CONTENTS

List	of Illu	istrations	vii
0	Preface and acknowledgments		
	A quick guide through this book		
1	Introduction		9
	1.1	Cultures, scopic regimes and visual domains	9
	1.2	Visual versus textual	28
	1.3	Text-image interplay and ekphrasis	41
	1.4	Visual rhetoric – arguments with images and models	51
	1.5	Alpers on the "Dutch connection"	62
	1.6	Instruments for creating and recording images	64
	1.7	A few deep insights from early 'visual studies'	69
	1.8	Later wrong turns of "the visual turn"	76
2	Histo	priographic layers of visual science cultures	81
	2.1	'Visual culture' vs. 'visual studies'	82
	2.2	My account of visual cultures as superimposed layers	84
3	Form	nation of visual science cultures	87
	3.1	Rudwick on geology	87
	3.2	The architects of stereochemistry	
	3.3	Sorby: Microscopic petrography and metallography	99
	3.4	Wheeler and geometrodynamics	107 113
4	Pioneers of visual science cultures		
	4.1	Some examples: Scheiner, Lambert, Young, Nasmyth	113
	4.2	Iconophile versus iconophobe types	135
	4.3	A prosopography of spectroscopists	142
	4.4	Generalizability of these claims	154
5	Tran	sfer of visual techniques	164
	5.1	The gradual diffusion of perspectival drawing	169
	5.2	Indicator diagrams from industrial secret to thermodynamics	180
	5.3	NMR: From physics to chemistry and medicine (MRI)	
	5.4	CT and PET scanners in medicine	200
6	Supp	port by illustrators and image technicians	206
	6.1	Leonhart Fuchs and his team of artisans	209
	6.2	Linus Pauling and Roger Hayward	217
	6.3	Friction between scientist and illustrator	229

vi Contents

7	One i	mage rarely comes alone	233
	7.1	Nickelsen on copy relations in botanical illustrations	234
	7.2	Diachronic succession of printing techniques	237
	7.3	Near-synchronous chains of representation	238
	7.4	Cinematographic images and science films	241
	7.5	The drift of scientific images into the public sphere	258
	7.6	Viscourse on top of discourse	262
8	Practi	ical training in visual skills	264
	8.1	Technical drawing in France, Germany and Britain	265
	8.2	Slides, posters and plates in training scientists	277
	8.3	X-ray atlases and training radiologists	281
9	Mastery of pattern recognition		
	9.1	Visual inventories of possibilities	291
	9.2	The illusory pattern of Martian canals	297
	9.3	Electron microscopy	310
	9.4	Interobserver and intraobserver variability in CT scans	317
10	Visua	al thinking in scientific and technological practice	321
	10.1	Gooding on Faraday and fossils	327
	10.2	Crystallographic puzzles: space models and x-ray diffraction	331
	10.3	Suspension bridge construction	341
11	Recu	arrent color taxonomies	348
	11.1	Gauging the blue of the sky: cyanometry	353
	11.2	Mineralogical color codes	358
12	Aest	hetic fascination as a visual culture's binding glue	362
	12.1	Mineralogical cabinets and collectors	364
	12.2	Beauty contests for electron-microscope images	368
13	Issue	es of visual perception	374
	13.1	Jules Janssen: black drops and solar granulation	374
	13.2	Recording the invisible	383
14	Visu	ality through and through	387
Со	lor pla	ites	I-XVI
Lis	List of abbreviations		
Re	comm	ended pathways into the secondary literature	392
Bil	oliogra	phy	395
Se	lect we	ebpages	481
Na	ame in	dex	483