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How Animals Move

BY

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and Professor of Zoology in the
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ILLUSTRATED BY

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To
Anthony James and
Sarah Ann

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Preface

THIS book represents the substance of six Christmas lectures delivered to a juvenile audience at the Royal Institution. The lectures were designed to illustrate the more striking features of animal locomotion without assuming previous biological knowledge. Wherever possible, living animals were allowed to tell their own story, and there can be little doubt that they succeeded where the spoken word or blackboard diagram would have failed.

Five of the lectures were concerned with relatively well-established facts. The sixth lecture was of a different type, for it enabled the audience to see research workers in action and hear from them, at first hand, something of the problems which biologists are trying to solve and how they set about their task. Dr F. S. J. Hollick and Dr J. W. S. Pringle demonstrated the methods they have developed for investigating the flight of insects; Mr D. O. Sproule provided an 'artificial' bat avoiding obstacles by supersonic echo-sounding, and Dr H. W. Lissmann demonstrated the electric fields which he has recently shown to exist round the bodies of certain fish. These demonstrations are referred to at various places in this book but not, I fear, in such a manner as reflects the striking impression made by them in their original form.

It is impossible to express adequate thanks to all those who helped in the production of these lectures. Particular gratitude is, however, due to the British Museum (Natural History) for the loan of many valuable specimens; to the Zoological Society for providing a unique series of living animals; to London Films International for the loan of

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the film *Around the Reef* and to Gaumont British Films for a number of slow motion films of human athletes; to Messrs Lines and Messrs Hamley, and the International Model Aircraft Company for the loan of mechanical models; and to Messrs Cinema Television Ltd and Messrs Dawe for electrical equipment and Messrs Gerrard for the loan of various specimens.

On the staffs of the Royal Institution and of the Zoological Department, Cambridge, fell the major task of preparing and assembling the demonstrations. It is impossible to thank each person individually, but three names must be mentioned: Mr L. Walden of the Royal Institution and Mr K. Williamson at Cambridge who for many weeks spared neither time nor effort, and Dr H. W. Lissmann, who not only designed and set up many of the exhibits, but who persuaded so many animals to do just what was expected of them at just the right time, and later on read the proofs of this book. An author's acknowledgements to his publishers may be somewhat formal, but in this instance I would like to express particularly sincere thanks to Mr F. Kendon of the Cambridge University Press not only for a revision of the original manuscript but for all that he and his colleagues have done during the publication of this book.

J. G.