Book reviews

Biogeography and Ecology of New Guinea

Edited by J.L. Gressitt
Dr W. Junk, 2 vols, US $195, DFL.450

The opening sentence of this splendid work sums it up: 'New Guinea is a fantastic island, unique and fascinating'. The largest tropical island and the highest island (with glaciers), it features extraordinary bio-ecological diversity: some 9000 species of plants, many of them endemic; more than 200 mammals, almost two-thirds of which are unique to the island; at least 570 birds; 170 lizards; 200 frogs; probably 10,000 species of beetles, and around 20,000 species of other arthropods. Yet these figures, remarkable as they are, refer only to known and documented species: the numbers awaiting scientific attention could well be much greater. Along the southern edge of the island the climate is seasonal, thus engendering ecological variety, and the geologic upheavals of the recent past have induced sufficient 'creative disruption' to stimulate the 'complexifying' processes.

Perhaps the most salient statistic is that of the human populace, a mere 3·5 million, mostly subsistence peasants plus a few hunter-gatherers. This means the island has been little disrupted through the hand of modern man, and there has been next to no outright destruction of forest that now characterises most other islands of South-east Asia (though a Japanese paperpulp enterprise is clear-chipping a forest tract around Gogol). To the scientist, the island presents an opportunity to explore any questions of basic biology and related disciplines. To the conservationist, the island still affords opportunity to 'do things right' from the start.

All the more welcome, then, are these two volumes that set out, in exceptional detail, the story of New Guinea. The seven parts review the general physical background, the repercussions of man's intrusions, the vegetation and flora, the vertebrate fauna, the biogeographical framework, the ecological context, and the conservation challenge. The 50-odd chapters are written by acknowledged authorities in their fields, making this a very solid publication that deserves to remain the definitive work for some time to come. Fortunately, moreover, the wealth of documentation, analysis and interpretation is put over with a style and spirit that prevents such a heavyweight work from becoming too stodgy.

Norman Myers

Darwinism Defended; a guide to the evolution controversies

Michael Ruse
Addison Wesley, £6·95

For a century it has been taken for granted that Darwin had solved the question to why there is a myriad of species on earth. Many people now think otherwise and the theory of evolution by natural selection is under assault from several branches of enquiry; some philosophers think that the theory is nothing more than empty rhetoric, some scientists think evolution occurs in jerks and thus negates the gradualist requirement of Darwin's theory and others believe that the patterns of life on earth are by the hand of an omniscient creator. *Darwinism Defended* celebrates the life and work of Charles Darwin in the centenary year of his death. It assesses the theory of evolution from a historical and philosophical perspective in a beautifully written and humourous, non-technical style in an attempt to undermine the attackers of the theory. Superficially it seems to do the job perfectly and looks like a nice book to give to students. On closer inspection Michael Ruse is out of date. His defense is for tradition—traditional systematics, dismissing modern overhauls such as cladistics with disdain, traditional ideas on neo-darwinism and support for some of the more curious and unscientific developments in evolutionary theory such as the doctrine of sociobiology. Mutations, heredity, variation and natural selection all of course happen, but neo-darwinism is a too simple and insufficient theory of genes for the phenomenon it seeks to explain—the evolution of forms. The treatment of these subjects is nothing better than can be found in a variety of other textbooks. Totally missing are discussions on rational form and so Darwin's modern rivals such as Riedl, Grassé, Thom, Prigogine, Saunders, Ho, Balanovski and Goodwin, to mention but a few, do not get a mention. In much the same way as plate tectonics upset the geological view of the earth, eventually interesting new developmental