

Biological Notes on an Old Farm: Exploring Common Things in the Kingdoms of Life

By Glenn B. Wiggins. 2009. Royal Ontario Museum, Toronto Ontario M5S 2C6

The author dedicated this book to his wife, Carol, and then noted: "and for curious observers who take time to look".

This is an unusual book in many ways. It includes information on all living land-based organisms – bacteria, plant and animal (in accordance with the title). It is exceptionally well illustrated with colour photographs, colour and black-and-white paintings – the colour plates of plants and invertebrate animals are exceptional – and numerous drawings and sketches on the margins of the text pages. The writing is clear, concise and most readable.

In the prologue, the author describes how the book arose, that the primary organization is based on the classification system for the Kingdom of Life. Within the prologue is a geological time-table showing geological ages, based on the fossil record for major groups in the Kingdom of Life.

A brief introduction to Oakdale Farm – (author's farm) follows, accompanied with an overview of the changes of life style from family farm to city dwellers, the appearance of summer cottages and the re-occupation of the small farms and finally the recognition of advancing age and the personal necessity of a less rustic lifestyle.

The text follows an evolutionary sequential pattern with informative discussions. When considering the spring-flowering Trillium, for example, the author notes that the plant requires many years of growth before it can produce seeds. Thus the grazing by deer and free-ranging cattle can have a devastating effect on the survival of this particular wildflower.

Then follows a discussion on the role of ants in the dispersal of Trillium seed.

This type of in-depth discussion concerning the welfare of a particular plant or animal group and its relationship with the environment, is continued throughout the book.

The discussion of beetles is fascinating, not only because of the sheer numbers "...one in every four know species in the entire Animal Kingdom is a beetle" but because of its long association with man. A scarab beetle was a prominent religious symbol in early Egyptian civilization. Our June beetle is a scarab. Many other beetle species are discussed and illustrated including fire flies, potato beetles, lady beetles and click beetles.

The accounts continue with the true flies, wasps, caddisflies and moths to the Fungal Kingdom, which includes the lichens. The concept of a functional sym-

biosis between a fungus and an algae was initially rejected by British biologists but was successfully supported by the scientific work of Beatrix Potter, who later became famous as the creator of Peter Rabbit books.

In a separate chapter 6, entitled 'Kingdoms of Life, Cyanobacteria and Photosynthesis', a serious discussion is presented concerning the roles of bacteria, cyanobacteria, algae and photosynthesis in the origin of life. A summation is presented in the following quotation:

'Photosynthesis with oxygen as its by-product, arguably one of the most important evolutionary innovations in Earth's entire history, began with Cyanobacteria more than 3 thousand million years ago'.

A section entitled the entomology of old houses discusses the wide variety of small creatures that have learned to share our homes, our clothes and our food. Included are carpet beetles, crickets, clothes moths, silverfish, sow bugs and spiders. The section includes a discussion of stored food insects – again with excellent illustrations, especially the clothes moth.

At the end of the book, chapter 8 is a discussion of life in temporary pools or ponds. This is clearly a habitat of special interest to the author and the many life forms are treated in detail, again with numerous illustrations of larvae and adults of the inhabitants of the pools, including mollusks, flatworms, worms, bryozoans, mayflies, caddisflies, dragonflies, diving beetles, water bugs and amphibians.

The problems associated with the life forms able to adapt to the conditions prevailing in such an environment are thoroughly discussed. The author concludes that at least 65 families of organisms have become adapted to the flood and drought cycles of temporary pools.

A beautiful book in many respects, not only because of the artwork, which is exceptional, but also because of the breadth of the information presented. The book was designed by the author.

An initial reading of this review may leave the impression that the book is too technical for the general reader – that would be an incorrect assessment.

Yes, the initial sequential arrangement of the material is technical, but the subjects and the written discussions are of broad general interest.

The author must be very proud of his efforts.

W. B. SCOTT

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