

The third part of the book moves away from the fished-out bay stations to the pelagic stage of whaling before and after World War II. More than half the book is devoted to the great expansion of the industry following the introduction of the floating factory, the marketing problems of the inter-war depression, the scramble for oil on the eve of World War II, and the even greater scramble for oil in the years of shortages following the war. The rough geographical divisions of the book are interspersed with admirable general chapters analysing the development of whaling as a whole in various self-contained periods, outlining the causes of bursts of activity, with due consideration of market opportunities that encouraged growth and technical advances which made it possible. Above all, especially towards the end, was the spectre of suicidal over-fishing. Whaling was a fight for profits in a world of fluctuating markets and unpredictable catches, and considerable attention is paid to the largely futile attempts of various bodies to control whaling, and to those who ignored the regulations.

It is impossible to do justice to the contents of such a large book in a review of this length. For the sheer volume of information contained in its 36 chapters it deserves the highest praise. If anything there is too much information, and the wood is sometimes obscured by the trees. With so many diverse chapters there is inevitably a certain amount of overlap and repetition, together with some chronological confusion which is not helped by incorrect page headers to two chapters (one reads of the quota conflict 1934–38 on a page headed 1927–31 in a chapter headed 1930–4!). The earlier chapters would have been clearer and more useful had potted histories of individual companies been subsumed in an over-all survey of the development of the business of whaling.

Here, in fact, lies the greatest weakness of the present edition. There is far too much diplomatic history and not enough business history. The endless negotiations of international bodies failed to save the whale and are rather tedious. The whaling firms were far more successful in their attempts to catch the whales. Or were they? There are plenty of references to millionaires, but very little on the long-term profitability of whaling. We still do not know how the business side actually worked. How were companies organized and financed? Was easy credit to blame for over-fishing? A greater examination of labour, and particularly of the Norwegian stranglehold on board foreign whaling factories, would have been good. It is not all that clear how or why Norway dominated the industry, when they used so little of the oil. The general problem of the marketing of oil would have benefited from close examination. (The omission of the oil broker David Geddes from the index is even more surprising than the omission of Rupert Troughton, the British whaling entrepreneur.)

When one is offered so much it is, perhaps, ungrateful to ask for more. Within its prescribed limits this work is magnificent. If there is still room for a survey of the economic or business history of whaling, much of it could be got by boiling down the present work, and we shall remain grateful to Johnsen who began it, Tønnessen who wrote most of it and abridged it, and R. I. Christophersen who translated it.

INTERNATIONAL LAW AND POLITICS OF ANTARCTICA

[Review by David Lloyd Jones* of F. M. Auburn's *Antarctic law and politics*. London, C. Hurst; Canberra, Croom-Helm, 1982, xx, 364 p. £17.50.]

Professor Auburn's work on the law and politics of Antarctica appears at a critical moment in the history of that continent. As he points out in his preface, Antarctic politics up to 1973 must be viewed against the comparatively static terms of the Antarctic Treaty of 1959. Article IV of the Treaty, which imposes a moratorium on claims to territorial sovereignty, conceals an inability of the participating states to resolve the question of sovereignty over Antarctica. In the same way delegates in 1959 were well aware that mineral resources might be discovered in Antarctica and of the possible eventual need to regulate their exploitation, but refrained from raising the issue simply because if it had been pursued there would have been no treaty at all. In a sense, these omissions were a part of the price paid for the measure of international agreement embodied in the Treaty. Professor Auburn argues that the Treaty has been adequate as a temporary measure, principally because the absence of an indigenous population and the absence hitherto of readily exploitable natural resources has largely relieved

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interested states of the need to resolve these issues. But the Treaty regime is now coming under pressure. Changing economic and technological factors now render the existing compromise fragile and demonstrate the need for early and substantial agreement to supplement the existing regime. The adoption of a Convention for the Conservation of Antarctic Marine Living Resources in 1980, and the current negotiation of a second resources convention, make this a particularly appropriate time for a reassessment of the Antarctic Treaty system. This book surveys the working of the system over the first 20 years of its existence and examines the current issues which necessitate its modification and development.

The threads of law and politics are closely and inextricably interwoven throughout the book. Nowhere is this more apparent than in the chapters which deal with claims to sovereignty over Antarctica and various national interests. Professor Auburn begins with a clear and concise exposition of the rules of public international law governing the acquisition of territory and considers their applicability to this vast uninhabited continent. The sector principle is considered in detail, both for the Arctic and the Antarctic, and the conclusion drawn that it is an 'Aunt Sally' of international law, more of a political than a legal principle. The special problem of sovereignty over ice is examined as is the relevance of acts of administration for claimed areas. The author then examines the basis of certain national claims and traces the history of the claims of South American states, the US and the USSR. The examination of the importance of disputed sovereignty over the Falkland Islands and its dependencies to claims to Antarctica is particularly relevant after recent events in the South Atlantic.

Professor Auburn now considers the compromise contained in the Treaty. After examining certain precursors of the Treaty, he turns to the political considerations which led states to maintain the impetus of the International Geophysical Year and the negotiation of the Treaty itself. The provisions of the Treaty are then analysed in detail, and extensive reference is made to *travaux préparatoires* and other relevant material from a variety of sources, including parliamentary debates and reports of participating governments. It is not possible in this short review to comment in detail on the comprehensive treatment of the Treaty's provisions. However, of particular interest are the relevance of continuing activities to claims to sovereignty after the termination of the Treaty, the effect of the Treaty on third parties, and the limiting effect of Article VI which preserves the rights of contracting states to the high seas south of 60°S. In a further chapter Professor Auburn considers the working of the Antarctic Treaty. The failure to establish even the most minimal form of international organization is clearly a serious defect. Procedural defects in the existing system, which the author believes is both sketchy and open to abuse, are examined; he concludes that the Treaty system is often incapable of prompt and adequate action. Finally in this section a chapter on jurisdiction considers the extension of different systems of criminal and civil law to Antarctica, and the exercise of curial and executive jurisdiction over activities there. As might be expected, there is little practice on this question and Professor Auburn considers problems which may arise and suggests solutions by analogy with the Arctic regimes, which are considered in some detail, and the application of general principles of municipal and international law.

The pressures on the Treaty system are examined in detail. Although an arrangement for the exploitation of mineral resources had been considered earlier, by 1977 the establishment of a regime for the exploitation of living resources was of higher priority and greatest urgency. As a result, the Conference on the Conservation of Antarctic Marine Living Resources concluded a comprehensive treaty in May 1980. Professor Auburn considers in detail the conservation principles embodied in the convention, and surveys the protracted battle over sovereignty issues which is reflected in the final text of the Convention. Attempts to placate claimants may well give rise to confusion in the future application of the Convention. Meanwhile, the exploitation of the mineral resources of Antarctica still awaits regulation. While the extraction of such resources on land is unlikely in the foreseeable future, it seems probable that Antarctic continental shelf oilfields will soon be commercially exploitable. Having considered the decisions on the minerals regime made to date by the consultative parties, Professor Auburn examines the possibilities open to those who are now beginning to frame a new treaty on the model of the living resources convention. He concludes that self-interest may well prevent the conclusion of a detailed or effective agreement. Certain other issues touched on in these chapters, in particular the analogy of resources of the deep sea bed and the likely relationship between the developing Antarctic system and the new law of the sea, might perhaps have been considered at greater length.

Professor Auburn's command of technical and scientific detail is extremely impressive and this contributes greatly to his expert exposition of the subject. Although this work by an international lawyer is a valuable contribution to the study of the international law of Antarctica, its importance is much wider and it may well prove influential in the future development of the Antarctic system.

SUB-ANTARCTIC VEGETATION

[Review by David Walton* of M. J. M. Gremmen's *The vegetation of the sub-Antarctic islands Marion and Prince Edward*. The Hague, W. Junk, 1982, x, 149 p, illus. Hardcover Dfl 110, US\$48.00.]

The vegetation of the sub-Antarctic islands has interested botanists for many years. J. D. Hooker in the 19th century suggested that the sub-Antarctic flora might hold the key both to an understanding of the ancient flora of Antarctica and to plant adaptation for long-distance dispersal. Despite this, only on South Georgia and Marion Island has there been any major research programme in terrestrial botany, and we must look to these islands for any advances in our understanding of the vegetation.

A good general description of the vegetation and soils of Marion Island existed before Gremmen began his studies (Huntley, 1971). He clearly used this to good effect when planning his research. His decision to use the Braun-Blanquet releve approach to vegetation classification is interesting. Many phytosociologists apparently did not believe that this floristic-sociological approach would work adequately in such species-poor communities. Gremmen has shown very convincingly that it does work and can provide the essential framework for any future botanical ecology. In this context, one useful development from this present work would be numerical analyses to quantify the community relationships along environmental gradients. His classification appears to make little use of the 50 species of lichens known from the islands, and it would be surprising if some of these did not show considerable association fidelity. Considerable taxonomic confusion still exists, especially in crustose lichen genera, and so it may be some time before definitive species lists are possible for all releves.

As well as providing detailed stand characteristics and species lists, Gremmen compares the Marion Island vegetation with that on other sub-Antarctic islands, the Falkland Islands and the maritime Antarctic islands. Generally, his survey of the literature (up to 1979) is good, but he has missed important papers on Iles Crozet (Davies and Greene, 1976) and Macquarie Island (Costin and Moore, 1960) amongst others, which would have added considerably to the comparative assessments.

The book is well produced, indexed and written in excellent English, although there are a surprising number of spelling errors. The photographs would have been much better on gloss paper; considerable definition has been lost by printing them in matt format. The final chapter, which attempts to outline plant community ecology on Marion Island, seems rather short. Perhaps Dr Gremmen will expand on this elsewhere, especially in respect of the dynamic aspects of vegetation. Dr Gremmen and the South African Antarctic programme must be congratulated on producing a valuable addition to our knowledge of the sub-Antarctic. It is to be hoped that similar accounts will be produced for the vegetation of the other islands.

References

- COSTIN, A. B. and MOORE, D. M. 1960. The effects of rabbit grazing on the grasslands of Macquarie Island. *Journal of Ecology*, Vol 48, No 3, p 729-32.
- HUNTLEY, B. J. 1971. Vegetation. In: VAN ZINDEREN BAKKER, E. M. and others, eds. *Marion and Prince Edward islands*. Cape Town, Balkema, p 98-160.
- DAVIES, L. and GREENE, S. W. 1976. Notes sur la végétation de l'île de la Possession (Archipel Crozet). *Comité National Français des Recherches Antarctiques*, No 41, p 1-20.

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