

endangerment category, also in relation to those in the whole of Africa).

A discomfiting fraction (well over 20%) of the material presented in the monograph under review is without documentation or else is based on personal communications or unpublished reports—an indication of the paucity of available information and of the difficulties that the Authors encountered in compiling this pioneering work. Nevertheless, a revised edition would provide an opportunity for the Authors to apply somewhat greater rigour to what qualifies for inclusion and also an opportunity to expunge the various editorial lapses.

In closing, the Authors and their sponsoring organization are to be congratulated for approaching the question of bird survival *via* the birds' forest habitat—that is, based on an ecosystem approach. In that regard, it is important to point out that one of the presented forests falls into two countries and another into three. This emphasizes the necessity for formal regional inter-state cooperation in addressing problems of environmental security.

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**Resources and World Development.** Edited by D.J. McLAREN & B.J. SKINNER. John Wiley & Sons, Chichester, West Sussex, England, UK: xvii + 940 pp., figs & tables, 23.5 × 15.5 × 6 cm, hard cover, £80, 1987.

This heavy tome is a report on the Dahlem (Berlin) Workshop regarding the above topic. Eighty-six scientists engaged in the studies, the majority being Germans and Americans, with notably less than half-a-dozen females. The contents are grouped as: General Background papers (6), Energy and Minerals (21), Water and Land (22).

There is a wealth of factual data presented, indeed a surfeit of such. To select contributions which made telling impressions upon the reader was not difficult, for as per this reviewer, such were notable by their scarcity. One worthy of comment was 'Economic Growth in a World of Limited Resources', by H.-J. Krupp. The concept of Limits-to-Growth of the Club of Rome raised vast clouds of discussion in the years following 1972, Krupp maintaining that several arguments were much in error. Economic growth relates only partly to human well-being and implies little respecting the quality of development; scarcity of natural resources has not impeded economic growth in industrial countries; lack of economic growth has undesirable effects on unemployment, etc. Economic growth differs from more recent interpretations, and we must substitute qualitative for quantitative growth. Our lot will only be improved if we consider those types of economic growth which, on the one hand, save resources, and on the other, contribute to the welfare of Mankind.

The paper by V. Smil entitled 'Fossil-fuelled Civilization and the Atmosphere: How much should we worry?' throws a more controversial yet optimistic light regarding atmospheric pollution. He contends that the 'heat disposal and solid-gaseous emissions arising from the combustion of fossil fuels do not endanger the global environment [or cause] degradation incompatible with the maintenance of industrial civilization'. This contention, and his further remark referring to CO<sub>2</sub>-burgeoning modelling industry, whose 'amazingly detailed forecasts' are 'just intellectual

constructs with certain heuristic values but with exceedingly wobbly foundations', are both comments which are certain to infuriate the *bona fide* members of Greenpeace. Smil believes that even if there is a boosting of the global temperature by 3°C ± 1.5°C on average, a warmer atmosphere would be 'conducive to richer life on Earth', that for 90% of the time since higher forms of life appeared in the world, Earth's surface temperatures were appreciably warmer than during the past five millennia, when high civilizations arose—so why should we worry? His view is that 'We are not rushing toward a planetary catastrophe; at worst we are facing some challenging implications of a basically beneficial change'.

Regarding that tedious, battered and bruised word 'models', we are informed by M.B. Fiering ('Models for Assessment of Water Resources') that they come in three convenient 'sizes' for the diligent shopper—descriptive, prescriptive, and proscriptive—water assessment models being broad-minded enough to include all three types. Fiering hesitates to criticize much that passes for mathematical modelling, but does make some telling points. At times we understand the processes at work but at other times we suggest heroic empiricisms or adjusted curves, we use assumptions about a class of reactions, not a statement of first principles, and we overlook the fact that almost *any* reasonable model or consequent approximation is unassailable which can be accepted *only* if short-range predictions are based thereon.

It follows that 'models develop their own metabolism, and are likely to outlive our vague recollections of their origins, limitations, [and any] underlying assumptions. Soon they are viewed as the truth, rather than the real world, and become first principles—hence the standard against which other models are judged, i.e. we find ourselves making models of models rather than models of reality'. Amen.

After a sumptuous diet of facts and figures scattered throughout over nine hundred pages, we have yet another ponderous tome dedicated to the environment, so that one feels rather like the small girl critic mentioned by James Thurber, who wrote: 'This book tells me more about penguins than I wanted to know'. Are we not perhaps indulging in an extravagance of such learned books as this one, for we can get an overdose of anything—including knowledge and awareness?'

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**'Innocents Abroad' in the Forests of Nepal—an Account of Australian Aid to Nepalese Forestry,** by DAVID MICHAEL GRIFFIN. ANUTECH, GPO Box 4, Canberra, ACT 2601, Australia: xvi + 188 pp., illustr., 21 × 15 × 1 cm, \$Aus. 28.50, paperback, 1988.

The title of this book (and much of the philosophy therein) derives from Mark Twain who felt that, despite what the learned write after careful analysis, it was always important to record first, subjective impressions. This book is intended to be just such a personal account of the cooperation since 1966 between the Australian International Development Assistance Bureau and the Nepalese Ministry of Forests and Soil Conservation, involving, particularly, recent community forest projects. But *Innocents Abroad* is a good deal more, as it constitutes a rare and perceptive insight into the inner workings of an aid project which actually

worked. This success can be seen from the number of trees planted and surviving and, perhaps even more significantly, from the involvement of people—politicians as well as peasants. In *Innocents Abroad*, people are part of the solution rather than being themselves the problem.

But the Author is careful to deny that there is any magic formula for forest or any other form of development: the chief hope lies in the successful involvement of people, which is a complicated, untidy process that can be full of surprises and uncertainties. There is dire need for great sensitivity to cultural and social nuances and for the strict avoidance of facile stereotypes such as corruption and inequality. There needs also to be an ability to carry on a dialogue with people in the context of a given time and place. For these reasons no project can really be a model for any other, or indeed for a continuation of the same project. The Author concludes by saying that one lesson which he has learned is that there should be a sociological consultant on the team, which is certainly a challenge to the sociologists who often themselves have to learn the bottom-up approach that this book so well demonstrates.

This is accordingly a book to read carefully, being useful not only for its thoughtful analysis of grass-roots dynamics but also for the optimistic note which it offers in the generally pessimistic chorus of development literature.

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**Where the Gods Reign: Plants and Peoples of the Colombian Amazon**, by RICHARD EVANS SCHULTES. Synergetic Press, Inc., PO Box 689, Oracle, Arizona 85623, USA: 306 pp., illustr., 25.25 × 21.5 × 2 cm, stiff paper cover, [no price indicated], 1988.

Colombian Amazonia forms about a third of the whole Colombian Republic and is a thinly-populated, forested region crossed by innumerable rivers descending from the Andes. Because these rivers are broken by rapids and waterfalls and, except for the Putumayo, are not navigable, Colombian Amazonia has remained little changed up to the present day. In this book Professor Schultes, one of the greatest ethnobotanists and plant explorers of our time, has reproduced 1,275 photographs of this little-known region, taken mostly by himself from 1941 to 1961.

But *Where the Gods Reign* is much more than a picture book. Facing each photograph is a paragraph of explanatory text and apposite quotations from other writers, ranging from the great naturalists and anthropologists of the past—such as Martius, Bates, and Koch-Grünberg—to translations from modern Latin-American Authors. There is a useful brief introduction about the region and Amazonia generally.

As a young Harvard graduate R.E. Schultes was advised by the late Professor Oakes Ames to devote himself to ethnobotany because of its 'tremendously important human implications and its call for searching investigations among things that really matter'. He followed this advice by spending most of the next fourteen years in Amazonia, mainly in Colombia. His interest was particularly in plants from which Indian tribes obtained hallucinogens and drugs potentially useful in modern medicine. During the war he was diverted for a time into a US Government project for

studying native rubber production and rubber-yielding plants, and so became the leading authority on the genus *Hevea*.

Some of the most interesting parts of this book are those dealing with the liane *Banisteriopsis caapi* which, with certain additives, provides the Indians with a powerful hallucinogen. Other interesting parts of the book deal with fish poisons and arrow poisons.

In his Amazonian journeys, Schultes endured almost unimaginable hardships; this Reviewer once received from him a barely-legible letter written when he was recovering from beriberi due to his vitamin-deficient diet on long journeys in a canoe with an Indian guide. In later years he has inspired many students to follow his example in exploring Amazonia for plants of possible pharmacological value.

The Colombian Amazon has long been protected by its inaccessibility, and in recent years large parts of it have been set aside by the Colombian Government as national parks. Most of what remains of the Amazonian rain-forest is not so protected, and Schultes makes a strong plea in this book for the preservation of what many South American politicians regard as a 'desert of trees'. He also argues for 'ethnobotanical conservation'—preserving the detailed knowledge of the unbelievably rich flora possessed by the native Indians. This knowledge is fast disappearing but, as Schultes says, could be of inestimable value for scientific research on phytochemistry, pharmacology, and human nutrition.

*Where the Gods Reign* is, among other things, an excellent introduction to one of the wildest and most fascinating regions on our Earth.

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**International Environmental Diplomacy**, Edited by JOHN E. CARROLL. Cambridge University Press, The Pitt Building, Trumpington Street, Cambridge CB2 1RP, England, UK: 32 East 57th Street, New York, NY 10022, USA: 10 Stanford Road, Oakleigh, Melbourne 3166, Australia: viii + 291 pp., tables, 23.5 × 15.75 × 2.25 cm, £35 or US \$54.50.

This book is a collection of articles by 14 contributors. They describe, from different angles, the slow and reluctant recognition by governments of the damage inflicted on Nature by their citizens both within and beyond their borders, and their responsibility to mitigate this damage or pay compensation to the aggrieved party. The assessment of damage—often insidious and long-term—may be technically difficult, while measures to forestall or repair it are costly and unwelcome for governments that are anxious to protect the livelihood of their trappers and fishermen, the profitability of their industries, economic growth, and above all to uphold the country's sovereignty. Nevertheless, a body of agreements, laboriously negotiated and ratified, is coming into being. Many are local, narrowly specific, bilateral but eventually multilateral, yet gradually evolving into International Environmental Law.

Often these treaties are initiated from below—by non-governmental agencies—or are outcomes of some international scientific congress. Thus among the earliest was the 1902 multilateral Convention on the Protection of Birds