

FRANCIS WILLUGHBY OF MIDDLETON,
WARWICKSHIRE AND WOLLATON, NOTTINGHAMSHIRE:
A SEVENTEENTH CENTURY NATURALIST

by
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Francis Willughby the naturalist, born in 1635, died in his 37th year in 1672.¹ He was the great-grandson of Sir Francis Willughby, the builder of Wollaton Hall, through the builder's eldest daughter and coheirss Bridget who had married her cousin Percival of the Kent branch of the Willughby family.

Percival and Bridget lived at Wollaton Hall but their eldest son and heir, another Sir Francis, who married Cassandra daughter of Thomas Ridgeway, Earl of Londonderry, lived at Middleton Hall in Warwickshire. This had come to the Willughbys through marriage with a member of the Freville family in the 15th century. A disastrous fire at Wollaton in 1642 ruined much of the interior. Percival, then a widower, carried out only minor repairs and died the following year. Wollaton would have needed large-scale renovation to make it permanently habitable again as a family home and Sir Francis, Lady Cassandra and their young family were settled in Middleton Hall. Thus they continued to live in the house in which their children had been born: Lettice, who later married Sir Thomas Wendy of Haslingfield, Cambridgeshire, Catherine, who became the wife of Clement Winstanley of Braunstone, Leicestershire, and the youngest child Francis.

After attending school at Sutton Coldfield, Francis became a commoner at Trinity College Cambridge in 1652. A studious youth, intellectually gifted, he readily responded to the stimulus of inquiring minds. His college tutor was James Duport who previously had been tutor to John Ray.² By this time Ray was himself a lecturer in the College. It was here that the lifelong association began between Ray, the blacksmith's son, brilliant scholar and teacher, and Willughby, the gentleman's son and apt pupil. Friendship quickly developed. How much Francis Willughby already had inclinations towards the study of natural history and how much interest in that field was aroused by Ray it is impossible to say. Certainly any predilections towards the subject would have been encouraged and fostered by the older man.

Very few personal details about Francis Willughby have survived. Today the primary source is the account of him written by his daughter Cassandra some 30–50 years after his death.³ She had manuscripts to turn to, which no longer exist, but she too bemoaned the lack of evidence. Her mother was able to tell her some snippets about his day-to-day life, and for a character sketch and intellectual attainments she relied on Wood's *Athenae Oxonienses* and on John Ray's preface to the *Ornithology*. Other information can be obtained from the younger contemporary, Dr. William Derham, in his memoirs of Ray and his selective edition of letters and in the correspondence published later by the Ray Society.⁴

It is known that Willughby took his B.A. in 1655–6 and was admitted to Gray's Inn in 1657, though he does not seem to have engaged in serious legal studies. He was reading in the Bodleian Library in Oxford in 1660.⁵ However, what he was studying, where, when, is almost unknown. Among his own surviving manuscripts there is a common-place book or student's note-book; a large folio volume this contains his notes on architecture, a wide-range of philosophical moral and religious topics, classical literature, geography, mathematics, chemistry, botany and medicine.⁶ Most of the entries in the book are undated. One can only assume that it stems initially from his undergraduate days, but he continued to use it many years later. Chemical experiments, including those headed 'Chy. experi. of Mr. Wrays', are dated 1658–9. Was he again in Cambridge or was he receiving reports second-hand?

Certainly a little later, in March 1659/60 Peter Courthope was sending him an account of other experiments in Cambridge.⁷ Some of Willughby's botanical notes are as late as 1664/5 when he was experimenting on rising sap at home in Middleton.

Early in 1660 Ray was writing to Willughby recalling work carried out together compiling a collection (i.e. catalogue) of rare plants out of authorities such as Gerard and Parkinson, and setting out his intention to carry out field work with the aid of his friends and compile a catalogue of finds. He was enlisting Willughby's help for Warwickshire and Nottinghamshire. He envisaged his plans would require some years to carry through and continued 'You have my Designs, and I desire your Judgment of them . . . I shall be very glad Sir to hear from you, and as I have heretofore received abundance of Pleasure and Contentment from your Friendship and Society, so it would still be some comfort to me to know that I retain a Place in your Thoughts and Esteem, though the meanest'.⁸ Willughby obviously did look favourably upon Ray's plans; that summer they carried out their first extensive tour together through the north of England and the Isle of Man in search of botanical specimens, some of which still remain in Willughby's collection.⁹ Writing to Courthope on 26th September 1660 Ray remarked ' . . . you do rightly guess that I did accompany Mr. Willughby in his travels this summer.'¹⁰ The late Dr. Raven assumed the tour took place in June and July, and that Ray was again travelling from Cambridge to Middleton on 1st August to wait upon Willughby.¹¹ It seems more likely however that this was the starting date of the northern journey, and that Ray was back in Cambridge and Willughby in residence at Oxford some time during September. The following year Ray made a similar tour with another pupil, Philip Skippon, who had entered Trinity College in 1655. The 1661 field trip, following largely the course of Willughby's journey the previous year, started on 26th July and ended on 7th September in Cambridge where it had begun.¹² It appears therefore that this second northern tour of Ray's not only had a similar itinerary but also a similar timing to the first, and it is hardly surprising that, writing to Willughby on 14th September, Ray complained of finding few new specimens.¹³

In August-September 1658, Ray had made a journey alone through the Midlands into North Wales returning through mid-Wales and the West Country to Cambridge. Now in 1661 he and Willughby were planning a similar tour together for 1662 and trying to persuade Courthope to accompany them.¹⁴ However it was Skippon who became the third companion. In May 1662 when he was about to depart for Warwickshire, Ray wrote again to Courthope: 'At Middleton, Mr. Skippon meets me; I hope his company will not be unacceptable to Mr. Willughby; however I know not how to reject him. I know he would have been a great deal better pleased with yours.'¹⁵ The journey progressed through Staffordshire and Cheshire into North Wales where specimens collected then and subsequently labelled remain in the collection.¹⁶ Continuing through mid and south Wales they returned via Somerset and Gloucestershire. Ray and Skippon then turned south into Devon and Cornwall but Willughby remained in Gloucestershire and near Dursley was able to satisfy another of his interests: coming upon a group excavating, he purchased from them a collection of Roman medals or coins which they had dug up.¹⁷ In spite of Ray's apprehensions, Skippon's company had obviously been acceptable to Willughby who developed a life-long regard for the younger man.

Francis Willughby was now eager to pursue their researches further afield. While Ray's interests lay predominantly with plants, his lay more particularly with birds, fish, insects and animals. It is well known that Ray found himself unable to subscribe to the Act of Uniformity and had to resign his fellowship at Trinity College in August 1662 after a year of uncertainty. He was thus free to make plans with Willughby for an extensive tour abroad. As a stop-gap he went to Friston Hall, Suffolk as tutor to the young Nathaniel Bacon, son of Thomas Bacon. This adventurous youth, who later emigrated to Virginia and had a short but spectacular career there, had been taken from Cambridge by his father because of his extravagances.¹⁸ Meanwhile Ray had agreed the following spring to travel with Willughby

who was getting his party together and again trying to persuade Courthope to accompany him, or at least to join the group abroad if he could not set off with them. Willughby wrote: 'I doubt not but you have friends . . . who would willingly undertake the trouble of looking to your affaires in your absence; ours cannot so well be settled at Wollaton, but something will be lost; but that does not move me at all, when I consider that time and youth are not to be bought, and that we are sufficiently secured against poverty, as you are too'.¹⁹ Courthope, however, did not join the party which finally consisted of Willughby, Ray, Skippon and Nathaniel Bacon. The last member is the most illusive. Derham refers to him as one of Ray's pupils, and it would be easy to assume that the group was made up with Ray's current student at Friston Hall.²⁰ This is hardly possible as he was entered at Gray's Inn in November 1664 when the traveller Bacon was still on the continent. As there were six men of the name of Nathaniel Bacon at Cambridge in the 17th century, of those who could have been a pupil of Ray's eligible for the tour, the most likely, as Raven deduced, was the Nathaniel Bacon who was admitted at Trinity on 19th April 1653.²¹ He would thus be a contemporary of Willughby in the college. It is significant that Willughby's passport dated at Whitehall 10th April 1663 included the name of Nathaniel Bacon and two servants, and when the party split up in Italy Ray and Skippon as on previous occasions went together, and Bacon accompanied Willughby.²² Having crossed by packet boat from Dover to Calais on 18th April, they travelled through the Low Countries into Germany, south through Mainz, Frankfurt and Strasbourg into Switzerland (Basle, Zurich, Constance) and turned back into Germany to Munich and Nuremberg. The most easterly point of the travels appears to have been Vienna. From there they turned south through the Alps to Venice. The winter of 1663-64 was spent at Padua. Throughout the journey they were collecting botanical specimens—many came from the botanical gardens at Padua—and Francis Willughby was purchasing paintings of birds, fish and plants, and engravings of birds and fish.²³

While in Padua the party attended anatomy lectures at the Hospital and Willughby matriculated in the University.²⁴ They were present also at the dissection of a woman's body at the house of Signor Marchetti and kept a day-by-day record of the proceedings, which were carried out by Antonio the son of Pietro Marchetti, a lecturer in anatomy.²⁵ From Padua the travellers visited other cities in northern Italy before moving south. The party then split up, Ray and Skippon continuing by boat to Sicily and Malta, Willughby and Bacon remaining in Naples before journeying to Rome. From Messina Skippon wrote to Willughby about the manuscript on insects by Dr. Petrus Castellus shown them by his nephew Dr. Petrus Corvinus.²⁶

Towards the end of the summer, Willughby parted from Bacon to carry out a project he had planned from the outset, a journey through Spain. For this purpose he brought with him letters of introduction from a merchant in London to contacts in the Peninsula and collected other similar letters on his travels.²⁷ On 31st August he started from Bagnols in southern France and crossed the frontier into the north-eastern tip of Spain near the coast of Cap de Creus, and, travelling by mule, followed the line of the coast south and westward to Granada before turning inland to Seville. From here he had hoped to go to Portugal, not by the difficult overland route, but by making for the coast (Cadiz) and continuing by boat to Tangier and then to Lisbon, but he was unable to obtain a passport. Instead he turned north to Madrid where he arrived on 2nd November and travelled back to the French frontier crossing by Fuenterrabia on the Biscayan coast. He continued through France on the way home and paused in Orleans. In his letter to Ray giving an account of the journey, Willughby wrote that he was accompanied by a merchant as far as Seville, but had travelled the last 1000 miles alone.²⁸ He would presumably still have his servant with him, and in his account of the travels through Spain printed by Ray after his death, Willughby continued to write in the plural 'we' even when describing the second part of the journey. He arrived back at Middleton towards the end of 1664, and spent some time in the spring carrying out experiments on rising sap in birch trees, a subject to which he returned with Ray in later years. Ray did not arrive back in England until early in 1666.

In 1673, shortly after Willughby's death, Ray published an account of the continental tour and added to it Willughby's description of his own journey through Spain.²⁹ The accounts are mainly topographical showing an interest in places and people. Ray did add a catalogue of plants not native to England found abroad. In fact they tried to see, to hear, to learn all they could. By-products of the tours were the vocabularies which Willughby and his friends compiled. The fore-runner was the English-Welsh word list compiled on the 1662 journey through Wales. Those written during the continental tour included not merely the national languages of the countries visited, but also other languages spoken there: French, Walloon, Low and High Dutch, Hungarian, Bohemian, Croatian, Turkish, Persian, Italian, Provençal, 'African' and 'Biscay', the last two written down by Willughby while in Spain, the 'African' (Arabic) from conversation with slaves from Algiers, the 'Biscay' (probably Basque) spoken by a boy from Bilbao.³⁰

Willughby's father died in December 1665; Francis now inherited the family estates. He was a bachelor and continued to live at Middleton with his mother whose regime still seems to have dominated the household even after his marriage. Relations and friends were pressing him to take a wife and in January 1667/8 he married Emma, daughter of Sir Henry Barnard, a merchant of the Levant company then living in Shropshire.³¹

Ray joined Willughby at Middleton for the winter of 1666-7 when they were arranging the specimens gathered on the continental tour. In fact, the two men were mainly together for the rest of Willughby's life apart from a time in 1668 after his marriage and other briefer interludes. They travelled around together on specimen hunting tours and on visits to other naturalists such as John Wilkins, Bishop of Chester. It is difficult to estimate how often they came to Nottinghamshire. It was in Warwickshire that Willughby served as Sheriff in 1670-71, twenty-one years after his father had held the same office. They were at Wollaton in April and June 1670 though not in continuous residence. Ray, writing to Lister from Wollaton on 28th April noted they were expecting the Bishop of Chester at Middleton during the following week. They intended returning to Middleton at the end of the present week by which time Ray believed Emma Willughby would have given birth to the child she was expecting.³² In this same letter to Lister Ray mentioned observing *Lychnis*, Gesner's *Polemonium petraeum*, about Nottingham castle walls and certain other plants in flower on the sandy grounds. He returned to the subject in his letter to Lister written from Wollaton on 29th June and added 'The Pink which grows by the highway sides of the sandy hill you descend going from Nottingham to Lenton, I find to be the same with that which grows on the hills about Sandy, in Bedfordshire, near Juniper Hill in Cambridgeshire, Bridgenorth in Shropshire, and in many places of Berkshire'.³³

There was a constant interchange of ideas, information, even specimens, among their own circle in which Philip Skippon was a prominent member from the start. Another was William Jessop of Bromehall, Sheffield. Willughby made these two, with Ray, trustees under his will by which Ray was granted also an annuity of £60. Other trustees were his father-in-law, Sir Henry Barnard, and his brother-in-law, Sir Thomas Wendy.³⁴ Professional men and scholars like Ray in the group included Issac Barrow the mathematician with whom Willughby corresponded on such themes as the spiral line and the parabolical line, and the solidity of the sphere from the surface.³⁵ Another was Martin Lister who though in medical practice was corresponding in many fields of natural history. There was the correspondence between individuals, and there were the communications to the Royal Society. Willughby was contributing pieces on the motion of sap, on ichneumon wasps and on a type of bee.³⁶ He was one of the original Fellows when the Royal Society was founded in 1663. Ray became a Fellow four years later.

These were not their only activities. Willughby and Ray undertook other pursuits together. In an age which produced men like Dugdale and Thoroton, the one belonging to his native Warwickshire, the other to his ancestral Nottinghamshire, it is not surprising that the scholarly Willughby should share their interest in antiquarian studies. His own

family archives went back to the 12th century, and he and Ray worked through them together writing summaries on the dorse of documents and compiling notes on the history of the family. Again, it is doubtful how much was done at Middleton and how much at Wollaton. In his notebook Willughby stated he worked on them in both places.³⁷ It is clear from later correspondence between the agent at Wollaton and Francis' widow that many documents had been removed to Middleton during the period when it was the main family residence. Referring to coals in Derbyshire, the agent wrote: 'I presume Mr. Ray knows the certainty of what I have writt and much more in this concern than ever I was yet acquainted with he haveing had the perusall of all or most of those writings which went from Wollaton and are now at Middleton.'³⁸

A much more unusual activity, and one in which Ray appears to have had no part, was Willughby's interest in all forms of games. Surviving accounts of him give a picture of a studious, sober gentleman, taking little exercise, given to periods of ill-health.³⁹ It is all the more surprising, therefore, that he compiled a very comprehensive book of games, a fascinating compendium of card games, ball games, indoor and outdoor games (skittles, tennis, football, hurling, bowls), simple children's games, and word games. The entries are mostly in his own hand with a few insertions by Philip Skippon. It is inconceivable that Willughby himself engaged in all these, but the knowledge is detailed. Apparently his enquiring mind knew no bounds, and he seems to have amassed the information on games with the same serious purpose with which he applied himself to more academic pursuits.

Willughby had to contend with ill-health for much of his life. He had cut short the 1662 tour because of illness, and on another occasion he had been taken ill at Bishop Wilkin's house. He had taken various spa waters, but there is no indication as to his medical consultant. He referred one of his men to his uncle Percival Willughby, noted best for his book *Observations in Midwifery*, who practised medicine in Derby.⁴⁰ He must have known Robert Thoroton, the doctor and antiquary, who certainly supplied treatment to staff at Wollaton.⁴¹ Lister, in December 1670, was expressing concern over Willughby's health and referring to repeated illnesses.⁴² He died on 3rd July 1672. Cassandra, the naturalist's daughter, believed his death had been hastened by the lawsuit with its inevitable anxiety, trouble, travel, which arose on the death of Sir William Willughby of Selston. Believing himself to be distantly related to Francis Willughby, and having no legitimate heir himself, Sir William Willughby had left the main Selston estate to his sister Mary, wife of Sir Beaumont Dixey, but had bequeathed his South Muskham and South Carlton estates to Francis Willughby. The will was disputed by the Dixeys after Sir William Willughby's death in February 1670/1 on the grounds that the testator was *non compos mentis* at the time the will was made. Dr. Robert Thoroton who had attended Sir William Willughby during his last illness was a witness for the defence.⁴³ Actions continued in Exchequer and Common Pleas for many years before being finally decided in favour of the naturalist's son Thomas, first Lord Middleton.

Ray continued to live at Middleton after Francis' death determining to write up Willughby's work. Nothing had been completed. His premature death and the dissipation of his energies in such a diversity of pursuits were contributory factors, but he was the true scholar who never felt his work was finalized. He himself believed it was not complete enough to publish. Ray, however, filled in the gaps. First came the *Ornithologia* published in Willughby's name in 1676, the plates for which were paid for by his widow Emma. The English edition was published two years later. Dame Cassandra Willughby, Francis' mother had died in 1675, and thereby Ray had lost his main sympathizer and supporter. Emma remarried in 1676. Her second husband was Sir Josiah Child of Wanstead, Essex, and she moved her three young children with her to Wanstead. Ray had married a member of the Willughby household and for a time lived at Sutton Coldfield after leaving Middleton, but eventually returned to his native Essex. After the birds he worked on the fish which he also published in Willughby's name as the *Historia Piscium* in 1686. Willughby's work on plants,

insects and animals was incorporated in Ray's own publications, the *Historia Plantarum* (1686, 1688, and 1704) and other books. Relations between Ray and the Childs became very strained. Ray felt handicapped. Middleton was shut up and Willughby's papers were inaccessible to him. There were also disputes over the trusteeship, particularly after the death of Sir Henry Barnard in 1680.⁴⁴

The Willughby children were not entirely happy at Wanstead. The elder boy Francis was made a baronet in honour of his father in 1677. Eventually he left home and went to his Aunt Wendy's and in 1682 to Cambridge. Before he came down in 1685 he established his younger brother Thomas there also. Francis at the age of 19 with his sister Cassandra aged 17 as housekeeper, opened up Wollaton and started to renovate the house, but before he could do much he died on his 20th birthday in 1688.

Thomas, the new young baronet, left Cambridge and came to Wollaton with his tutor Dr. Man, Cassandra still acting as housekeeper.⁴⁵ They continued the restoration work at Wollaton. They also brought from Middleton plate, linen and furniture, and their father's collections of medals, dried birds, fish, insects, shells, seeds, minerals and plants, which had lain neglected in the intervening years since his death. They set about cleaning and labelling them and putting them in order. It is probably at this time that the plants were sewn into a copy of Ray's *Historia Plantarum* which had been interleaved with coarse paper for the purpose. These volumes of specimens were deposited in the University of Nottingham Manuscripts Department by the late Lord Middleton. The present Lord Middleton still possesses the collection of seeds in the 17th century cabinet in which they had been arranged by Francis Willughby himself, or more probably, by his children.

They also brought the library to Wollaton. Cassandra had been over to Middleton with her elder brother Francis in 1687 to inspect the books and other goods, but Sir Josiah Child had refused to allow them to be removed without a decree in Chancery. It may have been at this time, therefore, that the Library catalogue was compiled as a necessary preliminary. It is in an unknown hand which bears similarities with that of George Antrobus who from 1659 to his death in 1708 was Master of Tamworth School. He obtained his B.A. at Oxford in 1657 but received his M.A. at Cambridge in 1660 and was ordained deacon and priest in 1661. Living at Tamworth he also served as minister at Middleton and was rector of Wollaton from 1679 till his death, a curate ministering there in his place. After Francis Willughby's death and Emma's remarriage, he corresponded with Sir Henry Barnard and with Emma at Wanstead, and on the occasion of the young heir's visit to Middleton Francis and Cassandra were in contact with Mr. Antrobus, perhaps even then discussing the library with him and commissioning a catalogue.⁴⁶ It was a library built up by the Willughbys over many years. The catalogue covers books published up to the late 1680s with a few additional entries for later publications acquired. It is interesting to see the wide range of books. They covered all the subjects represented in the common-place book and included the natural history authorities on whose researches and nomenclature Willughby and Ray drew: Gerard's *Herbal*, English botanists Parkinson and Merret, the continental scholars, Aldrovandi, Rondelet, the Bauhin brothers Gaspard and Jean and Gesner. Other authors represented were classical writers such as Plato, Aesop, Caesar, Cicero, Pliny, Horace and Virgil; the theologian Duport; scientists Barrow, Boyle and Lister; philosophers More, Hobbes, Locke; poets Dryden, Milton; antiquaries Dugdale and Thoroton. Though the catalogue contains many additional works only published after Willughby's death, the greater part of the library must have been in existence in his lifetime, being the compilation of his predecessors as well as of himself. It is small wonder that men like Wilkins sought permission to use it and that Ray felt severely hampered in his attempts to complete and write up their researches after the house at Middleton had been closed and he was denied access not only to Willughby's papers but also to this vast store-house of reference works. Above all, it is a testimony to the versatility and intellectual appetite of Francis Willughby himself.

REFERENCES

- ¹The naturalist invariably used the 'WILLUGHBY' spelling. His children and later descendants adopted the 'Willoughby' variant used by some earlier members of the family.
- ²On John Ray see C. E. Raven, *John Ray naturalist his life and works* (2nd ed. 1950).
- ³A. C. Wood, ed. *The continuation of the history of the Willoughby family by Cassandra Duchess of Chandos* (1958); N(ottingham) U(niversity) M(anuscripts) D(epartment), Mi Lm 37.
- ⁴William Derham, 'Select Remains and Life of Ray', in E. Lankester, ed. *Memorials of John Ray*, Ray Society (1846); W. Derham, *Philosophical Letters between The Late learned Mr. Ray and several of his ingenious correspondents, natives and foreigners to whom are added those of Francis Willughby, Esq.* (1718); Lankester, ed. *The Correspondence of John Ray*, Ray Society (1848); R. W. T. Gunther, ed. *Further Correspondence of John Ray*, Ray Society (1928).
- ⁵J. and J. A. Venn, *Alumni Cantabrigienses* pt. I, iv, 723.
- ⁶N.U.M.D., Mi Lm 15.
- ⁷Derham, *op. cit.*, 357–358. Peter Courthope of Danny Place, Sussex, a cousin of Willughby's, became a commoner at Trinity College Cambridge in 1655. He was descended from the Courthopes of Cranbrook, Kent.
- ⁸*Ibid.*, 355–357. Letter from Trinity College 25th February 1659/60, reprinted in Lankester (1848) *op. cit.*, 1–3.
- ⁹N.U.M.D., Mi Lm 17, p. 180; Mi Lm 19, p. 831; Mi Lm 20, p. 1306.
- ¹⁰Gunther, *op. cit.*, 17–18.
- ¹¹Raven, *op. cit.*, 116. See letter to Willughby, 14th September 1661, Derham (1718) *op. cit.*, 358–359, and J. Ray, *Historia Plantarum* I, 474 linking Ray's finding of a specimen ('the least hares-ear') near St. Neots' with 1st August, and his visit to Willughby.
- ¹²The itinerary of the 1661 tour is printed in Lankester (1846) *op. cit.*, 131–163, (the editor is incorrect in stating Willughby was on this tour); see also letter Ray to Courthope, July 1661, where he states 'My company is only Mr. Skippon and a servant' and summarises the proposed route, Gunther, *op. cit.*, 20–21. On Skippon see Venn, *op. cit.*, iv, 86; he was the son of Philip Skippon, a Major-General in the Parliamentary forces, see article by C. H. Firth in the *D.N.B.*
- ¹³Derham (1718), *op. cit.*, 358–359, reprinted in Lankester (1848), *op. cit.*, 3–4.
- ¹⁴Gunther, *op. cit.*, 24, Letter from Ray to Courthope.
- ¹⁵*Ibid.*, 28–29.
- ¹⁶N.U.M.D., Mi Lm 19, p. 706; Mi Lm 20, pp. 1225, 1302.
- ¹⁷Letter, Willughby to Ray in Derham, (1718), *op. cit.*, 9, quoted by C. Brown, *Lives of Nottinghamshire Worthies* (1882), 209, and reprinted in Lankester (1848), *op. cit.*, 5–6.
- ¹⁸See T. F. Henderson on Nathaniel Bacon in the *D.N.B.* and letters, Ray to Courthope, 3rd November 1662 and n.d. in Gunther, *op. cit.*, 32–35.
- ¹⁹*Ibid.*, 36.
- ²⁰Lankester (1846), 16.
- ²¹Raven, *op. cit.*, 131; Venn, *op. cit.*, i, 65.
- ²²N.U.M.D., Mi 4/149a/1.
- ²³For a more detailed account of specimens obtained and paintings and engravings purchased or commissioned see M. A. Welch, 'Francis Willoughby, F.R.S. (1635–1672)', in *Journal of the Society for the Bibliography of Natural History* (1972), 6(2), 71–85.
- ²⁴N.U.M.D., Mi F 10/6.
- ²⁵N.U.M.D., Mi Lm 15/1.
- ²⁶Derham (1718), *op. cit.*, 361, letter dated 5th June 1664.
- ²⁷N.U.M.D., Mi 4/149a/2.1–5.
- ²⁸Derham (1718), *op. cit.*, 10–13, and Lankester (1848), *op. cit.*, 7–9.
- ²⁹John Ray, *Observations topographical, moral and physiological whereunto is added a brief account of Francis Willughby Esq.; his voyage through a great part of Spain* (1673).
- ³⁰N.U.M.D., Mi 4/149a/3. 1–16.
- ³¹Marriage articles dated 8th January 1667/8 and settlement 29th September 1668, N.U.M.D., Mi 1/7/15 and Mi 1/9/1.
- ³²Letter of John Ray to Martin Lister printed partly in Derham (1718), *op. cit.*, 62–63, repeated in Lankester (1848), *op. cit.*, 55–56, continued in Gunther, *op. cit.*, 125; The baby daughter Cassandra had arrived on 23rd April unknown to the men at Wollaton. Wilkins liked to consult Willughby and Ray on his own researches and to make use of the reference books in Willughby's library, *c.f.* letter of Wilkins to Francis Willughby 20th October 1666, Derham (1718), *op. cit.*, 366–367.
- ³³Derham (1718), *op. cit.*, 67–68 and Lankester (1848), *op. cit.*, 60–61. According to Lankester the *Polemonium petraeum* referred to in both letters is *silene nutans* Linn, and the Pink is *Dianthus deltoides* Linn. The foot of this hill is still known locally as 'Lenton Sands'.

- ³⁴Original will 24th June 1672, proved 19th April 1677, N.U.M.D., Mi 4/149/15, 1/13/18, 30–31, 6/176/184; 1/13/32, 1/13/19–20, 33.
- ³⁵Derham (1718), *op. cit.*, 360–365; letters from Barrow to Willughby, 26th March 1662 and 5th October 1665.
- ³⁶*Philosophical Transactions of the Royal Society of London*, IV no. 48, 963 (1669); no. 57, 1165 (1670); V, no. 58, 1199 (1670); no. 65, 2100 (1670); VI, no. 70, 2125 (1671); no. 74, 2221 (1671); no. 76, 2279 (1671).
- ³⁷N.U.M.D., Mi Lm 13.
- ³⁸Letter from Edward Dovey to Emma, Lady Child, 10th November 1680, N.U.M.D., Mi E 4/12.
- ³⁹*c.f.* Cassandra's statement that most of the day was spent in study and that the only exercise he took was a walk during the short period between morning prayers at 11 a.m. and dinner. A. C. Wood, *op. cit.*, 110–111.
- ⁴⁰Fragment of letter and prescription from Percival Willughby, Derby, 27th March 1662, inserted in N.U.M.D., Mi Lm 15.
- ⁴¹*c.f.* letter from Edward Dovey to Emma, Lady Child, Wollaton, 17th October 1681, N.U.M.D., Mi E 4/19.
- ⁴²Letter from Lister to Ray, Derham (1718), *op. cit.*, 80–81.
- ⁴³A. C. Wood, *op. cit.*, 113–115; N.U.M.D., Mi 2/76/1–50, Mi L 23–48.
- ⁴⁴Letters from Jchn Ray to Lady Child, July–September 1680, N.U.M.D., Mi E 4/29–32, and cause papers Mi L 55.
- ⁴⁵Thomas Man, b. Helmsley, Yorkshire, Fellow of Jesus College, Cambridge; see Venn, *op. cit.*, iii, 132.
- ⁴⁶N.U.M.D., Mi I 17/1. Wood, *op. cit.*, p. 126. On Antrobus see C. F. R. Palmer, *The History of the Town and Castle of Tamworth*, 310, 427–431; K. S. S. Train, 'Lists of the Clergy of Central Nottinghamshire', *Thoroton Soc. Record Series*, XV, pt. III (1954), 51; N.U.M.D., Archdeaconry of Nottingham Call Book C1 166a, 1680, when at the Archdeacon's visitation, Henry Hankey, curate, exhibited George Antrobus' orders for the absent rector. Antrobus was at least third choice for the Wollaton living after the death of the previous rector Samuel Kendall. Sir Henry Barnard, as Trustee, offered it first to a Mr. Cooke, a relation who refused it, and then the young heir Sir Francis Willughby offered it to his tutor at Wanstead, Mr. Henry Barrington; N.U.M.D., Mi C 34, letter from Sir Henry Barnard to Edward Dovey, 10th April 1679, *c.f.* also Barnard to Antrobus 6th April 1680 where he is discussing Middleton and Tamworth affairs, and Antrobus to Emma, Lady Child, 22nd May 1680, Mi E 6/64.

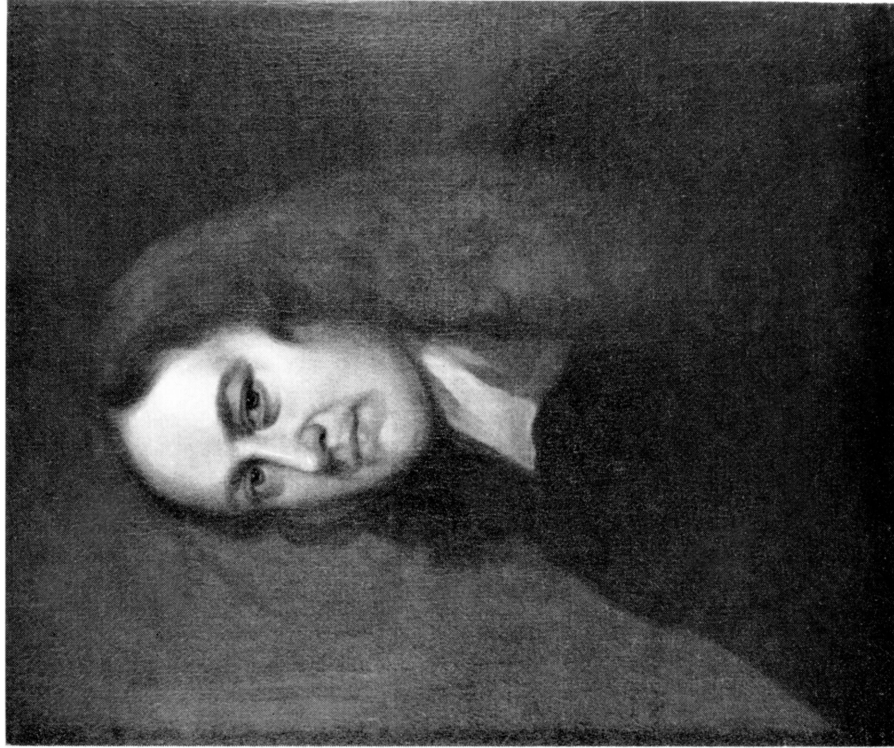


PLATE 1

Robert Thoroton, 1623-1678

HENSTOCK and TRAIN: ROBERT THOROTON

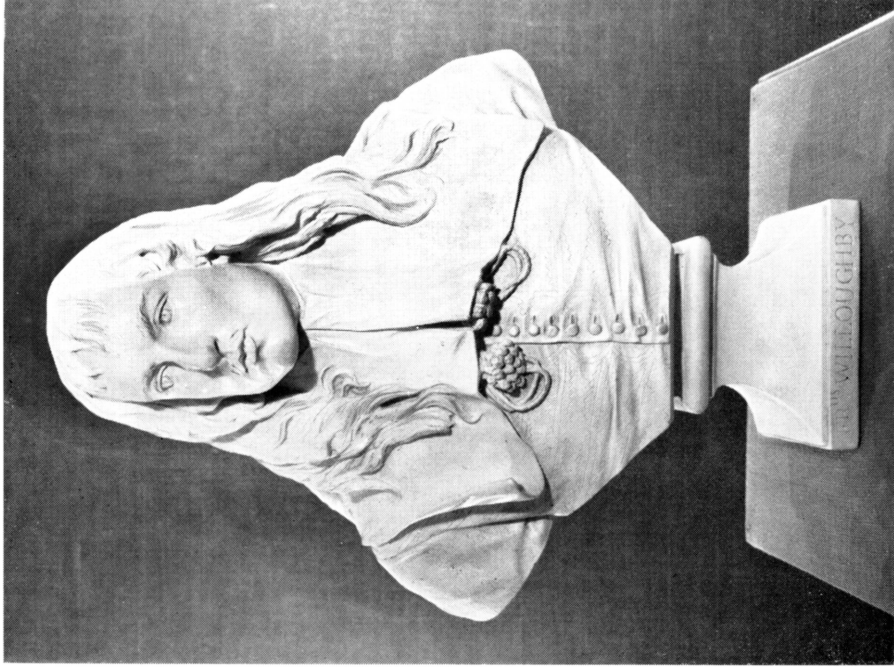


PLATE 2

Plaster cast in the Manuscripts Department of Nottingham University Library taken from the bust of Francis Willughby by Roubiliac in Trinity College, Cambridge

WELCH: FRANCIS WILLOUGHBY OF MIDDLETON