

Contents

Figures and Tables / ix

Acknowledgments / xiii

Introduction / 1

Part 1: What Is a Bird?

- 1 The Bird beneath the Feathers / 15
How adaptations for flight allow a bird to earn a living on the ground
- 2 A Bird Is an Animal with Hollow Bones / 40
Special features of avian bones and their assembly as a skeleton
- 3 A Bird Is Like a Dinosaur / 86
Features shared by birds and their reptilian ancestors
- 4 A Bird Is Not So Like a Dinosaur / 108
Features that distinguish birds from their reptilian ancestors

Part 2: What Kind of Bird Is It?

- 5 The Kinds of Birds / 133
Classification and taxonomy
- 6 That Bird Is Different from the Other One / 169
Evolutionary relationships among families of birds

Part 3: How Does a Bird Fly?

- 7 Feathers and Feathered Dinosaurs / 205
Flight in early birds and birdlike animals
 - 8 Birds with a Modern Shape / 235
Birds cease to look like feathered dinosaurs and become skilled fliers
 - 9 Birds on Land / 275
A robust design helps birds compete with mammals
 - 10 Birds at Sea / 305
Sophisticated aerodynamics take birds onto oceans
- Conclusion / 344

Appendices

- 1 Birds in Relation to Other Vertebrate Animals / 346
- 2 Geological Time Scale / 347

Glossary of Ornithological Terms / 349

Literature Cited / 360

Index / 372