

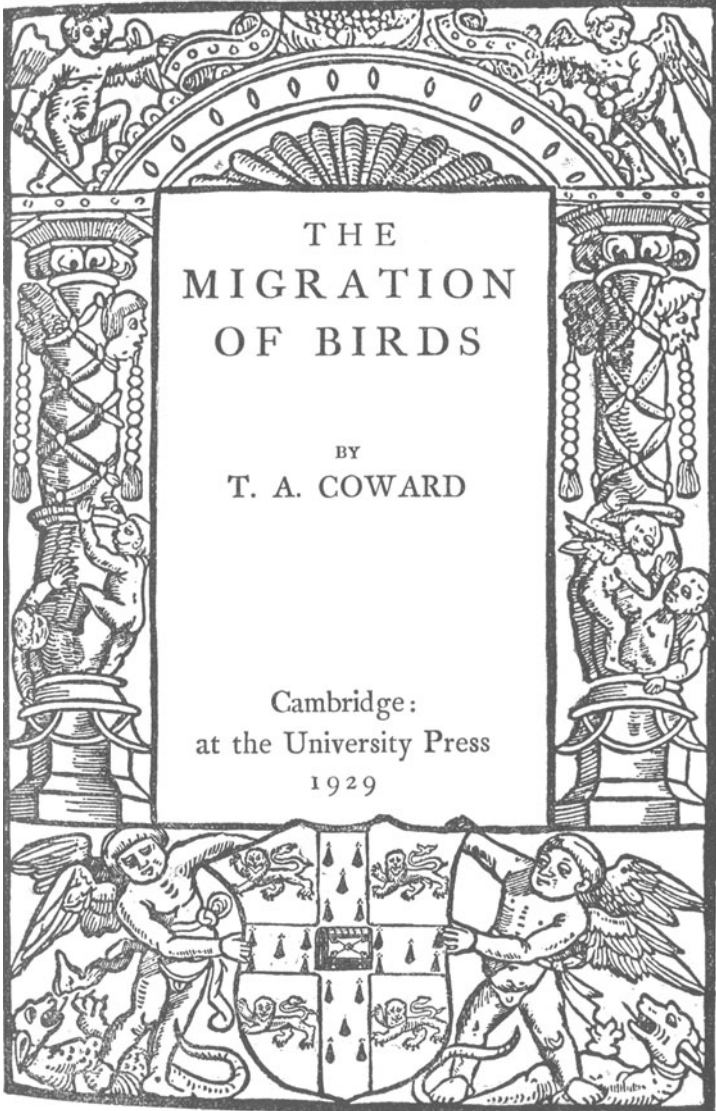
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**The Cambridge Manuals of Science and
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THE MIGRATION OF BIRDS

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PREFACE

ANY attempt to elucidate the problems connected with the Migration of Birds must, in the present state of knowledge, contain some theory and speculation, but the diligent observations of an army of careful workers yearly add facts, which though they may appear insignificant when considered alone, tend in the aggregate to confirm or repudiate the conclusions of past workers. I have endeavoured to bring together some of the more important theories, and to give prominence to ascertained facts; I have also striven to check desire on my own part to wander into realms of pure speculation, though conscious that I have not always evidence to support my suggestions.

The numbers in brackets () in the text refer to the books or papers mentioned in the list at the end of the volume, which is in no ways an attempt at a full bibliography. I have quoted freely from the works of past and living ornithologists. To these I offer apologies if I have misconstrued their arguments, and acknowledge my indebtedness to those whose observations or writing

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have given me light. In particular I tender thanks to Mr Wells W. Cooke for his permission to reproduce the maps facing pp. 76, 78, 80. I have found his writings and those of Herr Otto Herman and Mr W. Eagle Clarke especially valuable. Mr Eagle Clarke's long looked-for book on Migration is, as I write, still in the press; had mine been more than a manual I should have hesitated to publish until his had appeared.

T. A. COWARD.

BOWDON, CHESHIRE,
4 November 1911.

PREFACE TO THIRD EDITION

THE advance in aviation teaching new facts about the upper air, the observations of experienced airmen, and the critical examination of the now numerous recoveries of marked birds, have qualified many theories of the past, strengthening or confirming some, proving the futility of others. Yet many problems await solution, further light is needed. That light will surely come; science was never more progressive than to-day. Dr Eagle Clarke's "Studies in Bird-Migration" and Dr A. Landsborough Thomson's "Problems of Bird-Migration" have been invaluable in this revision.

T. A. C.

February 1929.

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NOTE TO THIRD EDITION

No attempt has been made to bring up to date the various designations of the authorities quoted, but throughout Mr W. Eagle Clarke should now read as Dr Eagle Clarke, whilst, to follow a general rule, titles should be omitted from the names of scientists of the past. Otto Herman, W. W. Cooke and others are, unfortunately, no longer with us.