The next forty pages deal with the reproductive systems and the complexities of larval ecology. The considerable vertical movements of euphausiids are discussed in chapter five. The importance of these migrations in the recycling of chemicals has been demonstrated partially through the agency of the radioactive zinc discharged into the north-eastern Pacific. The twenty-five pages on feeding mechanisms and food highlight the tremendous problems in making quantitative studies in this field. The brief account of the chemical composition of euphausiids has an important discussion on the role of vitamin A, which is concentrated at improbably high levels in their eyes. Here is the principal source of the reserves of vitamin A in the livers of whales and many commercially important fishes. Chapter eight, on vision and bioluminescence, describes the spectral sensitivity of the eye pigments and so suggests the means of adaptation to a particular isolume. This leads to an insight of the mechanism controlling vertical migration. The chapter on growth, maturity and mortality tells of the considerable variations in breeding patterns, both within and between the species. It is followed by thirty-seven pages on the ecology of distribution. A testimony to the nutritional value of the euphausiids is brought out by the impressive lists of major predators. The staggering abundance of the euphausiids, particularly in the Antarctic, is described in the last chapter on their place in the marine economy. Now that the main predators of the euphausiids, the whales, have been so voraciously decimated, man is turning to direct exploitation of the crustaceans.

In a work of this nature there are inevitably omissions and minor errors. Perhaps most surprising is the exclusion of Glover's work[1] on the distribution and abundance of euphausiids of the North Sea and north-east Atlantic. One would also have expected a note on Cushing and Richardson's estimate[2] of the population density of *Nyctiphanes couchi* in the North Sea.

The text is refreshingly free from typographical errors, although the figure of 0·96 seconds given on page 247 as the delay between stimulation and luminescence should be 96 seconds. The style is usually simple and direct but with the occasional horror such as the sentence of seven lines on page 249. The 600 references illustrate the growth in the study of euphausiids, 30 per cent having been published in the past decade. The meticulous care characteristic of the whole review is reflected in the thorough subject and author indices. As one who has laboured through the diffuse literature on the group, I am conscious of the gratitude which is due from the whole community of marine scientists to Dr Mauchline and the late Dr Fisher for this stimulating and extremely welcome compendium on the Euphausiacea. The preliminary work is over. The challenging task of quantitative evaluation of euphausiid populations awaits us. L. T. JONES

[1] Glover, R. S., *Hull Bull. Mar. Ecol.*, **3**, 23 (1952).
[2] Cushing, D. H., and Richardson, I. D., *J. Mar. Biol. Ass. UK*, **35** (1956).

COMPREHENSIVE HAEMATOLOGY

Blood Platelets in Man and Animals

By Bernard Maupin. Vol. 1: Pp. xiv+544. Vol. 2: Pp. x+487. (International Series of Monographs in Pure and Applied Biology, Zoology Division, Vol. 41.) (Pergamon: Oxford, London and New York, August 1969.) 360*s*; $45.

THIS comprehensive work is divided into two volumes. The first volume contains the text only, while the bibliography, which contains more than 7,500 references collected over a period from 1938 to 1964, is published in the second volume. Dr Maupin has covered every aspect of the platelet, from its origin in the megakaryocyte to its function in haemostasis and thrombogenesis. The work also includes chapters on morphology, physiology, biochemistry, immunology, and pathology of the platelet.

It is a great pity that such an ambitious book took so long to prepare for publication, because what has been presented is historical rather than representative of current ideas on the nature and function of the platelet. The considerable effort that must have gone into collecting such a vast bibliography is, to an extent, wasted, because the author has presented the result of his labours so uncritically. Throughout the text, where opposing views on a particular topic are given, no attempt has been made to explain or reconcile the different opinions. In my opinion, these volumes will be purchased by the reference libraries as a comprehensive reference book rather than by the individual. M. P. ESNOUF

MOTHER TIES

Attachment of the Young

Imprinting and Other Developments. By F. V. Smith. (Contemporary Science Paperbacks, No. 38.) Pp. viii+120. (Oliver and Boyd: Edinburgh, September 1969.) 7*s* 6*d*.

THIS little book provides a compact introduction to the literature on attachment behaviour in young animals. From the viewpoint of a reader who wishes to enlarge his background for understanding human development, the book is overly focused on studies of birds rather than mammals. In this it parallels the literature on imprinting, which was discovered in birds first. Smith briefly reviews many studies of the innate processes which ordinarily assure that a young creature will become firmly attached to its mother soon after birth. Visual and auditory modes largely mediate the tie in birds, while tactile, kinaesthetic and sometimes olfactory modes are more important in mammals.

Brief chapters on activities resembling imprinting in mammals and on implications for the study of children present evidence that important distortions of development occur when attachment behaviour is interfered with. For instance, in goats, "As soon as the newborn kid becomes mobile, the doe, in normal circumstances, maintains a 'safe' area around it. Intruders are butted away and after the butting the mother circles the kid, in effect ensuring freedom from interruption and favourable conditions for the attachment of mother and young. . . . Kids whose 'safe' territory has not been maintained, because of accident or experimental design, do not develop a normal social life. It is soon apparent that they lack confidence and poise in social relationships with other kids. Invitations to play are received with aggressive butting and, before long, communication is so bad that other kids react to it as an inanimate object".

In discussing the bird data, the author's attention to the specific research details of each study cited reduces the book's usefulness to the general reader, who may lose the conceptual thread. His style is largely that of a technical review article to which some continuity has been added. This makes it an excellent survey for the student who is beginning a systematic study of the field. As a general introduction to the topic I prefer J. P. Scott's *Early Experience and the Organization of Behaviour*, also a paperback, which presents much more material about mammals. LEONARD J. FRIEDMAN

ENTROPY FOR EVERYBODY

Knowing and Guessing

A Quantitative Study of Inference and Information. By Satosi Watanabe. Pp. xiii+592. (Wiley: New York and London, September 1969.) 211*s*.

IN certain of the more venerable of British institutions, physics is still described as natural philosophy, in spite of the fact that physics nowadays seems to depend more on