Spoils and Spoilers is not the usual economic and political history of a country, but is a history of a nation that is widely considered to be resource-rich and of how it has handled its resources. The reader will quickly appreciate the parallels between Australia's treatment of resources and our North American experience. It will not surprise most of the readers to know that Australia is the driest of continents. It may surprise the reader to learn that Australia is one of the most urbanized countries in the world with over 90% of its people living in urban centers of 20,000 people or more.

Australians, the author says, have been rather slow to see the undesirable consequences of urban blight and environmental pollution in their country. It seems that they have had to learn of such conditions from American or English sources before they slowly realized that such undesirable circumstances existed right in their own country. Rurally dominated state legislatures were not prone to voting anything more than the funds absolutely necessary to sustain urban centers. Such situations have had their parallels in America.

In his concluding chapter "Backlash and Forecast" the author expresses the opinion that Australia's natural resources will be "exploited relentlessly" in the future for export income, as has been the case in the late 1970's. The author is rather pessimistic in the viewpoint of the future he expresses. Current economic difficulties, which the author sees as extending through the 1980's and into the 1990's, will, he suggests, cause even more pressure to develop available resources, to encroach on parks and wilderness areas, and to infringe on wildlife habitats. It is his opinion that the environment fares best when the economy is good and suffers when the economy is bad.

I enjoyed reading this book. It will be useful as a college textbook both in Australia and elsewhere, and indeed for anyone who wishes to know more about the history and the development of that island nation. I certainly recommend it for anyone planning travel in Australia. Spoils and Spoilers contains a very good list of references for additional reading and is adequately indexed.—ARTHUR D. LATONELL, Deputy Regional Director, Ontario Ministry of Natural Resources, Richmond Hill, Ontario, Canada, L4C 3C9

Phosphorus in Sewage Sludge and Animal Waste Slurries


In June 1980, a symposium was held in Groningen, Netherlands, to discuss the effects on soil, plants, and water of phosphate applied to land in sewage sludges and livestock wastes. Sponsored by the Commission of the European Communities, the symposium included 25 papers by researchers from many of the European Economic Community nations, and the proceedings present those papers along with pertinent discussions recorded at the symposium.

The first four papers deal with general aspects of the phosphorus cycle in soils, of which "Pathways of Phosphorus in Soil" by R. E. White is most informative and well-written. The other 21 papers present results of various laboratory and field experiments on the nature of phosphorus in sewage sludges and livestock wastes, the plant-availability of phosphate in various wastes compared with fertilizer phosphate, and the potential for phosphate leaching from soil receiving high rates of sewage sludges or livestock wastes.

The subject matter covered in this publication will be of great interest to the agriculturists, consulting engineers and waste-disposal specialists who are involved in crop utilization of the phosphate in various wastes. While some of the material has been published elsewhere, some will be found here for the first time, and organization of the works into one publication will be helpful to the practitioner who does not have access to a research library. The papers give some useful data on chemical forms of phosphorus in sludges and manures, and the effects of treating sewage sludges with lime, FeCl₃, or Al₂(SO₄)₃, on plant-availability of phosphate. One drawback to the utility of many of the research results presented here is the very high waste application rates employed—rates that are greatly in excess of crop requirements for phosphate and, in many cases, even for nitrogen.

While this publication contains much information that could be useful to researcher and practitioner alike, the reader will have considerable difficulty with many of the chapters because of poor editing and inconsistency of style. Little attempt was made to polish these papers, and many were apparently translated into English without the editing needed to eliminate the ambiguity of different units, acronyms, etc. Too many of the papers were short on discussion of the data presented in them, leaving to the reader the difficult task of interpreting the results of experiments, the details of which were often incomplete. The papers of the proceedings were photographed rather than type-set, and the lack of editing is apparent in the many typographical errors and awkward organization of tables and graphs.

For the researcher working in this particular area, this book will be worth acquiring, but for the waste-disposal practitioner, deriving useful information from it will require some effort.—TERRY J. LOGAN, Agronomy Department, The Ohio State University, Columbus, OH 43210.

Nitrogen Losses and Surface Run-Off from Landspreading of Manures


This publication contains the proceedings of a workshop on animal waste disposal held at Johnstown Castle Research Centre, Wexford, Ireland, 20-22 May 1980. The workshop was conducted under the auspices of the Commission of European Economic Community Countries, at the request of the Efluenta from Livestock Committee.

An aim of the committee is the eventual adoption of guidelines for landspreading of animal manures. This workshop represented a coordinated approach by member countries, and focused on nitrogen losses associated with landspreading of solid and, especially, slurry manure forms.

Session topics included: surface runoff of nitrogen and phosphorus (chaired by J. H. Voorburg, The Netherlands), nitrogen uptake by crops (J. K. R. Gasser, United Kingdom), nitrogen leaching (J. C. Brogan, Ireland), nitrogen storage in the soil (H. Vetter, Federal Republic of Germany), gaseous nitrogen losses (L. Rixon, Belgium), and summary and conclusions (J. H. Voorburg). The session papers typically concern recent experimental findings by the authors, and are generally written in a clear, straightforward manner. After each series of papers extended discussion follows, thereby highlighting points of consensus and uncertainty. Format and length of the papers vary considerably, with only a few having abstracts and extensive references. However, most do have a conclusions section.

Included also in the book is a Draft Guideline for the landspreading of animal manure, resulting from a 1979 session in Brussels. Additional elaboration on the Draft Guideline is provided in a paper by J. H. Voorburg. Much of the discussion in the papers and at the workshop concerned these guidelines, which are contained in the body of the book. Placing the guidelines in a position of prominence at the front would have aided readers unfamiliar with the work of the committee.

The final paper is by G. J. Kohlenbrander (The Netherlands), who attempts to place the workshop findings in perspective with earlier reports. In this discussion he notes, too, potential problems associated with potassium in animal manures. Specific guidelines are not decided upon at the workshop, and additional discussion will continue with member countries. In the reviewer's opinion the participants selected the prudent course. Overall, the book provides a comprehensive view of the latest scientific thinking in the member countries regarding disposal of animal manures by landspreading. Persons with an interest in animal waste disposal should find the book quite useful.—S. J. SMITH, USDA-ARS Southern Plains Watershed and Water Quality Lab, Durant, OK 74701.