Book Reviews

Trees of Amani Nature Reserve, NE Tanzania

L. Schulman, L. Junikka, A. Mndolwa and I. Rajabu.
The Ministry of Natural Resources and Tourism, Tanzania. Pp 336. £50,TSh20000 (pbk),1998, ISBN 9987–646–01–8.

Tree identification is one of the greatest hurdles confronting tropical forest ecologists and this problem becomes particularly acute in areas containing a high proportion of endemic species such as the East Usambaras in Tanzania. This mountain range of less than 1000 km^2 now has a Flora describing 183 species (roughly half of the tree species). The first 58 pages of the book provide useful background information including a section on the forests of eastern Tanzania (by J. Lovett) and a history of Amani. Following leaf and bark identification keys the remainder of the book consists of species descriptions, although only 97 species are given a full entry (i.e. scientific and common name, introduction with the species key features called 'characterization', a detailed standard botanical description, ecological information, a botanical drawing and usually photographs of bark and slash).

The early excitement of obtaining such a potentially useful book rapidly turned into frustration if not disbelief. Anyone who has experienced the steep and slippery slopes of the Usambara forest would find the use in the field of a large and heavy tome a rather daunting task. It is not a field guide, yet neither is it a coffee table book as the descriptions are pretty technical and identification focuses on field characteristics and especially the slash of the bark. However on pages 36 and 60 readers are warned not to slash trees in the reserve, unless a permit is obtained. The leaf key works well, at least for common species, but here again field characteristics such as the exudation of latex is often important. For such a glossy publication the sharpness of the photographs is often poor and there are many minor errors; most drawings lack a scale. The garish colours (one graphical identification key consists in a mixture of purple, dark green, light green and some white) and the modern lay-out hinder, rather than facilitate, the use of the Flora.

The book is sponsored by Finnish aid which, after being responsible for widespread industrial logging, was instrumental in setting up the Amani Nature Reserve. Like all aid programmes it supports not just the targeted country but also employs its own nationals, here the two senior authors with expertise in South American Melastomataceae and bark morphology. The other two authors are local foresters whilst the artist of the excellent botanical drawings only gets an acknowledgement. The major limitations of this Flora and its emphasis on bark characteristics are a reflection of the senior authors, employed primarily on the basis of their nationality rather than their local expertise. Clearly botanical experts of the Usambaras should have been associated with this venture.

Although on the back cover the authors state that 'The guide is written for the layman as well as for professional botanists with field identification in mind' they unfortunately fail to provide a satisfactory product for either of the targeted groups.

Pierre Binggeli

Mayfly on the Stream of Time

Mick Gillies
Messuage Books, Whitfield, East Sussex. Pp. x11 +404, £17 + p&p, 2000, ISBN 0-9539837-0-7. Distributed by Cliffe Bookshop, 22 Cliffe High Street, Lewes, East Sussex, BN7 2AH, UK.

Mick Gillies died in December 1999, shortly after completing this book. He was born in 1920. His father, Sir Harold Gillies, who was the author of the pioneering text *Plastic Surgery of the Face*, was also a keen fly fisherman. As a boy fishing with his father, a casual remark initiated Mick's lifelong amateur interest in mayflies. He followed his father in becoming a medical doctor. Because his training coincided with the Second World War, he was soon a medical officer with the armed forces in the Far East. This initiated a lifelong passion for tropical natural history. Following a spell as medical officer at the British Embassy in Moscow, he switched to medical entomology

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and investigated mosquito behaviour in relation to malaria in East Africa. He later established the Mosquito Behaviour Unit at Sussex University, but with annual spells of field work in The Gambia. He also investigated mosquito problems on short visits to Aden and Egypt. Wherever he was he also studied mayflies, becoming especially expert on African species. When I was working on blackflies whose larvae are phoretic on mayfly nymphs in Cameroon, I first made contact with Mick. Thus I became acquainted with a fellow medical entomologist who was a delight to know. His whimsical humour, natural courtesy and self deprecating modesty regarding his distinguished contributions to entomology are all very much in evidence in these pleasurable memoirs. However, only the appended list of Mick's 64 publications on mosquitoes and 51 on mayflies reveal the extent of these contributions. He concentrates on people, places, anecdotes and wry observations. He only touches lightly on his scientific work, and then largely on the frustrations, difficulties, impediments and improvizations that are all too familiar to those of us who have worked in tropical countries away from the modern amenities we take for granted in Britain.

Henry Disney

Ecobeaker 2.0 – Laboratory Guide and Manual

Eli Meir

Beakerware, Ithaca, NY. xiv + 392 pp, price $85 (individual), 1999, ISBN 0-9671306-0-3.

Eli Meir has produced a superb new computer program for ecology students. *Ecobeaker 2* is intuitive to use, has great visual appeal, and can be used by the most computer-shy of students (or their professors!). The programs are intuitive and very clearly laid out. He has attempted to cover a wide range of topics in ecology and has done an admirable job. Real-world situations are used in most modules and even where he resorts to *Alice in Wonderland* characters for species names, the analogies to real species are clear. Chapter topics include such important ecological issues as population and predator–prey dynamics, competition, keystone predation, biological pest control, intermediate disturbance, island biogeography, trophic cascades, nutrients and biotic interactions, disease spread, conservation corridors, quadrat sampling, mark–recapture sampling, programming spatial models, population genetics and natural selection. This represents a broad, if somewhat eclectic collection of topics in ecology. I particularly liked the programs on the intermediate disturbance hypothesis (which uses fire in a forest as the disturbance) and island biogeography (which uses the example of birds dispersing from a mainland to islands). However, I did think that it would be more useful if the island biogeography example allowed the user to simultaneously view immigration and extinction at several islands of different sizes and distances from the mainland rather than one island at a time as is currently the case. Of course, one would also have hoped for other topics here and there, but as it stands it is generous in its coverage. Furthermore, the program is sufficiently flexible that those who wish to tinker with it can adapt it to situations they wish to demonstrate. Indeed, Meir claims that some researchers have even adapted some of its individual-based models for specific research situations and have subsequently published these models.

Each module of the program, whether it covers keystone species or stepping stones and corridors in butterfly metapopulations, uses a basic three-component display: (1) the ecological arena, which is depicted as a square in which the pixels change colour as species or individuals become extinct or die off, or are born or arrive from elsewhere; (2) a graph, which summarizes changes in species/individual numbers as the program iterates change in the ecological arena; and (3) a control panel, where one can alter values of various parameters in order to change the outcomes of the simulations. I found this combination of display items very useful and was pleased that one could view the changes in the graphs and ecological arenas simultaneously while the simulations were running.

One wonders how long we will have to wait for a similar program for African environments. We have so many outstanding ecological features and conservation issues in Africa that must surely warrant a program of a similar design for African students? For example, the concept of multiple-stable states could be taught with emphasis on the elephant- and fire-induced changes in Tsavo, Kenya, while the role of multiple causal agents such as rainfall, fire, soil quality and grazing acting independently or in tandem could be taught with savanna dynamics in mind. Plant species replacement along the altitudinal gradient on Mount Kenya might be far more interesting than the tired old example of *Balanus and Chthamalus* on Scottish

rocky shores. It seems to me that programs such as this one would also be ideal for teaching students the fundamentals of cost–benefit analysis of various conservation measures using examples such as increasing anti-poaching patrols in national parks, or incorporation of local people in park management, or ecotourism vs. agriculture. . . well, the list could go on and on.

Another attractive feature of *Ecobeaker* is its price. Prices range from a single-copy student license at $39 (US), $85 for a regular single-copy license, to site licenses for universities with less than 5000 students of $2000 for 25 computers (+25 manuals) and $3000 for large universities with more than 10,000 students. Prospective users in poorer countries outside the USA, Canada and western Europe may e-mail them (see their website: http://www.ecobeaker.com) 'with a price that you can afford' and they promise 'to work out a deal'. *Ecobeaker* is free to secondary schools during 2000 and 2001.

I highly recommend *Ecobeaker* 2.0 to all who teach ecology and conservation. I will certainly be incorporating it in my teaching programmes.

David Ward

Animal Quest: A Naturalist on Four Continents

M. J. Delany
Capponnellan Press, Bingley. Pp. 192, £9.95, 2000, ISBN 0-9538886-0-6.

This is an autobiographical account of the author's experiences while working on a variety of ecological topics in various parts of the world. Readers of this Journal will be particularly interested in the account of his time in Uganda, which he visited frequently both before and after he spent 4 years as Professor of Zoology at Makerere University. Professor Delany began his research career as an entomologist at Exeter University followed by brief interludes in Florida and Glasgow. He changed his interest to small mammals on his appointment to a lectureship at Southampton University to teach vertebrate ecology, and it is with these animals that he has made his most significant contribution to ecology. It was from Southampton that he made his first African visit. A few years after his return from Makerere, he took up the post of Professor of Environmental Science at Bradford University where he set up a link with King Saud University in Saudi Arabia. This led to him taking early retirement from Bradford to become one of the founding professors of the new Sultan Qaboos University in Oman. Throughout his career, Professor Delany has successfully combined full-time teaching and research. Although the book is primarily an autobiography, it contains much factual information on the ecology of small mammals leavened with many amusing anecdotes. It covers a period when research was fun and, more importantly, when there was still much to find out about tropical ecology. There are copious illustrations including black and white photographs and drawings as well as eight pages of colour plates.

The book should be available in book shops but if there are problems, copies may be obtained from Capponnellan Press, Fern Lodge, Fern Hill, Bingley, West Yorkshire, BD16 4AQ (price £9.95 plus £2.00 post and packing).

S. K. Eltringham