in entropy occurring in these processes comes from the release of water.

The first chapter discusses the nature of entropy-driven processes and states that we should no longer speak of hydrophobic or apolar bonds but of entropic unions. This is as illuminating as the sentence in the *Financial Times* of 11 August 1965: 'Moralising by those whose industrial entropy is an accepted fact of life is neither likely to persuade the workers nor assist the trade unions in the task of trying to meet the nation's difficulties'. The second chapter, on the role of water, develops the theory of hydration and gives an account of the methods that may be used to investigate the degree of hydration and changes in it. The latter part of this chapter and the next four, comprising almost half the book, are concerned with a detailed account of the polymerization of TMV protein. So the second part of the title must be taken seriously, since so much space is devoted to a subject that has been thoroughly gone over in the past – as witnessed by the dates of many of the references – and which is, in my opinion, no longer very exciting.

The rest of the book outlines a number of entropy-driven structure-forming processes such as the sickling of haemoglobin S, the in vitro formation of collagen, actin and myosin, the division of fertilized eggs, pseudopodia formation in amoeba, colour change in killifish (*Fundulus heteroclitus*), and a motley collection of others.

We have come a long way since the seminal paper by Frank and Evans ((1945) J. Chem. Phys. 13, 507–532). The work and ideas of Kauzmann, Lauffer and Tanford – to mention but a few – have been absorbed into general biochemical thinking and the notion that hydrophobic interactions are entropy-driven processes has even found its way into student textbooks (see, for example, S. J. Edelstein, 1973, Introductory Biochemistry, p. 130, Holden-Day, San Francisco). It therefore seems otiose to produce a monograph on the subject in 1975. It is a pity that so much space is devoted to TMV protein and that other topics are given such short shrift; a much more interesting book could have been written if the emphasis had been reversed and the topics dealt with discussed in relation to each other.

S. P. Datta

Gene–Enzyme Systems in Drosophila

Vol. 6 in the series *Results and Problems in Cell Differentiation*
by W. J. Dickinson and D. T. Sullivan

Edited by W. Beerman, J. Reinert and H. Ursprung
Springer-Verlag; Berlin, Heidelberg, New York, 1975
x + 164 pages with 32 figures. DM 58.00, $ 25.30

The editors of this series of handbooks believe that the study of enzyme behaviour during development merits much study, particularly if carried out on a eukaryote that lends itself to genetic and developmental analysis. *Drosophila* is the obvious candidate because of the very large amount of information available, making it a system that is well-defined both genetically and biochemically. The authors, who work in this field, have performed a very useful service in collecting together and summarising the scattered literature.

Insect biochemists now prefer to work with single tissues or organs rather than with whole animal homogenates so *Drosophila* is not a popular choice because of the small size. It is now possible, however, to obtain daily batches of 100 gm of insects by synchronous mass breeding and then density gradient centrifugation may be used to obtain gram quantities of separate organs and this should facilitate the isolation and purification of *Drosophila* enzymes for detailed study. Luckily for much genetic work, useful information can be obtained from extracts of single flies by gel electrophoresis and histochemical staining and hundreds or even thousands of individual flies can be screened within reasonable time. It is noted that a biochemically defined system permits quantitative measurement instead of qualitative description when dealing with mutants, but ease of assay often determines the enzyme systems studied. The first chapter gives a general review of the usefulness of gene–enzyme systems in the investigation of various problems and can be read with profit by the non-specialist. The subsequent chapters discuss examples of various gene–enzyme systems in detail and are possibly of more value to those already working in the field or about to do so.

The second chapter deals with Eye Colour Mutants and their Enzymes and it is fitting that they have pride of place because of the classical work in the development of biochemical genetics by Morgan, Beadle, Tatum and their associates. Only in a few cases are the specific enzyme defects known in visible mutants of *Drosophila* but the eye pigment story shows what can be achieved. The third chapter reviews xanthine dehydrogenase, aldehyde oxidase and pyridoxal oxidase since these are involved in one of the most complex and interesting gene–enzyme systems yet investigated in any eukaryote. The rest of the book deals with dehydrogenases, enzymes of tyrosine metabolism, amylase and other hydrolytic enzymes and finally a mixed bag of miscellaneous enzymes.

The book is well produced with about 400 references with dates up to 1973. Clearly a very useful addition to this series of books on Developmental Biology.

B. A. Kilby

Insect Hormones (2nd English edition)

by V. J. A. Novak
Chapman and Hall; London, 1975
xxii + 600 pages, 37 plates and 73 figures. £16.80

The author of this fine book is the Head of the Department of Insect Physiology in the Entomological Institute of the Czechoslovak Academy of Sciences and his interest in insect hormones dates from a period 30 years ago when he worked with Professor V. P. Wigglesworth in Cambridge. There has been great activity in the field of insect endocrinology since then and especially in the last decade so that there are now over 6000 relevant papers in the literature. The first English edition of 1966 listed 3000 papers published up to that time and the new, revised and enlarged edition lists the 3000 published since 1966 (133 pages of them!). The two editions together therefore provide an unrivalled guide to the scattered literature on the subject.

There are three main causes for the great upsurge of interest in insect endocrinology. Hormones are now known to play an important role in almost all functions of the insect-growth, morphogenesis, moulting, reproduction, diapause, colour change, digestion, excretion, movement, nervous activity, etc., so that they must be taken seriously by anyone working on almost any aspect of insect biochemistry and physiology. Secondly, a study of insect hormones often contributes to other and wider fields such as morphogenesis, phylogenic relationships, neuro-physiology, etc. One remembers, for instance, the elegant demonstration of the effect of a hormone at the molecular level when Clever and Karlson showed puffing at specific loci in the giant chromosomes of insect salivary glands within a few minutes of exposure to ecdysone, the moulting hormone. Finally, the elucida-

12. FUNCTIONS ï½ In insects, juvenile hormones regulate a variety of functions including 1. Metamorphosis, 2. Vitellogenesis, 3. Diapause and 4. Polymorphism. 13. ï½ ï½ JH found in haemolymph control the stages of development of insects. They maintain a juvenile state in insects.Â 19. JUVENILE HORMONE ANTAGONISTS Exogenous application of JHAS is effective only when endogenous levels of JHs in insects is low. So, chemicals blocking the biosynthesis of natural JHS are used, named as anti-JH agents. example: Procene 1 and 2 - Plant, Ageratum houstonianum . Piperonyl butoxide . This review describes common features among diverse biological clocks in insects, including circadian, circatidal, circalunar/circasemilunar, and circannual clocks. These clocks control various behaviors, physiological functions, and developmental events, enabling adaptation to periodic environmental changes. Circadian clocks also function in time-compensation for celestial navigation and in the measurement of day or night length for photoperiodism. Phase response curves for such clocks reported thus far exhibit close similarities; specifically, the circannual clock in Anthrenus verbasci shows What's the English translation of INSECT HORMONES? See comprehensive translation options on Definitions.net!Â Would you like to know how to translate INSECT HORMONES to English? This page provides all possible translations of the word INSECT HORMONES in the English language. Discuss this INSECT HORMONES English translation with the community: Citation. Use the citation below to add this definition to your bibliography: Style:MLA Chicago APA. "INSECT HORMONES." Definitions.net. STANDS4 LLC, 2019. Web. 24 Apr. 2019. . Powered by CITE.ME. The Web's Largest Resource for.