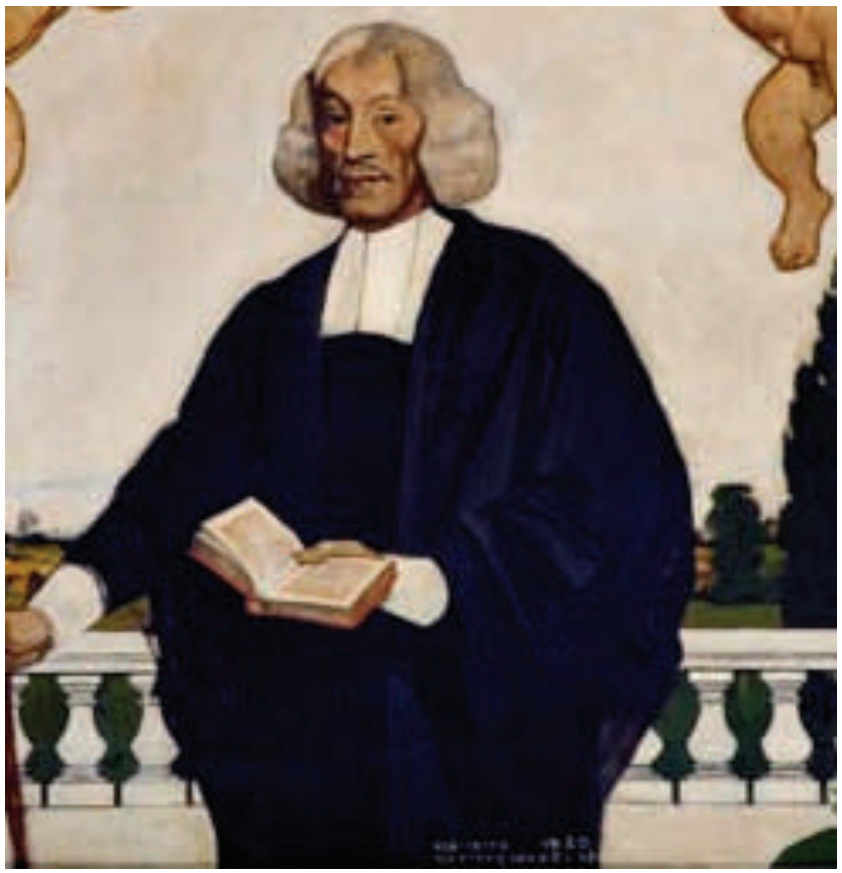




Braintree District Council

Information Sheet:

# John Ray (1627-1805)



# John Ray: Naturalist, Philosopher and Scholar

Almost 400 years ago, in the small village of Black Notley, Elizabeth Ray, a local herbalist and wife of Roger the village blacksmith, gave birth to her third child. Their newly-born son, christened John, would become one of the most distinguished natural historians of all time.

John Ray was an extraordinary man. Heralded as the Father of English Natural History, he was a pioneer, way ahead of his contemporaries in terms of knowledge and understanding of the natural world. One of Ray's greatest achievements was to lay the foundations for the classification of all living things. In addition to being an eminent naturalist, he was also an influential philosopher, one of the most travelled men of his time, the author of over 25 books, an internationally honoured scholar and scientist, a brilliant linguist, an observer of local dialects and a collector of proverbs. His work was used by others whose names are better known, notably Linnaeus and Darwin, yet in spite of his success, Ray did not seek popular acclaim, remaining humble and sincere. This coupled with the fact that as a scholar he wrote mainly in Latin may explain why he is less well known than he deserves to be.

## Early Life

In contrast to his extraordinary achievements, John Ray had a very ordinary start in life. His success was indeed a result of 'virtue, not birth'. As a child John Ray would spend hours watching his father at work in the forge; his fascination for how things are made and how they work would be significant in his later studies of anatomy.

The young John Ray undoubtedly gained his love of nature, especially plants, from his mother as they walked together through the Essex countryside, collecting herbalist specimens. Ray would later write that: "I remember that when I was a boy I saw the flowers of a buttercup... it was then frequent in the gardens near my home." His mother's herbal remedies also taught John Ray a great deal about the medicinal use of plants. Magic and superstition still governed the mindsets of many 17<sup>th</sup> century people, but Ray would later play a significant role in promoting scientific investigation of plants' medicinal uses.

## Education and Scholarship

At the age of ten, Ray became a pupil of Braintree Grammar School, held in the Jesus Chapel of St. Michael's Church. Here he learnt Latin and trained his remarkable memory and methodical mind. Aged 16, Ray was awarded a scholarship to Catherine Hall at Cambridge University. Upon arrival however he found life at Catherine Hall "too disputatious", and in 1646 he transferred to Trinity College.

Ray rapidly became an expert in languages, mathematics and natural science, and after graduating he stayed at Cambridge to lecture. A Fellowship followed in 1649, the turbulent year in which Charles I was executed and the Commonwealth established.

Many of John Ray's students became good friends; he was perhaps closest to Francis Willughby from Warwickshire – one of his earliest students. Willughby, being of aristocratic birth, had a very different background to the son of the village blacksmith, but his vitality and enthusiasm for learning became an invaluable inspiration to Ray. Their friendship lasted, and ultimately, as a result of Willughby's wealth and generosity, enabled Ray to devote himself wholly to science.

In 1650 Ray became seriously ill and it was during his recovery from this illness that he began to explore the Cambridgeshire countryside. His interest in natural history was re-awakened, although the discipline had no place in Cambridge University at the time. Describing this period, John Ray wrote that "there was leisure to contemplate by the way what lay constantly before the eyes and were so often trodden thoughtlessly underfoot... the shape, colour and structure of particular plants fascinated and absorbed me: interest in botany became a passion."



In 1660, after 6 years of fieldwork with his friends, Ray published his pocket-sized catalogue of Cambridge plants – the first ever book of local plants published in Britain and possibly the world. This work was well received and is still relevant today, over three hundred years later.

Even before the Cambridge Catalogue was finished, Ray decided to extend his botanical studies. Inspired by Willughby, he became determined to find, name and classify all living things. Together with friends, Ray embarked upon a ten-year period of travel throughout Britain and the Continent – a remarkable series of excursions given the poor quality of tracks, prevailing social unrest and the perils of highwaymen. Alongside plant observation, Ray was also fascinated by fossils, geology, mining and industrial processes. He also made collections of proverbs and unusual English words, and studied dialects. Books would later emerge from all these studies.

In the 17<sup>th</sup> century, the academic world and the Church were closely inter-connected. When the Church enforced control over education in 1660, Ray accepted priestly ordination in order to continue working at Cambridge; now aged 33, it seemed as though a successful scholarly career now lay before him. This decision was short-lived however, as Ray's conscience would not allow him to sign the Act of Uniformity, and so he was forced to resign his Fellowship and leave Cambridge in 1662. It is ironic that this painful decision would prove to be of immense benefit to the scientific world and indeed to Ray's own personal happiness.

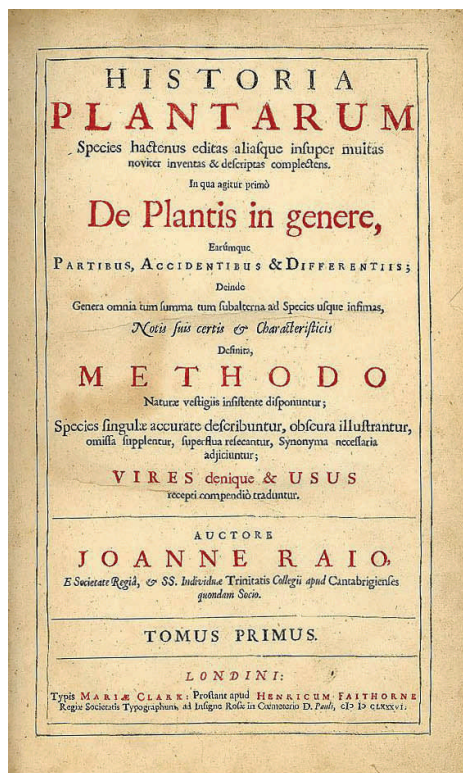
## Travels Far and Wide

Debarred from work either as a clergyman or a teacher, a period of poverty could have followed. Fortunately, John Ray's friends came to his aid. In April 1663 he again set out on a Continental tour, with three companions: Willughby, Bacon and Skippon. This undertaking lasted three years, and aimed to attempt the first systematic recording of the entire natural world. Eager to study plants and animals in their natural setting, the three visited France, Belgium, Holland, Germany, Italy, Malta, Sicily, Austria and Switzerland. Ray was fascinated by every new experience and published incredibly detailed accounts of his travels.

John Ray returned to England once more in 1666, and spent the next six years organising the huge amount of material collected on his travels. Before his death, Ray would publish systematic works on plants, birds, mammals, fish and insects, in which he brought order to the chaotic mass of names in use by naturalists at the time.

Ray also did experimental work in plant development and growth; his research on tree germination was particularly well received, and led to his admission to the newly-formed Royal Society, one of the world's first scientific societies, in 1667.

Willughby, Ray's great friend and benefactor, died in July 1672 at the age of just 37. His death was a great personal loss to Ray, although the Will left Ray a £60 annuity and responsibility for the education of Willughby's two sons.



## Publications

In 1670 John Ray published two new books: the first, his *Catalogue of English Plants*, was the first attempt to scientifically record the plants of England, and includes an index detailing their medicinal uses; the second book, *A Collection of English Proverbs*, also aroused a great deal of interest and is used even today in the study of folklore and dialect.

Ray's most famous work is undoubtedly his *Historia Plantarum*, published in three volumes in 1686, 1688 and 1704. The first two volumes describe and classify almost 7000 species of British and European plants, of which all but 800 were known to Ray. The third volume contains a further 11,700 entries and gives descriptions of plants from Jamaica, the Philippines, Africa and the Far East. The *Historia Plantarum* combined Ray's own remarkable findings with the best of all that had gone before and resulted in one of the great foundation stones on which modern botanical science is based.

## Final Years

During the last years of his life, Ray was in poor health. Often only able to work two hours a day, and more or less confined to the house, he still managed to produce an incredible volume of work. In 1691 'The Wisdom of God Manifested in the Works of the Creation' was published; a theological book which addressed Ray's inability to serve the Church as a preacher following his departure from Cambridge in 1662. Written in English, 'The Wisdom of God...' was widely read both in the British Isles and abroad.



At the age of 75, Ray concentrated his final efforts on the systematic study of insects. House-bound by his painful ulcerated legs, the majority of his specimens were caught by Ray's wife and daughters, including caterpillars, moths and butterflies. Sadly, his *Historia Insectorum* remained unfinished at his death.

John Ray died on 17<sup>th</sup> January 1705. He was buried in the village churchyard at Black Notley, too humble to feel that he should be buried inside the church itself. The impressive monu-

ment that marks his grave was erected by Ray's many friends and admirers.

## The John Ray Trust

In 1986 Braintree District Council established The John Ray Trust. The objects of the Trust are to promote and increase awareness and appreciation of the work of John Ray, and also to provide an annual Bursary Scheme for students undertaking projects in the natural sciences. The bursary scheme has been in existence since 1987 and has awarded bursaries to successful candidates for projects all over the world.

The John Ray Trust has also worked with other local bodies to establish the nine-mile **John Ray Walk** and the **John Ray Garden** at Bocking End, Braintree. Those who wish to learn more about John Ray can visit the **John Ray Gallery** in Braintree District Museum or purchase the story of his life and work from the Museum Shop.

### Did You Know?

- *The herbal remedies used by John Ray's mother included the bark of white willow trees as a cure for headaches!*
- *The terms 'Petal' and 'Pollen' were both used for the first time in John Ray's Historia Plantarum.*
- *John Ray was the first to study and record the complete life cycle of the butterfly.*