

Worm's eye view

Neil A. Croll

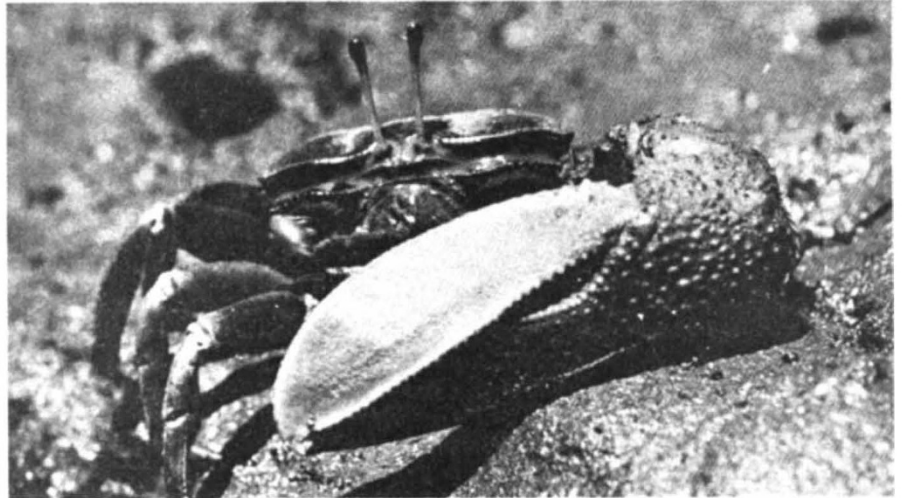
The Biology of Free-Living Nematodes. By Warwick L. Nicholas. Pp. viii+219. (Clarendon: Oxford; Oxford University: London, August 1975.) £8.25.

THE study of nematodes, perhaps more than with any other group of animals, is divided by the artificial barriers of professional groupings, journals and institutions. Too little communication exists between 'helminthologists', 'plant nematologists' and 'invertebrate biologists'. Dr Nicholas's book brings establishment to another faction, the free-living nematodes. As such it further frustrates the attempts of those who would study nematodes as a single biological grouping; it does, however, recognise the important role of the new nematologists who specialise in 'free-living' forms. 'Free-living' is a difficult notion; essentially it describes what is left when the parasitic species are taken away. Such a definition has hazy edges: parasites often have 'free-living' larvae, fungal feeders are free-living, but species which feed on higher plants are parasitic. Dr Nicholas wisely does not attempt strict definitions and emphasises soil, fresh water and marine forms.

As a series of essays some chapters can be recognised as those in which Dr Nicholas has had direct personal experience—such as 'Culture and Nutrition', Cytogenetics and Development' and 'Biochemistry'—and these achieve a high level of comprehension and accuracy. The chapter on 'Ecology' is a clear and thoughtful assemblage of a very heterogeneous subject area, and is the best short review of the subject currently available. One of the most attractive features of the book is that marine nematodes are not neglected. Furthermore, they are set apart from other free-living species on basic biological criteria but at the right distance.

In the first chapter on Morphology and Structure, much of the information is drawn from nematodes other than free-living forms. This has introduced some patchiness and has resulted in such important sections as those on the sense organs, excretory system and cryptobiosis being weaker than the other more restricted parts of the book. References are quoted but they are not necessarily the most relevant; they do not always demonstrate a synthesis made by the author before their selection. The book is eminently readable and the few typographical errors and

Male fiddler crab (*Uca maracoani maracoani*), Trinidad



mis-spelled names are more distracting than misleading. The book is informative rather than scholarly. Dr Nicholas has chosen a chatty style which narrates the subject rather than one that provokes the reader to think beyond these pages. Typical of this are his useful chapters on taxonomy and methods of handling and culturing.

There are over 1000 references but only 20 are quoted after 1971 and none after 1973. This has resulted in certain topics, in which rapid growth has occurred, already being dated; it is, however, more contemporary than any other competing text.

Nematodes are being widely used as model metazoans by geneticists, behaviourists, gerontologists, and developmental biologists. This is the best book available to give these researchers and their students in allied disciplines a 'worm's-eye view' of the nematodes. □

Fiddler crabs

R. G. Hartnoll

Fiddler Crabs of the World: Orypodidae—Genus Uca. By Jocelyn Crane. Pp. xxiii+736. (50 plates.) (Princeton University: Princeton, New Jersey, November 1975.) £43.70.

WITH over seven hundred large pages, and weighing in at only a shade under 3 kg, this is a truly impressive book at first sight. It is a pleasure to report that this favourable opinion is reinforced by a study of the contents. This monograph covers all the known species of *Uca* in respect of taxonomy, functional morphology and behaviour. To a great extent it is based on many years of the author's own work in various regions of the world, and as a consequence the different topics are integrated to an unusual degree.

The first and larger part of the book is the systematic section within which

each of the 62 species of *Uca* is dealt with in turn. For each one there is a full morphological description together with an analysis of its differences from related species, followed by details of behaviour, distribution and type material. I was relieved to find that the genus *Uca* was not fragmented here, for although large it has a distinctiveness and homogeneity which render it an excellent example of the generic concept. Recently Bott (*Senckenberg. biol.*, 54, 315–325; 1975) has proposed the division of *Uca* into nine genera, but it now seems unlikely that this partition will be generally accepted. Dr Crane renders the genus manageable by introducing a new scheme of subgenera, and simplifies a number of taxonomic difficulties by a judicious use of subspecific categories. Her analysis of criteria for erecting subspecies is particularly interesting.

The second part of the book contains a series of chapters which collate and discuss, subject by subject, the information presented species by species in the first. There are excellent chapters on zoogeography, environmental relationships and functional morphology, but to me the most interesting are those on behaviour and evolution within the genus. Few large genera have been analysed in such detail with regard to these latter.

There are a number of appendices, of which the most useful are the keys to species in different geographical areas, and that providing practical advice on the observation, collection, transport and maintenance of these crabs. There are many high quality line drawings and photographs which amplify both the morphological and behavioural accounts. Overall this is a remarkably comprehensive review of a most interesting genus, and has been produced to a very high standard. It will be of great interest to carcinologists of a variety of disciplines, and it is only a pity that the economics of publishing must put it beyond the reach of most. □