

CONTENTS

EXERCISE

EXERCISE	PAGE
25.—Find the density of a liquid by weighing a solid first in water then in the liquid	27
26.—Compare the densities of two liquids which do not mix (water and oil)	28
27.—Compare, by means of balancing columns, the densities of two liquids which mix	29
28.—Prove that a gas has weight	29
29.—Measure the pressure exerted by the atmosphere	30
30.—Study the action of the common pump	31
31.—Study the action of the force-pump	31
32.—Study the action of the siphon	31
33.—Measure the pressure of the gas in the city mains, or in a vessel into which air is pumped	32
34.—Find the way in which the volume of a given mass of gas changes when its pressure is changed, the temperature being kept constant (Boyle's Law)	33

PART IV—SOUND

35.—A study of the origin of sound	36
36.—Determine the velocity of sound in air by means of a stop-watch and a gun (alternative to Exercise 37)	37
37.—Determine the velocity of sound in air by means of a pendulum (alternative to Exercise 36)	38
38.—Find the wave-length of a sound	38
39.—Find the velocity of sound in glass or in metal (By Kundt's method)	39
40.—Find the vibration-frequency of a tuning-fork	40
41.—A study of pitch	42
42.—Investigate the laws of vibrating strings	43
43.—Investigate the nodes and loops of a vibrating string	44
44.—A study of flame-pictures given by sounds	46
45.—Experiments to show interference of sound-waves	47
46.—Find the wave-length of a sound by interference in a divided tube	48

PART V—HEAT

47.—Test the freezing and the boiling point of a thermometer	51
48.—Find the coefficient of linear expansion of a metal rod	53
49.—Compare the expansions of water and alcohol	55
50.—A study of the expansion of water near the freezing point	56
51.—Find the coefficient of expansion of a gas, Charles' Law (First method; alternative to Exercise 52)	57
52.—Find the coefficient of expansion of a gas, Charles' Law (Second method; alternative to Exercise 51).	59