



The latest scientific discoveries that explore and explain the oldest secrets of the reptile age



From the reptiles of 300 million years ago to the emergence of the mammals — and how reptiles evolved to rule prehistoric Earth



The complete record — in full color reconstructions, photographs, maps, diagrams, and timetables — of a fascinating era



# CONTENTS

---

## INTRODUCTION 6

The evolution of reptiles and their relatives 12

---

## CHAPTER ONE 14

### THE DAWN OF AN ERA

The origin of the Universe · The early Earth and the origin of life · Complex cells and multicells · The geological time scale · Ediacara: a glimpse of early life · Cambrian life and the origin of the vertebrates · The oldest fishes · Fishes of the Old Red Sandstone · Eusthenopteron, the ancestor of the tetrapods? · Problems of life on land · The first amphibians · The Carboniferous, the age of the amphibians · Continental drift · The first reptiles · Reptiles and amphibians of the Mid Carboniferous

---

## CHAPTER TWO 38

### THE REPTILES TAKE OVER

The amniotic egg, a “private pond” · Other amniotic indicators · The first amniote radiation · The pelycosaurs: sail-backed synapsids · Sails and temperature control · Early reptile diversity · The rule of the therapsids · The dicynodont therapsids · Reptiles of Late Permian · The first “saber-tooths” · The Karroo Basin and its reptiles · The non-therapsids of the Permian · Permian diapsid reptiles · Mass extinction at the end of the Permian

---

## CHAPTER THREE 62

### THE RULING REPTILES

The Triassic scene · Triassic therapsids · Cynodonts and the line to mammals · Reptile or mammal? · Diverse diapsids of the Triassic · The feeding habits of rhynchosaurs · More Triassic diapsid reptiles · The early archosaurs · Archosaur ankles and postures · Diversity of the crocodylotarsans · The importance of hip joints · Reptiles of the Late Triassic · The origin of the dinosaurs and pterosaurs · Turnover in the Late Triassic

---

## CHAPTER FOUR 82

### REPTILES OF THE AIR

The first flyers · Triassic gliders · Early Jurassic pterosaurs · Pterosaurs of the Late Jurassic · Flying reptiles of the Late Jurassic · Cretaceous pterodactyloids · Flying giants · Pterosaur flight · The evidence for active flapping flight · Pterosaur flight · *Archaeopteryx*, a flying dinosaur · Could *Archaeopteryx* be a hoax? · The origin of the birds · Feathers and the origin of flight · Bird evolution

---

## CHAPTER FIVE 108

### REPTILES OF THE SEAS

Fishes of the Carboniferous and Permian · The mesosaurs · In Triassic seas · The first “fish lizards” · The nothosaurs · Unusual marine diapsids of the Middle Triassic · The first shell-crushers · Cephalopods and fishes of the Jurassic and Cretaceous · Ichthyosaurs of the Jurassic and Cretaceous · Marine reptiles of the Late Jurassic · Expert swimming reptiles · Marine crocodilians · Plesiosaurs and pliosaurs · Marine turtles · Swimming in the seas · The great extinction · The time of the extinctions · Gradualism and catastrophism

---

Names of fossil amphibians and reptiles 138

Museums 140

Index 142