

Dictionary of microbial taxonomy

Dictionary of Microbial Taxonomy. By the late S. T. Cowan. Edited by L. R. Hill. Pp.285. (Cambridge University Press: Cambridge and London, 1978.) £12.50.

TAXONOMISTS, who one might suppose ought to be able to tell us what taxonomy is, seem to agree no more about the meaning than on the derivation of the word. *Taxis* means arrangement: de Caudelle in 1813 coined *taxonomie* and can perhaps by now be forgiven the slip of not spelling it *taxinomie* but he did not explain whether the latter half was from *nomia* (distribution), *nomos* (law) or, mixing Greek with Latin, *nomen* (name). To some, taxonomy means systematics, to others the theoretical study of classification, to others still, nomenclature and the codes which regulate it.

The late S. T. Cowan viewed taxonomy as a scientific art intended to bring order to the often untidy processes of biological classification and nomenclature. Taxonomists he saw as artists—capricious, jealous, argumentative, aggressive—while charitably conceding “Some are good and able to

make a useful contribution to science”. The microbial taxonomist, he felt, should be a systematist dealing equally with classification, nomenclature and identification—“the trinity that is taxonomy”. As a medical and public health bacteriologist, Cowan was often engrossed with practical tasks of identification and he forgave but never forgot the pronouncement of the zoologist, E. Mayr, that identification was the lowest job a systematist did.

Cowan's *Dictionary* contains about 1600 entries, with four introductory chapters, one unfinished, and follows his earlier *Dictionary of Microbial Taxonomic Usage*; the editor, Dr L. R. Hill of the National Collection of Type Cultures, contributes sections on numerical taxonomy. About half of the entries refer to terms or practices in the codes of microbiological nomenclature. These international codes, of Nomenclature of Bacteria, Botanical Nomenclature (covering fungi and algae), and Zoological Nomenclature (including protozoa), with the Rules of Nomenclature of Viruses (a provisional virological code was not ratified) differ in numerous confusing ways. For example, the type of a bacterial species can be and, very sensibly, usually is a living culture maintained in a reference collection, but the type of a fungal or

algal species is generally a dried specimen as required by the Botanical Code. The nomenclatural entries explain the terms, meticulously compare the Codes, where they differ, and give references to the relevant Rules or Articles.

Other entries are technical terms of taxonomy, classification and descriptive microbiology (mostly bacteriology), biographies of taxonomists, addresses of culture collections and advice on scientific authorship; just a few (for example, “chemostat”) have no discoverable relevance to taxonomy.

Many are miniature essays, easy to read and rewarding to the browser, sprinkled with drily entertaining, semi-heretical asides which, for those who did not know Dr Cowan, will convey a flavour of his acrid and sometimes whimsical philosophy. The *Dictionary* is prefaced with an aphorism: “The serious student of nomenclature and the student who takes nomenclature seriously—these are two quite different people”, which reads like a 24-carat hand-turned Cowanism but nicely hints that both types of reader should find the book of value—and they will.

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Control of eye movement

The Brain and Regulation of Eye Movement. By A. R. Shakhnovich. Pp. 189. (Plenum: New York, 1978.) \$30.

THERE is an important school of Soviet scientists who have studied eye movement. Matyushkin has described the different muscle fibres of the eye muscles. Yarbus has published his studies on eye movement in the examination of patterns, and Luriya used this technique in the investigation of neurological cases. The author of this book, Dr Shakhnovich, has worked on eye movements, especially in the rabbit, on eye movement in man and on the local cerebral blood flow in man. This book is of interest chiefly for his account of Russian work, for though he is aware of western work, mostly of the 1950s and 1960s, there are important omissions.

It is not, however, easy to follow the accounts of his own work. Although one can accept that local increased activity can and does increase the blood flow in the cerebral cortex so that there are sharply defined local increases and decreases in flow, there

is no successful attempt to relate these changes to the control of eye movement. The illustrations, as Lorrin Riggs remarks in his introduction, are frequently devoid of essential detail of scales and experimental conditions. A little more detail on the technique of recording of eye movement by the Yarbus cap would be helpful, as Yarbus's own account, though admirable, is not readily available here.

In many current problems the author has little help to provide. The function of slow contracture fibres in the eye muscles remains obscure, and the question of vision during saccades is not clarified. As Riggs also remarks, the elegance of the bioengineering approach to the control of eye movement is not exploited in this book.

It is, however, his account of the literature which is unhelpful. “Stimulation” of unknown technique in poorly defined places does not provide a useful basis for study of the controlling mechanisms of eye movement in the midbrain, and it is difficult to follow his argument on the vexed question of reflex responses to stretch in eye muscles.

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