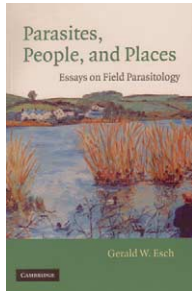


## Post-mortem as a life style choice

**Parasites, People and Places. Essays on Field Parasitology** by Gerald W. Esch, Cambridge University Press, 2004. £45.00/£17.99 hbk/pbk (233 pages) ISBN 0 521 81549 5/0 521 89457 3

### Andrew F. Read

Institutes of Evolution, Immunology and Infection Research, School of Biological Sciences, University of Edinburgh, Edinburgh, UK, EH9 3JT



*Parasites, People and Places* is an unusual book. Part science, part autobiography, part history, it is, at the same time, none of those things. It is a strangely gripping series of anecdotes about, well, parasites, people and places. Yet it is ultimately unsatisfying: a book about ecological parasitology that does not explain what ecological parasitologists are actually trying to do.

According to this account, field parasitologists are people who like to identify and count the parasites of (mostly) dead wildlife. Given that most organisms are parasites, this ought to be an important part of ecology, although as a career choice, it surely warrants some explanation. Gerald Esch's book concerns the places where people did these post mortems, the people who did them, and a bit of what they learnt. Along the way, we gain some startling insights into now-unrecognizable scientific lifestyles.

Wincentry Wisniewski was born a century ago in Poland. By 1937, he was Assistant Professor at Warsaw University, doing unremarkable work on the biology of trematode cercariae. When Hitler invaded, he was captured by the Nazis but escaped, only to fall into Soviet hands in Czechoslovakia. His lucky break was to be sent to a Siberian labour camp for two years (thus avoiding Stalin's massacre of Polish officers and intellectuals at Katyn). Via Palestine, he then went on to fight with the British at Tobruk and Casino before being demobbed in 1947.

It is always difficult to know what one would do after such an experience. Wisniewski necropsied 1537 vertebrates and 119 300 invertebrates from a single lake in northern Poland. Esch argues that the four conclusions Wisniewski drew from the resulting data were far ahead of their time. First, final hosts act as a concentrating sieve in aquatic parasite systems (intermediate hosts merely pass the parasites along). Second, parasites are not evenly distributed in lakes. Third, parasite species can be categorized into typical and atypical species. And finally, eutrophication causes bird parasites to dominate lakes. Esch disagrees with the last conclusion, but argues that, as one of the first ecological theories in parasitology, it was hugely influential. The second and third conclusions

pre-date modern concepts ('spatial heterogeneity', 'landscape epidemiology' and 'core-satellite species' [1], etc.), and all four conclusions pointed to the power and the need to quantify parasites, 20 years before Crofton crystallized parasite population ecology in the West [2]. It is difficult now to imagine a world where people thought otherwise.

Wisniewski's story and many others form the heart of the book. There are entertaining observations: a fluke apparently saved Taiwan from Mao, Will Cort used his daughter to determine experimentally the cause of swimmer's itch, and the daily intake of human blood by hookworms was equivalent to exsanguination of 1.5 million people (at least in 1962 – it is more now). Yet only with the Wisniewski story does Esch really tie together parasites, people and places in a way that helps us to understand ecological parasitology as a science. Technical advances are mentioned (putting numbers on life cycles, epidemiological models and molecular biology), but Esch gives no examples of what has been learnt as a result. Perhaps this was not the aim, but it is hard to understand why people did all those post mortems without understanding what the enterprise was about. It is as if our modern understanding of how parasites can regulate host populations, of how parasites manipulate host behaviour, and of parasite epidemiology happened in other places. Perhaps they did.

Unrecognizable (at least for my generation) is the world apparently inhabited by 20th-century ecological parasitologists. Whole families happily followed Dad summer after summer to a field station where he was allowed to work six or more days a week. There was an explicitly recognized niche called a 'parasitology wife' (my wife and I want one). Large-scale slaughter of wildlife for teaching purposes was uncontroversial, and publication success did not need to be maximized, so a 'stream of consciousness' approach to research was possible, where you could follow your nose. The search was on for problems, rather than for publishable solutions.

Esch clearly worries that ecological parasitology will soon be all molecules and mathematics, with not a field course in sight. He is probably right, at least in the non-applied context: the expertise needed to recognize a parasite in freshly killed wildlife is being lost. Yet from *Parasites, People and Places*, it is difficult to determine whether this matters terribly much. Without knowing what the big questions were, the answers on offer and what we now believe, it is hard to assess the contribution

Corresponding author: Read, A.F. (a.read@ed.ac.uk).

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of field parasitology to either ecology or parasitology – or indeed, where hobby ends and scholarship begins.

## References

1 Hanski, I. (1982) Dynamics of regional distribution: the core and satellite species hypothesis. *Oikos* 38, 210–221

2 Crofton, H.H. (1971) A quantitative approach to parasitism. *Parasitology* 62, 179–193

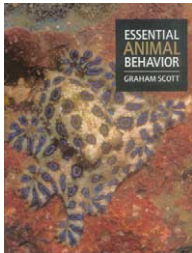
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# The bare essentials of animal behaviour

*Essential Animal Behavior* by Graham Scott, Blackwell Publishing, 2004. US\$59.95/£22.99 pbk (216 pages) ISBN 0632057998

## Neil B. Metcalfe

Division of Environmental & Evolutionary Biology, IBLS, Graham Kerr Building, Glasgow University, Glasgow, UK, G12 8QQ



The continual advances in scientific knowledge make it necessary to produce new basic textbooks for undergraduate use. But how should one condense this expanding amount of information into the same standard format? Paradoxically, the response of publishers in recent years seems to have been to reduce the amount of

information presented. Font sizes and margins are larger, and there is more visual information. This undoubtedly makes the information presented easier to assimilate, but the drawback is a huge reduction in detail. This latest book covers the same field as (and is identical in page number and size to) my old copy of Manning & Stamp Dawkins [1], but whereas they had up to 900 words per page, and a bibliography of >500 references, Scott has <500 words per page and gives details of only ~70 references.

So what is omitted, and does it matter? The core chapters cover the nervous control of behaviour, motivation and organization, development, communication, foraging, avoiding predation and reproduction. In general, the book has a logical structure with good links between sections. As to the content, the most serious weaknesses would seem to be the omission of any discussion of parental care: although dunnock-style breeding systems are described, there is no mention of co-operative breeding and only a passing mention of social insects. Indeed, the chapter about reproductive behaviour covers sexual selection, mating systems, courtship and mate choice, but more or less stops at the point when the gametes are fertilized. The other serious omission is the almost complete absence of any endocrinology, even in a chapter entitled the 'control of behaviour'. This seems particularly odd given the recent resurgence of interest in the diverse role of hormones, such as testosterone. Although it is impossible to cover everything in this kind of textbook, it seems a little perverse to omit these topics while devoting

15 (admittedly well written) pages to the specialist topic of navigation and orientation.

These quibbles apart, the book is very readable and attractively presented. I particularly liked Graham Scott's tendency to use analogies to introduce behavioural concepts (e.g. beach volleyball introduces the idea of motivation, whereas car brake lights illustrate unintentional signals). This style, together with personal asides, should help to make subjects approachable to new students. In general the text is fairly up to date – many of the references are post-1995 and, where older work is quoted, it tends to be the classic studies in the field. However, I am not convinced that the concept of cost–benefit analysis is best illustrated by Tinbergen's eggshell removal work (where neither costs nor benefits were fully quantified), and Cullen's 1957 comparison of two species is a very dated way to describe the comparative approach.

The text is broken up (perhaps too much) by the use of colour-coded boxes for concepts, case studies, summaries, discussion points, links, and so on. As one would expect with Blackwells, the figures are excellent, but I was disappointed by the photographs. It is a nice personal touch to have some photographs taken by the author, but the others rarely seem to illustrate much in the way of behaviour: in one case an appallingly distant view of a solitary flying bird is optimistically captioned 'ospreys share information about good hunting'!

The index is rather odd – I searched in vain for many key terms (e.g. social status, dominance, aggression, social insect, diet selection, breeding system, hormone, kin selection, parental care...), and instead found that appreciable index space is devoted to the names of the researchers mentioned in the text. Which is more useful to the student of animal behaviour? Another dubious editorial decision was to repeat the full bibliographical details of some references (up to three times, in text boxes, figure legends and acknowledgements) while omitting all details (even of the authors) of most other studies mentioned in the text.

In summary, *Essential Animal Behavior* is attractive, generally up to date and readable, and will be

Corresponding author: Metcalfe, N.B. (n.metcalfe@bio.gla.ac.uk).