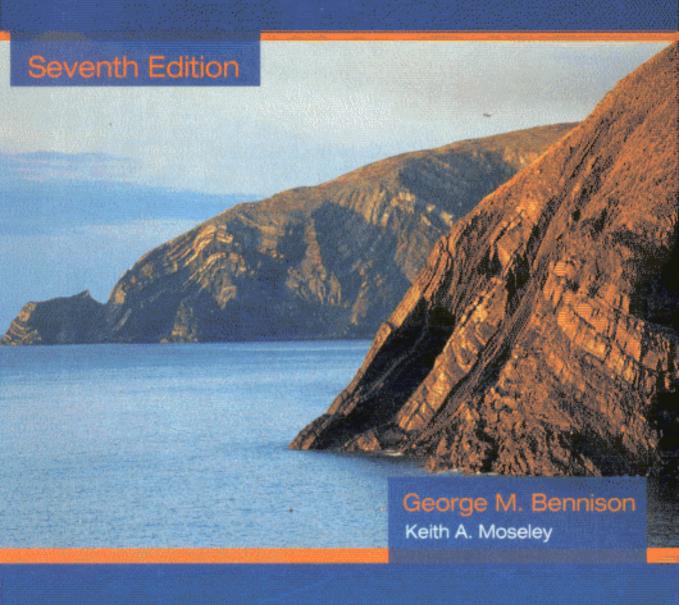
Geological Structures & Maps



CONTENTS

List of plates		viii ix
Preface to th		
Preface to previous editions		ix
Key to maps	xi	
Chapter I	Horizontal and dipping strata	ı
	Contours Dip Structure contours (= strike lines)	1 3 5
	Construction of structure contours True and apparent dip	5 10
	Calculation of the thickness of a bed Vertical thickness and true thickness Width of outcrop Inliers and outliers Exercises using Geological Survey Maps	11 11 11 14 14
Chapter 2	'Three-point' problems	16
	Construction of structure contours Depth in boreholes Insertion of outcrops	16 16 18
Chapter 3	Unconformities	21
	Overstep Overlap Sub-unconformity outcrops Exercises using Geological Survey Maps	22 26 26 26
Chapter 4	Folding	28
	Anticlines and synclines Asymmetrical folds Similar and concentric folding Two possible directions of strike Exercise on published Geological Survey Map	29 30 34 35 41

Chapter 5	Map solution without structure contours I	42
	(Simple maps with structures so far described)	
Chapter 6	Faults	50
	Normal and reversed faults	51
	The effects of faulting on outcrops	52
	Classification of faults	53
	Calculation of the throw of a fault	57
	Faults and economic calculations	57
	Wrench or tear faults	60
	Pre- and post-unconformity faulting	61
	Structural inliers and outliers	61
	Posthumous faulting	61
	Isopachytes	61
	Exercises on published Geological Survey Maps	66
Chapter 7	Map solution without structure contours 2	67
	(More advanced maps which include all the structures so far described, as well as igneous features)	
Chapter 8	More folds and faulted folds	77
	Plunging folds	<i>7</i> 7
	The effects of faulting on fold structures	80
	Displacement of folds by strike-slip (wrench) faults	80
	Calculation of strike-slip displacement	81
	Faults parallel to the limbs of a fold	81
	Sub-surface structures	81
	Posthumous folding	81
	Polyphase folding	86
	Bed isopachytes	86
	Exercises on Geological Survey Maps	87
Chapter 9	Igneous features	90
	Lavas	90
	Pyroclastic deposits	90
	Concordant intrusions	90
	Discordant intrusions	92
	Exercise on Geological Survey Map	99
Chapter 10	Planetary geology	101
	Solutions to planetary geology maps	105
Chapter II	Economic problems	107
Chapter I2	Complex structures	122

Index	158
Block diagrams	152
Real-apparent dip conversion graph	151
Dip/vertical thickness table	150
Dip/apparent dip table	150
Numerical answers	149
Completed map solutions	142
Completed sections across problem maps	132
Appendix	132
Exercise on Geological Survey Map	131
The geological history of Map 45	130
Description of a geological map	130
Axial plane cleavage	124
Thrust faults	124