reviews

Reproductive physiology in the male

B. P. Setchell

The Process of Spermatogenesis in Animals. By Edward C. Roosen-Runge. Pp. viii+214. (Cambridge University: Cambridge, London and New York, 1977.) £15.50.

THIS book is an extremely welcome addition to the literature on reproduction in the male. It brings together an absolute wealth of information on the formation of spermatozoa in lower animals and then relates this to the much greater body of knowledge about testis function in mammals. The book begins with a historical introduction, important in a subject which, has developed explosively in the last ten years. The author then works systematically through the Animal Kingdom, collating and tabulating the widely scattered information, and more importantly, discussing its relevance to the situation in other classes of animals. As a scientist working on the physiology and biochemistry of the testis in mammals, I found the book extremely interesting and stimulating.

The invertebrate species, in particular, provide so many extraordinary variants on the basic theme that I will look with new eyes at my own data to see whether things in mammals are as simple as they have seemed till now. I found the description of the 'carrier' spermatozoa in the marine snail *Janthina* particularly intriguing, as was Professor Roosen-Runge's own work on the marine hydrazoon *Phialidium*. This animal releases spermatozoa twice daily at sunrise and sundown for 3–4 months and its testes continue to produce and release spermatozoa *in vitro* although in these conditions spermatogonia are not renewed. This animal should obviously be studied in greater detail in view of the failure so far to maintain spermatogenesis, particularly the meiotic divisions, in cultures of fragments of mammalian testes.

I am not quite so sure whether a zoologist, who wanted to obtain a general picture of reproduction in male mammals to relate to the animals he was studying, would find all the information he needed. Professor Roosen-Runge is one of the most imaginative of the still-active older scientists in this field and he has worked for many years on spermatogenesis in mammals, although his contribution is often underrated. It is therefore a pity that he feels that this field "has been reviewed almost to excess" and does not attempt a detailed exposition of his view of the present state of knowledge of mammalian spermatogenesis.

The book is very well produced, although I do find it irritating that the plates are grouped together rather than spaced through the text, but I suppose that this is a consequence of rising costs. There seem to be very few spelling mistakes (even fewer if the 'bettle' on p70 is not meant to be a 'beetle'). Some of the line drawings could be clearer and several are inadequately labelled, for example Fig. 3 (p7), in which the numbers are undefined and cannot be reconciled easily with the text.

In summary, this is a book which every library interested in the physiology of reproduction should have; and almost all workers in this field would learn something new by reading it. Professor Roosen-Runge is to be congratulated. I do not know of anyone else who could have done it as well. □

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Human variation and adaptation

Population Structure and Human Variation. International Biological Programme. Vol. 11. Edited by G. A. Harrison. Pp. 342 (Cambridge University: New York, London and Cambridge, 1977.) £17.50.

THIS monograph consists of a selection of studies of human populations carried out during the International Biological Programme. Each of the 12 chapters attempts a broad review of investigations concerned with population genetics, demography and ecology as they relate to human variation and adaptation.

In the past, physical traits (such as head shape and skin colour) have been largely used for defining population groups, but the value of such traits is somewhat limited because they are polygenically determined, and at least some are significantly affected by the environment. For these reasons anthropologists and population geneticists have increasingly turned their attention in recent years to monogenically determined biochemical markers (blood groups, haemoglobins, serum proteins and enzymes) and it is with the distribution of these markers, as well as disease incidences and various physiological parameters, that this book is also concerned.

The world distribution of genetic markers is reviewed and also the findings in various "isolates" in North Asia, the Yanomama Indians of Brazil and the Solomon Islanders. The nature of specific factors which may influence human variation and adaptation are also approached through the study of migration of genetically similar groups into different environments (Tokelau Islanders of the Pacific into New Zealand, the African savanna dwellers into the equatorial rain forests) the study of genetically different groups living in similar environments (various Jewish communities in Israel) and physiological adaptations to extreme environments (the semi-arid regions of Central Africa and the tropical forests of Papua New Guinea).

There are those who might question the merit of studying the frequencies of various traits in different populations which, at their lowest level, Mall the anatomist might somewhat irreverently have referred to as 'brick-counting-research'. But in defence of such studies it can be asked how else can human evolution and adaptation be investigated? If there is a defect perhaps it lies not so much in the collection and analysis of such data but rather in their interpretation.

This is essentially a postgraduate text, and in any event is far too expensive for possible recommendation to undergraduates. It is well edited and presented, and should prove particularly valuable for research workers. It is also an excellent sourcebook of relevant data for teachers of human biology, population genetics and anthropology. **Alan E. H. Emery**

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