Entomon, 1976, *Vol.* 1, *No.* 2, *pp.* 209

BOOK REVIEW

ATLAS OF AN INSECT BRAIN by NICHOLAS J. STRAUSFELD. pp. i–xiv & 214, 71 plates (some in colours) and 81 figures, 1976, Springer-Verlag, Berlin Heidelberg, New York, size – 33.5 cm x 25 cm.

This highly technical, profusely illustrated, almost inimitable volume, aptly entitled *Atlas of an Insect Brain,* attempts to unravel the complexities of the principal neuropile regions of the insect brain as typified by that of the common housefly, and in view of the arthropod neuropile forming an excellent basis for the study of related phenomena about the computation that neurons can do, such detailed explorative studies on the shapes and disposition of the single neuron within the brain, sufficiently project the architectural patterns comprising the most complicated form of neuronal arborisation.

The work comprises seven chapters of which two, *viz.* Chapters 6 and 7 relating to the Atlas proper (involving sections through the brain), followed by the form and disposition of the neurons cover more than half the volume. One is struck by the presentation of the three-dimensional lattice work of the associating neuropiles in the central body and the suggestion that the disposition of its elements is reminiscent of the thalamus–reticulate formation of vertebrates. In order to clearly follow these structural details the first five chapters serve as a guide with the historical aspects of neuroanatomy in the first chapter, followed by the second, presenting information on the ramifications of the insect neuron; the main division of the brain are outlined in Chapter 3, according to their affiliation with the visual, chemosensory and mechanosensory inputs, while chapter 4 provides the descriptive anatomy of the brain of *Musca*, giving comparisons with the same brain regions of other insects; the numerical data presented in Chapter 5 on the quantitative aspects of the fly brain, such as the total number of neurons in the brain, their distribution in the various regions, the volume of the brain, density of neurons, the number of receptor neurons received by the brain as well as those connected with the ommatidia and ocelli, appear to be revealing pieces of information.

Of the two appendices, appendix I seeks to provide extremely useful information to students of neuroanatomy through providing detailed procedures of the histological techniques for a variety of methods which could be employed in the study of diverse insect groups. What has been most revealing is the inclusion of unparalleled colour photographs depicting the results which may be obtained through utilisation of these techniques. Appendix II deals with the glossary of technical terms, a must in such a grossly technical work and certainly fulfils the need of every student of neuroanatomy.

The 28 large size plates depicting sections of the brain at various levels, with as many figures indicating portions enlarged, not to mention the coloured plates, both photographs as well as colour washed diagrams, leaves an unusual experience to the reader, who will not only wonder at the complex architecture of the so profoundly complex, yet tiny brain of the housefly, but also feel a sense of reverential awe for the author whose mastermind enabled such a work possible.

Students of neuroanatomy of animals in general and insect physiology will find in this unique volume, a treasure house of knowledge which will lead them to unravel the further mysteries of the brains of insects.

T. N. ANANTHAKRISHNAN