

**REFRACTION, INCLUDING  
MUSCLE IMBALANCE AND  
THE ADJUSTMENT OF  
GLASSES**

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Refraction, Including Muscle Imbalance and the Adjustment of Glasses by Royal S. Copeland & Adolph E. Ibershoff

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**ROYAL S. COPELAND & ADOLPH E. IBERSHOFF**

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# REFRACTION

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MUSCLE IMBALANCE AND THE ADJUSTMENT  
OF GLASSES

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## PREFACE.

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With no word of explanation, it would be presumptuous to add to the large and growing list of excellent and exhaustive treatises on the subject of refraction. No student of medicine, we think, will deny that the study of this branch of practical therapeutics is beset with many difficulties, and, when viewed through the meshes of a multiplicity of diagrammatic cobwebs, it appears especially unattractive. We feel safe in adding that any real help in simplifying the teaching of refraction will be welcomed by student and practitioner. An attempt to accomplish this end is our only hope of justification, and if, in a small measure, we succeed in elucidating some of the difficult principles and problems of the subject, we shall feel that our efforts have not been vainly spent.

Refraction is an eminently practical science and we aim to treat it as such, divesting it, so far as possible, of such theoretical demonstrations, logarithmic computations, and minor technicalities as are not deemed absolutely essential to a thorough comprehension of the subject. To strip it of its embellishments is to invite criticism, but the relative importance of what has been omitted is, of course, a matter of judgment. To some of our readers, occasional statements may seem too broad, but if we have failed to limit them sufficiently, or to state all known exceptions, we have acted in the hope of avoiding confusion without sacrifice of essentials. To lead the student along practical lines to an accurate un-

derstanding of the applied principles of refraction has been the object of our labor. To this end, it is strongly recommended that the student early acquaint himself with the test-case and, so far as possible, supplement his studies by practical verification of the facts and theories set forth in the text.

*University of Michigan, June, 1905.*



# CONTENTS.

	PAGE.
CHAPTER I.	
OPTICAL PRINCIPLES, . . . . .	9
Wave Theory of Light, 9; The Light Ray, 9; Refraction, 10; Index of Refraction, 11; First Principles, 11.	
CHAPTER II.	
LENSES, . . . . .	13
A Lens, 13; The Prism, 13; Spherical Lenses, 14; Cylindric Lenses, 20; Properties of Lenses, 23; Varieties of Lenses, 23; Systems of Lens Measurements, 24; The English System, 25; The Metric System, 25; Prescription for Lenses, 26; Neutralization of Lenses, 26; Other Methods, 28; Measuring the Strength of a Prism, 29; Mechanical Devices for Measuring Lenses, 31; The Relationship of Lenses, 32; The Relationship Between Spheric and Cylindric Lenses, 32; The Relationship of Cylinders, 33; The Relationship of Spheres to Prisms, 34; The Relationship of Cylinders to Prisms, 34.	
CHAPTER III.	
THE NORMAL EYE, . . . . .	35
Introduction, 35; Requisites of Vision, 35; Dioptric System of the Eye, 35; Static Refraction, 36; Dynamic Refraction, 36; Physiology of Accommodation, 37; Convergence, 37; Relationship of Accommodation, Convergence and Pupillary Contraction in the Emmetropic Eye, 40; Optical Defects of the Normal Eye, 41; Changes Occurring During the Life History of the Eye, 42; Visual Acuity, 44.	
CHAPTER IV.	
ASTHENOPIA, . . . . .	47
Symptoms, 47; Asthenopia as a Cause of General Disease, 48.	
CHAPTER V.	
THE TRIAL CASE AND ITS USES, . . . . .	49
Introduction, 49; Spherical Lenses, 49; Cylindric Lenses, 49; Prismatic Lenses, 50; The Trial Frame, 52.	

## CHAPTER VI.

HYPEROPIA OR FAR SIGHT, . . . . .	55
Introduction, 55; Causes, 57; Symptoms and Sequelæ, 57; Spasm of Accommodation, 57; Varieties of Hyperopia, 58; Determination of Hyperopia, 58; Correction of Hyperopia, 58; Cycloplegics and Mydriatics, 60; Contraindication for the Use of Mydriatics, 60; Correction of Results Obtained Under a Cycloplegic, 61; Myotics, 62.	

## CHAPTER VII.

MYOPIA OR NEAR SIGHT, . . . . .	63
Introduction, 63; Causes of Myopia, 65; Symptoms of Myopia, 65; Determination of Myopia, 66; Correction of Myopia, 66; Prophylaxis, 67.	

## CHAPTER VIII.

ASTIGMIA, . . . . .	68
Introduction, 68; Forms of Regular Astigmatia, 69; Causes of Regular Astigmatia, 71; Symptoms, 71; Determination of Astigmatia, 71; Correction of Astigmatia, 74; Simple Hyperopic Astigmatia, 75; Simple Myopic Astigmatia, 76; Compound Hyperopic Astigmatia, 77; Compound Myopic Astigmatia, 78; Mixed Astigmatia, 79.	

## CHAPTER IX.

ANISOMETROPIA, APHAKIA, AMBLYOPIA AND MALINGERING, . . . . .	82
Anisometropia, 82; Aphakia, 82; Amblyopia and Amaurosis, 82; Malingering, 83.	

## CHAPTER X.

PRESBYOPIA, . . . . .	84
Causes and Symptoms, 84; The Relationship Between Presbyopia and the Age of the Patient, 86; Correction of Presbyopia, 86.	

## CHAPTER XI.

CONFIRMATORY TESTS (OBJECTIVE), . . . . .	88
Introduction, 88; Mirror Test (Direct Method), 89; Mirror Test (Indirect Method), 90; Retinoscopy or Skiascopy (Keratascopy), 91.	

## CHAPTER XII.

MUSCULAR IMBALANCE, . . . . .	94
Ocular Movements, 94; Muscular Balance or Orthophoria, 95; Heterotropia or Strabismus, 95; Heterophoria, 96; Forms of Heterophoria, 96; Determination of Heterophoria, 96; Prism Test, 98; Maddox Test, 98; Cobalt Test, 99; Cover Test, 99; Determination of Cyclophoria, 100; Correction of Heterophoria, 100; Correction of the Error of Refraction, 100; Prism Exercise, 101; Wearing of Prisms, 101; Operation, 102.	

## CHAPTER XIII.

SPECTACLES AND EYE GLASSES, . . . . .	103
Introduction, 103; Spectacles, 103; Requisites of Properly Fitting Glasses, 105; Measurements and Data for Ordering Spectacles, 105; Inter-pupillary Distance, 106; Size of Lenses, 107; Angle of Lenses, 107; Bridge or Nose Piece, 107; Temples, 108; Eye Glasses, 108; Measurements and Data for Ordering Eye Glasses, 109; Springs, 109; Studs, 110; Guards, 110; Other Forms of Glasses, 111; Half Oval Eye Frames, 111; Reversible Spectacles, 111; Hook or Grab Fronts, 111; Clerical or Adjustable Eye Glasses, 112.	

## CHAPTER XIV.

SPECIAL FORMS OF LENSES, . . . . .	113
Bifocal Lenses, 113; Periscopic Lenses, 114; Meniscus Lens, 115; Toric Lens, 115.	

## APPENDIX.

MECHANICAL AIDS TO REFRACTION, . . . . .	118
Ophthalmoscope, 119; Luminous Ophthalmoscope, 119; Luminous Retinoscope, 120; Ophthalmometroscopy, 122; Ametropometer, 125; Refractometer, 125; Placido's Disc, 126; Ophthalmometer, 127; Risley's Rotating Prism, 129; Phorometer, 129; Perimeter, 130; Stigmatometer, 132.	