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978-1-107-51203-0 - The Influence of Man on Animal Life in Scotland: A Study in Faunal Evolution

James Ritchie

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THE INFLUENCE OF MAN
ON
ANIMAL LIFE IN SCOTLAND

Frontispiece



SCOTTISH RED DEER IN PREHISTORIC TIMES AND TO-DAY

The Stag to the left represents the prehistoric Red Deer of the Scottish peat mosses, which lived in low-country forests even to the sea coast; to the right is placed for comparison a modern Royal Stag—the difference in size can be traced to the interference of man (see p. 333 *et seq.*).

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THE INFLUENCE OF MAN
ON
ANIMAL LIFE IN SCOTLAND
A STUDY IN FAUNAL EVOLUTION

BY

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Quhare I misknaw myne errour, quho it findis
For charité amend it, gentil wicht,
Syne perdoun me sat safer in my lycht ;
And I sal help to smore your falt, leif brother,
Thus vailye quod vailye, ilk gude dede helpis vthir.
GAWAINE DOUGLAS, Bishop of Dunkeld.

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PREFACE

THE animal life or fauna of a country is no fixed unit of occupation, established and unchanging, but, endowed with the plasticity of life, it carries in itself the imprints of many influences which have played upon it throughout the ages. The lectures contained in the following pages were planned to unravel one important set of such influences—those which radiate from the acts of Man—so that it might be possible to trace the different ways in which Man's power has worked and is working, and to realize to what degree a fauna of to-day owes its character and composition to his interference.

With this end in view it was necessary to select a particular fauna of manageable compass, where the inquisition into Man's influence could be pushed to the furthest limits; and several facts pointed to the fauna of Scotland as best suited for the purpose. Nevertheless, I have not hesitated to refer to examples of Man's influence in other countries, wherever particular types have been strikingly illustrated, or where influences are seen at work which help to explain effects of causes long lost to sight in Scotland, or where, as in the case of counter-pests, modern science has created new kinds of interference which sooner or later are likely to be adopted in this country.

A result of this enquiry has been to emphasize the instability and changefulness of a fauna, and a word may be said as to the general place of Man's influence in the sum of change. Two types of changefulness affect a country's animals—one temporary in incidence and local in effect, a

function of circumstance ; the other persistent and general, a function of time. Within itself a fauna is in a constant state of uneasy restlessness, an assemblage of creatures which in its parts ebbs and flows as one local influence or another plays upon it. It may be that a succession of favourable seasons breeds many field-voles, and the tide of the field-vole race flows to its high water-mark of numbers. But this new food-supply brings to the feast hungry owls, hawks, stoats and others, and as the tide of the beasts and birds of prey flows, that of the voles ebbs. Yet no sooner is the ebb apparent than the carnivores themselves decline for lack of food; and eventually the dead level is reached again. So the story goes on—there is a constant ebb and flow of parts within the whole, a fauna is in unstable equilibrium, the “balance of nature” is never quite struck.

But while the parts fluctuate, the fauna as a whole follows a path of its own. As well as internal tides which swing to and fro about an average level, there is a drift which carries the fauna bodily along an irretraceable course. While the former adjustments depend on temporary influences, such as adverse or favourable seasons or variations in the amount of food-stuffs, the latter is a secular phenomenon, due it may be to climatic changes or to the ordinary processes of organic evolution, and leaving a slowly marked but permanent imprint on the sum total of the fauna. The extinct animals and lost faunas of past ages illustrate the reality of the faunal drift.

Now, part of Man's influence, where it is inconstant in tendency, is of no more import in the long run than the internal tides of the fauna ; but it is strikingly true that the greater part of his influence ranks with the great secular changes. For his interference tends to persist in fixed directions, and so impels individuals in the fauna and the fauna as a whole upon a definite path along which there is no return. So sweeping are the changes wrought by Man and so swift are they in their action that they obscure and

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almost submerge the slow march of the other processes of nature, and this difference in degree, associated with Man's purposefulness, almost inevitably leads to a sharp distinction being drawn between nature and man. Where, however, this distinction has been emphasized in the following pages the contrast is relative and not absolute, it lies between wild nature and nature man-controlled; in our land the old order of nature has been all but superseded by the new order of mankind, but Man himself is still "Nature's insurgent son."

This book has been made possible by the labours of many, and principally of Scottish naturalists, travellers, historians and lawmakers; their records are the bricks of which the structure is built. I recognize and would acknowledge my debt to all, instancing as of special value to the student of faunal evolution such contributions as were made by the late Dr J. A. Harvie-Brown to the past histories of several Scottish animals. For myself in particular I am indebted to Dr W. Eagle Clarke for hints which led to fruitful investigation, and to Mr Oliver H. Wild for several apt illustrations.

Permission to use figures from published papers was granted by Prof. J. Cossar Ewart, F.R.S., Dr R. Stewart MacDougall and Mr A. Henderson Bishop; blocks were generously lent by the Councils of the Society of Antiquaries of Scotland (Figs. 1, 10, 12, 26, 35, 57, 60), and of the Highland and Agricultural Society (Figs. 5-9, 13-19, 21, 72-74, 76, 81-83), by Mr Bruce Campbell (Fig. 23), Mrs Comyns Lewer, Editor of *The Feathered World* (Fig. 24), the Council of the Zoological Society of Scotland (Fig. 58), and the Trustees of the British Museum (Fig. 68). Full reference to the sources of these blocks is made in the "List of Illustrations." The Director of the Geological Survey of Great Britain allowed the reproduction of an unpublished photograph from the Survey Collections (Fig. 56). It is a pleasure to record my gratitude to one and all of these.

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As for the remainder of the illustrations, they are from my own photographs and drawings, those of animals being based for the most part on specimens in the collections of the Royal Scottish Museum. The reproduction of this extensive series of illustrations was made possible by a very generous grant from the Trustees of the Carnegie Trust for the Universities of Scotland.

Most of all, the reader and myself are indebted to my wife, Jessie J. Elliot, who has been associated with this work from its beginning. She shared in the reading of old books and records, has constantly been consulted during the development of the theme, read a proof, and is responsible for the full index.

It ought to be added that the material in the pages which follow was presented in lecture form to general audiences in Aberdeen in December 1917, as a course under the Thomson Lectureship in Natural Science in the United Free Church College.

J. R.

EDINBURGH,
March 1920.

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