

THURSDAY, OCTOBER 8, 1885

## MR. GRIEVE ON THE GAREFOWL

*The Great Auk, or Garefowl (Alca impennis, Linn.), its History, Archaeology, and Remains.* By Symington Grieve, Edinburgh. 4to, pp. x. 141, and Appendix, pp. 58. (London: Jack, 1885.)

AGREEABLY to the wish of the editor of NATURE that I should notice in its pages the lately-published volume whose title stands above, I undertake a responsibility of a kind which is for me as delicate as can be imposed upon anybody. It has long been no secret that for more than five-and-twenty years—since, indeed, the premature death, in 1859, of my friend and fellow-traveller, the late Mr. JOHN WOLLEY—I have had it in hand to prepare and eventually to produce a monograph of the presumably extinct species of bird, into the investigation of whose history he had thrown himself with all the energy of his character. During that time I am not conscious of having ever lost an opportunity of adding to my store of information on the subject, in doing which I was for several years assisted by the zeal of the late Mr. G. D. Rowley; and, though always having in view the ultimate publication of the monograph originally contemplated by Mr. Wolley, I never hesitated to supply any inquirer with the particulars for which he asked—as may be seen on reference to the publications of Dr. Victor Fatio<sup>1</sup> and of Prof. Wilhelm Blasius<sup>2</sup>—both of whom I rejoice to think I was able in some measure to help. Nevertheless, each attempt to elucidate the natural history of the Garefowl only added to the number of still unanswered or unanswerable questions relating to it; and, amid numerous other occupations or duties, I have with difficulty been able to keep myself abreast of the ever-increasing contributions to the subject—many (I may say most) of them proving on investigation to have little or no foundation; and those which had the least, or none at all, generally giving the greatest trouble.

Apology, I feel sure, is needed for an introduction so egotistical as that contained in the foregoing paragraph; yet without it, or something like it, I fear my remarks on the book before me may be misunderstood. The force of circumstances has compelled me to set up a very high standard; and, when that standard has not been approached by any writer on the subject, it is almost impossible for me not to see his shortcomings, though many another man might find in him no fault at all. I therefore wish at once to record my opinion that in the present work the author has done the best that in him lies, and especially that his book, so far as it goes, is an honest book. If, after working at the subject for more than a quarter of a century, a man still finds himself unable, from one cause or another, to publish the results of his labour, it does not follow that he should be hard upon anybody else who, with perhaps as many distractions, makes a praiseworthy attempt to set before the world what is known of the lost species, though he may not have devoted to the task a tenth of the time. Moreover, Mr.

Grieve begins his preface with the words: "In submitting these pages to the public, the author has fears that they will not bear severe criticism." I regret to say that regard to truth obliges me to declare that this is so; but I have no wish to be the severe critic, and it will be best here to describe the plan and scope of the work, which is obviously well chosen. Mr. Grieve begins with a very appropriate dedication to Prof. Steenstrup, that venerable biologist who first wrote a history<sup>1</sup>—he modestly called it only a "contribution" to a history—of *Alca impennis* that was in accordance with facts, and was worthy of the subject, of science, and of himself. The amount of indebtedness to him, due from all his successors in the investigation—but not always acknowledged—is not to be overrated. Hard as they may have found their work, it has almost entirely lain in clothing the form that he constructed; and, though there has been plenty of false tailoring, his outlines have proved to be true in almost every particular. In the dedication Mr. Grieve very justly states that he has not "much to relate that is new to British ornithologists;" but his desire has been "to bring within the reach of all, materials that at present are difficult of access."<sup>2</sup> These preliminaries over, the geographical range of the species—first in American and then in European waters—is entered upon, care being taken to warn the reader against the popular misconception that it was ever a bird of the high north, and then is given a description of its remains as found in the New World and in the Old. Under the last category come four chapters treating respectively of the discovery of its bones in Caithness, and in Oronsay, of the period to which the kitchen-midden on that island containing them presumably belongs, and of the single fragment found near Whitburn-Lizards, on the coast of Durham, by Mr. Hancock, which fragment, being the greater portion of the maxilla of what seems to have been an exceptionally large example, now in the Museum at Newcastle-on-Tyne, is very delicately figured (p. 64). After this Mr. Grieve enters upon a consideration of the bird's habits and of the regions in which it lived, and then proceeds to catalogue at some length (pp. 76-114) its existing remains—whether bones, skins, or egg-shells. Then follow three chapters on the uses to which the bird was put by man, on the names by which it has been known, with their possible origin and meaning, and on the period during which it lived. No fewer than nine appendices are added—all more or less of the nature of *pièces justificatives*—while an excellent index, with remarks on the accompanying chart, completes the volume, which is illustrated by several woodcuts and a couple of coloured plates representing the two eggs that doubtless came to Edinburgh in 1819 with Dufresne's collection, when it was bought by the University there, and, having been transferred to the Museum of Science and Art in the northern capital, were first publicly noticed by Major Feilden in 1869.

There cannot be a dispute as to the great pains which the author has taken with this work, but it would be inexpedient here to attempt any criticisms of its details, to an abundance of which exception may be taken. The

<sup>1</sup> *Vidensk. Meddel. Naturh. Forening i Kjöbenhavn*, 1855, pp. 33 to 118.

<sup>2</sup> Here may be added that, if report speaks truly, so strong has been this desire on the part of the author, that the book is sold to the public at less than cost price.

<sup>1</sup> *Bull. Soc. Orn. de la Suisse*, ii. pt. 1, pp. 5-70, 73-85.  
<sup>2</sup> *Ver. f. Naturw. zu Braunschweig*, iii. pp. 89-115; *Journ. für Orn.*, 1884, pp. 58-176.

fact seems to be that up to a certain point the story of the Great Auk can be worked up and told by any one willing to labour at it. Beyond that point the difficulties begin. Mr. Grieve appears to be hardly aware of the existence of these difficulties, though some of them have been hinted at, if not pointed out, by his predecessors. The most serious charge that can be brought against him is that he has needlessly raised fresh difficulties for future investigators. Mistakes that have taken years of labour to correct, and the correction of which has been published, are again set agoing, just as if no progress in that direction had been made; and, even worse than this, some new assertions, or at least suggestions, are hazarded that have, I am persuaded, no firm ground. No doubt on some of these points I may be prejudiced; but according to my knowledge I perceive that on too many questions Mr. Grieve has been unable to distinguish between good evidence and bad. However, there is in this book a distinct gain to all historians of the Gargaw, and that is the information here first placed on record by Mr. Champley of Scarborough, who is known to have interested himself for many years in all that concerns this species.

I most sincerely wish that I could accord higher praise to this work than I have been able to do, for Mr. Grieve's enthusiasm in the cause deserves greater success. It is seldom that any one but a Fenimore Cooper or a Charles Kingsley feels the romance that clings around the history of an expiring race. Most men—men of science especially—nowadays believe in the survival of the fittest, and are content to let the dead bury their dead. The moral lesson I do not venture to draw, and in conclusion have only to ask pardon of the readers of NATURE for putting myself so forward in this article.

ALFRED NEWTON

#### "THE WAVE OF TRANSLATION"

*The Wave of Translation in the Oceans of Water, Air, and Ether.* By John Scott Russell, M.A., F.R.S. (London: Trübner and Co., 1885.)

THE late Mr. J. Scott Russell was one of the most prominent and gifted naval architects which this country possessed in the middle of the present century. His name will long be remembered as the builder of the *Great Eastern*, the early advocate of the longitudinal system of framing iron and steel ships: the ingenious and eloquent expounder of the "wave-line" principle of design; and for many improvements in the theory and practice of iron steamship construction. His personality was at once striking and attractive, and his abilities were of an original and versatile kind. He was the author of a massive work upon naval architecture; and of numerous papers read before various learned societies. No one exercised greater influence than Mr. Scott Russell in promoting the cause of scientific education in naval architecture, and in stimulating and helping students, by numerous speeches and writings, to acquire a general and clear knowledge of the laws upon which the qualities of ships depend.

Mr. Scott Russell's writings were always interesting. He possessed the rare faculty of making the driest and most complicated of subjects intelligible, and even

fascinating. Where he may not be correct in the hypotheses, or justified in the sweeping generalisations, he sometimes hastily put forward, he is usually suggestive, and provocative of thought upon the part of his readers. He was a vigorous and clear—though with a tendency to be a too rapid—thinker; and there are no writings upon naval architecture which have the power of fixing the attention and stimulating the intellect in a greater measure than those of Mr. Scott Russell.

We regret to say that the present work is not likely to add to the reputation of its author. It exhibits *les défauts de ses qualités* in their most pronounced form; and if we were asked for an example of Mr. Scott Russell at his very weakest and worst we could hardly do better than refer to that portion of this book which has not been before published. One-half of the volume is devoted to a reprint of the Report made by Mr. Scott Russell to the British Association in 1842-43, in which a description is given of the "solitary wave of translation," which he discovered for himself in 1834, and the properties of which he did much to investigate and make known. This Report is not only printed *in extenso*, but Part I. of the work consists exclusively of extracts from it. The same matter appears twice over—once as Part I. of the book, and once as portions of the British Association Report. The Report describes the knowledge possessed by Mr. Scott Russell in 1843 of "the varieties, phenomena, and laws of waves, and the conditions which affect their genesis and propagation." This may be interesting from a biographical point of view, but its present scientific value is not great. Many things have happened since the date of this Report, such as the theoretical investigations of Airy, Stokes, Rankine, Froude, eminent French mathematicians, and others; and numerous observations have been made of the forms and properties of waves by scientific officers of our own and foreign navies. These constitute a mass of information which the present work completely ignores.

One half of the book is taken up with the reprint of the British Association Report referred to, and with those extracts from it of which Part I. is made up. The remaining half contains the only new matter now published. This is divided into two sections, one being "on the analogy between the solitary wave in water and the sound wave in air," and the other "on the great ocean of ether and its relation to matter." The less said of these chapters the better. The following is an instance of how Mr. Scott Russell frames a theory or invents a hypothesis: "I am so impressed with the truth of this law, that the velocity of this solitary wave in any fluid is due to the depth of the fluid in which it moves, whether thick or rarefied, that I hazard the hypothesis, that in the unknown element which pervades the universe, and which, though unknown, is the cause and medium of the most familiar phenomena of everyday life, proceeding on the same basis of calculation as in the air and water occurs, we shall find that the ethereal ocean should be given a height of 5,000,000,000 miles, and that the corresponding velocity of the solitary wave through that ocean would be 1,000,000,000 feet per second."

An atomic theory is framed upon the following basis: "The law of attractive force in the atom, in conformity with the law of Newton, is according to the *square of the*