated Theory of the Siren and Similar Sound Producing Devices" **243**  
Translated from Poggendorf's *Ann. Physik Chemie*, 59, 497ff. (1843)
26. Joule, James Prescott: "On the Effects of Magnetism upon the Dimensions of Iron and Steel Bars" (Selections) **249**  
*Phil. Mag.*, Ser. 3, 30, 76-87 (1847)
27. Stokes, George Gabriel: "Sound Attenuation Due To Viscosity" (Selections) **262**  
*Trans. Cambridge Phil. Soc.*, 8, 75-102 (1845)
28. Earnshaw, Samuel: "On the Mathematical Theory of Sound" **291**  
*Phil. Trans. Roy. Soc. London*, 150, 133-148 (1858)
29. Waterston, John James: "On the Theory of Sound" **308**  
*Phil. Mag.*, Ser. 4, 16, 481-495 (1858)
30. Helmholtz, Hermann von: "Sensations of Tone" (Selections) **324**  
From an English translation of *Die Lehre von den Tonempfindungen als physiologische Grundlage für die Theorie der Musik*, 3rd ed., 1-6, 36-49, 49-56 (1895)
31. Tyndall, John: "Singing and Sensitive Flames" **352**  
From *Sound* by J. Tyndall (Appleton), 217-237 (1867)
32. Blake, Eli Whitney, Jr.: "A Method of Recording Articulate Vibrations by Means of Photography" **366**  
*Amer. J. Sci. Arts*, Ser. 3, 16, 54-59 (1878)
33. Curie, Paul-Jacques, and Pierre Curie: "Crystal Physics—Development by Pressure of Polar Electricity in Hemihedral Crystals with Inclined Faces" **373**  
Translated from *Compt. Rend. Acad. Sci. Paris*, 91, 294 (1880)
34. Strutt, John William (Lord Rayleigh): "On the Theory of Resonance" (Selection) **376**  
*Scientific Papers of Lord Rayleigh* (Dover Publications, Inc.), Vol. I, 33-55 (1961)
35. Lord Rayleigh: "Our Perception of the Direction of a Source of Sound" **399**  
*Scientific Papers of Lord Rayleigh* (Dover Publications, Inc.), Vol. I, 277-279 (1961)
36. Lord Rayleigh: "On the Application of the Principle of Reciprocity to Acoustics" **402**  
*Scientific Papers of Lord Rayleigh* (Dover Publications, Inc.), Vol. I, 305-307 (1961)

37. Lord Rayleigh: "On the Physics of Media That are Composed of Free and Perfectly Elastic Molecules in a State of Motion"	407
<i>Scientific Papers of Lord Rayleigh</i> (Dover Publications, Inc.), Vol. III, 558-561 (1961)	
38. Lord Rayleigh: "On the Cooling of Air by Radiation and Conduction, and on the Propagation of Sound"	411
<i>Scientific Papers of Lord Rayleigh</i> (Dover Publications, Inc.), Vol. IV, 376-381 (1961)	
39. Sabine, Wallace Clement: "Reverberation" (Selection)	418
<i>Collected Papers on Acoustics</i> (Dover Publications, Inc.), 3-42 (1964)	
<b>Author Citation Index</b>	<b>459</b>
<b>Subject Index</b>	<b>461</b>