

CONTENTS

	Page
I Introduction	1
II Preparation of Specimens for Micro-Examination	5
III The Microscope and Method of Microscopical Examination	21
IV Low-Power Photomicrography and Macrography	52
V The Structure of pure Metals and of Alloys	64
VI The Structure and properties of ingot iron and wrought iron	82
VII The Structure and Properties of Normalized and Annealed Barbon Steels, and the Effect Of Hot- and Cold-work	86
VIII The Structure and Properties of Hardened and Tempered Carbon Steels	98
IX The Structure and Properties of Alloy Steels, and the effect of heat treatment	109
X Non-Metallic Inclusions and Defects in Steel	127
XI The Structure and Properties of Pig Iron, Cast Iron and Malleable Cast Iron	142
XII The Effect of Impurities in Copper	151
XIII The Structure and Properties of Alloys of Copper with Zinc, Tin, Silicon, Aluminum and Nickel	159
XIV The Structure and Properties of Alloys of Nickel with Copper, Iron and Chromium	178
XV The Structure and Properties of Alloys of Aluminum	182
XVI The Structure and Properties of Alloys of Magnesium	192
XVII The Structure and Properties of Alloys of Zinc, Tin, Lead, and of Bearing Metals	196
XVIII Special Techniques in Metallurgical Microscopy	205
Index of Photomicrographs	215
Subject Index	217