

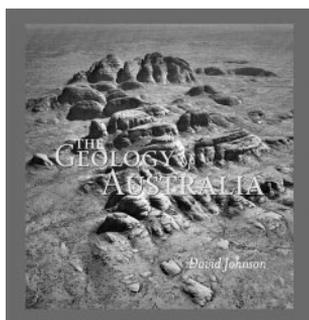
## Review Section

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**David Johnson:** *The Geology of Australia*. Cambridge University Press: Melbourne, 2004. 288 pp., colour illus., ISBN 0 521 84121 6 (HB), \$150.



Geology is a reputable Earth Science. It is also—and has been since the time of Charles Lyell—a natural *history*. David Johnson's new book, *The Geology of Australia*, is about the latest in science, but he also takes his subject's natural history dimensions very seriously. It is the latter that makes the book very accessible to an outside reader like myself.

There are several unusual features in this book that make it very much more than a textbook of geology. The first is the delightful design. Richard Rudd's beautiful aerial photograph of Kata Tjuta on the cover signals what follows. This is a slim and pleasantly weighted book that includes lots of colour and succinct text with photographs and diagrams, all clear and helpfully captioned. Quickly, we discover that the organizational structure of the book is also well designed and, unlike many 'science books', there is a strong, singular

authorial voice shaping a coherent narrative. This is not a text-book assemblage of expert chapters, but rather one writer's line on a subject that clearly fascinates him.

The opening chapter introduces both Australia and dating techniques that help us understand its deep-time dimensions. Australia is not just the subject of the study, it is also the place where key dating techniques, such as SHRIMP (Sensitive high-resolution ion microprobe), have developed (p. 5). This is a technique that can date the magmatism (or zircons) of the original rocks, and can also be used on grains of sand. This is not a collation of facts about Australia, but a history of how geological ideas have changed here and elsewhere. Under the heading 'Why we know more than we did 50 years ago', we find some of the key scientific and technological developments that inform geology. These include: using sonar to map the ocean floors; the Deep-Sea (later Ocean) Drilling Program, which recovered rocks for dating the ocean floor; and satellite imagery that provided high-altitude views of Earth, and made sense of it as one of many rocky planets in the solar system.

The second chapter takes us on a quick run through the history of Earth, including the plate tectonics revolution of the past 35 years. It also introduces four styles of techniques for age-dating rocks and minerals—by their magnetic signature (historical reversals in magnetic polarity); by thermoluminescence (emission of light); by the fossils trapped within their sediments; and by fission-track (based on

the uranium-238 content). The chapter assumes very little, explaining both common types of rocks and minerals, as well as basic geological processes such as folding, uplifting and erosion.

The next five chapters take us through the Ages of Earth, from the Precambrian to flowering plants, mammals and deserts. The next three chapters are more descriptive, taking some of Australia's 'special cases' and explaining them: volcanic activity in the Great Dividing Range; the continental shelf and coastlines; and the Great Barrier Reef. The final two chapters take a reflective step beyond Australian and regional considerations, and consider planets, moons, meteorites and impact craters and the cycles of a continental journey.

The striking thing about Johnson's narrative is the historical consciousness it displays, simultaneously, at a range of scales. The Age of the Earth—even the place of the earth in the solar system and beyond, is balanced with human-scale stories of explorers and geologists making sense of puzzles, using geological observations. David Carnegie, making the overland camel trek from Kalgoorlie to Halls Creek in the nineteenth century, survived the desert because he recognized granites and noted their power to trap small underground reservoirs (p. 56). The sight of the scattered erratics in the Inman River valley in South Australia had Walter Howchin speculating as early as 1918 about ancient connections between Australia and Antarctica (p. 103). This is geology with a human history, and a sensitivity to the particularities of Australia and its scientific traditions.

The Australian focus throughout is insistent, yet conscious of the rest of the world. Whilst Australia has some big boasts, the narrative is not all 'strut'. Sure, we find the planet's oldest mineral grain (a zircon) in the Pilbara (p. 53), one of the earliest plants (from Victoria—a *Barag-*

*wanathia*, p. 270), and one of the most primitive life forms—cyanobacterial mats or stromatolites—dating from 2700 million years ago, a variety of which is still evident in the salty waters of Shark Bay (p. 68). But we also find a very different Australia in Precambrian times. The neat little boundaries of our island-continent take many chapters to emerge. All the populous east coast is deep under water, and even the narrow western edge on which Perth stands is missing, although the Western Australian wheatbelt stands prominent on the large Archaean Yilgarn craton more than 2500 million years ago. It is a strikingly different Australia—comprising most of the parts where humans have settled most sparsely, and which, in European times, have been subject to least development apart from the mining industry. Almost every major mineral-based settlement from Broken Hill to Mt Isa and north-eastern Cape York, across to the Pilbara and Kimberly, and down to Kalgoorlie can be marked on a Precambrian map—but none of the places where the biggest cities have grown.

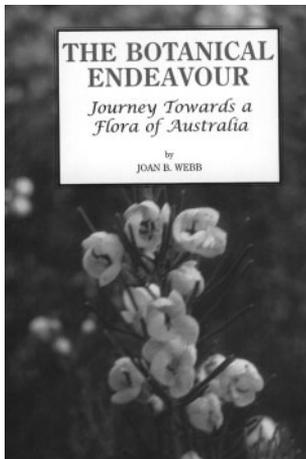
Johnson also reminds us of why it is important to look beyond the commonly cited northern hemisphere examples to understand the Ages of the Earth. Chapter 5 deals with the Carboniferous/Permian age—named for and described as a 'tropical' era, because that was what was happening in the north. But this was an icehouse time for Gondwana, literally down-under 300 million years ago, with Australia's land mass right near the South Pole. This did not always mean glacial conditions, however. Towards the latter era of the Gondwanan supercontinent, the climate warmed—and despite being within the Antarctic circle, both Australia and Antarctica were covered in rainforest (p. 149). We did not fully break away from Antarctica and start to have our recognizable shape until chapter 7, about 84 million years ago.

I commend this carefully crafted and unfolding story, rich in both facts and reflection. My only regret is the price. The publisher's inexplicable decision to release it at a 'library price' (despite prominent sponsorship from a mining company) is going to mean many of the book's most enthusiastic potential readers—the intelligent general public—will miss its treats. Roll on a second, paper-back edition!

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**Joan B. Webb:** *The Botanical Endeavour: Journey towards a Flora of Australia*. Surrey Beatty & Sons: Chipping Norton, 2003, viii + 290 pp., illus. (maps, portraits), ISBN: 0 949324 92 2 (PB), \$40.

**Philip Short:** *In Pursuit of Plants: Experiences of Nineteenth and Early Twentieth Century Plant Collectors*. University of Western Australia Press: Nedlands, 2003, xvi + 351 pp., illus., ISBN: 1 876268 98 0 (HB) : \$54.95.



In the preface of *The Botanical Endeavour*, and on the back cover, British botanical historian David Mabberley describes it as

an 'important source-book on the nineteenth century', and indeed it is a useful contribution. But he does not tell us anything about its author, Joan Webb, or why her travels have taken her into so many European herbaria. The abundance of primary sources from Kew Gardens archives shows us that Webb has done considerable research at Kew, England, but there is little other information about her. If I resort to my bookshelf and to the internet, I discover that Webb has also written a biography of botanist and activist Thistle Harris, a history of the Australian Wildlife Preservation Society, and has co-written a guide to plants, *Sydney Sandstone Flora*.

After brief introductions to Australia's botanical history and the value of herbaria, including the recent debate about maintaining such archives, *The Botanical Endeavour* deals with the lives, publications and botanical collections of a number of individuals. Those who are dealt with at greater length are the botanist and botanical patron Philip Barker Webb (1793–1854); Lieutenant-Colonel William Paterson (1755–1810), Lieutenant-Governor of New South Wales and a Fellow of the Royal Society of London; explorer and 'King's Botanist' Allan Cunningham (1791–1839); the Western Australian residents James Drummond (1784–1863) and Georgiana Molloy (1805–43); Tasmanian collector Ronald Campbell Gunn (1808–81); 'foreign literati' Amalie Dietrich (1821–91) and Ludwig Preiss (1811–83), George Bentham (1800–84); Ferdinand Mueller (1825–96); and Joseph Henry Maiden (1859–1925). Most of these lived, worked and collected plant material in Australia. Only Philip Barker Webb and George Bentham did not, and their contributions to Australian botanical collection and classification are indisputable. Philip Barker Webb acquired, for example, the herbarium of Jacques Julien Houtou de Labillardière, with its plants from Bruny d'Entrecasteaux's expedition,

and Bentham's seven volume *Flora Australiensis* was a most significant nineteenth century contribution to Australian botany (p. 217). As well as looking at the lives of these individuals, Webb examines Australian herbaria, particularly the Melbourne Botanic Gardens herbarium with its origins in the work of the director of the Gardens, von Mueller.

Each chapter introduces its subject or subjects, and has sections on the life, journeys, collections, and significance of the subject, followed by chapter notes with detailed references. And though it is a modestly-produced printing in soft-cover, there are interesting black and white illustrations, maps, and —most welcome!—an index.

The nineteenth century that Webb writes about did not lack exciting times, and we know that even from the thoroughly dried pages of herbarium specimens, lively tales can spring. Peter Raby's *Bright Paradise: Victorian Scientific Travellers* (Princeton University Press 1996) covers a similar period and similar pursuits, with a clarity and verve that make it hard to put down. But this is not such a book. Motivated perhaps by desire to respect the truth of the scientific detail she presents, Webb does not breathe the same life into the moments of discovery, and there are parts of the book where a reader's interest might falter over the detailed catalogue of the pursuit and preservation of plants of Australian significance. But these are leavened by generous inclusion of interesting primary sources, and by useful and succinct appraisals of her characters. Webb writes, for example, that:

William Paterson may have endeared himself to the general populace in the colony of New South Wales, but as an administrator he showed no ability for government; as commanding officer of the New South Wales Corps he showed no determination; and both as administrator and as commanding officer he allowed himself to be the tool of designing persons. (p. 69)

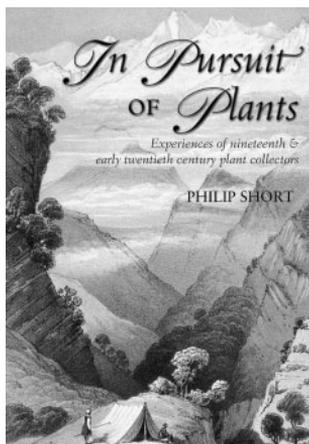
and quoting Joseph Hooker on Ronald Gunn, we find that:

There are few Tasmania plants that Mr Gunn has not seen alive, noted their habits in a living state, and collected large suites of specimens with singular tact and judgement. These have all been transmitted to England in perfect preservation, and are accompanied with notes that display remarkable powers of observation, and a facility for seizing important characters in the physiognomy of plants, such as few experienced botanists possess. (p. 174)

Webb's researches have been extensive, but sometimes even these are hidden from the reader. I took a moment to realize that when she write about 'two of the many specimens examined in 1999 by J. Webb', she is referring to her own labours. My erudition and facility with languages are certainly not at all comparable with those of Philip Barker Webb—adept in French, German, ancient and modern Greek, Italian, Latin, Portuguese and Spanish—whose chapter begins with a small tribute from S. Gay:

*Son* Phytographia canariensis peut, indépendamment de ses riches ornements, soutenir la comparaison avec tout ce qui a été fait de mieux dans ce genre. (p. 28)

So I would have been grateful for an English translation of this quotation. [His *Phytographia canariensis* can, independently of its ornamental riches, compare favourably with the best of its type.] Some of the other language Webb uses in telling the stories of these men (and one woman) also minimizes the chances of enticing general readers: the concepts embodied in technical terms such as 'floristic regions' require some measure of scientific background, while 'lectotypes' and 'holotypes' belong to the highly specialized world of botanical taxonomy. This makes the best-informed audience for this book a small one, though historians will also be glad to refer to it, and will appreciate Webb's careful presentation of the facts.



Dr Philip Short's book does not lack drama. It begins:

In 1792, David Burton died of gunshot wounds on the banks of the Nepean River, near Sydney ... Richard Cunningham died of spear wounds. In 1844, Franz Sieber ended his days in a lunatic asylum and, in the following year, John Gilbert was fatally speared in the neck. (p. vii)

This makes us sit up and take notice. And we continue to do so. The life of this book is in the presentation of the original writings of Short's nineteenth and twentieth century subjects, all except one (like Joan Webb's subjects) are men. Extensive quotations form almost the whole bulk of each section. Short himself is a taxonomist whose specialty is the daisy family. He has written for, and edited, the *History of Systematic Botany in Australasia*. And he too has spent time at Kew's Royal Botanic Gardens in 1991–2 as the Australian Botanical Liaison Officer, which provided him with the opportunity for finding and assembling these articles.

Short divides *In Pursuit of Plants* into seven regions: Africa, Asia, Australia and New Zealand, Europe, North America, Central and South America, and Oceans and Islands. Each of these features a number of collectors, just three for the Oceans and Islands and as many as eleven for Australia and New Zealand. Some col-

lectors, such as Joseph Dalton Hooker, feature in more than one category.

The book is a handsome production from the University of Western Australia Press, a well made hard-cover with good-quality colour photographs of plants and reproductions of some older illustrations. The layout is clean and enticing to the eye. Some relatively small changes or additions to the text and to the arrangement of quotations would have made the book more useful. In particular, it is not at all obvious on first reading that the text quoted (for Vogel, for example) consists not of one letter or quotation, but of a series of excerpts run on in the text with only a fresh heading to indicate a break and change of date in the writing. This could easily be clarified by giving the date of writing of each quotation with each heading, instead of having them buried within the (excellent) endnotes for the chapters. And many non-botanist readers would have appreciated the use of some common and Aboriginal names—something botanists including Short often like to avoid—in addition to the scientific names given here for plants. It would seem entirely a useful thing, for example, to know that the *Ptilotus rotundifolius* illustrated on page x is one of the 'mullamullas' of the Hamersley Ranges. On this point, it's interesting to see Short's discussion of plant names (on p. 323).

Short mentions (p. xiii) that he has standardized some abbreviations and spellings in these quotations—for example, 'wagon', not 'waggon', and 'botanised' not 'botanized'. This is neither necessary nor justifiable: it is an unnecessary uniformity imposed for no sake but its own, and results in an irritating loss of historical accuracy and of the richness of detail which accretes to tell the story of changing language usage. Short's readers are surely made of sterner stuff: we can cope with more than one spelling of familiar words,

and we deserve to see things they way they really were in a collection of quotations.

Short gives a brief (one-paragraph) introduction to each selection, such as the following one for the passage on F. J. Gillen he chose:

Born in South Australia, Francis James Gillen (1855–1912) was for many years associated with the Overland Telegraph Line that ran between Adelaide and Darwin, and in 1892 was appointed the post and telegraph stationmaster at Alice Springs. From an early age he had interests in natural history and anthropology and in 1894, when the Horn Scientific Expedition visited Alice Springs, his interests were further stimulated. Sometimes he was assisted in collecting specimens by Aboriginal people and undoubtedly the harnessing of their skills was usually beneficial. This was not always the case, as the following extract from a letter of Gillen's to Professor Baldwin Spencer shows. (p. 190)

I would very much like to have seen Short include more detail on his reasons (apart from the obvious one of availability) for choosing the particular individuals gathered here and attempt to fit each writer and each passage selected into a larger picture. It would have added punch to the collection to have a more substantial commentary interpreting, analysing and putting into context what is ultimately an assemblage of quotations, and it need not have entailed a great addition to the size of the final work. A small concluding chapter drawing together the themes of the book would have been valuable for the same reason. It would also have been good to have thumbnail maps locating each piece of writing (especially in the case of obscure islands such as the southern Indian Ocean one of Kerguelen (p. 297)). But it is a fine book.

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**Patricia Fara:** *Sex, Botany & Empire: The story of Carl Linnaeus and Joseph Banks.* Thriplow: Cambridge UK, Revolutions in Science: Icon Books 2003. 168 pp., illus., ISBN 1 84046 573 5 (PB), \$29.95.



This is only a small book, pocket-sized in fact, but with a very big subject. As the author herself says, it is about how the links between the three 'S's, Sex, Science and the State, were revealed in the careers of Swedish botanist Carl Linnaeus (1707–78) and British naturalist and patron of science Joseph Banks (1743–1820). In themselves these themes and individuals have been well-covered by historians of science, as the list of further reading at end of *Sex, Botany & Empire* acknowledges, but this is not so of Fara's particular combination, especially in regard to Linnaeus and Banks who were almost of different generations, and did not ever meet each other. Fara writes with a light touch and many asides that is more characteristic of a Georgian romp than a scholarly treatise.

Fara connects sex and botany through the so-called 'sexual system' of classification that was devised by Linnaeus. Unlike its predecessors it used the male and female parts of the reproductive

organs to assign plants to different ranked groups. Botany and empire are linked by the exploring expeditions in the eighteenth century that looked for plants and other natural history objects at the same time as opportunities for the commercial exploitation and political acquisition of new lands. Finally, Fara uses sex as a metaphor to characterize imperial relationships—conquering, subduing, deflowering, and clearly not consensual—although she also indicates that much actual sex also took place between explorers and natives in the South Pacific.

These links are evident in the careers of both Linnaeus and Banks although more so in that of Banks, who consequently dominates Fara's book. Linnaeus recruited a number of disciples to promulgate his system of classification and to bring plants from new lands to Sweden. While not one of these disciples himself, Banks adopted the sexual system and used it to classify his specimens from Cook's *Endeavour* voyage. Like Linnaeus, Banks was also interested in using science to enrich the state, but his position in the Establishment of a more powerful nation than Sweden enabled him to do so on a grander scale. Linnaeus may have published more scientific works than Banks, but Banks was more successful in influencing commerce and imperial expansion.

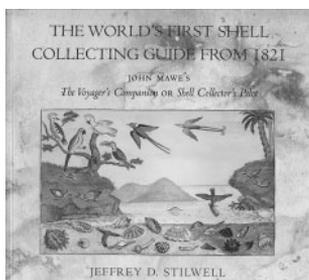
Fara thinks Banks has been hard done by in Britain, concluding that 'very few British people have heard of [him]—unless, that is, they have visited Australia, where Banks became a national hero.'. She thinks this is because British scholars have only recently begun to appreciate that 'books are not necessarily the best way to measure scientific achievement.'. She also thinks that enthusiasm for Banks waned in Australia 'towards the end of the 20th century' as it 'was severing its ties with Britain' but this is difficult to sustain in the light of the Australia's decision to retain the monarchy in a referendum in 1999, and

the recent books of John Gascoigne, an Australian scholar, on Banks.

*Sex, Botany and Empire*, however, is clearly not intended to be a closely argued work. It draws on the research of other historians, including Gascoigne, reflects on large themes and makes novel connections. Fara also makes extensive use of illustrations, and her comparison of two portraits of Linnaeus and Banks as explorers encapsulates what they did and did not have in common. Both men are shown exhibiting a new plant named according to the Linnaean system, which was also a potential commercial product. But while the 'Lapp Tea' brewed from Linnaeus' *Linnaea borealis* was deemed disgusting even by his son, Banks' *Phormium tenax*, a kind of flax, was influential in getting the British to settle Australia.

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**Jeffrey D. Stilwell (ed.):** *The World's First Shell Collecting Guide from 1821: John Mawe's The Voyager's Companion or Shell Collector's Pilot*. Western Australian Museum: Perth, 2003. xii + 81 pp., colour illus., ISBN 1920843043 (PB), \$39.95.



A quick glance at most library catalogues reveals an abundance of books about shells, shell-collecting, shell classification and illustrated guides to shells dating back at least to the late eighteenth century, enough to vindicate Jeffrey Stilwell's assertion that 'Shells (phylum Mollusca) have a mystique that transcends time'. His production of John Mawe's *The Voyager's Companion; Or Shell Collector's Pilot* was itself a labour of love. Stilwell is a palaeontologist at Melbourne's Monash University, specializing in Australian fossil mollusca. His passion for shells and for rare books coalesced in a bookshop in Cambridge in 1995, when he found a well-preserved copy of the 1821 third edition of *The Voyager's Companion*.

Subsequently he hunted down the even rarer fourth edition of 1825. The existence of a 'first edition' of Mawe's book, an eleven page pamphlet with a different title, published in 1804 held in the collection of the Mitchell Library, State Library of New South Wales was brought to Stilwell's attention by a colleague. Only the first and the third editions are reproduced in this facsimile. The editor was unable to trace an extant copy of the second edition. This failure in part motivated his decision to

produce a facsimile of the surviving editions, to prevent their loss to shell and rare book enthusiasts. The first and the lost second edition are cumbersome titled: *A Short Treatise, Addressed to Gentlemen visiting the South Seas, and All Foreign Countries; More particularly to Commanders, &c. of Ships, and Gentlemen Residing on Shore, With a View to Encourage the Collecting of Natural History*. This could be read as a collision of Mawe's primary interests, commerce and natural history education.

Dissemination is clearly as important to Stilwell as it was to John Mawe. He wrote that he wanted Mawe's work to reach a wider audience than rare book collectors and historically-conscious conchologists: 'I decided to reproduce the book here—so that many more people could enjoy one of the greatest rarities of early nineteenth-century natural history'. He, and the Western Australian Museum, have certainly gone some way toward achieving this aim, producing a beautifully illustrated, well-researched and affordable little book combining two facsimile reprints, prefaced by several short essays by Stilwell and a foreword by the eminent shell collector S. Peter Dance, a former president of the Conchological Society of Great Britain and the British Shell Collectors' Club. Within his commentaries, Stilwell has helpfully included brief extracts from letters by Mawe about shell-collecting and also illustrations from other nineteenth-century books on shells, and from Mawe's mineralogical catalogues.

Several times, including in the title, Stilwell reiterated the primacy of Mawe's work as the *world's first* shell-collecting guide. He made the bold claim in his introduction that the 1821 edition of *The Voyager's Companion* is 'the first detailed and all-encompassing account of shell collecting'. I am not satisfied that his search for antecedents was sufficiently exhaustive. He made no reference, at least, to

Thomas Martyn's 1784 publication, *The Universal Conchologist*, whose subtitle promises to exhibit 'the figure of every known shell, accurately drawn, and painted after nature, with a new systematic arrangement'. Martyn's work was self-published in London and sold from his house. It is in four volumes, written in English and French.

According to Stilwell, John Mawe (1766–1829) was the son of a prosperous Derbyshire baker and merchant. He spent several years at sea on a merchant ship, but was later described as 'a practical mineralogist'. This is born out by the informed ease with which he discussed matters geological in two of his best-known books *The Mineralogy of Derbyshire, with a description of the most interesting mines in the North of England, in Scotland, and in Wales* (1802) and *Travels in the interior of Brazil, including a voyage to the Rio de la Plata, and an historical essay upon the revolution in Buenos Ayres* (1812). Both went into several editions, and the latter book was widely reviewed. A natural history entrepreneur and avid publisher, Mawe began selling minerals as early as 1794 and published a number of descriptive catalogues of minerals, gems and rocks, aimed at students and collectors of geology. These catalogues were often intended as guides to the stock in his mineralogical shop in the Strand, opened after he returned from South America in 1811, where he 'entertained students and gave demonstrations'. His books are engaging, lively and entertainingly boastful, in the tradition of much eighteenth-century travel literature. They are both natural and commercial histories of mining and conchology, tracking the industrialization of Britain and calling for the establishment of a School of Mines, while lauding the 'fashion' for mineralogy which promised 'great improvements' in an 'important branch of natural history'. They demonstrate his shrewd business eye, often incor-

porating advertisements for his products. His entrepreneurial skills are no more evident than in Stilwell's gorgeously produced edition of the *Voyager's Companion* which, like *The Mineralogy of Derbyshire* and *Travels in Brazil*, is part treatise, part travelogue and part tourist guide.

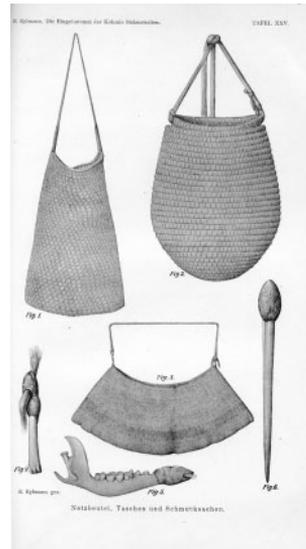
There is much of interest in Stilwell's accessible chapters on the practicalities and tribulations of shell-collecting at a time when 'large areas of the globe were, conchologically speaking, unknown', in his 'brief history', including an archaeology, of shell-collecting, and in his short biography of John Mawe. Nevertheless, I am disappointed that he attempted neither to place Mawe in a more detailed fashion within a cognitive community of early nineteenth-century naturalists, collectors and dealers in natural history objects, nor to unpack and contextualize his ideas about change in the Earth. Furthermore, in the context of this publication, Stilwell seems interested in shells largely as collectable objects. Differences between fossil and living mollusca were recognized as markers of faunal change in the geological record during the late eighteenth and early nineteenth centuries. They were integral to Georges Cuvier's work on extinction (as Stilwell himself pointed out), to William Smith's stratigraphic mapping and later to Charles Lyell's gradualistic speculations which led to the publication of *Principles of Geology* in 1830–33. Stilwell touched on these ideas early in his essay on Mawe's life, but did not develop them.

I should like to see Mawe located in wider intellectual and economic contexts, within a network of Western European dealers in natural history and disseminators of natural history information. He published eclectically and popularly: travel literature, geological and mineralogical work, collectors' and students' guides, gem-cutters' guides, catalogues, as well as at least two other book on shells (an 1823

treatise on *The Linnaean System on Conchology*, self-published with 34 lithographic plates, and another published posthumously by his wife Sarah). The existence of the former work again reveals him to be no mere profit-focused entrepreneur, but an informed and interested student of natural history, despite his own disclaimer in *The Mineralogy of Derbyshire* that as ‘an observer addicted to no theory’ he preferred to ‘leave the scientific to form opinions agreeable to their own sentiments’. I am intrigued by his links to the Portuguese Crown. Where did he fit intellectually? Who purchased and used his books? Stilwell’s commentary provided tantalizing hints, but did not satisfy my curiosity. Nevertheless, for shell enthusiasts, book lovers and students of nineteenth century natural history alike, this lovely little production is a treat and a useful resource.

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**Wilfried Schröder** *Ich reiste wie ein Buschmann (Zum Leben und Wirken des Australienforschers Erhard Eylmann)* [I travelled as a bushman: Life and Work of the Pioneer of Australian Culture Erhard Eylmann] Science Edition Publication, Hechelstrasse 8 D 28777 Bremen, Germany, 273 pp., illus. b&w, ISSN: 1615-2824, 20 Euros.



‘This book is not a scientific biography’ according to the author Wilfried Schröder, but an attempt to sketch in general terms, the life and work of the explorer Erhard Eylmann. Eylmann made an ‘indispensable contribution to science and the history of discovery in Australia’ (p. 11). His contribution to the field of Australian anthropology and history, however, is still relatively unknown. The results of Eylmann’s fieldwork in Australia culminated in the publication of *Die Eingeborenen der Kolonie Südastralien* in 1908, which is available in major university and museum libraries both here and overseas, but only accessible to readers of German.<sup>1</sup> Eylmann’s diaries and drawings, as well as his collection of natural history specimens and Aboriginal artefacts, are

either on display or in storage at the Übersee Museum in Bremen.

Schröder certainly achieves his aim of engaging the reader in Eylmann's 'adventurous life' in Australia between 1898 and 1913. His account of Eylmann's travels is embellished with intimate details that we can only assume were sourced from Eylmann's own expedition notebooks and diaries. A few of the illustrations from Eylmann's monograph have been reproduced by Schröder, albeit rather poorly. These include Eylmann's remarkable pencil drawings from observation depicting Aboriginal people in camps, artefacts and rock art. The additional historical photographs are useful, but the sources are not acknowledged and scenes of Arrernte ceremonies may be restricted.

Eylmann encountered a miscellany of characters in remote places and towns, including pastoralists, gold diggers, adventurers, missionaries and Aboriginal people. He often experienced life-threatening danger as well as loneliness and despair. Schröder's treatment of these events sometimes appears over-dramatized as he weaves them into his narrative along with his own analysis and interpretation. It is often unclear whether it is Schröder's interpretation or in fact Eylmann's own records, a frustration exacerbated by the lack of footnotes acknowledging his sources.

While the book appears to stray into the realm of biographical fiction, Schröder has constructed a convincing chronological narrative based on the few published sources about Eylmann's life and work.<sup>2</sup> Chapters 1–9 are not titled, but are arranged in order

beginning with Eylmann's early life on Krautsand, an island on the Elbe River in northern Germany, until his death at 61 in Blumenthal, a small town on the banks of the Unterweser River (p. 63).

Schröder introduces the reader to Eylmann's family, who were farmers for many generations on Krautsand. This was where Erhard, the second of ten children, developed an interest and enthusiasm for natural history, particularly geography and astronomy. After successfully completing his secondary schooling, he studied natural history and medicine at the universities in Leipzig and then Freiburg where he graduated with a PhD in 1886. He continued studying medicine in Würzburg, Freiburg and Heidelberg and completed his degree in medicine in 1889–1890 (p. 39).

After the tragic loss of his wife while he was working as a doctor of tropical medicine in Cairo, Eylmann returned to Germany in 1894 and withdrew to Krautsand. Fortunately, Eylmann came across an article about the penal colonies in Australia, the 'fifth continent' that he thought might offer exciting new research potential. He decided not to work as a doctor again (p. 35). Instead he enrolled as a student at Wilhelms-University in Berlin and undertook a study of Australia's geography, geology and ethnology. Schröder makes it clear that Eylmann was driven by the possibility of undertaking original research in Australia, collecting specimens and artefacts and recording his observations for evaluation and publication (p. 39).

Two years later in February 1896, Eylmann arrived in Adelaide and spent four weeks visiting the library, zoo, and botanical gardens as well as the museums. He befriended Amandus Zietz, Assistant Director of the South Australian Museum,

<sup>1</sup>Eylmann, Erhard. *Die Eingeborenen der Kolonie Südastralien*. Dietrich Reimer (Ernst Vohsen) Johnson Reprint Corporation: New York 1966 (originally 1908). English translations of selected chapters from Eylmann's publication are available from IATSIS in Canberra—Chapters 10, 12, 13, and 14 translated by WC Gerritsen and Rupert Gerritsen, Chapters 16 and 17 translated by Kevin Sherlock.

<sup>2</sup>Otto Bunzendahl, 'Der Australien-Forscher Dr. Erhard Eylmann und seine Sammlung im Deutschen Kolonial und Übersee Museum zu Bremen.', 1938.

a fellow German who played a key role in assisting Eylmann with preparations for his expedition north (p. 45). He then set out alone on his first self-funded Australian expedition with two horses, minimal equipment and provisions, and travelled from Oodnadatta to Darwin and back, a journey that took him three years.

Eylmann survived his gruelling expedition from south to north and back again and established an important relationship with Frank Gillen in Alice Springs. He visited several stations, missions, Aboriginal camps and mining towns, as well as collecting Aboriginal artefacts, minerals and fossils.

Eylmann's meetings with Gillen at the Telegraph Station in Alice Springs reinforced the value of his ethnographic work: they discussed diseases afflicting Aboriginal people, geology and rock art. Eylmann also took the opportunity to study Edward Stirling's volume on anthropology from the Horn Expedition.<sup>3</sup> It is clear from Gillen's correspondence that Baldwin Spencer expressed some concerns about Eylmann publishing the results of his research ahead of them. Gillen wrote:

I am afraid that so much about Eylmann will make you uneasy and I can almost imagine I see you shifting uneasily in that chair. I feel certain that he does not intend to do any Anthropology except in a general way—He intends to publish a book on his travels, on his return to Germany which may not take place for a couple of years.<sup>4</sup>

After his return to Adelaide in January 1899, Eylmann sought further advice from Amandus Zietz at the South Australian

Museum before setting out on foot to Cape Otway in Victoria via Lake Albert. He returned to Adelaide in May via Hamilton, the Grampians and the Ninety Mile Desert after walking 800 kilometres. He then prepared for his return to Germany. Schröder reveals Eylmann as a very lonely character wishing to escape his past and determined to succeed in his new scientific endeavour. According to Otto Bunzendahl's account, Eylmann travelled 'to learn more precisely the customs and habits of the Aboriginal people of Central Australia who still exist in the natural state'.<sup>5</sup>

Not satisfied with the results of his first expedition to Australia, Eylmann returned again in June 1900, but this time he concentrated on missions and their impact upon Aboriginal people, their social organization and beliefs. Schröder briefly acknowledges Eylmann's visits to Point Macleay Mission at Lake Alexandrina south of Adelaide and the Bethesda Mission at Lake Killalpaninna on the Cooper Creek in north-east South Australia (pp. 117–120).

Eylmann was well aware of the impact of European settlement on Aboriginal people around the country and accused the missionaries of complicity in the extinction of their race. Schröder's analysis of Eylmann's critical view of the missionaries' work simply mirrors his opinion (pp. 117–121). Eylmann claimed there was 'no good star over mission life in Australia' and the Christian Gospel was just not suitable for a 'nature-people' who stood on the lowest cultural step.<sup>6</sup> Schröder does not offer any substantive critique of Eylmann's social Darwinist position or the role of missionaries as anthropologists.

Schröder provides a very lengthy account of how Eylmann's book *Die*

<sup>3</sup>E. C. Stirling in Baldwin Spencer (ed), *Report on the work of the Horn Scientific Expedition to Central Australia*. Part IV Anthropology. London and Melbourne: Delau and Co. and Melville, Mullen and Slade 1896.

<sup>4</sup>John Mulvaney, Howard Morphy and Alison Petch. *My Dear Spencer—the letters of F.J. Gillen to Baldwin Spencer*. Hyland House, Melbourne, 1997.

<sup>5</sup>Bunzendahl, 'Der Australien-Forscher Dr Erhard Eylmann...', p. 41.

<sup>6</sup>Eylmann, *Die Eingeborenen der Kolonie Südastralien*.

*Eingeborenen der Kolonie Südaustralien* was conceived, written and published. He acknowledged the key influences on the form and content of his book, including publications by Karl Emil Jung, Spencer and Gillen, and the Horn Expedition Report, as well as his own background in ethnology and philosophy. Finally published in 1908, Eylmann's book contained 481 pages illustrated with his photographs, detailed drawings and paintings from observation.

The book received positive reviews in journals for ethnology and geography and it was not long before he began planning his final trip to Australia (p. 190). This was another remarkable feat which he reported quite simply as follows:

In the year 1912 and the first month of the following year I crossed and recrossed the southern part of the states of southern Australia. I walked 1100–1200 km and returned by train and Murray steamer, approximately 1500 km.<sup>7</sup>

On this expedition, Eylmann mainly investigated and illustrated the birdlife, the results being published in his article 'Die Vogelwelt südöstlichen Teils vom Staate Südaustralien' in the *Journal für Ornithologie* in 1914. Schröder paints a bleak picture of the last few years of Eylmann's life after the First World War. The German economy was very depressed and high inflation took its toll. Eylmann finally moved to Blumenthal on the Unterweser River and at the age of 60 was forced to seek employment in the Bremer Woll-Kämmerei (wool factory). He remained committed to researching Australian ethnology and kept busy studying associated literature and worked on his collections of natural history specimens and artefacts at home (p. 221). A highlight was the publication of Eylmann's report *Das*

*Bettelwesen in dem Staate Südaustralien* in 1922, which provided insights into the lives of beggars such as tramps and swagmen around South Australia and Victoria.

Eylmann finally retired from the wool factory in 1926 and retreated to his small apartment with little to sustain him except 'water soup' and only his pet cat for company. Despite the rapid decline in his health, he continued to work on manuscripts each day committing a few lines to paper or making a drawing (p. 227). In December 1926 Eylmann died at the age of 66.

Schröder concludes his biography by acknowledging the recent celebration and evaluation of the work of Baldwin Spencer and Frank Gillen and also Carl and Ted Strehlow. He then asks why Eylmann's contribution to Australian science and exploration is still not recognized. Schröder claims the main reason is that his monograph *Die Eingeborenen der Kolonie Südaustralien* (1908) was never published in English, although we can assume that Spencer at least read German.

It is not unreasonable for Schröder to claim that Eylmann's pioneering fieldwork and 'first hand' observations were on a par with Spencer and Gillen, and that he deserves a place in the history of ethnographic fieldwork, along with the most important exponents in the development of participatory observation (p. 236). Eylmann was well aware that his short periods of intensive fieldwork resulted in limited data for analysis and evaluation but his ethnography not only offers us previously inaccessible data on the material culture and beliefs of Aboriginal people in southern Australia at the turn of the nineteenth century, but also complements the records from central Australia at the time.

Schröder's biography provides important context for one of the best-documented colonial collections of Aboriginal material culture in Europe and

<sup>7</sup>Eylmann, Erhard. *Das Bettelwesen in dem Staate Südaustralien*. Mitteilungen der Geographischen Gesellschaft. Hamburg, Band 34, 1922, p. 57.

we eagerly await a full translation of Eylmann's monograph into English, perhaps illustrated with images of his collection.

Chris Nobbs  
South Australian Museum

## Exhibitions

### **Drought through the Twentieth Century: Australia's National Experience.**

<http://www.naa.gov.au>

Throughout Australia's relatively short history since Federation, perhaps one of the most enduring and important themes is Australians' relationship with water. Yet it has commanded surprisingly little attention from historians, both academic and popular, despite ample sources of information available in archives, newspapers and published material. Going some way to correct this, the National Archives of Australia has embarked on a project to help bring this ever-timely subject into the public domain, presented in a forthcoming exhibition entitled *Just Add Water*.

Research for this exhibition, based primarily upon the Archives' own collection, reveals numerous and wide-ranging measures to alleviate the impact of drought. On one level were initiatives to provide direct financial assistance to drought victims: in 1902, a federally-sanctioned fundraising initiative by Dame Nellie Melba; various Drought Relief bills providing grants and loans to the State support schemes; and a late-1960s proposal to introduce Drought Bonds, as a means of encouraging personal responsibility for insurance against future hardship. Yet the exhibition also highlights various attempts at drought prevention,

including river diversion schemes, research into drought-resistant plants, cloud-seeding experiments, and long-range weather forecasts based on the planetary alignment of Jupiter and Saturn. Such schemes, which represent the main focus of the exhibition, ranged from the conservative to the audacious. Among the latter: a 1903 patent for steel towers stretching into the cloud stratum, in order to release electrical currents into the sky and thus effect precipitation; the proposed construction of a canal connecting the ocean to the great inland lakes of South Australia, recreating the fabled inland seas and transforming the climate of the arid interior; and, perhaps most intriguing of all, recurring suggestions to use nuclear weapons to create entirely new inland lakes within central Australia.

The documents also illuminate the personal accounts of individual Australians affected by drought. Beyond the official reports recording local drought conditions, one finds in the collection various direct appeals to Prime Ministers for federal action on drought relief, often including testimonies of the hardships facing rural Australia during the worst droughts of the century.

In addition to the wealth of textual material available, *Just Add Water* also draws upon the Archives' large collection of photographs. Taken primarily by official Commonwealth photographers, these images provide striking visual representations of the severity of the various droughts that have characterized much of the Australian experience throughout the twentieth century.

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### CONGRATULATIONS to the Australian Academy of Science on its 50th Anniversary!

Celebrations included a very successful Open Day on Sunday 17 October 2004, when the Academy opened its doors to the public to explore the Academy's two heritage buildings. Over 200 visitors (including two who had worked on the construction of the Dome) took a guided tour of the Shine Dome and watched a film showing original footage of its construction. They also viewed objects from the Academy's collection including some wonderful memorabilia depicting the Dome on plates, matchboxes and cloths. To help create a 1950s atmosphere, Academy staff

dressed in 1950s clothes, the FX-FJ Holden Car Club displayed cars on the forecourt outside the Dome and a jazz band provided entertainment. The Academy's original charter with the signatures of the foundation fellows was on display in the foyer, along with the architectural designs (successful and alternative) for the building.

The other 50th anniversary exhibition—*Eureka moments! Highlights of 50 years of Australian science*—is travelling around the nation, following its launch at the National Museum of Australia in May 2004. It is also available online. For details see: <http://www.science.org.au/eureka/>

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Sue Serjeantson, Jacinta Legg, Susie Barratt, Megan Rogers, Marian Heard and Amy Pryor of the Australian Academy of Science, in their 50s dresses outside Ian Potter House. Photograph: Jane Hingston.



One of the vintage Holdens at the front of the Shine Dome for the celebration. Photograph: Jane Hingston.



Collage of Open Day 2004 by Jane Hingston.