

SOME EARLY BRITISH ORNITHOLOGISTS
AND THEIR WORKS.

BY

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VII.—JOHN RAY (1627—1705) AND FRANCIS
WILLUGHBY (1635—1672).

(PLATE VI.)

THE names of John Ray and Francis Willughby, the founders of scientific ornithology in this country, must ever be held in equal honour and esteem. Of very different origin—Willughby being a country gentleman of means, descended from a long line of illustrious ancestors, and Ray the poor son of a village blacksmith—a common devotion to the study of natural history made them close friends and zealous fellow workers. “Together they studied, together they travelled, and together they collected.” To separate their joint work or to credit one with a greater share in devising the scientific classification of the subjects they studied, is as impossible as it is invidious. The misfortune of Willughby’s premature death, and the fact that his posthumous works were edited by his friend, and that the latter became not only an eminent ornithologist, but also world-famous as a botanist, have undoubtedly tended to obscure Willughby’s claim to an equal recognition. Had he, however, been spared to accomplish his allotted share of their joint labours he would undoubtedly have achieved as great a reputation as his famous friend. In the course of their investigations these two eminent men having become “dissatisfied with the status of natural history, agreed to attempt a systematic description of the whole organic world,” in which their different parts were apportioned according to the following method, as is detailed by Dr. Derham from information he received when he visited John Ray at Black Notley in May, 1704 (*Memorials of Ray*, p. 33): “For these two gentlemen,

finding the 'History of Nature' very imperfect, had agreed between themselves, before their travels beyond sea, to reduce the several tribes of things to a method; and to give accurate descriptions of the several species, from a strict view of them. And forasmuch as Mr. Willughby's genius lay chiefly to animals, therefore he undertook the birds, beasts, fishes, and insects, as Mr. Ray did the vegetables. And how each of these two great men discharged his province, the world hath seen in their works; which show that Mr. Ray lived to bring his part to great perfection; and that Mr. Willughby carried his as far as the utmost application and diligence of a short life could enable him." The period in which Ray and Willughby flourished is justly described by Linnæus as the dawn of the golden age in natural history. Before their great work was undertaken, ornithology as a science could scarcely be said to exist. It is true that an Englishman, Edward Wootton (1492-1555), had in a folio work entitled:—

Edoardi Wotto- / ni Oxoniensis de / Differentis Ani- / malium Libri / Decem. / Ad Sereniss. Angliæ Regem / Edoardum VI. / itemque singulæ eorum partes recensentur, Lutetiae Parisiorum / apud Vascosanum. / M.D.LII. / Cum privilegio Regis.

made some attempt at a systematic arrangement of birds, but he did not profess to do more than give a compilation from the classical authors, while the standard authorities of the day, Gesner and Aldrovandus, were full of obscurity and mistakes.

In England itself the study of zoology had hitherto received but scant attention, hence "observing in this busie and inquisitive age the History of Animals alone to have been in a great measure neglected by English men (for that since Turner* and Mouffet† none that I know of have performed anything worthy of commendation). . . . Our main design was to illustrate the History of

* William Turner (1500-1568), author of "Avium Historia."

† Thomas Mouffet (1553-1604), author of "Insectorum Theatrum."

Birds, which is (as we said before of Animals in general) in many particulars confused and obscure, by so accurately describing each kind, and observing their Characteristics and distinctive notes, that the Reader might be sure of our meaning, and upon comparing any Bird with our description not fail in discerning whether it be the described or no. Nor will it be difficult to find out any unknown Bird that shall be offered : for Comparing it with the Tables first the Characteristic notes of the genus's from the highest or first downward will easily guide him to the lowest genus ; among the species whereof, being not many, by comparing it also with the several descriptions the Bird may soon be found ” (Preface to the *Ornithology*).

John Ray, the son of Roger and Elizabeth Ray, was born in the parish of Black Notley, in Essex, in the autumn of 1627, possibly on November 29th ; and was baptized on December 6th of that same year. The date of Ray's birth and baptism have proved a stumbling block to most of his biographers. This arises from the coincidence that on the same page of the parish register at Black Notley are recorded the baptisms of two John Rays, in the successive years of 1627 and 1628, as will be seen from the reproduction of these entries here given. They run as follows :—

(1627) John [son] of Roger and Elizabeth Ray December 6.

(1628) John son of Thomas and Dorothis Wray bapt. June 29.

The latter of these two entries has apparently been mistaken as referring to John Ray the naturalist. William Derham, in his “Select Remains and Life of Ray” * gives the date of Ray's birth as November 29th, 1628, and then in a footnote informs us that on “searching the parish registers” it was discovered that “he was baptized on the 29th of June, 1628 ; consequently the

* Included in the “Memorials of John Ray.” London, 1846. I vol., 8vo.

above date, as the supposed one of his birth, is incorrect." Acting on this ingenious hypothesis, Ray's subsequent biographers have fixed his birth on November 29th, 1627, and his baptism on June 29th, 1628.*

Ray was the son of the village blacksmith, and the house which now stands opposite the forge in Black Notley is said to have been his birthplace. Although of humble origin he received an excellent education: first at the Grammar School in the neighbouring town of Braintree, and afterwards at St. Catherine's Hall (where he only remained for a short time), and Trinity College, Cambridge. At Trinity he obtained a fellowship in 1649, and afterwards filled many important offices in his College. Ray remained at Cambridge for several years. From the University he commenced his earlier "Itineraries," journeys which he undertook for the sake of observation and the collection of plants, and of which he kept an account. The first of these he undertook alone in 1658, but in many of the subsequent ones he was accompanied by Francis Willughby, proceeding on different occasions as far as Scotland and Cornwall. At Cambridge, Ray published the first of his numerous works, a small 8vo volume entitled "Catalogus Plantarum Circa Cantabrigiam nascentium." This appeared in 1660, and in the same year Ray entered into holy orders. Two years later his connection with his College came to an end. Refusing to subscribe to the "Act of Uniformity" of 1662, he resigned his fellowship, and being now at greater liberty he resolved to pursue his studies in Natural history still more ardently, and for that purpose to extend his travels beyond the confines of his own country.

Accordingly in the spring of 1663, Ray, with two of his pupils,† and accompanied by Willughby, left England for France, and after "passing through divers parts of

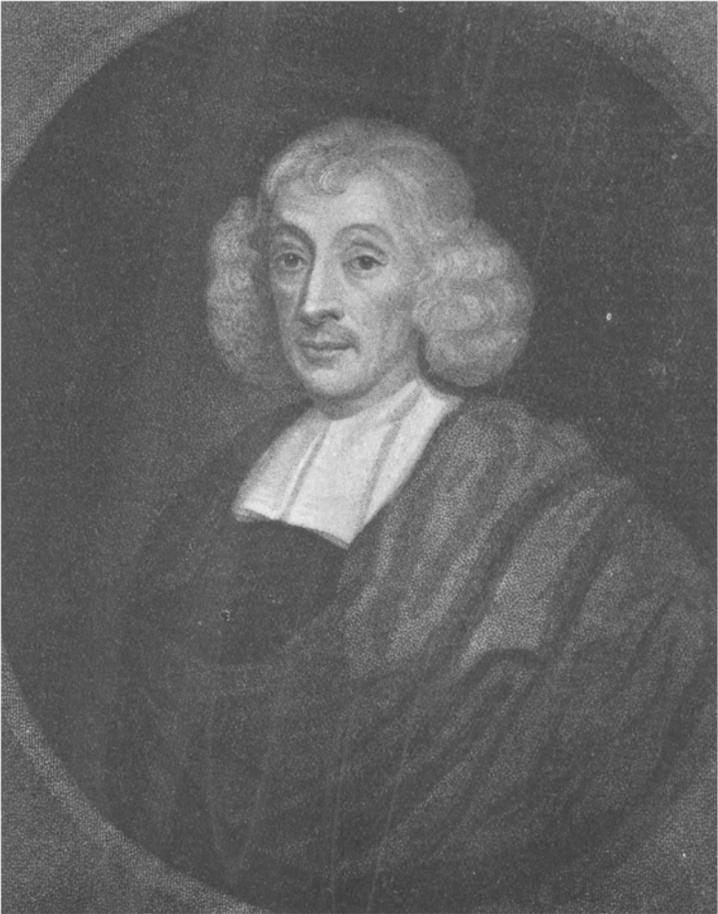
* *Vide* art. "Dict. Nat. Biogr." "Ray, John (1627-1705), naturalist, was born at Black Notley, near Braintree, Essex, probably on 29th Nov., 1627. He was baptized on 29th June, 1628."

† Mr. Skippon (afterwards Sir Philip) and Mr. N. Bacon.

Europe" returned to this country in 1665, having parted company from Willughby during the latter part of the journey. On his return to his native country, Ray devoted his serious attention (as he wrote to Dr. Martin Lister) to "gathering up into a catalogue all such plants as I had found at any time growing wild in England . . . possibly one day they may see the light : at present the world is glutted with Dr. Merrett's bungling 'Pinax.' * I resolve never to put out anything which is not as perfect as it is possible for me to make it." These labours bore fruit in after years, when Ray published his "Catalogus Plantarum Angliæ," and his yet more famous "Synopsis Methodica Stirpium Britannicarum," the second edition of which, published in 1696, set the seal on his fame as a botanist. In 1667 Ray was persuaded to become a Fellow of the Royal Society, and in 1670 he changed the spelling of his name, which he had hitherto written Wray, by dropping the initial "W," thus returning, as he informed his correspondent Martin Lister, in a letter written August 22nd, 1670, to the style used by his ancestors. In 1672 Ray suffered a great blow by the death of his intimate friend and companion, Francis Willughby, who died in this year "to the infinite and unspeakable loss and grief of myself, his friends, and all good men." To Ray's guardianship Willughby committed his two sons, and further left him an annuity of sixty pounds, which formed his chief means of support during the remainder of his life. Faithful to his trust, Ray now took up his residence at Middleton Hall, the Warwickshire seat of his late benefactor, and in 1673 he was married to Margaret Oakley, in Middleton Church. The year 1674 saw the publication of Ray's first contribution to ornithology, entitled :—

A / Collection of English Words / not generally used
 / and catalogues of English Birds / and Fishes
 / London 1674. 1 vol. 12mo.

* "Pinax Rerum," by Christopher Merrett. London, 1666, 1 vol., 8vo.



JOHN RAY.

(From the Engraving by H. Meyer, after a Picture in the British Museum.)

1627.

Henry of Christopher and Mary Inthornie Apr. 10.
 John of Simon and Anne Synon's Apr. 10.
 Elizabeth of Henry & Elizabeth Inthornie Apr. 16.
 Francis son of Francis & Anne Byrd July 5.
 Anne of Edward & Priscilla Simpson Aug. 9.
 William of Thomas & Elizabeth Gilder Aug. 26.
 Mary of Gregory & Mary Long Sept. 13.
 Mary of William & Mary Corby Sept. 23.
 Joan of John Michel & Anne his wife Octob. 7.
 Elias of Elias & Mary Wright Octob. 18.
 * Israel of Isaac Dixon & Anne his wife Octob. 25.
 * John of Roger & Elizabeth Ray Decemb. 6.
 Francis daughter of Tho. & Francis Edward of
 Roger nobile Febr. 7.
 * Joop Ge. son of Joop Michael and Saragge profs
 Febr. 7.
 * Margaret daughter of John Burdige Febr. 25.
 Susan daughter of James & Susan Gilder March 30.

1628

Maria daughter of Maria Gilder bapt. June 10
 William Simpson son of Will & Elizabeth Simpson June 1.
 * East son of James & Anne Burke June 26.
 * John son of Edward and Dorothy Worthington bapt. June 29
 William son of William and Easton Gilder was
 baptised: St. Andrew's day of October, 1628 — 8th.
 & John of
 was baptised: 1st day October Ann. Dom. — 1628.
 Samuel son of Samuel & Anne Gilder
 was baptised: 1st day of November, 1628 — 1st day.
 * Thomas son of Robert & Elizabeth Gilder bapt. 1st
 day of November Ann. Dom. 1629.

Entry in Parish Register of John Ray's Baptism,
 and that of another John Ray.

The catalogue of Birds, which was an imperfect one, was omitted in subsequent editions, and Ray now commenced to engage himself on a far more important work, the arrangement and publication of the notes and observations about birds which had been left by Willughby as his share of their undertaking in the study of natural history. This posthumous work of Willughby's Ray published in Latin in 1676, under the title "Ornithologia libri Tres," the English edition of the same appearing in 1678. This, the well-known "Ornithology of Francis Willughby," was edited by Ray "with large editions." A facsimile of the title-page is here given, the collation of the book being: 1 vol. folio; pp. 12. un + pp. 441. + pp. 6, Index. 2 plates of fowling and LXXXVIII. of birds.* A catalogue of English birds appears on pp. 21-28, some 190 species in all being mentioned. How much original matter Ray added to Willughby's labours it is impossible exactly to determine, but it was evidently not inconsiderable, for not only did he, as he tells us in his preface, add the "descriptions and histories of those [birds] that were wanting," these being principally those recently discovered in the Indies and the New World, but he also added a good deal of information which he received from certain of his fellow-countrymen, notably from Sir Thomas Browne, of Norwich, who "frankly communicated the Drafts of several rare Birds, with some brief notes and descriptions of them," and also from Mr. Jessop and Sir Philip Skippon. His most important assistance, however, came from Mr. Ralph Johnson, of Brignal, in Yorkshire, who is described by Ray as "a person of singular skill in Zoology, especially the History of Birds," and who appears to have been not only an observer of nature far in advance of his time, but also to have in-

* The engravings which were executed at the expense of Mrs. Willughby, are poor, and Ray laments that although he employed good workmen the great distance he was from London necessitated all directions and descriptions passing by letter, and observes that "in many Sculptures they have not satisfied me."

vented a "method of Birds" which was freely used by Ray "in the divisions and characteristic notes of the genera." In 1676 Ray left Middleton Hall, his two young pupils having ceased to be under his tuition, and removed to Falborne Hall, near Black Notley, the residence of Mr. Edward Bullock, to whose son Ray probably acted as tutor, and to whom he dedicated the "*Stirpium Europeanarum . . . Sylloge*" in 1694.

In 1678 Elizabeth Ray, the naturalist's mother, died, and Ray then took up his abode at her house on "Dewlands," in Black Notley, where, said he, "I intend, God willing, to settle for the short pittance of time I have yet to live in this world." Ray now settled down to uninterrupted work, and in 1682 published his "*Methodus Plantarum nova*," in which he proposed a

"new method of classifying plants, which when altered and amended as it subsequently was by himself at a later period, unquestionably formed the basis of that method which under the name of the system of Jussieu is universally received at the present day."

In addition to his own numerous labours Ray also continued to deal with the mass of material left to him by his friend, Francis Willughby, and in 1686 he published the "*Historia Piscium*," 1 vol. folio, which "he had extracted out of Mr. Willughby's papers, revised, supplied, methodized and fitted for the press." This Ichthyology was, by the assistance of Bishop Fell, printed at Oxford, the Royal Society defraying the expense. The "History of Fishes" was, as Ray laments in a letter to his friend, Dr. Tancred Robinson, far from being as complete as it should have been, most of the notes which he and Willughby had made in the course of their travels having been mislaid.*

It is here quite impossible to enumerate all the works which came year after year from Ray's pen; a list of them will be found in the "Memorials of Ray" (p. 111).

* This refers to their joint notes; of Willughby's notes Ray writes "it is almost impossible to procure a sight of them."

Ray's final contribution to ornithology was the "Synopsis Methodica Avium," which was completed in 1694, but not published till after his death in 1713. "In this synopsis Mr. Ray added many species of birds and fishes which were omitted in Mr. Willughby's histories of them," and by way of a supplement added a short catalogue with figures of "Avium Maderaspatanarum," or "Indian Birds about Fort St. George," compiled by James Petiver (1663-1718), and of interest as being "the first attempt to catalogue the Birds of any part of the British possessions in India" (*cf.* Newton, *Dict. of Birds*, Introduction, p. 7).

Ray's health now began to fail, and in 1704 he passed away at Black Notley "in a house of his own building" called "Dewlands" (destroyed by fire in 1900). He lies buried in the churchyard of his native parish, where his sadly neglected grave requires prompt attention, if the several inscriptions that his monument bears are to remain decipherable.

Of Ray's influence on natural history it is impossible to say too much. His works on zoology, in the words of Cuvier, "may be considered as the foundation of modern zoology," and by Haller he was termed "the greatest botanist in the memory of man."

Of the short but busy life of Francis Willughby it is necessary to say but little. He was born in 1635, the only son of Sir Francis Willughby, Knt., of Middleton Hall, Warwickshire. At the age of seventeen he became a fellow Commoner of Trinity College, Cambridge, and there formed the acquaintance of John Ray, with whose labours in natural history his name will ever be associated. It has been generally asserted that Willughby was Ray's pupil at the University, but what little evidence exists on the matter is rather against this supposition. In 1655 Willughby took his degree as B.A., and proceeded M.A. in 1659. That he had early begun to assist Ray in his work is evident from the allusions in the latter's "Catalogus Plantarum Circa Cantabrigiam," which was

published in 1660. In the preface to that work Ray writes as follows :—

“ Jam quoniam honestum est fateri per quos profeceris, generosissimi Juvenes, D. Franciscus Willughby et D. Petrus Courthorpe * Armigeri, natalium splendore ingenii sublimitate. Suavitate morum, fide, virtute illustres, non rei duntaxat herbariae callentissimi, sed in omni literarum genere versatissimi, amici nostri, plurimum honorandi, non sunt a nobis silentio transmuttendi, ni ingrati & arrogantes esse velimus. Horum opera nos saepius usos & ab his non mediocriter adpitos fuisse in hoc opusculo, Concinnando, libere & ingenue profitemur.”

In 1663 Willughby, who had already accompanied Ray in some of his expeditions in Great Britain, went with him on his journey to the continent, but they parted company the next year at Montpellier, and Willughby continued his journey through Spain alone. It should here be mentioned that Willughby's name appeared as one of the original Fellows of the Royal Society on its incorporation in 1663–4. In 1665, on the death of his father, Willughby succeeded to the estates of Wollaton and Middleton, and in 1668 married Emma, daughter of Sir Thomas Bernard, by whom he had two sons and a daughter. His great devotion to work seems to have overtaxed his strength, and on December 22nd, 1670, Dr. Martin Lister, writing to Ray, says, “ I am very glad Mr. Willughby is near well again. Methinks he is very valetudinary, and you have often alarm'd me with his Illnesses.” In the beginning of June, 1672, “ he fell into a pleurisie which terminated in that kind of fever called Cattarrhalis.”

He died on July 3rd, 1672, “ to the immense grief of his friends and all good men that knew him, and the great loss of the commonwealth in general.” Thus was frustrated his project of a voyage to the New World, “ that he might perfect the History of Animals.”

* Mr. Peter Courthorpe, of Danny, in Sussex; a friend and pupil of John Ray's, to him Ray dedicated the “ Collection of English Words,” published in 1674.

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Pſalm 104. 24.

*How manifold are thy works, O Lord? In wisdom hast thou made them all: The Earth is
full of thy riches.*

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