

Contents

1	Orientation and Navigation Cues	1
1.1	Magnetoreception	1
1.1.1	Earth's Magnetic Field	1
1.1.2	Models of Magnetoreception	4
1.1.3	Differences Between Models	29
1.1.4	Magnetoreception in Different Groups of Vertebrates	30
1.2	Celestial Cues	52
1.3	Sensitivity to Polarized Light	64
1.4	Olfactory Cues	67
1.4.1	Fishes	67
1.4.2	Turtles	70
2	Navigation and Cue Interplay	77
2.1	Mechanisms of Navigation	77
2.1.1	Navigation on the Individual Level	78
2.1.2	Group Navigation: The "Many Wrongs Principle"	119
2.2	Navigation Strategies	121
2.2.1	Pigeon Homing	122
2.2.2	Navigation in Sea Turtles	126
2.2.3	Navigation in Migratory Birds	132
	References	139
	Index	161