Book Reviews

Primate Studies

Comparative Ecology and Behaviour of Primates. Proceedings of a conference, London, Nov. 1971. RICHARD P. MICHAEL and JOHN H. CROOK, Eds. Academic Press, New York, 1973. xvi, 848 pp., illus. $34.

Michael and Crook begin their preface by saying that "anatomical, physiological, sociological and ecological studies of each species should no longer be pursued in isolation [for] each provides an insight into what is a larger system of organization." Their volume contains thoroughly professional and interesting articles, but the reader is inevitably left to provide most of the links which might connect, for example, home ranges of the mouse lemur in Madagascan coastal forest with the greeting rituals of guests at a Long Island beach party.

The volume is divided into sections on Ecology and Behaviour, Sexual Behaviour and Social Dynamics, and Primates and Human Ethology. They can also be conveniently grouped as ecology, physiology, and personal relations.

The first group is fairly coherent, all the papers belonging to a growing field of ecological primatology where there is considerable agreement about the important factors to study. They are all jigsaw-puzzle pieces which illustrate, or modify our views of, the relations between food distribution and social structure and the relative selective advantages to individuals of different age or sex within different forms of social organization.

Martin first reviews his field studies of the lesser mouse lemur. Mouse lemurs form population nuclei in which females share communal nests, may have synchronized estrus, and share upbringing of the young within one nest. A few central males have home ranges within this breeding nucleus, while other males remain peripheral, ranging more widely. The nucleus centers on bushes of one favored food plant, so females and central males share the advantage of a preferred food supply. Chivers describes the Malayan dipterocarp forest of Kuala Lompat, comparing the grouping, ranging patterns, and diet of siamang (*Hylobates syndactylus*) with those of white-handed gibbon (*Hylobates lar*) and dusky and banded-leaf monkeys (*Presbytis obscura* and *Presbytis melalophos*). This is an interesting but still preliminary report, and will be extended by further comparison with *Macaca fascicularis* and *Macaca nemestrina* in the same forest. Gautier-Hion summarizes her field studies of talapoin (*Miopithecus talapoin*), adding comparisons with five *Cercopithecus* species in the same area of Gabon. Rodman gives us the first published report of his two-year study of Bornean orangutans. Orangs live in apparent solitude, except for a mother and her dependent child, but the Rodmans' study of habituated animals reveals a system of home ranges which oddly recalls the mouse lemur—females overlap and very occasionally associate with female "friends" (possibly adult daughters?), while a fully mature male's range overlaps those of several females, with whom he may mate. Sugiyama compares group structure and social behavior in chimpanzees living in the Budongo Forest, Uganda, and in the wood and savanna of the Mahali Mountains, Tanzania. In many respects social behavior is similar in the two kinds of habitat, with far more flexible open groupings than in any primate except man, but in savanna one may find "unit groups" of 40 to 50 chimpanzees joining to travel together, or even migrating seasonally to new range, whereas in the forest the unit group remains implicit as a dense network of social relations outside of which individuals have little contact. One fascinating observation is that adolescent female chimpanzees in estrus may deliberately change unit group to mate, and may even remain for years in their new group without any Lévi-Straussian paraphernalia of reciprocal gifts or formalized kinship links.

Deag and Chalmers made detailed studies of parts of the social repertoire—Deag of intergroup encounters in Barbary macaques, Chalmers of aggressive and affiliative behavior in caged groups of African monkeys. Deag's macaques overlap extensively in home range, and the reaction of one group to another varies from active hostility through "ignoring" to several days' travel together. Chalmers addresses himself directly to the differences between arboreal and terrestrial species. His data suggest that those aggression and avoidance patterns which maintain distance between individuals may reflect a species' ecology fairly directly, for they would be related to foraging patterns, while other aspects of aggressive and sexual behavior are more phylogenetically conservative.

The two physiology papers are somewhat isolated—Ploog and Maurus on brain stimulation in squirrel monkeys, and Michael, Wilson, and Plant on the castration of adolescent and adult rhesus monkeys. Experienced adults may maintain normal mating patterns for months after castration, but testosterone seems necessary for young males to develop sexual behavior.

The third group of papers, on interpersonal relations, raises the question whether quantification really helps when discussing social behavior. There are two obvious reasons for quantifying: first, to obtain an objective measure that can be used again in other species or situations by other workers, and second, to uncover nuances or connections that we would miss with casual observation. In human relations, we have evolved subtle perceptions of other people which we sum and act upon with extreme rapidity, so attempts to reduce such data to the feeble capacity of computer inputs can range from the banal to the painful. To be honest, we also do pretty well at empathy with chimpanzees.

The fashion for principal-component and temporal-cluster analysis of nursery school children (represented by a paper by Smith) seems to me to fall into this trap. If most recorded behaviors can be related to a first component of social maturity and a second of toy manipulation, what does this say? If hopping and swinging fall together in hierarchical temporal-cluster analysis, are we wiser about children, even

though we may need such methods to analyze motivations of the Bengalese finch? As the Waterhouses say in their review, the future lies in comparison of measures, between cultures, age groups, or even species, so measures should perhaps be made with future observations, not just future statistical techniques, in mind.

Blurton-Jones and Konner do just such a study, comparing sex differences in London and !Kung Bushman children. Among other observations, they find that the Bushman girls are rougher-and-tumbler than London middle-class girls, which might support the contention that our culture inhibits females. More impressive, perhaps, are the similarities in sex roles which underline the importance of the innate component. Brindley, Clarke, Hutt, Robinson, and Wethli also emphasize innate components of nursery school sex differences—adding the nice point that most instances of girls' cooperation occur when older girls help younger children, whereas among boys it is the younger ones who seek to tag along in older boys' games.

Kendon and Ferber's paper on human greetings falls at an earlier level of analysis—the description and quantification of individual gestures. It again is strained by the self-discipline of "objectivity" in all-too-familiar situations. Here the authors save themselves by, first, an introduction stressing the comparative approach; second, seeing a surprising number of gestures of which we are usually only half-conscious (for example, the "body-cross" when a greeter places an arm across the midline during the last stages of approach, which may well be a substitute means of preserving individual distance); and finally, conveying the feeling that they themselves can't quite keep a straight face, especially as the hostess whose greeting behavior they were studying had the sense to wear magnificently flowered beach pajamas.

Finally, Simpson's paper on grooming in Gombe stream chimpanzees and Hess's description of sex among captive gorillas perfectly illustrate the quandary of whether quantitative observation illuminates or obscures social behavior. Simpson counts grooming bouts up, down, and sideways among his 11 male chimpanzees. He ends with a part-paper, a fragment which will take on meaning (or even comprehensibility) only when compared with other grooming studies, or when synthesized with other aspects of these same males' behavior, to recreate, in detail, the kind of character sketches of individuals which Simpson couldn't resist telling in his oral presentation of the same work. Hess, in contrast, in a qualitative, "preliminary" account, shows that the Basle Zoo gorillas have eager, individual, and complex patterns of sexual behavior, from the mother's first genital inspections of a newborn to the urgent invitations of the estral female. Hess succeeds in conveying, as clearly as any author in the book, that higher primates are inventive creatures and find many ways of enjoying themselves.

This book will be bought by the captive audience of libraries and by those individuals who are pursuing adjacent parts of the same puzzles, but by few of the wider public, particularly at $34 a copy.

ALISON JOLLY

School of Biology,
University of Sussex,
Falmer, Sussex, United Kingdom

Sea Spiders

Pycnogonids. P. E. KING. St. Martin's, New York, 1974. 144 pp., illus. $8.95.

This compact volume brings together a surprising amount of information about these enigmatic marine arthropods. As might be expected from the author's interest in the histology and feeding habits of pycnogonids, physiological and structural information is most adequately reviewed. In addition to his own contributions, King has stimulated several students to undertake studies of the reproductive and nutritional biology of pycnogonids; he has set up a sort of school of pcynogonid studies at Swansea. This book has grown out of this activity, and is intended as an introduction to stand alongside the growing number of inexpensive paperbacks about various groups of invertebrates that have appeared in recent years. It is my understanding, however, that this book is to be available only in this expensive hard cover, senior professor edition.

The literature on pycnogonids is not easy to summarize because so much of it is systematic, dealing with descriptions of species, revisions of older descriptions, and geographical distributions. Ecology and behavior are still for the most part unknown, and often tidbits of information are tucked away in unlikely places. Obviously the author lacks command of this systematic literature, for he often uses obsolete and current generic names on the same page, and overlooks information in papers he has consulted in other contexts. The chapter on affinities and evolution is based on a less than careful reading of the available information. The chapters on morphology and anatomy are reasonable summaries, but unfortunately all illustrations have been redrawn in a muddy, heavy line and stipple style that obscures details when they are not distorted. Nowhere in the book is there a good drawing of an entire pycnogonid, and there are no photographs except for the very good one on the dust jacket. Thus it will be difficult for many who consult this volume to get a good idea of what one of these animals looks like.

While the book will have its use as an introduction for students, as intended, it could have been a much better book. Many of the mistakes are obviously due to haste at the expense of reflective reconsideration. The prose style appears to be taken directly from clusters of sentences on filing cards. I wish King had taken the time to reread and rewrite before committing the book to a publisher.

JOEL W. HEDGPETH

Marine Science Center,
Newport, Oregon

The Thysanoptera

Thrips. Their Biology, Ecology and Economic Importance. TREVOR LEWIS. Academic Press, New York, 1973. xvi, 350 pp., illus., + plates. $22.

This book on a minor insect order covers the group completely, except for its systematics. It is a timely compilation, to be welcomed by the general entomologist, the teacher, and younger workers in the order. The references, appendices, and index, in which a high degree of accuracy is evident, will be of great help to the nonspecialist.

Anatomy, reproduction, feeding mechanism, and life cycles are covered in the manner of most major texts on entomology but in more detail. The chapters on migration and dispersal and factors affecting field populations are particularly well done. While many predatory species of thrips depress insect pest populations, there is little evidence that members of this order control major infestations. Likewise,