# CONTENTS

**Contributors** ix  
**Preface** xiii  
Does comparative respiratory physiology have a role in evolutionary biology (and vice versa)? 1  
*W.W. Burggren*  
Energy metabolism in helminths 15  
*P. Köhler*  
The role of carbonic anhydrase within the tissues, with special reference to mammalian striated muscle 35  
*G. Gros*  
Multiple strategies in oxygen and carbon dioxide transport by haemoglobin 55  
*F.B. Jensen*  
Respiratory gas exchange and the regulation of acid–base status in decapodan crustaceans 79  
*E.W. Taylor, N.M. Whiteley and M.G. Wheatly*  
Respiration and thermoregulation of amphibians and reptiles 107  
*S.C. Wood and M.L. Glass*  
Ventilation, gas exchange and oxygen delivery in flying and flightless birds 125  
*J.H. Brackenbury*  
Animal energetics at very low oxygen: information from calorimetry and respirometry 149  
*E. Gnaiger*
## Contents

- pH changes in fish during environmental anoxia and recovery: the advantages of the ethanol pathway  
  G. van den Thillart and A. van Waarde  
  p. 173

- Respiratory and metabolic adaptations of aquatic annelids to low environmental oxygen tensions  
  A. Toulmond  
  p. 191

- Respiratory adaptations of aquatic decapod crustaceans and fish to a burrowing mode of life  
  A.C. Taylor and R.J.A. Atkinson  
  p. 211

- Respiratory adaptations to limited oxygen supply during diving in birds and mammals  
  P.J. Butler  
  p. 235

Index  

p. 259