TREE THINKING

0

An Introduction to Phylogenetic Biology

> David A. Baum and Stacey D. Smith

ROBERTS AND COMPANY PUBLISHERS Greenwood Village, Colorado

Contents

0

Preface	xv
About the Authors	xix

PART I: INTRODUCTION

1	Phylogenetic Trees and Their
	Importance in Modern Biology 1
	PART II: INTERPRETING TREES
2	Tree Thinking and Its Importance in the Development of Evolutionary Thought
3	What a Phylogenetic Tree Represents 35
4	Trait Evolution
5	Relatedness and Taxonomy 107
6	Gene Trees and Species Trees 139
	PART III: INFERRING TREES
7	Phylogenetic Inference with Parsimony 173
8	Phylogenetic Inference with Distance, Maximum Likelihood, and Bayesian Methods 217
9	Statistical Tests of Phylogenetic Hypotheses 265

•

Contents

PART IV: USING TREES

10	Using Trees to Study Character Evolution	305
	Using Trees to Study Space, Time, and Evolutionary Diversification	349

PART V: RESOURCES

Appendix 1: Data for Phylogenetic Analysis	389
Appendix 2: Generating a Morphological Data Matrix	399
Answers to Chapter Quizzes	405
References	425
Glossary	439
Index	459

,

.