

CONTENTS

	PAGE.
PREFACE	3
CONTENTS— <i>Chapters, List of Illustrations and List of Tables</i>	5
I. ——————(<i>Editorial Note</i>)	11
II.—TEMPERATURE	
I. Adélie Land and Queen Mary Land—	
1. Instruments and Methods	13
2. Topography	13
3. Temperature Observations	17
Mean Temperatures	17
Annual Variation	20
Diurnal Variation	21
Extreme Temperatures	27
Variability... ..	30
II. Macquarie Island—	
1. Instruments and Methods, Location, Etc.	37
2. Temperature Observations	37
Mean Temperatures	37
Annual Variation	39
Diurnal Variation	41
Extreme Temperatures	43
Variability... ..	43
III.—PRESSURE	
I. Adélie Land and Queen Mary Land—	
1. Instruments and Methods	46
2. Observations	47
Mean Pressure	47
Annual Variation	49
Diurnal Variation	52
Non-Periodic Variations	54
Pressure Waves	57
II. Macquarie Island—	
1. Instruments and Methods	60
2. Observations	60
Mean Pressure and Annual Variation	60
Diurnal Variation	66
Non-Periodic Variations	66
Pressure Waves	71

LIST OF ILLUSTRATIONS

Figure No.	Title.	Chapter.	Page.
1	Map of the Australasian Quadrant in high southern latitudes	II	14
2	Map of the coastal region of Antarctica adjacent to the Main Antarctic Base Station ... ..	.....	15
3	Map of the coastal region of Antarctica adjacent to the Queen Mary Land Base Station ... ..	.....	16
4	Annual Variation of Temperature ... ..	.....	17
5	Temperature at Southern Stations ... ..	.....	19
6	Diurnal Variation of Temperature at Adélie Land ... ..	.....	23
7	Diurnal Variation of Temperature, Queen Mary Land... ..	.....	24
8	Map of the vicinity of the Base Station on Macquarie Island ... ..	.....	36
9	Annual Variation of Temperature, Macquarie Island ... ..	.....	39
10	Diurnal Variation of Temperature, Macquarie Island ... ..	.....	41
11	Temperature differences ... ..	.....	45
12	Comparison of Monthly Pressures	III	47
13	Annual Variation of Pressure, Adélie Land ... ..	.....	48
14	Annual Variation of Pressure at Antarctic Stations; Ross Sea to Queen Mary Land ... ..	.....	48
15	Diurnal Variation of Pressure, Adélie Land ... ..	.....	49
16	Diurnal Variation of Pressure, Queen Mary Land ... ..	.....	50
17	Annual Variation of Pressure ... ..	.....	62
18	Annual Variation of Pressure ... ..	.....	62
19	Diurnal Variation of Pressure, Macquarie Island ... ..	.....	63
20	Annual Variation of Wind Velocity, Adélie Land	IV	74
21	Diurnal Variation of Wind Velocity, Adélie Land ... ..	.....	77
22	Diurnal Variation of Wind Velocity, Adélie Land ... ..	.....	78
23	Cloud Movement, Adélie Land ... ..	.....	82
24	Annual Variation of Wind Velocity, Macquarie Island... ..	.....	83
25	Percentage Frequencies—(a) of all Winds, and (b) of Gales—from Various Directions, Macquarie Island ... ..	.....	86
26	Diurnal Variation of Wind Velocity, Macquarie Island... ..	.....	87
27	Cloud Movement, Macquarie Island	IV	92
28	Comparison of Sea and Air Temperatures, Macquarie Island	V	110
29	Diagram showing Variation with Latitude of Monthly Pressure Change	VI	119
30	Diagram showing Variation with Latitude of Monthly Temperature Change ... ..	.....	120

LIST OF TABLES

Table No.	Title.	Chapter.	Page.
	Temperature—		
I	Monthly Means, Adélie Land and Queen Mary Land...	II	18
II	Harmonic Analysis of Annual Variation, Adélie Land and Queen Mary Land ... ..	.....	18
III	Mean Diurnal Inequalities, Adélie Land ... ..	.....	22
IV	Mean Diurnal Inequalities, Queen Mary Land ... ..	.....	22
V	Harmonic Analysis of Diurnal Variation, Adélie Land and Queen Mary Land ... ..	.....	26
VI	Extremes, Adélie Land and Queen Mary Land ... ..	.....	28
VII	Absolute Extremes, Adélie Land and Queen Mary Land ... ..	.....	28
VIII	Interdiurnal Variation, Adélie Land ... ..	.....	29
IX	Interdiurnal Variation, Frequency of Different Values, Adélie Land ... ..	.....	31
X	Interdiurnal Variation, Maximum Values, Adélie Land ... ..	.....	32
XI	Interdiurnal Variation, Queen Mary Land ... ..	.....	33
XII	Interdiurnal Variation, Frequency of Different Values, Queen Mary Land ... ..	.....	34
XIII	Interdiurnal Variation, Maximum Values, Queen Mary Land ... ..	.....	35
XIV	Monthly Means, Macquarie Island ... ..	.....	38
XV	Harmonic Analysis of Annual Variation, Macquarie Island and Chatham Island ... ..	.....	38
XVI	Diurnal Inequalities, Macquarie Island ... ..	.....	40
XVII	Harmonic Analysis of Diurnal Variation, Macquarie Island ... ..	.....	42
XVIII	Absolute Extremes, Macquarie Island... ..	.....	42
XIX	Interdiurnal Variation from Daily Means, Macquarie Island and Adélie Land ... ..	.....	44
	Pressure—		
XX	Monthly Means, Adélie Land and Queen Mary Land	III	46
XXI	Diurnal Inequalities, Adélie Land ... ..	.....	51
XXII	Diurnal Inequalities, Queen Mary Land ... ..	.....	51
XXIII	Harmonic Analysis of Diurnal Variation, Adélie Land and Queen Mary Land ... ..	.....	53
XXIV	Comparison of Calculated and Observed Amplitude and Phase of Semi-diurnal Variation at various Stations ... ..	.....	53
XXV	Variability, Maxima and Minima, Adélie Land ... ..	.....	55
XXVI	Mean Interdiurnal Variation, Adélie Land ... ..	.....	55
XXVII	Interdiurnal Variation—Percentage Frequency of Various Ranges from hourly Values, Adélie Land...	.....	56
XXVIII	Waves at Queen Mary Land ... ..	.....	58
XXIX	Waves at Adélie Land ... ..	.....	59

Table No.	Title.	Chapter.	Page.
	Pressure—		
XXX	Monthly Means at Macquarie Island, Wellington, Christchurch and Dunedin ... ..	.....	61
XXXI	Harmonic Analysis of Annual Variation at Macquarie Island ... ..	.....	61
XXXII	Diurnal Inequalities, Macquarie Island ... ..	.....	64
XXXIII	Harmonic Analysis of Diurnal Variation, Macquarie Island ... ..	.....	65
XXXIV	Variability, Maxima and Minima, Macquarie Island... ..	.....	67
XXXV	Percentage Frequency of times of Maxima and Minima, Macquarie Island ... ..	.....	67
XXXVI	Interdiurnal Variation, Macquarie Island ... ..	.....	68
XXXVII	Diurnal Variation of Interdiurnal Variation, Macquarie Island ... ..	.....	68
XXXVIII	Interdiurnal Variation—Percentage Frequencies of Various Ranges from Hourly Values, Macquarie Island ... ..	.....	70
XXXIX	Waves at Macquarie Island ... ..	.....	72
	Wind—		
XL	Mean Velocities, Adélie Land	IV	72
XLI	Mean Diurnal Inequalities of Velocity, Adélie Land... ..	.....	79
XLII	Harmonic Analysis of Diurnal Variation of Velocity, Adélie Land ... ..	.....	80
XLIII	Mean Velocities, Macquarie Island ... ..	.....	80
XLIV	Percentage Frequency of Various Directions (individual years), Macquarie Island ... ..	.....	84
XLV	Percentage Frequency of Various Directions (from all observations), Macquarie Island ... ..	.....	85
XLVI	Number of Gales per month, Macquarie Island ... ..	.....	85
XLVII	Percentage Frequency of Gales from different Directions, Macquarie Island ... ..	.....	85
XLVIII	Diurnal Inequalities of Velocity, Macquarie Island ... ..	.....	88
XLIX	Harmonic Analysis of Diurnal Variation of Velocity, Macquarie Island ... ..	.....	89
L	Example of Gustiness in North to West Winds, Macquarie Island ... ..	.....	91
	Humidity—		
LI	Mean Relative Humidity, Adélie Land	V	95
LII	Mean Diurnal Inequalities of Relative Humidity, Adélie Land ... ..	.....	96
	Bright Sunshine—		
LIII	Monthly Totals, Adélie Land ... ..	.....	96
LIV	Mean Number of Hours, Adélie Land ... ..	.....	97

LIST OF TABLES.

Table No.	Title.	Chapter.	Page.
LV	Mean Amount of Cloud, Adélie Land ... ..	.....	100
LVI	Cloud—Percentage Frequency of Different Amounts at Noon, Adélie Land ... ..	.....	100
LVII	Falls of Spherical Snow ... ..	.....	101
LVIII	Precipitation—Macquarie Island ... ..	.....	102
	Humidity—		
LIX	Monthly Means, Macquarie Island ... ..	.....	103
LX	Mean Diurnal Inequalities of Relative Humidity, Macquarie Island ... ..	.....	104
LXI	Bright Sunshine—Total Hours, Macquarie Island Cloud—	.....	106
LXII	Mean Amount, Macquarie Island ... ..	.....	106
LXIII	Percentage Frequency of Different Amounts, Macquarie Island ... ..	.....	108
LXIV	Phenomena—Frequency of Occurrence, Macquarie Island ... ..	.....	108
LXV	Sea Temperature Means, Macquarie Island ... ..	.....	110