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Collins' Elementary Science Series; Elements of Acoustics, Light and Heat by William Lees

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**WILLIAM LEES**

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# ELEMENTS

OF

# ACOUSTICS, LIGHT, AND HEAT.

BY

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1876.

## P R E F A C E.

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THE following treatise has been prepared in strict accordance with the syllabus of the Government Department of Science and Art, as indicated by their scheme of instruction for the elementary stage examination, in the particular branches of Acoustics, Light, and Heat.

Having taught these subjects for several years to large classes, and that with encouraging success, as tested by the annual examinations of my students, I feel the less hesitation in complying with the request made to me by the Publishers, of giving an outline of the course which I have followed, in the hope that it may be found useful to others engaging in the discharge of similar duties.

While instruction in the branches referred to, or indeed in physical science generally, is essentially dependent for its thorough efficiency on extensive and minute experimental illustration, the possession on the part of the teacher of the requisite instruments and apparatus, is of course, a *sine quâ non*.

Special references, accordingly, are made to these, and such explanations given of them by means of diagrams

and otherwise, as will enable the student to understand their construction and use, and thus aid him towards acquainting himself with the leading principles of these important departments of science.

At the end of each subject are added a few general questions, similar in some respects to those that have been given at the May examinations.

In an Appendix I have made a selection of questions from some of the former Government papers, and have given also their solutions. These, it is to be hoped, will be of use to the student in the way of showing him how to set down his knowledge of the subjects for the examiner.

Though many excellent books on Physics have been written of late years, both in our own country and on the continent, I must own myself more especially indebted to the works of Tyndall, Ganot, and Deschanel. For a more extensive and complete knowledge of the subjects in question, the student would do well to refer to these works.

W. L.

LINKVALE LODGE, VIEWFORTH,  
EDINBURGH, *December, 1872.*



# CONTENTS.



## ACOUSTICS.

### CHAPTER I.

	PAGE
Object of Acoustics—Cause of Sound—How the Air is Affected—A Sonorous Wave—Wave-Length—Sound not Transmitted through a Vacuum—Velocity of Sound—Elasticity and Density—Influence of Temperature—Changes of Temperature in a Sonorous Wave,	9

### CHAPTER II.

Intensity of Sound—Propagation of Sound through other Media—Table of Velocities through Different Substances—Reflection of Sound—Echoes—Refraction of Sound—Structure of the Ear, . . . . .	14
---	----

### CHAPTER III.

Physical Difference between a Musical Sound and Noise—Pitch, Intensity, and Quality of Musical Sounds—Method of Determining Number of Vibrations—Sonometer—Influence of Sound-Boards—Resonance—Nodes and Ventral Segments—Laws of the Vibration of Strings—Nodal Lines in a Vibrating Plate—Stopped and Open Pipes—Organ Pipes—Interference of Sound—Beats in Music—The Voice—Stuttering, . . . . .	20
QUESTIONS, . . . . .	30

---

## LIGHT.

### CHAPTER I.

Theories—Light Proceeds in Straight Lines—Definitions—Inversion by Rays Passing through a Small Aperture—Shadow—Penumbra—Velocity of Light—Law of Inverse Squares—Measurement of Intensity of Different Sources of Light, . . . . .	31
---	----

## CHAPTER II.

	PAGE
Reflection, Irregular or Scattered—Light in Itself Invisible—Regular Reflection, Plain Mirrors—Influence of Obliquity—Formation of Images by Plain Mirrors—Lateral Inversion—Simple Experiments, Curious Facts—Polemoscope—Multiplication of Images—Kaleidoscope—Reflection from Curved Mirrors—Spherical Aberration—Caustics, . . . . .	37

## CHAPTER III.

Refraction—Law of Refraction—Effects of Refraction—Refraction always Accompanied by Reflection—Transparency—Opacity of Transparent Mixtures—Total Reflection—The Limiting Angle—Lenses, Converging and Diverging—Formation of Images by Double Convex and Double Concave Lenses—Camera Obscura—Magic Lantern—Spherical Aberration, . . . . .	47
--	----

## CHAPTER IV.

The Eye: Its Structure—Distinct Vision—Punctum Cecum—Foramen Centrale—Why Objects are seen Erect—Single Vision—Adjustment of the Eye for Different Distances—Long and Short Sight—Spectacles—Size of Objects—Visual Angle—Persistence of Impressions—Irradiation—Stereoscope, . . . . .	60
---	----

## CHAPTER V.

Medium with Parallel Surfaces—Prisms: Course of a Ray through a Prism—Dispersion—Curious Facts as to the Solar Spectrum—Recomposition of White Light—Doctrine of Colours—Complementary Colours—Chromatic Aberration, . . . . .	71
QUESTIONS, . . . . .	78

## H E A T.

## CHAPTER I.

Nature of Heat—Heat and Cold—General Effect of Heat—Expansion of Solids—Co-Efficient of Expansion—Practical Applications—Breguet's Metallic Thermometer—Gridiron Pendulum—Exceptions to Expansion, . . . . .	79
--	----

CONTENTS.

7

CHAPTER II.

	PAGE
Expansion of Liquids—Thermometer—Thermometric Scales —Conversion from one Scale to Another—Ebullition —Dependence of the Boiling Point upon External Pressure—Illustrations—Maximum Density of Water—Department of Water in Freezing—Effects in Nature—Expansion on Solidification: a Property not Peculiar to Water, . . . . .	55

CHAPTER III.

Expansion of Gases—Illustrations—Fire-Balloon—Con- stancy of the Co-efficient of Expansion—Physical Character of Carbonic Acid and Sulphurous Acid Gases —Draft of Chimneys: Ventilation—General Character of Winds—Trade Winds—Land and Sea Breezes, . . . . .	93
---	----

CHAPTER IV.

Aqueous Vapour: Evaporation—Point of Saturation—Air Heated by Compression and Chilled by Expansion— Clouds: Rain—Dew—Snow—Hail, . . . . .	100
---	-----

CHAPTER V.

Specific Heat—Methods of Measuring Specific Heat of Bodies—Table of Specific Heats—Illustration—Influ- ence of High Specific Heat of Water on Climate— Latent Heat—Latent Heat of Water and Steam—Cold of Evaporation—Freezing by Evaporation—The Cryophorus, . . . . .	105
--	-----

CHAPTER VI.

Convection—Conduction—Relative Conductivity of Bodies —Illustrations—Effect of Mechanical Texture—Cloth- ing—Sensations of Heat and Cold—Combustion— Structure of a Candle Flame—Effect of Wire Gauze— Bunsen Lamp—Animal Heat, . . . . .	113
---	-----

CHAPTER VII.

Radiation of Heat: Theory of Exchanges—Reflection of Radiant Heat—Radiating Power of Bodies—Strange Effect of Close Contact—Application to Common Ex- perience—Absorbing Power of Bodies—Reciprocity of Radiation and Absorption—Refraction—Diather- mancy, . . . . .	121
QUESTIONS, . . . . .	128