

C O N T E N T S

INTRODUCTION.....	1 - 3
1. "DOLOMITIZATION" RECONSIDERED	4 - 24
What diagenesis?	4
Models of "dolomitization"	5
High-temperature syntheses	7
Replacement	9
Laboratory evidence	12
Huntite and norsethite	15
Solid state diffusion	17
Microtextures	19
Discussion.....	20
2. SOLID SOLUTION OR SUPERLATTICE ?	25 - 65
Mixed crystals.....	25
Structural chemistry.....	27
X-Ray analysis.....	30
Diffraction signal	31
Stacking faults	33
Stoichiometry.....	44
Magnesium calcites	50
Calcite, aragonite and dolomite	58
Discussion.....	61
3. NEODOLOMITE RE-EXAMINED	66 - 85
The precursor	66
Superstructure reflections.....	68
Degree of order	69
Formation of superlattices	70
Exsolution	72
Phase relations	74
Disordered dolomite?	78
Discussion.....	81

4. REGIONAL ASPECTS.....	86 - 164
Introduction.....	86
Afghanistan.....	86
Australia.....	87
Austria.....	94
Bahamas.....	97
Barbados.....	100
Belize.....	101
Bonaire.....	103
Botswana.....	105
Brazil.....	105
Canada.....	107
Chad.....	110
Colombia.....	110
Denmark.....	111
France.....	111
Germany.....	112
Ghana.....	112
Greece.....	113
Hungary.....	113
India.....	114
Indonesia.....	115
Iran.....	115
Israel.....	116
Italy.....	120
Jamaica.....	121
Japan.....	121
Kenia.....	122
Libya.....	122
Mexico.....	122
Netherlands.....	124
Pacific atolls.....	124
Persian Gulf.....	135
Russia.....	138
South Africa.....	140
Spain.....	140
Tanzania.....	143
Tunisia.....	145
Turkey.....	147
United Kingdom.....	148
United States.....	148
Dolomite in deep-sea sediments.....	158
Dolomite in caves.....	162
Discussion.....	163

5. ORGANIC OR INORGANIC ?	165 - 190
Introduction.....	165
Dolomite in reefs	166
Dolomite in peat and coal.....	169
Dolomite in dogs	172
Dolomite in pearls	174
Dolomite and algae.....	174
Dolomite and bacteria	177
Discussion.....	188
6. MAGNESITE AND HUNTITE	191 – 215
A. Magnesite	
Introduction.....	191
Syntheses of magnesite	194
Occurrences of Recent magnesite.....	198
Amorphous magnesium carbonate	202
Hydrated magnesium carbonates	204
Dehydration barrier	207
Magnesia alba and hydromagnesite.....	209
B. Huntite	
Introduction.....	212
Recent deposits of huntite	213
7. DOLOMITE SYNTHESSES	216 - 277
Introduction.....	216
Irreproducible results.....	221
Scheerer's experiment.....	225
Experiments by Pfaff.....	229
Experiments by Linck	231
Leitmeier's experiments.....	237
Experiments of Lalou	241
Experiments of Zeller, Saunders & Siegel	242
Erenburg's experiments	249
Budzinski's experiment	251
Experiments by Oppenheimer & Master.....	255
Liebermann's experiments.....	258
Experiments by Glover & Sippel.....	262
Experiment by Donahue & Donahue.....	265
McCunn's experiments	267
Experiments by Mirsal & Zankl	270
Deelman's experiments.....	273

8. MECHANISM OF DOLOMITE FORMATION.....	278 - 329
Nucleation and statistics	278
Stability and metastability	281
Breaking Ostwald's Rule	285
Reversible or irreversible ?	288
Formation of magnesite.....	293
Dolomite formation	298
Organic or inorganic?.....	308
Replacement ?.....	317
Looking back (and forward).....	324
9. NOTES.....	330 - 365
REFERENCES	366 - 485
A – D	366
E – K	392
L – R	426
S – Z	461
APPENDIX: A tribute to Otto Liebermann.....	486 - 487
