

**Bird Notes---Part 2, by Rick Pyeritz**

**Francis Willughby  
The First True Ornithologist  
November 1635 to July 1672**

***“What’s shot is history, what’s missed is mystery”***

My first birding trip west of the Mississippi was a 10-day journey to the “Sky Island” land of southeastern Arizona. Preparation for the trip consisted of conferring with folks who had been to the area before, acquiring Peterson’s Field Guide to Western Birds, the National Geographic Bird Guide, the available Lane guides for the region, and a CD of western bird songs. Along with that, I got a good road map and a rental car, and secured reservations at various motels, B&B’s and campgrounds. And, lastly, I packed my binoculars, a spotting scope, and appropriate clothes. I was ready for my own scientific journey of discovery. Utilizing my guides, I slowly began to feel comfortable identifying the local floras and fauna.



Francis Willughby and John Ray’s preparation for their 20-month continental journey was much different than mine. The trials and tribulations of their daily travels is beyond the scope of this article, but it’s well worth gaining an appreciation of 17<sup>th</sup> Century scientific journeys by reading the book. Here is a brief look at some of their travel preparations. Horses were essential for travel and for hauling the ever-increasing amounts of bird, insect, and plant specimens being obtained. Letters of introduction and passports were required. Dissecting equipment was needed, as the internal as well as the external characteristics of birds were being studied. Notebooks were essential for detailing daily activities, for drawing & painting what they collected, and for recording their developing classification system for birds.

As far field guides, the ones in existence then were large, cumbersome productions filled with a few inaccurate images, and often containing fanciful renderings of made up birds. Without reliable guides for identification, Willughby realized they would have to produce one of their own in order to develop a classification system. For bird identification, one needed a specimen to produce accurate information on unique field marks, reliable measurements, structure of bills and feet, numbers of feathers, as well as examination of stomach contents. Approximately 155 of the 380 birds described in Willughby’s *Ornithology* were dissected. Fowling pieces (guns) were vital to produce specimens for this information.



***“There is no ornithology without specimens: its’s as simple as that. We might recoil in revulsion at such an attitude, but for Willughby and Ray killing a bird was little different from us today identifying one through binoculars. Understanding the beginnings of ornithology requires us to recognize this.”***

Author Tim Birkhead

They also reflected how their beliefs about the natural world were challenged as a result of their research. One question was, what were fossils? If fossils had been living organisms and no longer existed, they had to be extinct.

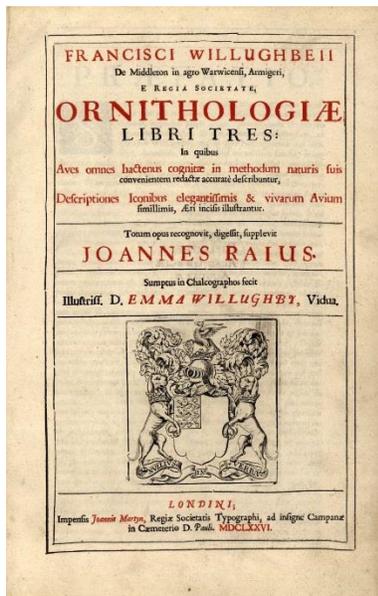
***“Their religious beliefs simply would not allow them to accept that God might have created certain animals and plants only to be subsequently lost.”***

Tim Birkhead

A similar thought was expressed after they observed the parasitic behavior of cuckoos depositing eggs in the nest of foster bird species. The foster species then raised the young cuckoos, much to the disbelief of Ray and Willughby:

***“it seems, strange, monstrous and absurd, that for my part I cannot sufficiently wonder there should be such an example in nature; nor could I have been induced to believe such a thing had been done by nature’s instinct, and with my own eyes seen it.”***

John Ray



So, what did Willughby and Ray accomplish with their 18-month continental journey and on their earlier trip through England and Wales? They described approximately 380 birds in addition to producing very accurate and beautiful renderings of the lot. The most important aspect of their work was the belief that there was order in nature and, if that was true, then that order could be discovered. The classification system developed by Willughby stood the test of time and formed the basis of those used by all subsequent generations of biologists. It took 200 years before a workable classification system for birds of the New World was developed with Elliott Coues's monumental *Key to North American Birds* published in 1872.

Unfortunately, Willughby was unable to complete his *Ornithologia* as well as his equally impressive works, the *History of Fishes* and the *History of Insects*. Often in frail health, Francis Willughby succumbed to his final illness (malaria?) in 1672, eight years after his return from the continent. His friend, traveling companion, and fellow scientist John Ray, was left to complete his works. Despite his short life, a review of his accomplishments seems to justify his title of The First True Ornithologist.

Comments and/or suggestions, please email me at [eapyeritz@gmail.com](mailto:eapyeritz@gmail.com).