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IN THE BEGINNING

Review of: Gilbert White 1789. *The Natural History and Antiquities of Selborne*.

London: Benjamin White 468 pp.

[Twenty-eighth in a series on "naturalist-in" books.]

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In opening this series, I said I would not review the main classic naturalist-in books, reasoning that none of you has any business not reading these books on your own. There is something to be said for this, yet I do have things to say about the classics, and discussing them here may stimulate more to read them.

The very first naturalist-in book, the one that initiated this distinctive genre, appeared while France was in revolution. Its author, Gilbert White (1720-1793), seemed entirely untouched by upheavals across the channel. He was one of the first in a long line of country parsons who formed a key support of the outstanding British natural-history tradition in the 18th and 19th centuries. This should not surprise us. For one thing, the job was not a demanding one. A parson was obliged to preach on Sunday, attend to various other church chores, counsel and console, be sociable, and not much else. In the course of visiting parishioners, he had frequent occasion to walk or ride leisurely about the countryside, with a wealth of chances to observe plants and animals where they live.

That explains the opportunity. The motivation is seen in the simple fact that these were educated men at a time when natural history was fashionable. Furthermore, the ruling paradigm was "natural theology", the idea that the path to understanding God's plan was in studying His works. Despite these supernatural underpinnings, the better parson naturalists were scrupulous in their observations, unprejudiced by any preconceived plan.

White spent his entire life in and around the village of Selborne, Hampshire, near the south coast of England, dying in the house in which he was born. *The Natural History and Antiquities of Selborne* is a record of what he observed and what he thought about it in the form of 110 letters to the naturalists Thomas Pennant and Daines Barrington. This is not just a classic but a hugely successful one, consistently in print in some hundreds of editions since it first appeared over 200 years ago. It is a striking example of the virtues of focusing deep attention on the natural history of a restricted area.

Hampshire has a relatively mild climate, buffered by its proximity of the sea and both warmer and sunnier than average for Britain. Selborne, in the uplands, is still a scenic village (present population about 1330), which Gilbert White made famous. His house is now a museum that attracts about 30,000 visitors a year.

White's social position and views are not directly treated in the book, but we know that he came from a well-off family, and a glance at photos of his house is

enough to show that he was a "gentleman". Although he was far from a haughty aristocrat, his empathy with the mass of poor people in his parish appears to have been limited. He remarked, for example, on how hard it was to suppress poaching on the great estates of the county, "so impossible it is to extinguish the spirit of sporting." He apparently had little appreciation that when poor people poach deer it is not for sport. (Had he really not read the Robin Hood stories?)

White had no patience with what he regarded as foolish folk beliefs that ran counter to solid facts. Living as he did toward the end of the Enlightenment, this makes perfect sense, although it is just a bit amusing to see a clergyman making much of the credulity of others.

Two things set White's natural history apart from that of his contemporaries and account for much of his enduring appeal. At a time when a great many naturalists worked almost exclusively with dead specimens, White studied living organisms up close and personally. He took the view, for example, that plant classification must be a means to an end, so that botanists "should study plants philosophically, should investigate the laws of vegetation." And at a time when much store was set by authority and the written word, he trusted his own observations from nature above all other sources. His wealth of original observations shows that he spent a great deal of time watching animals in their activities.

Correspondence was evidently crucial to White's natural-history practice. He regretted that he had no neighbours of similar interests, with whom he could compare notes. He not only reported new observations to his correspondents but eagerly received their own observations and suggestions of additional inquiries. And he was happy to recruit others to make observations of interest to him.

The Natural History and Antiquities of Selborne treats a wide variety of topics -- including such things as echoes, earthquakes, leprosy and sundials -- in passing, but there are also major themes, with a keen sense of open questions in natural history. For example, the reproduction of amphibians was very poorly known. Was a given species viviparous, oviparous or something else?

White is commonly regarded as a pioneer of ecology, and with good reason. His subject matter was the relationships of plants and (especially) animals with their environment. This is strikingly seen in his recognition of the crucial role of earthworms in conditioning the soil: "Earthworms, though in appearance a small and despicable link in the chain of nature, yet, if lost, would make a lamentable chasm." He suggested that someone ought to make the activities of earthworms the topic of a monographic study, which Charles Darwin did a century later.

His emphasis on personal observation led to a number of highly original insights. Perhaps the most famous of these arose from his recognition of the importance of territory and song in the life of birds. White had noticed that birds regarded as a single species, the willow-wren, had three distinct songs. From this he inferred that they were, in fact, three species. It was, as far as I know, the first analysis of what we now call ethospecies.

White kept a notebook on hand, ever at the ready as he moved about his parish.

The core theme of his notes was what is now called phenology, the seasonal timing of natural events in the lives of organisms. He recorded the dates of first and last appearance of some hundreds of species of plants and animals. He also noted year-to-year fluctuations in the abundance of yellowjacket wasps. The Bureau of Animal Population, established in 1932 by Charles Elton, has its roots firmly in White's notebooks.

His most important phenological data were from birds. These did much to advance our understanding of migration, a subject that was very much in the dark at the time. More than 120 species were recorded in Selborne at one time or another, almost half of the British fauna. By noting that certain species appeared rather abruptly in the spring and disappeared entirely in the fall, White reasoned that they must either overwinter elsewhere or hibernate in hidden situations. With the help of correspondents, he satisfied himself that most such species were, indeed, "birds of passage". For example, his brother in Gibraltar reported mass, multi-species passage of birds going south in the fall and then north in the spring. Before bird banding, this was the best evidence of long-distance migration.

In addition to birds that summer in Hampshire and fly south for the winter, there are those that come south to winter in Hampshire. White listed 20 species of the first and 17 of the second group, arranged according to their approximate order of arrival in Selborne. Another table gives the times of year at which 30 birds sing. It bears mention that his data tables give both common and scientific names.

At the same time, he doubted that all migration could account for all regular seasonal absences. In particular, he proposed that at least one species of swallow went into hibernation in Britain. While this strikes us today as rather preposterous -- as far as I know, no Eurasian bird undergoes true hibernation -- White's lines of evidence were reasonable. First, some young swallows had only recently fledged in the fall, and he found it hard to believe that they would attempt to fly all the way to the Mediterranean or Africa. Second, occasional swallow appeared either unseasonably late or early in the year, as if they had come temporarily out of hibernation on especially warm days. He had observed various insects, mammals and a tortoise, doing just that. The problem was that, unlike with these other animals, he could never discover the birds' hibernacula.

I will note three other topics in birds that excite my admiration in this book. On observing mixed foraging flocks of birds, White suggested that different species had different sensory capabilities, so that each gained from the others' perceptions. He wrestled with the questions of whether cuckoos are choosy about their hosts and what makes for a suitable host, as well as why they are parasites at all. And he noticed that a bank swallow typically digs a nest burrow in an earth bank and then occupies it for a few years before abandoning it. His proposed explanation -- a very ecological one -- was that the bird abandons the burrow when it becomes too unclean or possibly due to a build-up of parasites.

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