does not help us to understand how migration is triggered nor how the animal's distribution *vis à vis* its vital habitat requirements changes as a result.

The evaluation of the model (Part 3) is a complex and not very convincing business, especially given the fact that 'in no case . . . is it possible at present to evaluate the model in a totally quantitative and objective manner' (page 278). In such circumstances, a model is not much better than an opinion. Nonetheless, a number of species are examined and attempts are made to construct 'adaptive packages'.

In his sweep of examples of different types of movements and 'lifetime tracks', the author produces neat and informative little thumb-nail ecological sketches of a host of species, from locusts to whales. In some species with which I am familiar, large African mammals for instance, the references are not the latest available; one hopes that other specialists will not find the same deficiency. Despite this, the taxonomic breadth is most impressive and does not appear to suffer in general from the superficiality which usually characterises such surveys. On the contrary, each species is tackled with detailed enthusiasm, and one learns a lot, despite the model.

HARVEY CROZE

Effects of Acid Precipitation on Terrestrial Ecosystems, edited by **T.C. Hutchinson** and **M. Haras.** NATO Conference Series: 1, Ecology; Volume 4. Plenum Press, New York, $49.50.

Decomposition in Terrestrial Ecosystems, Studies in Ecology, Volume 5, by **M.J. Swift, O.W. Heal** and **J.M. Anderson.** Blackwell, £22.50.

The first book is the latest in the series of NATO Conference proceeding on ecological topics, and folows on logically from the previous volume – The Breakdown and Restoration of Ecosystems; see *Oryx*, April 1980, p299. It contains 38 pages in 7 sections, and concludes with 10 useful summaries of various groups of contributions, written by a participant.

In the light of current concern about the effects of acid precipitation, largely caused by industrial sulphur dioxide emissions, and of the 'export' of this acidity by high level winds to other countries – notably Canada and Sweden – this compilation is particularly valuable. The papers start from underlying concepts of precipitation in vegetation, and then cover the effects of acidity on vegetation, soil chemistry and soil biology. The final group on 'Identification of Sensitive Sites and Soils' demonstrates that, as too often in ecology, description is one thing, but prediction quite another.

The processes of decomposition are unromantic and rarely given the prominence they deserve in ecological literature. Yet in most ecosystems, the majority of the energy fixed by green plants passes not to the conspicuous herbivores and carnivores in the grazing food chain, but the less obvious bacteria, fungi and soil animals, out of sight and often out of mind in the soil. Only in environments where this hidden community is unable to function (usually waterlogged or acid soil) does the decomposer food chain fail, and the result is peat.

The second book is therefore timely. It is also well written and has a novel approach, based on consideration of decomposition processes in six distinct ecosystems – tundra, taiga, temperate deciduous forest and grassland, savanna, and tropical forest. This is the scheme of the opening and closing chapters, the latter with a neat diagrammatic summary of the processes in the six systems. In between are chapters concerned with the decomposer organisms (treated with a refreshingly functional approach), the nature of the materials decomposed, the biochemical processes involved, and the influence of the environment.

Altogether this satisfying and very welcome book can be recommended to anyone who wants to know what really makes terrestrial ecosystems tick.

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