perfectly sensible research — some of it even their own — to demonstrate just how messy and irregular and unpredictable is the acquisition of information for innovation as if the very uncertainty can be catalogued. Even the chapters are sub-sub-sub-paragraphed in an attempt to lend order to their description of chaos.

In its stated aims, the book is focused enough: it is to "provide a sound basis for the design and management of information services" (p.xii) and to turn stocks of knowledge in libraries and information centres into useful flows of information (p.21). Thank goodness the book actually aims much higher than this, but in providing information specialists with the richest of insights into what is required for innovation in the organisation, the authors must surely undermine the confidence of even the keenest. Much better to have written about how the librarian turned computer anorak holds the key to innovation in the organisation. The reality, of course, is that no one holds the key, even if there is one, a reality to which the authors readily admit.

Ironically, the authors find themselves in the position of the organisation's information specialist — supplying information without ever using it themselves; always a bridesmaid and never a bride. So the information they provide the reader is nearly always a precis of what some other author has said. Thus, there are seven factors, according to Rothwell and Zegveld, which determine success or failure in industrial innovation (p.66), and five attributes of innovation which, according to Rogers, affect the rate of adoption (p.64), but the authors stop short of doing anything with this information. "Anyone interested in the process of innovation will find Rogers (1983) the most comprehensively helpful work available" (p.65). It is not inconceivable that readers of a book entitled *Information Services for Innovative Organizations* might be interested in innovation, and might expect some processing of information about innovation in the book itself. This is not quite the approach of the text book, more that of the information specialist proffering a thorough, concise, and totally objective report to a very important and very busy senior executive.

There is an unbitten bullet here. Can the information specialist remain aloof from the use to which the information provided is put? The authors appreciate the problem: they have written many a scholarly paper on the role of information in innovation; they know full well that a snippet picked up from a friend here may have more impact that a whole information service there. This the information specialist should also appreciate. This book will help. But the authors expect rather more than passive appreciation: they want information specialists to respond to the impact of their information on innovation. Why else would they write a book on the subject? Information specialists cannot respond, any more than the authors have been able to respond to the research they have unearthed, unless they become involved with the use that is made of the information they supply.

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Colonial Technology — Science and the Transfer of Innovation to Australia *by Jan Todd* (Cambridge University Press, Oakleigh, Victoria, 1995), pp. xii + 300, A$49.95, ISBN 0-521-46138-3 (hb).

The aim of this book is to show how the dependency theory often applied to the United Kingdom-Australian scene for the nineteenth century is not as simple as is widely accepted as far as technological dependence is concerned.

It is divided into four parts, the first of which gives an overview of the dependency theory, in economic, scientific and technological terms, and an introduction to technology transfer and technological systems. It also considers cross-currents of change, including a number of themes. Part I is concerned with microbes, rabbits, and sheep and investigates the anthrax menace in livestock and how it was overcome by the Pasteur solution. Part III, with which I shall be mainly concerned, turns to rocks, cyanide, and gold, and the diffusion of the cyanide process from Glasgow to the Australian goldfields — cyanide becoming an important form of extracting gold from its refractory ores and tailings. Part IV is concerned with linkages, learning and sovereignty — transfer, diffusion and learning, colonial science, and thoughts towards an Australian system. It includes references to other technologies — in brewing, sugar, dairy technology, wheat and so on, in which an Australian style developed. It highlights the mythological character of some dependency arguments, and so on.

Overall, the book is highly readable and appears to have involved considerable research of an archival nature. It lacks a bibliography and concentrates perhaps too narrowly on two major case studies, both of which could have been condensed somewhat.

While I found the anthrax section interesting, I was astonished in reading Part III to find that a great deal of my own (pioneering?) research, involving many weeks in archives and libraries had been ignored as if it had never existed. In terms of the cyanide patent controversy much of Part III suffered from a "want of novelty" — see my papers on "The Cyanide Process and Gold Extraction in Australasia (Australia and New Zealand)", working paper in 1985, published by A.E.H.R. in 1987, pp. 44–60, and "The Discovery, Development, and Diffusion of New Technology: the Cyanide Process for the Extraction of Gold, 1887–1914", in *Prometheus*, 1989, pp. 61–74. A similar paper was delivered at the International Mining History Conference in Melbourne in 1985. One expects that the second ploughing of the field can dig deeper and spread more widely but the ploughman would be conscious of the efforts of the first in the field. Acknowledgment does not take up much time or space and if it is omitted it means the efforts of the first in the field have been brushed aside as if they count for nothing. It is surprising that no one has already picked this up, especially if it formed part of a PhD dissertation, which seems apparent from the preface (p. x).

Nevertheless, there are numerous errors of fact in this book, some of which can be referred to here. First, on the cyanide patent, there was no need for an amendment to the Queensland patent in 1895 (p. 158) because, for some reason, the (amended) complete specification was submitted to the Queensland Patent Office with "dilute" and "selective action" included in 1888 (see copy in the Commonwealth Archives, Brisbane Branch). In addition, (p. 124) despite the claim that a "later Chief Justice was to wonder at the relevance of the English patent in determining the novelty of the Queensland application," Griffith had been approached by the Australian Gold Recovery Company for his view on the patent application in 1889 (see Cassel Company Board Minutes for 27 September 1889) which he gave at that time. Poor Ludwig Diehl had his name misspelt Dhiel wherever he was mentioned and in the index. On bromine and cyanide, not only did Sulman-Teed precede Mulholland (p. 173) but also did the New Zealander, Dr Gaze of Westport, who first proposed its use (see *Jnl of Soc. of Chem. Ind.*, Dec. 15, 1906, p. 1130).

On Australian-made innovations there were many but it would require much research (the *Australian Dictionary of Biography* may help to some extent) to discover whether Australian-born inventors performed the innovations or former immigrants. There were some noticeable omissions from the list of mining industry innovations, including the Ridgway vacuum filter of the early 1900s introduced on the Great Boulder Proprietary gold mine and the somewhat unsatisfactory vacuum filter prototype, the Eureka slimes washer. As Geoffrey Blainey has shown the flotation process was at least developed for use at Broken Hill, but

the litigation on flotation was even messier than that on the cyanide process. The concentration of Kalgoorlie miners on the filter press and the tube mill set them apart from their counterparts in other places, at least for some time. Whether mining innovations were developed by foreigners or not seems not to matter when much of the development, experimentation and change in extraction procedures actually took place within Australia, and some of them were copied in other countries. There is an impression that the author favoured the miners in their contest with the developers of the cyanide process. On the other hand, it could be argued that if the miners expected to receive all major innovations free of charge, which they seemed to do in the 1890s, why should inventors come to their aid, not only with untried new technology, but with such technology offered as a package including the equipment to use and the tutors to show how to use the valuable innovation? It is a question never answered by members of the mining industry.

Todd's stories are well told and her arguments generally sound, but it must always be remembered that all contesting research claims should be acknowledged. If this does not happen, then no one's painstaking pioneering research is safe and we will all move more rapidly into academic obscurity.

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After the Fact: Two Countries, Four Decades, One Anthropologist *by Clifford Geertz* (Harvard University Press, Cambridge, Mass., 1995), pp.198, A$44.50, ISBN 0-674-00871-5.

Clifford Geertz is Harold F.Linder Professor of Social Science, Institute for Advanced Study, Princeton. In this book he looks back on four decades of anthropology in the field, and, according to the blurb, "creates a work that is characteristically unclassifiable, a personal history that is also a retrospective reflection on developments in the human sciences amid political, social and cultural changes in the world. An elegant summation of one of the most remarkable careers in anthropology..."

Geertz begins in this way: "Suppose, having entangled yourself every now and then over four decades or so in the goings-on in two provincial towns, one [Pare] a Southeast Asian bend in the road, one [Sefrou] a North African outpost and passage point, you wished to say something about how those goings-on had changed" (p.1). He lists possible approaches: a narrative; invention of indexes and description of trends; a memoir; outlining of stages with some goal for it all; a description of the transformation of institutions; "You could even build a model, conceive a process, propose a theory. You could draw graphs" (p.1).

The difficulties arise because "there seems to be no place to stand so as to locate just what has altered and how": this sort of time is "part personal, part vocational, part political, part (whatever that might mean) philosophical". "There is order in it all of some sort, but it is the order of a squall or a street market: nothing metrical"(p.2).

An attempt to make sense of it brings on a "train of worrying questions".