

The Australian miracle; an innovative nation revisited

by Thomas Barlow

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This paperback is not particularly about geophysics, or even science at all in a technical sense. However, it makes provocative reading regarding the manner and strategies under which science and innovation are promulgated. It is relevant to geophysics research and development in Australia, and readers of *Preview* should find it stimulating indeed. Its relevance is not least because the ASEG brings together a healthy mix of private enterprise and government research and development, a situation implicitly applauded by author Thomas Barlow in this book.

Barlow, we are told, is the CEO of a materials company. He has been a Research Fellow at Oxford and MIT, a columnist with the Financial Times and Scientific Adviser to the Minister for Education, Science and Training in the Australian Government. From the context I guessed his subject was chemistry (confirmed by a web search).

The style of the book is that of an after-dinner speech. Statements are asserted, and interwoven with opinions, predictions and ideas generally. Historic facts are not backed up with references cited: it is not that sort of book. As with an after-dinner speech, it is best just to go with it, and see to what extent you find it convincing.

The premise of the book is that a mantra has developed of pessimistic opinions about Australian innovation. These opinions are expressed widely, with force and consistency of rhetoric, and the book has been written as a response to such overwhelming negativity. The reader must from the start accept such an assertion, otherwise the whole exercise is based on knocking down a straw man.

Chapter 1 presents 'Ten myths' about Australian science, which (if accepted) demonstrate the negativity mentioned. These range from 'Australians are hopeless at profiting from their inventions because Australian researchers aren't commercial enough' (No. 2) to 'All of Australia's best scientists go overseas, leaving Australia the victim of a *brain drain*' (No. 8). It is asserted that these 10 points are

entrenched in the general imagination of the Australian populace.

Chapter 2 then presents 'The Australian miracle', which is the progress made in Australia in the first century of European settlement. The Australian colonies progressed from one of the poorest to one of the richest countries in the world: an economic miracle, illustrated in the book by individual case histories and anecdotes. As the author is at pains to point out, this progress was not only due to gold. A resilient and enterprising culture was bred of necessity, which led to an innovative use of technology and transformed the country with railways, telegraph and water engineering.

Given what was demonstrated in the nineteenth century, Chapter 3 then asks 'Are we our own worst enemy?' today? This chapter again quotes examples and anecdotes to make the point that there is excessive pessimism about Australian science, and a false(!) linkage to insufficient government funding. The author asserts that at almost every gathering of innovation specialists in the country, the purported lack of government interest in science is the favourite topic. He laments that Australians should be incapable of having ideas without first asking government bureaucrats to hold their hands. There are some pointed comments on scale being king in research projects, rather than quality or merit, and secondly when scale becomes an end in itself, the pursuit of size may provide a broader justification for mediocrity. Cooperative Research Centres (and the philosophy which has spawned them) come in for a serve here.

Chapter 4, on 'Priority setting', prescribes ways to put things right. Barlow turns to economics, and strongly favours decentralised free-market economies. He is strong for small government, efforts by individuals, and market forces, which he says can operate in science as well as anywhere else. He believes firmly in the benefits of competition between small groups, and advocates leaving decisions in the hands of the researchers. He also advocates legitimising the pursuit of the unknown, because the future value of scientific results is unpredictable.

Chapter 5, 'Understanding ourselves' is a calmer view of Australia, and what might be. In some respects it revisits the material of earlier chapters, with further anecdotes

about Australian innovative success in the past, and the damage which the unjustified pessimism of the present is doing to the national self confidence. Amongst the examples quoted to cheer the reader up and demonstrate that Australia can (and does) lead the world still in innovation is the airborne gravimeter. Australian exploration geophysics is given plaudits here. The author closes with the opinion that Australian technological and scientific enterprise will rise strongly, even miraculously, in the 21st century, if Australians will only understand themselves and seize the opportunities which abound.

In summary, the author has a good knowledge of Australian scientific, social and economic history, and his 'Australian miracle' is basically how well Australia did in innovation in the 19th century. He says that we should be able to do as well today in international competition, but we need to return to more of the self-reliant and individual enterprise of the 19th century, and less of the government-funded and directed monopolistic entities of today.

I first read the book in 2006, about the time of the death of Milton Friedman. Newspapers were then reviewing Friedman's neo-liberal contributions, contrasting them with those of the more socialistic Keynes who had earlier held sway. Barlow I think would get on very well with Friedman. Actually, I also think Barlow would get on very well with *Preview's* Eristicus; for they have the same gift for the perceptive analysis of the politics of science.

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