

## The importance of being alpha

W. C. McGrew

### The Chimpanzees of the Mahale Mountains. Sexual and Life History Strategies.

Edited by Toshisada Nishida. *University of Tokyo Press*: 1990. Pp. 328. £60.

IF ASKED about their images of wild chimpanzees, Europeans and North Americans would probably agree on the importance of Jane Goodall's contribution. Her long-term study of the Kakombe community of apes in western Tanzania means that, after 30 years of research, individuals like Flo, Fifi, Goblin and so on are well known to millions of lay people as well as to academics. This is as it should be, for more than any other person she, with the help of the National Geographic Society, has defined our Western view of wild chimpanzee nature.

But another study of wild chimpanzees in western Tanzania is arguably equally important, if not more so. This is the 25-year-long project of Toshisada Nishida and his colleagues at Kasoje in the Mahale Mountains. Their research programme, which is based at Kyoto University, has received wide acclaim in Japan, but is not well-known in the West, except among primatologists. One reason is, that unlike Goodall with *In the Shadow of Man* (1971) and *The Chimpanzees of Gombe* (1986), Nishida had not produced a book in English. That long-awaited convenience has now been supplied.

Differences in structure make direct comparisons between Nishida's volume and Goodall's impossible. While the latter has always written integrated, personal accounts, Nishida has edited an anthology

of 16 chapters by 10 contributors. While Goodall has always striven for comprehensiveness, Nishida *et al.* are here more selective, as the subtitle suggests.

Finally, Goodall's forte has always been a blend of primarily qualitative, and only secondarily quantitative, description that focuses on individual apes. This richness is matched in the present volume only by Itani's chapter on his safari surveys through the Mahale Mountains and their hinterlands during the past 25 years. It is engrossing, adventurous stuff, and reiterates a technique that still has much to offer.

Of the book's other chapters, two stand out. One is Nishida's opening overview of 2 years of research, and is the single most accessible source in English on the history of Japanese primatological efforts in the region. Also exceptional is the compilatory chapter on demography and reproductive profiles. This is where longitudinal study of a long-lived species comes into its own. Impressive (such as a median birth interval of as long as 72 months) and unexpected (such as bimodal annual birth-peaks) results appear on almost every page of this chapter, which is an actuarial goldmine.

I have insufficient space to do justice to the 12 'data chapters', each of which is essentially equivalent to a meaty journal article. Their topics range from the specific (social context of the pant-grunt vocalization, age differences in ant-eating) to the more general (social relations among adult males, mother-infant relationships).

Comparisons between Gombe and Mahale highlight the unique aspects of the latter: at Mahale, the main study group, M-Group, is the biggest ever recorded for the species, with more than 100 members. This has numerous implications — for example, the joint strategy of a male and female of disappearing on a temporary 'honeymoon safari', as first detailed by

Caroline Tutin at Gombe, cannot occur at Mahale. There are just too many male rivals to be evaded. Consequently the possessive tactics of the alpha male assume disproportionately greater importance. He dominates the matings of females at the time of ovulation. Again and again, the importance of being 'the alpha' (highest-ranking male) comes through. The long-time holder of this position, Ntologi, deserves just as much fame in his own right as do Washoe or Lana in theirs.

My only complaint is one of frustration. Nishida has told only a fraction of the story, and whole areas of interest like tool use are largely ignored. Is it too much to ask him to give us a fully synthetic sequel? □

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## Ordered growth

Lewis Wolpert

**Pattern Formation. Ciliate Studies and Models.** By Joseph Frankel. *Oxford University Press*: 1990. Pp.314. £52, \$65.

CILIATES are bad and good for cell biologists. Bad because they undermine our self-esteem by showing how little we understand about cell structure at the molecular level; good because they offer us problems, which, when solved, will be a quantal leap in our understanding of not only cells but, surprisingly, embryos. For among the extraordinary properties of ciliates is that their mechanism of pattern formation and regulation is formally similar to that of multicellular systems.

The varied surface patterns of ciliates are highly complex and asymmetrical, yet are essentially a variation on the organization of ciliary units. Division of ciliates is a good introduction to the basic problems. When a ciliate like *Tetrahymena* divides, the process is more like budding in hydra than a typical division of a cell. In fact its growth and division is best likened to a clonal cylinder. The ciliate grows longitudinally, and before division a second set of structures develops in the posterior half. In the fission zone, in the middle of the cell, two opposite poles of the cell are thus juxtaposed. The oral apparatus defining the anterior end of the new cell begins with the formation of an anarchic field in which the ciliary units are so oriented that no order is evident. Gradually, the highly ordered organelle emerges. In addition to this local ordering there is long-range order which places the organelles in the correct relationship to each other.

Ciliates provide the best example of structural inheritance — that is, pre-



The plunge of the diver from this world to the next. The platform symbolizes the pillars of Herakles, the edge of the known world, and the water the unknown, limitless ocean beyond. The painting is on the underside of a coffin lid at Paestrum, one of the best preserved classical cities of the ancient world. From *Paestrum* by John Griffiths Pedley. Published by Thames and Hudson as part of the series "New Aspects of Antiquity", general editor Colin Renfrew. Price is £20, \$35. □