

years. For instance, it offers a model (simulation) of text-processing which predicts not only the precise time taken for a user to perform a particular task, but also the individual keystrokes involved. These concrete case-studies are used as the basis for drawing more general conclusions regarding psychological matters, and how they should be taken into account by computer scientists when designing artificial information-processing systems.

The authors are unashamedly interdisciplinary in their approach, saying "We see this book not just as a book in applied psychology, but as a book in computer science as well". They regard certain central aspects of computers as being as much a function of the nature of human beings as of the nature of the computers themselves. This is partly because it is human beings who have designed computers and who wish to use them. But it is also due to the fact that both human

minds and computers are information-processing systems, and as such conform to general principles of information-processing which (the authors claim) their approach promises to clarify.

Many things taken for granted in today's technology are not merely inefficient at the level of superficial ergonomics, but radically mismatch the basic organizing principles of mind and machine. This mismatch, according to Card *et al.*, is neither theoretically nor technologically necessary. For example, a more precise model of user-performance would have encouraged computer-engineers to design time-sharing systems in a significantly different way. It follows that (precise) models of the human user have a place in "what every computer scientist should know to call himself a computer scientist". □

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Adding colour

R.S. Davidson

The Colour Science of Dyes and Pigments.

By K. McLaren.

Adam Hilger, Bristol/Heyden,

Philadelphia: 1983. Pp.185.

£17.50, \$34.

Organic Chemistry in Colour.

By P.F. Gordon and P. Gregory.

Springer-Verlag: 1983. Pp.322.

DM178, \$66.

THE study of colour is one which bridges art and science, and industry and academe. In both of these books it is clearly evident that the authors are fascinated by the subject and truly knowledgeable. This, no doubt, in part reflects the fact that all three of them have spent many years working in the dyestuffs industry.

In his first chapter, McLaren paints a most vivid picture of the historical development of colouring matters, and indeed throughout the book he discusses modern achievements and current ideas in relation to concepts developed years ago. Overall, he is mainly concerned with colour science, that is, the definition of colour and the especially complex topic of its measurement.

To lead up to a description of the basis of modern colour measurement, McLaren covers the process of colour vision and the factors which influence perception of colour. Succeeding chapters deal with measurement of colour, colour and measuring instruments, quantification of colour difference and computer match prediction. Two other chapters, covering the photophysics and photochemistry of colouring matters, and the application of colouring matters, are fairly well integrated with the rest of the book.

McLaren writes authoritatively, yet in an easy, readable style, and entertainingly intersperses his text with anecdotes. For example, the ability of men who have taken up holy orders to devise palatable and health restoring drinks is well-known, but to find one who, as early as 1611, dreamt up a colour system is rather surprising (that man was Sigrid Aron Forsius, a Swedish monk and astrologer). The book is thoroughly up to date and can be highly recommended to students and practitioners of colour measurement. My only criticism, and at that a minor one, is that the structural formulae are badly drawn and in some cases are incorrect — perhaps the author doesn't like the organic chemistry aspects of his subject.

For that sort of information, one should turn to Gordon and Gregory, who deal in depth with the chemistry (synthesis and properties) of many classes of dye. In contrast to McLaren, they hardly mention colour measurement (even though a colour map is included in the book!). In many respects, therefore, the two books are complementary.

Gordon and Gregory also include an excellent chapter on the application and fastness of dyes. Another attractive feature is provision of a bibliography at the end of each chapter which lists references under specific headings. I was impressed by this book; it is virtually free of typographical errors, and the quality of writing is generally good. While it is unfortunate that the title is so ambiguous, and that the authors have not exploited the usefulness of dyestuff chemistry in teaching the principles of electrophilic and nucleophilic aromatic substitution reactions more fully, both teachers and students of colour chemistry will find it to be well worth reading. □

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Sinaean seaweeds

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Common Seaweeds of China.

Edited by C.K. Tseng.

Science Press, Beijing: 1983. Pp.316.

Price not known.

ALTHOUGH almost every country has one or more beautifully illustrated publications dealing with native flowers and native birds, few have comparable works with good colour photographs of the local seaweeds. Japan and Australia have such books: the United States and Switzerland (perhaps for different reasons) do not. Now the Chinese have published a lovely volume, in English, lavishly illustrated on heavy paper with 149 coloured plates showing 512 species, including most of the major algae of the coasts of China. (It is noteworthy that 14 of the plates deal with cyanophytes, which tend to be ignored altogether in most seaweed floras. Bacteriologists will doubtless be pleased.)

Common Seaweeds of China is not merely a coffee-table production, however. For every species included, some 50–60% of the total recorded in the Chinese marine algal flora, there is a colour photograph and a 5–10-line description, in technical but clear scientific style, with details of form and structure, and plenty of dimensions of cells and organs (so necessary for identifications, yet all too often sadly lacking in other algal texts). There is information on distribution on the Chinese coasts and elsewhere, and, where relevant, mention is made of culinary or other uses. The generic and specific binomials are accompanied by full authorities. The English syntax and spelling are almost impeccable. A bibliography with 146 references provides a most valuable introduction to the Chinese seaweed literature for phycologists elsewhere in the world.

In his preface, C.K. Tseng explains that the book is not intended to be a working manual. There are few technical details whereby genera of seaweeds are to be distinguished and no diagnostic keys. It could hardly be otherwise in a book of this sort. Tseng also solicits comments and suggestions for future editions, but it is hard to find fault except with some of the photographs which are really very poor. I recognize that many of the species are not easy to photograph clearly, especially the filamentous forms, but I think it should be possible to do better.

Common Seaweeds of China is altogether quite an achievement. Tseng and his colleagues have produced a remarkable book, one for which all English-speaking phycologists will be grateful. □

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