

Contents

Preface	vii
1 Behaviour in <i>Leptothorax</i> ants	1
1.1 A brief taxonomical review	1
1.2 Distribution	2
1.3 Colony size	3
1.4 Social organization: queen number and role	3
1.5 Communications	8
1.6 Activity patterns in time	11
1.7 Activity in space	16
1.8 Cycles of activity as collective behaviour	18
2 Collective behaviour in artificial systems	19
2.1 Mobile Cellular Automata	20
2.2 System microdynamics	22
2.3 The dynamics of social facilitation	24
2.4 System macrodynamics	25
2.5 Stability and robustness	27
2.6 Space dynamics	30
2.7 Ants and MCA	31
3 Summary and discussion	37
Appendix A	40
Appendix B	46
Bibliography	47